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Civilisations et Sociétés euro-méditerranéennes et comparées

[Laboratoire IMSIC]

THÈSE présentée par :

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pour obtenir le grade de Docteur en Sciences de l'Information et de la Communication

**L'utilisateur et le documentaire interactif :
étude expérimentale de l'engagement de l'utilisateur dans
un documentaire interactif**

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USER AND INTERACTIVE DOCUMENTARY:
AN EXPERIMENTAL STUDY OF USER ENGAGEMENT WITH INTERACTIVE
DOCUMENTARY

By
Baker Alkarimeh

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Abstract

In recent years, interactive documentary field has been gradually growing because of great changes in the world of Internet, promising interactive documentary projects, and the increase in academic studies within the field. Nevertheless, relatively little is known about the relationship between user and interactive documentary. The aim of this study was to measure users' attitudes and actual interaction toward different levels of interactivity manipulated in two designed interactive documentaries. The users' attitudes were categorized in this study as: narrative engagement, perceived interactivity, perceived involvement, and attitude toward the interactive documentary website. Another purpose of this study was to examine the relationship between users' actual interaction and their perceptions. To fully understand interactive documentary, the study, therefore, sought to compare interactivity with linearity in terms of narrative engagement and perceived involvement. A sample of 360 participants was randomly divided into three groups and assigned to view three designed documentaries, and to answer the related questionnaire. The study also used software packages to measure and monitor users' actual behaviors.

The findings of this study indicated that there was a significant relationship between the high level of actual interactivity and both perceived interactivity, and attitude toward the interactive documentary website. On the other hand, the findings revealed that there was a positive correlation between perceived interactivity and both perceived involvement and attitude toward the interactive documentary website. However, the study did not find a correlation between perceived interactivity and narrative engagement.

Moreover, the findings showed that the participants' actual interaction was positively correlated with their perceptions, and the participants who viewed the linear documentary were significantly involved with the documentary narrative more than other groups. Discussion, limitation, and future studies were presented in this study

Résumé

Au cours des dernières années, le domaine du documentaire interactif s'est progressivement développé en raison des changements survenus dans le monde de l'Internet et d'études académiques croissantes sur le sujet. Pourtant, on sait relativement peu de choses sur la relation entre l'utilisateur et le documentaire interactif. L'objet de cette étude est précisément de mesurer les attitudes et les interactions de l'utilisateur exposé à un documentaire interactif décliné en différentes versions, disposant chacune d'un degré d'interactivité plus ou moins développé. L'étude de l'attitude des usagers nous a conduit à approfondir les notions d'engagement narratif, d'interactivité perçue, d'engagement perçu et d'attitude à l'égard du site Web documentaire interactif. Un autre objectif de cette étude est d'examiner la relation entre interactions réelles et perceptions des usagers. L'étude a cherché à comparer l'interactivité et la linéarité en terme d'engagement narratif et d'engagement perçu.

Un travail de terrain a été conduit auprès de 360 étudiants jordaniens. L'échantillon a été divisé en trois groupes, chaque groupe visualisant un des 3 documentaires interactif et répondant au questionnaire relatif. L'étude a également utilisé deux logiciels pour tracer le comportement réel de l'utilisateur.

Les résultats de cette étude mettent à jour une relation significative entre d'une part le haut niveau d'interactivité réelle et d'autre part l'interactivité perçue et l'attitude à l'égard du site Web documentaire interactif. D'autre part, les résultats ont révélé une corrélation positive entre d'une part l'interactivité perçue et de l'autre l'engagement perçu et l'attitude à l'égard du site Web documentaire interactif. Cependant, l'étude n'a pas trouvé de corrélation entre l'interactivité perçue et l'engagement narratif.

De plus, les résultats ont montré que l'interaction réelle des participants est positivement corrélée à leurs perceptions. Enfin, les participants qui ont regardé le documentaire linéaire sont significativement plus engagés dans la narration documentaire que les autres groupes. Cette étude présente enfin les résultats, les discute et envisage des perspectives futures.

Chapter 1: Introduction

Over the last decade, there has been an increase of using the term ‘*interactive documentary*’ (e.g., Almeida & Alvelos, 2010; Dovey & Rose, 2013; Gifreu, 2014; Miles, 2008; Nash, 2014a; Vázquez-Herrero, Negreira-Rey, & Pereira-Fariña, 2017; Whitelaw, 2002) or abbreviated as i-doc (Gaudenzi, 2013, Gantier & Labour, 2015), although this term intersects with other terms such as: webdocumentary (e.g., Nash, 2012); database documentary (e.g., Hudson, 2008; Keep, 2014); new media documentary (e.g., Cohen, 2012; Gifreu, 2011; Ocak, 2014); and collab docs (Dovey & Rose, 2012). On the other hand, this type of documentary has witnessed a growing practice in production, and distribution, where some festivals and television channels have been supporting such genre, offering a special platform such as France 24 and IDFA (International Documentary Film Festival Amsterdam). Consequently, many interactive documentaries have gained a global reputation among various media such as: *Gaza/Sderot: Life in Spite of Everything* (2008); *Prison Valley* (2009); *6 Billion Others* (2003); *Highrise: The Thousandth Tower* (2011); *Out My Window* (2010); and *Bear 71* (2012).

Using the term ‘*interactive documentary*’ is notably the result of an assumption that this type of film is related to the concept of interactivity (e.g., Galloway et al., 2007; Gaudenzi, 2013, Nash, 2012) offered by digital technologies and led by computers and web 2.0 (Le Grice, 2001; O’Flynn, 2012). Both terms ‘*documentary*’ and ‘*interactivity*’ have become considerably controversial over the last decades.

The first controversy is derived from the fact that the term ‘*documentary*’ has been associated with reality as an approach that used to differentiate between documentary as a genre and the fictional film. However, ‘*reality*’ or the so-called ‘*profilmic reality*’, which is the reality beyond and before the camera (e.g., Favero, 2013; Beattie, 2008; Nichols, 2010) has opened a widely historical debate between documentary theorists and practitioners since it is not possible within our capacity to represent reality as it is, instead one should conceivably deal with on what Grierson (1933) identified it as “the creative treatment of actuality” (p. 8). Consequently, Nichols’s and Trinh’s views can illustrate the depth of the controversy between the documentary theorists when Nichols (2010), for example, suggests that “every film is a documentary” (p. 1);

and when Trinh (1993) proposes that “there is no such a thing as documentary” (p. 90). In this context, Almeida and Alvelos (2010) touch the indispensable fact when they conclude: “It appears that nowadays everyone is using the word ‘documentary’ to describe every single multimedia piece that incorporates video no matter its nature, technique, language or scope, taking advantage of the fuzzy and fragile boundaries of the documentary definition” (p. 124).

The first examples of documentaries such as, *Arrivée des Congressistes à Neuville-sur-Saône* (1895) by Louis Lumière and *Nanook of the North* (1922) by Robert J. Flaherty, were considered to be the core of the documentary genre. These examples could meet Grierson’s notion that reality was edited based on the traditional narrative, which is built on cause and effect (Manovich, 1991) or on “evidentiary editing” as Nichols (1991, p. 30) argues; or as Le Grice (2001) confirms consecutively “narrative is a method by which events - real or imaginary- are given coherence through the representation of sequential connections” (p. 290).

The second controversy is derived from the fact that the term ‘*documentary*’ is progressively connected with the term ‘*interactively*’ (Whitelaw, 2002) as a vision for a new type that enables the narrative structures to be open to varying degrees. These open narrative structures adopt principally the logic of the spatial database, abandoning the logic of the chronological order that is based on cause and effect (Manovich, 2002). Moreover, connecting documentary with interactivity as mostly common use (Almeida & Alvelos, 2010; Dovey & Rose, 2013) makes this genre associated with a constant change and development as a significant attribution of interactivity. Thus, it is difficult to establish basic rules to understand interactive documentary, conceptualize it or even study it with this constant change and development.

Based on the essential difference between the database and narrative, Manovich declares that: “data-base and narrative are natural enemies” (as cited in Hayles, 2005). The logic of databases provided by digital environments, or the so-called “random access” (Le Grice, 2001; Marles, 2012) is that the films can be structured as narrative fragments, where users can have several choices to deal with and navigate in, including access to them from multiple directions. Database is essentially “... engines that allow content to be contributed and “mixed” in an ingoing basis” (Miles, 2008, pp. 225–226).

What simply happened is that we no longer discuss a directional linear relationship,

including sender, medium and user; but instead a reciprocal, participatory relationship, where users can communicate with or through the medium. Thus, the closed authored static narrative becomes open. It is what Umberto Eco (1989) calls 'open works', where users/participants can influence the content. It thus offers many different possibilities, facts and interpretations. This has been expressed in many studies as '*user control*' that titles the concept of interactivity (e.g., Jensen, 1999; Lombard & Snyder-Dutch, 2001; McMillan, 2000; Nash, 2012; Roehm & Hautvedt, 1999; Zeltzer, 1992). The debate about this term lies in whether the user control (the result of interactivity) is a product of the medium features or a perception of these features, or both of them. If '*user control*' is added (the ability to modify and add to the content) to the basic concept that forms the concept of documentary, the debate about the concept of reality becomes very complicated and unnecessary (Favero, 2013). In fact, the transition from linearity to interactivity represents a real revolution that has changed the classical concepts of media, and of the relationship that arise in their environments.

This age, however, is marked with terms such as digitalism, non-linearity, trans-media, cross-media, new media, social media, etc. These problematic concepts have created divergences in theorists' and practitioners' views, and confusion expressed clearly by Manovich, as 'uneven development' in his article *Image Future* (2006). Although we live in the context and consequences of this digital shift, the classical media as a concept of linearity, still resists fading. In contrast, the presence of web 2.0 platforms, social media, new media and technology does not in fact mean that documentaries or media messages are digital and nonlinear. Many interactive documentaries are linear, edited in digital software with standardized narratives (Whitelaw, 2002). Technology and web platforms are only facilitative tools for establishing relationships that are described as interactive. They enable two-way communication but do not guarantee its continuity (Wu, 2006). Therefore, the task of activating this participatory relationship is essentially the responsibility of both the author and the user/the participant.

Interactivity in other theoretical contexts indicates the capacity of a system to enable interactive communications or responsive messages in real-time; user control by providing adequate choices and continuous feedback; and the ability to construct a mutual meaning. In this context, interactivity builds its notion on interpersonal communication, as a substructure for evaluating interactive experiences, despite the fact that they both have different natures (e.g.,

Bretz, 1983; Heeter, 1998; Williams, Rice, & Roger, 1988).

Furthermore, interactivity as characteristics of a medium is evaluated based on the number or appearance of interactive features (e.g., Ghose & Dou, 1998; Ha & James, 1998; Bucy, Lang, Potter, & Grabe, 1999). Therefore, the level of interaction may decrease if the number of interactive features is limited, on the one hand. On the other hand, interactive features cannot be separated from the story, the medium itself, or the audience's perceptions. In the field of interactive documentary, the documentary is conceptualized based on the user's ability to influence the content (e.g., Gaudenzi, 2013; Nash, 2012). This conceptualization indicates that the new documentary is conceived in terms of what the user can do about its content. The documentary is implicitly classified based on the degree of control given to both the author and the user as if they are in a reciprocal relationship including the exchange in roles and tasks.

On the contrary, despite the advancement of technology and the participatory options available, the digital documentary narrative may still be implicitly seen as a genre that continues to imply the author's traditional influence, since narrative and available choices are still limited and pre-authorized; and there is still no real flexibility in the constant exchange between the user and narrative (Grasbon & Braun, 2001).

As a result, this controversy about terms such as documentary, interactive documentary, linearity, non-linearity, author and user, is what calls for the current study. Therefore, this study is an attempt to understand the relationships between these fields and concepts through an experimental study on how the user perceives them.

Statement of the Problem and the Importance of the Study

This study emerges from the assumption that there are almost no experimental studies on users' perceptions within the interactive documentary domain. Although there are adequate studies on users and interactivity in other fields such as economy, advertising, marketing, games, education and computer and information science (e.g., Hwang & McMillan, 2002; Jee & Lee, 2002; Wu, 1999, 2005), it seems not to be the case in the field of interactive documentary. In addition, despite the fact that the history of interactive documentary can be traced back to the late 1980s, with a growing production in multi forms (Gifreu, 2017a), academic studies as a whole are somewhat scarce compared to other fields.

Some studies of the interactive documentary have emerged to classify this genre (e.g., Aston & Gaudenzi, 2012; Dankert & Wille, 2000; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012), some have come to analyze the existing interactive documentary projects (e.g., Duijn & Koenitz, 2017; González, 2014; Harsin, 2014; Hosseini & Wakkary, 2004; Marles, 2012; Smaill, 2018; Ursu et al., 2009) and others have come to conceptualize it (e.g., Dinmore, 2014; Favero, 2013; Galloway et al., 2007; Gifreu, 2014; Koenitz, 2015a, 2015b; O'Flynn, 2012). Nevertheless, the experimental studies on the relationship between users and interactive documentary are apparently absent. The reasons for insufficiency of adequate studies in this field can be generally related to the lack of consensus between theorists and practitioners on defining this genre (e.g., Almeida & Alvelos, 2010; Cohen, 2012; Dovey & Rose, 2013; Gifreu, 2014; Hudson, 2008; Katale, 2011; Keep, 2014; Liuzzi, 2015; Miles, 2008; Nash, 2014a; Ocak, 2014; Sukari, 2009; Whitelaw, 2002).

Furthermore, the lack of consensus could be related to the fact that many practitioners do not call themselves filmmakers but designers (Gaudenzi, 2013). This, therefore, calls for a multiple understanding, where specialty seems to be undefined and absent from this type of documentary. On the other hand, while some understand interactive documentary as an evolution of the traditional documentary (e.g., Berenguer, 2004; Goodnow, 2004; Miller, 2004), others call for separation from the antecedent and insist to study it in a different context (e.g., Gaudenzi, 2013; Simoes, 2011; Whitelaw, 2002) where the antecedent is reckoned as a representation of reality (e.g., Nichols, 1991), and the latter is as a recreation of it (e.g., Gaudenzi, 2013). The problem becomes more complex as the documentary is more often linked with the term '*interactivity*', which makes it constantly in an unstable state of evolving and changing (Almeida & Alvelos, 2010; Dovey & Rose, 2012). In a sense, what can be applied to it today could not be the same tomorrow.

In the field of practice, this type of documentary does not seem to follow a precise approach to deal with reality, on the one hand, and the amount or the way of using interactivity, on the other hand. For example, many interactive documentaries are entirely designed on a database and do not open the narrative structure such as *Prison Valley* (Arte, 2010) and *Journey at the End of the Coal* (Bollendorff, 2009) while other interactive documentaries open this narrative structure at different levels of participation such as *6 Billion Others* (2008). The

absence of a clear approach in the field of practice could be the result of having no clear feedback from users as well as no experimental study on users with these types of documentaries. Essentially, the absence of agreement of having a precise term of this genre; lack of clear vision of separating or connecting this type with the linear documentary; and finally, the association of this type with other dialectical terms, such as interactivity and reality, leads eventually to inaccurate methodologies and divergent visions.

In light of growing voices and studies on the importance of user involvement and contribution in the field of interactive documentary (e.g., Ascott, 1990; Aston & Gaudenzi, 2012; Gantier & Labor, 2015), the user remains distant from experimental studies. This concern of user engagement comes from the fact that the interactive documentary is relevant to interactivity dimensions, which are generally based on the concept of user control through available choices, participation and contribution to the documentary content, and thereby the possibility of creating various interpretations and meanings. Therefore, the interactive documentary is understood by its connected adjective '*interactive*', and is distinguished from the traditional documentary by the attempt to perceive it, and study it on the basis of interactivity (e.g., Gaudenzi, 2013). Although the controversy of interactivity is still ongoing on whether to evaluate it as the attribute of media, or of users, this does not seem the scenario in the field of interactive documentary. Several studies, as seen by Nash (2014b), reflect theoretically the determined influence of users over the documentary content whether by providing the ability of modification or contribution, but they almost exclude how users understand this interactivity. In other words, how users perceive this interactivity in the scope of interactive documentary as a digital narrative.

In other fields, many studies have shown a positive correlation between the high level of actual interactivity and users' perceptions (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; McMillan, 2000; Wu, 1999; Yoo & Stout, 2001). In contrast, other studies have shown no such positive correlation between both variables (e.g., Bezjian-Avery, Calder, & Iacobucci, 1998; Coyle & Thorson, 2001).

Under this experimental framework, if interactive documentary is perceived on the logic and dimensions of interactivity, it is possible to conduct experimental studies on users' perceptions of this experiential interactivity. In the studies that sought to classify the interactive

documentary genre, many of them have conceptualized the user within the logic of interactivity, or rather, how much participatory space is theoretically occupied by the user in the domain of interactive documentary based on opening or closing narrative structures (e.g., Aston & Gaudenzi, 2012; Choi, 2010; Nash, 2012). For example, Gaudenzi (2013) assumes that interactive documentaries could be classified according to opening their structures to users as conversational, hypertext, participatory and experiential documentaries. She understands that interactive documentaries, which allow users to explore their database as in hypertext mode, have a low level of interactivity compared to other modes. Users, in this mode, are only exploring the documentary database. On the contrary, Hudson (2008) argues that users do not only explore the given narrative, but they also construct meaning, where exploration is viewed as a voyage in search of meaning that conveys some aspects of authorship to users.

In other contexts, the level of interactivity does not necessarily mean the number of technological properties developed in a documentary, but it basically means the level of user interaction with these technological features, or more precisely, the level of suitability of these characteristics with users' characteristics. Although studies on interactivity are divided between medium characteristics and users' perceptions, this study understands it as a process that consists of both medium characteristics and users' perceptions. In this study, the user is conceived as the core evaluator whether, for example, a documentary with a high level of interactivity is actually more capable to positively influence the user than a documentary with a low level of interactivity.

Consequently, the main argument arises from the fact that we are still talking about the documentary; about the documentary story that narrates the events of life around us. Do users really enjoy this type of documentary story as a database in which they can build their own narrative? Do they want an essential role in which they are equal to authors? Therefore, interactivity is conceived in the context of the documentary, which is essentially different in other contexts. In a sense, interactivity as a dimensional concept cannot be understood in isolation from the content itself, audience and medium.

However, while several studies conclude that users would have an interactive experience and an active control in interactive environments (e.g., Bezjian-Avery et al., 1998; Liu & Shrum,

2002), Wu (2006) argues that users, even the experts, may lose their control or interactive experience at any stage. Similarly, Neuwman (1991) states that people may not often make an effort to interact even though they have the available choice. Therefore, a high level of interactivity may be undesirable (Ariely, 1998; Bezjian-Avery et al., 1998; Liu & Shrum, 2002). In a number of studies, users seem less interested in dealing with interactive features. For example, Aldersey-Williams (1996) stated that “IDEO found that most people only use a few functions offered by state-of-the-art television, and that they tend not to readjust the controls once they have set them” (p. 35). Moreover, Sundar, Kalyanaraman and Brown (2003) stated that:

Interactivity at higher levels may impose greater navigational demands on users, which serve to counteract its positive effect on user impressions of the site. Therefore, any operationalization of interactivity that involves navigation is a double-edged sword: increasing clicking activity among users may boost their engagement with content but also concurrently induce tedium. (p. 27)

Moreover, users do not also seem to be active in contributing to online content. According to Nielsen (2006), 90 % of online users view content, 9 % of them modify without contributions, and only 1 % contributes to the content. Similarly, only 0.2 % of users contribute to Wikipedia out of 99 % of those who are considered to be lurkers, and only 1 % of customers contribute reviews in books’ section at amazon.com even that Amazon sells a large number of these books (Nielsen, 2006).

More recently, another study showed that only 11 % of users contribute to online content (Bronner & De Hoog, 2010). Other studies found that online users read only 20% of the text on the average page (Nielsen, 2008), and that web users spend 80 % of their time viewing the left side of the webpage with only 20 % of viewing the right side (Fessenden, 2017). In contrast, other studies have found that 44 % of American adults have made some contribution to the Internet that includes posting photos, written materials, comments, artwork and video, downloading music and video (Lenhart, Fallows, & Horrigan, 2004).

Therefore, if one property of the interactivity is the user’s ability to contribute and edit as an expression of user control, the previous studies have shown there were passive users who

have less interest to add to online content. In the same context, if the interactive documentary is classified based on the degree of opening the narrative structure, where the high interactive documentaries are those that allow the user to change their narrative and to add to it (e.g., Gaudenzi, 2013), it is consequently clear that there is a vast gap between the theoretical classifications of interactivity, and of interactive documentary, and the actual results that show users' passivity toward adding or changing the content. As a result, in the interactive documentary field, interactivity is not everything, many of the best-known documentaries are based on the database narrative or on: 'choose your path by yourself' such as *Prison Valley* (Arte, 2010), *Journey at the End of the Coal* (Bollendorff, 2009). Accordingly, Manovich (2006) sees that although we live in a technological age, the films are still linear. Others also consider that technology is only facilitative means (Hales, 2002; Le Grice, 2001).

In general, this study is consistent with previous studies that emphasize the importance of users' participations and interaction, but at the same time, it insists on measuring this interaction; on understanding it pragmatically; and on providing deep answers from users' point of view. For this reason, this study is an initial contribution in an endeavor to empirically understand users by measuring their perceptions of interactivity in the framework of interactive documentary, and by profoundly examining their engagement with the narrative and the documentary as a whole. In this context, the study designs two different documentary projects based on actual interactive features, and another linear documentary project in an attempt to first examine how users perceive the two interactive projects, and whether the level of interactivity influences the level of users' engagement. Secondly, the study seeks to provide practical answers on the extent of the correlation between interactivity and linearity with the documentary narrative. Does the level of interactivity influence positively or negatively the documentary narrative? Or is linearity in a positive correlation with the documentary narrative? By comparing linearity with interactivity in the course of documentary, the study seeks to predict the future of both linear and interactive documentaries in the interactive age.

Furthermore, the importance of this study arises from the fact that the population of this study is one of the Arabic-speaking countries. It is controversial that studies, practices, statistics and even specialties of this documentary genre in the Arab region are almost missing. There are some limited productions supported by some Arabic channels such as Al Jazeera Documentary

and some other independent interactive documentaries such as *18 Days in Egypt* (Metha, 2011), but most of them are introduced in languages other than Arabic. Moreover, although the percentage of using the Internet in the Arab-speaking countries is fairly great (see Internet World Stats, 2018) especially social media (see Radcliffe, & Lam, 2018; Salem, & Mourtada, 2012), interactive documentaries are not apparently included. It is seemingly that Arab citizens are almost marginalized from this field. Arabic documentary productions in general are very low when compared to its Western counterpart, due to economic cultural reasons and the absence of real platforms for such types. Based on the above, this study is generally considered to be a definition of this society in terms of how they understand and experience these types of documentaries.

Finally, the importance of this study lies in its attempt to examine the dialectical relationship between both linear and interactive documentaries. It aims to answer how users engage and understand the narrative in three designed documentary projects: high interactive documentary, low interactive documentary, and linear documentary.

The nature of narrative in linear documentaries is quite different from interactive documentaries. In linear narrative, we deal with one-way communication and a completely closed narrative that is based on temporality and cause and effect (Dovey, 2002; Le Grice, 2001; Manovich, 2002). In interactive narrative, we deal with a database that allows a binary communication and a reconstruction of meaning (Hudson, 2008) since it can be essentially expandable, modifiable and contribuable.

This change, in the nature of narrative, was accompanied by a change in the relationship between the author and the user. While the author has full control over the text in classical documentaries, the author and the user can share this control in interactive narratives (e.g., Gifreu, 2017a; Nash, 2012; O'Flynn, 2012). In other circumstances, the author's control over the text is completely absent and it is replaced with the user control in an open narrative. The open or closed structures of a documentary depend on the susceptibility of a narrative to be expandable and contributable. Nevertheless, although the age is digital, ideas and concepts are still linear (Hales, 2002). It is the asymmetry between modern technology and the continuation of using the old media (Manovich, 2006).

Moreover, Manovich (2002) limits narrative to linearity, making linearity and non-linearity (database) in a conflicting relationship since they both have different natures. The database contains a different narrative, anchored on fragmentation and spatial montage, and can be accessed from several points. However, Hayles (2005) suggests “*probability space*” as broader concept to deal with linearity and non-linearity, where both concepts can coexist. In a different context, the displacement of a static authored text to a fragmental database may negatively affect emotional identification and enjoyment with a documentary, where the focus becomes more on viewers’ next movement or selection (McKee, 1997; O’Flynn, 2012).

It is undeniable that we are dealing with new users who have unique and distinctive personalities. These new users cannot be understood without comprehending the technological aspects that surround their age: one is the Internet; the other is the logic of database. In the first one, the Internet as a tool of two-way communication has activated users’ control in the form of participation, modification, contribution, etc. In the second one, we are dealing with a variety of random multimedia linked with hypertext and hypermedia. Users are mainly responsible for connecting this database and for making it meaningful. In this case, users exert great effort ranging from linking random databases to physical activity. This mental process (linking) is translated into physical actions such as clicking, browsing, navigating, etc. Although the logic of databases, or the logic of ‘*random access*’, may seem closer to our human logic in terms of the mental process that we use when we think of something, and try to make sense of it, it also refers to a large effort exerted by users based on the level of interactivity or complexity.

Therefore, this quantitative and qualitative study seeks to provide answers on whether users still prefer to experience linear narratives instead of interactive narratives in the framework of linear and interactive documentaries. It seeks equally to provide answers on whether the level of interactivity has a positive or negative impact on narrative engagement from users’ point of view.

Objectives of the Study

The objectives of this study are divided into three parts: level of actual interactivity, users’ actual interaction and interactivity versus linearity.

First objective of the study: level of actual interactivity.

The first objective of this study was to examine whether there was a relationship between the level of actual interactivity and users' perceived interactivity and attitude toward the interactive documentary website. To achieve this goal, the study, based on the literature review and existing interactive documentaries, designed two interactive documentaries: low interactive documentary and high interactive documentary. Both documentaries used the same documentary story. Both designed documentaries in terms of the story order; the degree of participatory space; the number of interactive features. The study used three software packages to design these projects: Adobe Premiere, Photoshop and Klynt.

Adobe Premiere was primarily used to produce the initial story (the linear documentary) by editing all related videos in a linear chronological order. Natural sound effects, music, transitions, captions, color grading and correcting, other elements and techniques were added to produce this documentary. After producing the linear documentary, the story was cut into small units in which each unit formed a complete short story. They all were exported from Adobe Premiere in order to be used in the Klynt software. Photoshop was chiefly used to design the necessary graphics and captions for the main pages in both interactive documentaries: low interactive documentary and high interactive documentary. Lastly, the Klynt software was mainly used to design both interactive documentaries. In this software, all micro stories, produced in and exported from Adobe Premiere, were entered, arranged and linked. The micro stories were constructed in a database format based on the degree of interactivity.

In essence, the purpose of designing these documentaries rather than using existing interactive documentary projects was: (a) the ability of manipulating the linear narrative in line with the study population; (b) the ability of manipulating the digital narrative and interactive features in accordance with the study population, and with the variables that the study sought to measure; (c) the ability of linking these documentaries with other software packages, such as Google analytics and Inspectlet, in order to measure users' actual interaction. Thus, designing these interactive documentaries in this manner could ensure the high and accurate possibility of consistency between the design and the study variables. It could also give greater control over the experimental environment by controlling external conditions that could adversely affect the experiment.

In general, the scarcity of experimental studies on users and interactivity in the field of interactive documentary is what requires this study. This study is an attempt to understand the interactive documentary from users' perceptions, where analyzing the interactive documentary is empirically based on studying users' actions and attitudes. Notwithstanding, there is a constant controversy among researchers on the concept of interactivity. Some of them have conceptualized interactivity based on medium features and functionally manipulated the level of interactivity (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001; Fiore & Jin, 2003; Haseman, Nuipolatoglu, & Ramamurthy, 2001; Raney, Arpan, Pashupati, & Brill, 2003; Sundar et al., 2003). Others have conceptualized it based on users' perceptions and used scales to examine the relationships between levels of actual interactivity versus perceived interactivity (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Liu & Shrum, 2002; Schlosser, 2003; Wu, 1999, 2005, 2006; Yoo & Stout, 2001). On the other hand, results of the studies on actual interactivity and users' perceptions in marketing, advertising and other fields are inconsistent. Some studies have found a positive correlation between actual interactivity and users' perceptions (Flore & Jin, 2003; Haseman et al., 2002; Macias, 2003; Raney et al., 2003; Sundar et al., 2003; Wu, 2005); and between perceived interactivity and the attitude toward the website (Cho & Leckeby, 1999; Hwang & McMillan, 2002; Jee & Lee 2002; Schlosser, 2003; Wu, 1999, 2005; Yoo & Stout, 2001). Other studies have revealed no such positive correlation (Bezjian-Avery et al., 1998; Coyle & Thorson, 2001).

Nevertheless, no study, in the field of interactive documentary, has measured the relationship between the level of interactivity and perceived interactivity, narrative engagement, perceived involvement, and attitude toward the interactive documentary website. Therefore, this study designed three documentaries and measured users' attitudes and behaviors toward them.

Second objective of the study: users' actual interaction.

The second objective of this study was to examine whether there was a relationship between user's actual interaction and perceived interactivity, narrative engagement, perceived involvement and attitude toward the interactive documentary website. To achieve this goal, the study linked the two interactive documentary projects with two software packages: Google Analytics and Intersectlet.

Google Analytics was essentially responsible for providing useful information about

users' actual interaction such as user page views, time spent on each page, page depth, etc. Inspectlet was used as a supplemental application for providing additional information about users' actual behaviors such as recording the entire session of each participant.

According to Hoffman and Novak (1996), interactivity could be measured based on the time spent by users on the website as well as the number of viewed pages. The time spent by users on the website may reflect a behavioral measure of engagement, and could help researchers to understand users' behaviors (McMillan, Hwang, & Lee, 2003). Wu (2006) also regards the time spent viewing the website or page as a key factor in building a conceptual framework of interactivity.

However, despite the emphasis on the importance of users' participation in the field of interactive documentaries, there are no experimental studies on users' actual interaction and perceptions. Therefore, this study aimed to investigate the relationship between users' actual behaviors and their perceptions in order to understand the interactive documentary in a practical way.

Third objective of the study: interactivity versus linearity.

The third objective of this study was to examine the relationship between interactivity and linearity in terms of narrative engagement and perceived involvement. To achieve this goal, the study designed a third documentary in addition to the two interactive documentary projects. The fundamental objective of this procedure was to test whether users are significantly more likely to engage in linear narratives than interactive narratives or vice versa. This goal is distinctive for it highlights quantitatively and qualitatively the relationship between users with linearity in the age of interactivity. This could therefore lead us to better conceptualize the dialectical relationship between linearity and interactivity. In addition, this objective of the study highlights the future of both interactive documentary and linear documentary. In other words, it examines whether users are cognitively linear and simply using interactivity as a facilitative and economic tool.

This controversy between interactivity and linearity arises from the literature on interactive documentary, from two different perspectives. One of these perspectives conceptualizes the interactive documentary as an evolvement of the linear documentary (e.g.,

Berenguer, 2004; Goodnow, 2004; Miller, 2004); and the other conceptualizes it as a separated genre (e.g., Gaudenzi, 2013; Simoes, 201; Whitelaw, 2002). In practice, many interactive documentaries are still using linearity (Whitelaw, 2002). In general, ideas need time to change from linearity to digital, from temporality and cause and effect to the special database (Manovich, 2006). Consequently, the third objective of this study was to quantitatively examine how users perceive linearity and interactivity in terms of narrative and involvement in the three designed documentaries: linear documentary, low interactive documentary, and high interactive documentary. In addition, the study applied a qualitative method employing an in-depth interview instrument to profoundly understand how users understand documentary narrative, in the three designed documentaries, and interactivity, in the two interactive documentaries.

Chapter 2: Literature Review

To explore the problem of this study, this chapter of literature review discusses these three main constructs: interactivity, interactive documentary, and user and interactive documentary: toward experimental research.

The study in the interactivity section seeks to provide the most important approaches and studies that sought to define interactivity. These approaches are divided into: actual interactivity studies, perceived interactivity studies, and interactivity as a communication process studies. In each of the previous approaches, the study presents the most essential definitions and the main general aspects. In addition, the study presents and discusses in detail the dimensions of interactivity. Finally, this section provides the main studies and their results that dealt with actual interactivity and users' perceptions. The main purpose of this section is based on a key assumption that interactive documentary is perceived as a relational concept with interactivity, where it is employed as a main tool to process the documentary content and to communicate with its audience.

In the interactive documentary section, the study seeks to review the problem of defining the interactive documentary genre with providing a discussion of the existing definitions. Second, the study explores in detail the studies that have classified the interactive documentary. The study then proceeds to a detailed review of research that has studied the interactive documentary, and concludes with a comparison between the interactive documentary and traditional documentary in terms of the author, the text and the user.

The major purpose of this second section of the literature review is to understand the interactive documentary in two different contexts: the interactivity context and the documentary context. By reviewing the documentary in the interactivity context, it is possible to see how interactivity influences its content as well as the expected objectives to be achieved by the users. In addition, studying interactive documentary in the traditional documentary context can provide deep answers to the changes that have occurred; and hence the possibility of conceptualizing and classifying the interactive documentary genre.

In the section of the user and interactive documentary: toward experimental research, the study considers this last section as a result of the convergence between user, interactive

documentary, and interactivity. This convergence between the three concepts produces seven main directions, which are discussed as following: interactive documentary as an actual interactivity, interactive documentary as a perceived interactivity, interactivity documentary as a communication process, narrative engagement, perceived involvement, attitude toward the interactive documentary website and user's actual interaction. The objective of this section is to establish a general framework in order to measure users' attitudes toward interactivity and narrative in the scope of interactive documentary and of traditional documentary.

Interactivity

The first construct of the literature review discusses under the scope of interactivity the following elements: interactivity: the problematic term; actual interactivity; perceived interactivity; interactivity as a communication process; dimensions of interactivity; and studies on actual interactivity and perceptions.

Interactivity: the problematic term.

There is a vast controversy and disagreement about the term '*interactivity*' (e.g., Heeter, 1989; McMillan, 2000; Newhagen, Cordes, & Levy, 1995; Steuer, 1992). The reasons of disagreement could be generally related to the wide use of the term in many scientific fields, such as sociology, computer science, information science, advertising, marketing, etc. Therefore, Rafaeli (1988) states: "Interactivity is a widely used term with and inutile appeal, but it is an underdefined" (p. 110).

Research on interactivity had many questions on whether interactivity is a feature of the medium or a feature of user perception. The concept of interactivity is controversial because of its correlation to mass communication in general and new media in particular. Using this term in this study without providing precise definitions may guide to unclear methodology, and hence to unintelligible results, especially that this study is not about interactivity as a separate concept, but as a relational dimension, which is considered to be an essential factor in defining the interactive documentary.

The term '*interactivity*' is apparently more relative to new communication technology (DeFleur & Ball-Rokeach, 1989); which was the result of the Internet and the development of computer programs (Lanham, 1993; Stromer, 2000). In light of the developments provided by

the Internet, as a two-way communication tool, it appeared that there was “a need to conceptualize communication, in part because of changes brought about by new telecommunication technologies” (Heeter, 1989, p. 217). Usually, levels of interaction may vary based on the used media and the subject itself. The subject may form another meaning regardless of the number of interactive features. For example, the concept of interactive documentary based on its subject may vary from interactive fictions or interactive marketing or advertising websites even though they all use the same interactive features. However, the medium may be described as high or low interactive medium based on its capacity to create an interactive experience or its capacity to activate two-way communication. Therefore, Rogers (1986) states: “the contemporary era of person-to-person communication centers on two-way media and this is made possible by computers” (p. 30).

In many fields, interactivity is viewed as an independent variable to describe the media and their capacity of producing interactive environments (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001), and as a dependent variable to measure the audiences’ attitudes toward the media or the included interactivity (e.g., Day, 1998; Kiouisis, 2002; Newhagen et al., 1995; Wu, 1999, 2006). On the other hand, levels of interaction may increase or decrease within a medium depending on people’s perceptions (Newhagen et al., 1995). On the contrary, levels of interaction may fluctuate if technological characteristics change (Schneiderman, 1987). McMillan (2000) states in this regard “while some scholars see interactivity as a function of the medium itself, others argue that interactivity resides in the perceptions of those who participate in the communication” (p. 71).

Although interactivity and the Internet are functionally related, the interactivity did not begin as an experimental concept with the new media (Katz, 2000). For example, the first picture-phone was displayed before the Internet and the interactive television was much earlier (Katz, 2000). However, the concept of interactivity and its functional use has recently increased rapidly to become a controversial and dialectical concept among scholars with the rise and growth of new media provided by the Internet 2.0. It has become urgent to define interactivity in compliance with these new means. Therefore, Rafaeli (1988) declared at that period that interactivity is “an expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous

exchanges referred to even earlier transmissions” (p. 111). This one-dimensional concept based on responsiveness emphasizes the concept of the one-way flow of information, which would later become the basis for several definitions and dimensions of interactivity (e.g., Downes & McMillan, 2000; Kiouisis, 2002). In the same vein, Williams et al., (1988) state that interactivity is “the degree to which participants in a communication process have control over, and can exchange roles in, their mutual discourse” (p. 10). This definition demonstrates, as it will be later explained, the emphasis on exchangeable relationship rather than the channel itself.

On the other hand, interactivity as a term has roots with a similar word ‘*interaction*’, but it takes a more social characteristic than an intermediate attribute (Jensen, 1999). Furthermore, interactivity, as mentioned earlier, is used in many scientific fields such as sociology, medical science, psychology, statistics, and others. In the field of mass communication, for example, the concept is considered to widely cover the processes between the media and message (Jensen, 1999). Lazarsfeld’s two-step flow of communication model is an important concept in mass communication and interpersonal communication, where it represents a dynamic interaction in multiple steps, beginning with the transmission of information to opinion leaders, and then to a wider audience. Although this model could be essential for understanding the roots of interactivity, it is conceived in the sense of sociology (Jensen, 1999).

In the same context, Horton’s and Wohl’s (1956) theory of ‘para-social interaction’ confirms that the media, especially television, have the capacity to create an illusion of a face-to-face communication between the broadcaster and the audience, through the techniques of shots and points of view. Audience participation in TV and radio programs can simulate the interpersonal communication (Jensen, 1999). This type of interactive communication is basically different from social interaction and media interaction in which it is controlled by the communicator; and in which it lacks continuous effective exchange. Nevertheless, Kiouisis (2002) suggests that interactivity derives from the Cybernetic theory, as summarized by Wiener (1948) that represents a basic communication model. According to Kiouisis (2002), the fundamental difference between the Cybernetic theory and the classic model of Shannon and Wiener (1948) is that it focuses on feedback from the message’s receivers. Later, this concept has become a key component of many definitions of interactivity. The interaction within this definition becomes a trait of the channel through which communication occurs, where

communication is seen as a dynamic process interconnected between both senders and receivers (Kiouisis, 2002).

In addition, informatics has the advantage of connecting humans to machines in an interactive sense (HCI). The context used by informatics in defining interactivity differs from other contexts, such as sociology or mass communication science. Interactivity in informatics sense is, as Jensen (1999) states: “a process often referred to as the computer-mediated communication (CMC). Within informatics then (in contrast to sociology), it is possible to have (human-machine) interaction without having communication, but not (computer mediated) communication without also having (human-computer) interaction” (p. 190).

The two main characteristics of interactivity in the informatics’ perspective are first the process between human and machine is viewed in an analogous manner that simulates the interpersonal communication between individuals; and the second characteristic is the concept of control (e.g., Jensen, 1999; Lombard & Snyder-Dutch, 2001; McMillan, 2000; Roehm & Haugtvedt, 1999; Zeltzer, 1992). The concept of control ranges from the number of options available that can be offered to which these options are able to be an expression of the individuals’ characteristics. Therefore, much later, many studies would try to use the terms ‘*participant*’ or ‘*interactor*’ (e.g., Gaudenzi, 2013; Gifreu, 2011; Rogers & Albritton, 1995) rather than ‘*user*’ or ‘*receiver*’ since the latter terms are viewed as a negative concept of interactivity. For instance, Rogers and Albritton (1995) prefer using the term ‘*participant*’ rather than the term ‘*receiver*’ since the receiver carries a negative meaning that conflicts with the notion of exchange. In the interactive documentary, it will be seen that the classical author will start to relinquish the role of the absolute author to a designer, and the concept of the accomplished product will become primarily dependent on the partnership between the author and the user; or rather both the author and the user will become involved in a mutual exchange. However, the concept of control may be viewed as a negative concept because it contradicts with the term ‘*interactivity*’ in which it is perceived as an expression of exchange and reciprocity (Jensen, 1999).

It is clear that many interactivity theorists have been preoccupied with conceptualizing interactivity to resemble interpersonal communication. For example, Leary (1990) emphasizes

that interactivity is the ability of a system to imitate interpersonal communication. He expects that the success of any medium relies mainly on its capacity to simulate interpersonal communication. Similarly, DeFleur and Ball-Rokeach (1989) state that: “interactivity generally refers to the processes of communication that take on some of the characteristics of interpersonal communication” (p. 341). In the same regard, many communication theorists believe that interpersonal communication is a basic criterion for evaluating interactive experiences (Bretz, 1983; Heeter, 1998, Williams et al., 1988). In contrast, several studies have criticized this reliance on interpersonal communication as a criterion (e.g., Schudson, 1978), because interpersonal communication is principally different from human-machine or from human-intermediate environments (Kiousis, 2002).

However, time is conceived as another main concern of interactivity theorists. For example, Steuer’s (1992) definition concentrates on real time “the extent to which users can participate in modifying the form and content of a mediated environment in real-time” (p. 84); Downes and McMillan (2000) lay stress on timing flexibility as a fundamental dimension of five dimensions included in their definition of interactivity. It is important here to distinguish between real time and timing flexibility. It is clear that these concepts may be considered controversial since the two concepts may contain implicit meaning of speed. It is also important to distinguish between the objective criteria of speed as a technical term and individuals’ perceived speed. In other words, the objective criteria of speed may not change but the perceptions of the audience may do (Kiousis, 2002). On the other hand, timing flexibility may seem very important for interactive experiences, where speed makes the medium more attractive (e.g., Finn, 1998; McMillan, 2000). But again, Finn (1998) suggests that interactive experiences should not always be fast or in real-time.

As a result, it can be seen that most of the given definitions of interactivity revolve around two-way communication in real-time or responsiveness in real-time and user control. However, it seems that the definition of interactivity remains controversial and can be summed up by what Walther, Gay, and Hancock (2005) stated, “Interactivity, as a loose term is alive and well on the Internet and is a dynamic that begs for theoretical and practical attention from communication researchers. As a construct, interactivity has been undertheorized, and as a variable, poorly operationalized” (p. 633).

Nevertheless, interactivity can be understood as a relational concept (Rafaeli & Sudweeks, 1997) and can be studied in three main directions: actual interactivity or interactivity as a feature of the medium; perceived interactivity or interactivity as a perception; and interactivity as a communication process. These three trends in understanding the interactivity are discussed separately since the methodology of this study is built mainly on them.

Actual Interactivity

There is some disagreement over the term '*actual interactivity*'. For example, Williams et al., (1988) and Wu (2006) call it actual interactivity; Rafaeli (1988) prefers objective interactivity; McMillan (2000, 2002) suggests feature-based interactivity; and lastly, Liu and Shrum (2002) propose structural interactivity. However, several definitions have focused on actual interactivity, or interactivity as characteristics of a medium (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001; Fiore & Jin, 2003; Haseman et al., 2002; Raney et al., 2003; Sun Sundar et al., 2003). For instance, Lombard and Snyder-Dutch (2001) state that interactivity is "characteristic of a medium in which the user can influence the form and/or content of the mediated presentation or experience" (p. 10). The characteristics of a medium in this definition position the user as a key player in determining the value of the medium characteristics, which involves the ability of the user to be influential within an intermediate environment. Therefore, the definition of actual interactivity from the communicator's perspective "tends to see interactivity as a characteristic, feature, property or capability inherent in a medium, or an interaction system that enables or facilitates an interaction between two parties" (Wu, 2006, p. 88).

The capacity of creating an interactive message or content is structured on three basic concepts or dimensions in the majority of definitions that discuss actual interactivity: (a) two-way communication or responsiveness dimension (e.g., Ahren, Stromer-Galley, & Neuman, 2000; Beniger, 1987; Bretz, 1983; Chesebro, 1985; Downes & McMillan, 2000; Duncan, 1989; Durlak, 1987; Garramone, Harris, & Anderson, 1986; Heeter, 1989; Kirsh, 1997; McMillan & Hwang, 2002; Pavlik, 1998; Rafaeli & Sudweeks, 1997; Zack, 1993); (b) interactivity in real time or speed of interaction (e.g., Campbell & Wright, 2008; Coyle & Thorson, 2001; Deighton, 1996; Novak, Hoffman, & Yung, 2000; Steuer, 1992); and (c) user control (e.g., Jensen, 1999; Lombard & Snyder-Dutch, 2001; McMillan, 2000; Roehm & Haugtvedt, 1999; Zeltzer, 1992).

Two-way communication.

Two-way communication expresses the capacity of media to enable two-way communication between the user and company or system, and between the user and others. The medium is able to activate such communication through devices such as e-mail, telephone, chat rooms, etc. In other words, as Wu (2006) concludes, the definitions that focus on actual interactivity are based on three assumptions: the willingness of the audience to interact by focusing on two-way communication/responsiveness, exchange or participation in real-time; the completion of interactivity cycle depends on the audience; and lastly, the conversational mode is an essential model for understanding and conceptualizing the interactivity.

Some researchers have conceptualized the two-way communication as a mutual discourse (Ball-Rokeach & Reardon, 1988; Burgoon et al., 2000; Hanssen, Jankowski, & Etienne, 1996; Williams et al., 1988). Others have identified it by focusing on the capacity of a medium to provide the feedback (Day, 1998; Duncan & Moriarty, 1998; Ha & James, 1998; Newhagen et al., 1995).

In general, the effectiveness of a medium can be measured by its capacity to enable two-way communication or by its capacity to respond to user input, where the sender and receiver can be able to communicate in two-ways. The capacity of a medium to send and receive the message in two directions is a basic representation of two-way communication (Schults, 1992). Many researchers believe that two-way communication should resemble interpersonal communication (Bretz, 1983; Heeter, 1989; Williams et al., 1988), and that the media are successful if they can simulate interpersonal communication (Leary, 1990). Therefore, DeFleur and Ball-Rokeach (1989) insists that: “interactivity generally refers to the processes of communication that take on some of the characteristics of interpersonal communication” (p. 341).

Jensen (1999) assesses the high degree of interactivity of any medium based on its use of interpersonal communication. Interpersonal communication is defined as communication that exists without an intermediate environment as one-to-one, one-to-few, face-to-face and direct (Norman & Russell, 2006). Therefore, face-to-face communication is seen as a fundamental criterion for evaluating the capacity of media to produce such a communication. In other words,

“face-to-face communication is held up as the model because the sender and receiver use all their senses, the reply is immediate, the communication is generally closed circuit, and the content is primarily informal or ‘adlib’” (Durlak, 1987, p. 744).

Conceptualizing media as a two-way communication based on interpersonal communication is critical, because the two natures are substantially different (Schudson, 1978). Nevertheless, McMillan (2002) divides interactivity based on the direction of communication as following: monologue, feedback, responsive dialogue, and mutual discourse. In the monologue communication, communication is one-way and has a small amount of control. In the feedback communication, the communication is also one-way. The feedback here is similar to consultation and general information, where the user can communicate with the sender but with limitations. Tools such as e-mail can express the communication between sender and receiver, but there is no guarantee that the sender will respond. In the response dialogue, two-way communication is possible, but the priority of control belongs to the sender. Online customer websites can be a platform for this kind of communication. In the mutual discourse, the two-way communication is activated, and the user has a great deal of control. Both sender and receiver become participants, and their roles are interchangeable. Chat room and bulletin boards are considered as main tools that reflect this type of communication.

On the other hand, many of the theorists have used the term ‘responsiveness’ to express two-way communication, which is conceived as an essential dimension of interactivity (Downes & McMillan, 2000; Kioussis, 2002; Rafaeli, 1988). The responsiveness dimension is one of the main Downes’ and McMillan’s dimensions of interactivity which include: direction of communication; timing flexibility; sense of place; level of control; responsiveness and the perceived purpose of communication.

Rafaeli’s (1988) definition of interactivity is based on responsiveness dimension as “an expression of the extent that, in a given series of communication changes, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to event earlier transmissions” (p. 111). Heeter (1989) also considers the responsiveness dimension as a key player to have an interactive experience, and it is defined based on the medium potential to respond to user input. The responsiveness dimension is usually linked with the concept of timing

flexibility, real-time and speed.

Nevertheless, Wu (2006) prefers to use the term '*responsiveness*' rather than two-way communication, because the old media cannot be distinguished from the new media based on this dimension, since the old media can support such communication in several forms such as direct marketing or television advertising. In the same context, Rafaeli (1988) prefers the term '*interactive communication*' rather than two-way communication because two-way communication is not interactive and since it is "present as soon as messages flow bilaterally" (p. 119).

Real-time interaction.

Several studies have identified real-time interaction as one of the most important dimensions of actual interactivity. Time is usually perceived as timing flexibility (McMillan & Downes, 2000). McMillan and Hwang (2002) consider time to be a dimension of interactivity and it means: Time to find and time to load. The ability of a system to create a rapid response is the focal point of several studies (e.g., Dellaert & Kahn, 1999; Kay, 1990; Nielsen, 2000; Vora, 1998). Likewise, real-time is a key part of Zeltzer's definition of interactivity. The time factor is very important in interactive media because users "can work in their own time and at their own pace, choose their preferred navigational pathways and delivery systems and develop their own mental models and schemata" (Latchem, Williamson, & Henderson-Lancett, 1993, p. 23).

Moreover, Rice (1984) associates real-time with user control, and Williams et al., (1988) link the available options with real-time interaction. Therefore, Hoffman and Novak (1996) believe that interactivity could be measured based on the duration of time spent by the user as well as the number of viewed pages. The time spent by the user may reflect a behavioral measure of engagement, and could help researchers to understand user behavior (McMillan et al., 2003). Wu (2006) also regards speed of access, time viewing the website or the page as key factors in building conceptual framework of interactivity and in understanding the context of the website through the information about the website traffic.

On the other hand, the real time of actual interaction is seen as a key component of the two-way communication in order to establish an interactive experience (Novak et al., 2000). Therefore, Straubhaar and La Rose (2000) point out that "we will use the term interactivity to

refer to situations where real-time feedback is collected” (p. 12).

Similarly, Steuer (1992) links interactivity with real time and defines interactivity as “the extent to which users can participate in modifying the form and content of a mediated environment in real time” (p. 84). Steuer (1992) identifies speed, range and mapping to be the key factors of interactivity. The *‘speed of time’* concept in a mediated system refers to the speed of absorbing the users’ actions. In this context, Steuer emphasizes that the speed factor of a system in response to user input would approximate the distance between the mediated experiences and real-life experiences or even replace them, where even low quality media can appear more interactive if they are able to respond immediately. Similarly, Crawford (1990) points out: “the ideal is to have the computer moving at a speed that doesn’t inhibit the user” (p. 105). Consequently, from users’ perspectives, the speed of responsiveness of a system while navigating and accessing information is essential to live an interactive experience (e.g., Mahood, Kalyanaraman, & Sundar, 2000; Nielsen, 2000; Wu, 1999).

User control.

Actual interactivity is characterized with “a style of control” (Guedj, Paul, tenHagen, Robert, & David, 1980, p. 69) and it is “voluntary and instrumental action that directly influences the controller’s experience” (Liu & Shrum, 2002, p. 54). Several studies have identified user control as a fundamental dimension of interactivity (e.g., Jensen, 1999; Lombard & Snyder-Dutch, 2001; McMillan, 2000; Roehm & Haugtvedt, 1999; Zeltzer, 1992). Moreover, several studies were based on the interaction between human and machine, system or computer, and how the users control these systems (Burgoon et al., 2000; Hanssen et al., 1996; Huhtamo, 1999; Milheim, 1996; Murray, 1998; Preece, 1993; Tan & Nguyen, 1993; Trevino & Webster, 1992). Roehm and Haugtvedt (1999) associate the term *‘control’* with who controls the nature of the interaction. According to Rice (1984), user control is related to the capacity of a system to enable users to have greater control over the pace and content of the communication. Typically, the level of interactivity is associated with the degree of control, where control refers to the options available in the circle of speed, content and sequence of communication (Williams et al., 1988).

User control can be defined as:

The degree to which an individual can choose the timing, content, and sequence of a communication act, search for alternatives, enter message content into storage, etc., the two or more participants in the interactive communication usually share control over their exchange of information. (Rogers & Allbritton, 1995, p. 180)

The previous definition demonstrates that user control is recognized into three components: the user's ability to choose, to access to information and to exchange information or/and communicate with others. Giving participants the ability to choose from several options is essentially an expression of the control dimension. In this process, the higher the number of choices that the medium can offer, the higher the possibility to increase the user's ability to be active (Chung & Zhao, 2004) and to be in control (e.g., Bezjian-Avery et al., 1988; Liu & Shrum, 2002). The ability to choose here reflects the capacity of a medium to provide the user with choices. Therefore, the user's ability to control and to interact depends on the degree of available choices; the degree of modifiability (Goertz, 1995); and the ease of adding information (Heeter, 1989). In general, the concept '*users in control*' reflects the potential of the media to offer the user the facility to select, add, participate and modify.

As a result of this section, creating interactive content is related to media characteristics or to the change of the technological characteristics (Schneiderman, 1997). In general, the term '*interactivity*' seems to be more relevant to new media, or to new communication technology (DeFleur, & Ball-Rokeach, 1989) provided by the Internet (Lanham, 1993, Stromer, 2000). New media may contrast in their capacity of creating interactive content, but this discrepancy may be vastly expanded when comparing new media with old media. The difference between both media could lie in the fact that the new media are significantly the result of the Internet that provides interactive templates and tools. Thus, these templates and tools have remarkably changed the one-way communication to the two-way communication. This change, in turn, from linearity to non-linearity has shifted the classical relationship between the sender, message and receiver to a participatory interactive relationship.

Consequently, those who consider interactivity as characteristics of the medium (e.g., Hoffman & Novak, 1996; Neuman, 1991; Rice & Williams, 1984; Rogers, 1986; Steuer, 1992) tend to describe the medium as a low or a high interactive medium or as rich or poor media

based on their technological properties (Daft, Lengel, & Trevino, 1987). Typically, the term ‘*low interactive*’ refers to traditional media such as radio and television, or any media that limit the user’s ability to play an interactive role in an intermediate environment. Classical media such as radio and television are considered to be low interactive (e.g., Rafaeli, 1988), because “they are designed to deliver messages cost-effectively to a mass audience that has little motivation to interact with content creators” (Wu, 2005, p. 30). On the other hand, the term ‘*high interactive media*’ refers to the new media such as smartphones, tablets, computers and the Internet, which have given the users more important roles through activating the communication channels, and through providing a variety of options that allow users to play an interactive role (Newhagen et al., 1995). Coyle and Thorson (2001) assert that an interactive website “should have good mapping, quick transitions between user input and resulting actions, and a range of ways to manipulate the content” (p. 67).

On the contrary, there is a stream of researchers who believe that high interactivity may not have an impact on the audience (Ariely, 1998; Bezjian-Avery et al., 1998; Liu & Shrum, 2002). For example, Sundar et al., (2003) conclude that a high degree of interactivity could be negative since it may require a lot of effort during navigation and may result in making users bored. Nevertheless, the level of interactivity may vary from one media to another based on users’ perceptions. In this regard, Rafaeli (1988) states that “interactivity is potential adequacy, but it is up to the communicators to realize it” (p. 117). Thus, Wu (2006) emphasizes the need of measuring perceived interactivity. In this framework, Williams et al., (1988) assert on development of a scale for both actual and perceived interactivity.

Perceived Interactivity

Using the term “*perceived interactivity*” (e.g., Williams et al., 1988; Wu, 1999, 2006) is varied among the researchers. For example, Rafaeli (1988) calls it ‘*subjective interactivity*’, McMillan (2000, 2002) proposes ‘*perception-based interactivity*’, and Liu and Shrum (2002) suggest ‘*experiential interactivity*’. However, several definitions of interactivity have focused on individuals’ perceptions (e.g., Day, 1998; Kiousis, 2002; Newhagen et al., 1995; Wu, 1999, 2006). Newhagen et al., (1995) used the term for the first time in an analytical study of audience reactions. The study showed that there were low levels of interactivity perceptions. They identified interactivity as a two-dimensional concept, including internally- based self-efficacy

and externally-based system. Internally- based self-efficacy refers to “the Internet message authors’ sense of being able to generate effective output messages to NBC News” (p. 165); and externally-based system refers to “the senders’ sense that NBC could process their message as useful input and in some way act on it” (p. 165). Wu (1999), on the other hand, used a scale to measure the perceived interactivity.

Wu (2006) points out that interactivity is understood in two main contexts. In the first context, interactivity is viewed based on the framework of the communicator, while interactivity from the context of the audience is perceived as “an individual trait, or message responsiveness perceived by an individual, or a psychological state experienced by an individual during an interaction” (p. 89). In this regard, several studies have attached great importance to the perceived interactivity rather than the actual interactivity (McMillan & Hwang, 2002; Sohn & Lee, 2005; Wu, 1999).

Chen (1984) emphasizes that interactivity and negativity should be defined as an individual characteristic rather than the characteristic of a medium. The process of cognitive activity in classical media such as television is not limited to the active viewers, but even to the passive viewers. Both groups engage in a certain cognitive and behavioral activity while dealing with the media (Chen, 1984). In the same vein, Neuman (1991) states that people may not often make an effort to interact even though they have choices available. Therefore, Sohn and Lee (2005) suggest focusing on perceived or experiential interactivity rather than analyzing the interactivity, or focusing on technological features. The interactivity offered by new technology could be stable at a given time, but the individuals’ perceived interactivity could be varied (Kiouisis, 2002). Moreover, Day (1998) demonstrates that “the essence of interactive marketing is the use of information from the customer rather than about the customer” (p. 47). Newhagen et al., (1995) define perceived interactivity as “the psychological sense message senders have of their own and the receivers’ interactivity” (p. 165).

This definition focuses on the reciprocal relationship between senders and receivers based on user interaction, where it is measured by perceived control and the web’s ability to respond to the user. In the same context, Wu (2005) distinguishes between expected interactivity, actual interactivity and perceived interactivity, and defines the latter “as the psychological state

experienced by a site-visitor during the interaction process” (p. 91). According to Kiousis (2002), interactivity can be identified based on interpersonal communication and the awareness of telepresence. He defines interactivity as “the ability to perceive the experience as a simulation of interpersonal communication and to increase their awareness of telepresence” (p. 18).

In general, perceived interactivity centers on how the users conceive the offered interactive tools. Therefore, understanding users is based on analyzing their perceptions of these tools (Bouwman & van de Wijngaert, 2002; Downes & McMillan, 2000; Morrison, 1998; Rodgers & Thorson, 2000; Sohn & Lee, 2005; Wu, 2005). Thus, Schumann, Artis and Rivera (2001) state that “ultimately it is the consumer’s choice to interact, thus interactivity is a characteristic of the consumer, and not a characteristic of the medium. The medium simply serves to facilitate the interaction” (para. 11).

Furthermore, the technological features offered by new media can be conceived as potential, where it is completely depending on the users to activate them and create mutual interactive experiences, either between the users and the system or between them and other users who share the same interest. Therefore, feedback from the users is a criterion for describing an experience as an interactive experience (Rafaeli & Sudweeks, 1997).

Understanding and measuring the individual’s perceptions of interactivity is very important for assessing content and developing communication channels. Perceived interactivity and actual interactivity are relevant to and depending on each other to develop interactive experiences either between users and machines or between users and others in an intermediate environment. Therefore, Naimark (1990) places special emphasis on this reciprocal feedback between actual interactivity and perceived interactivity “always requires information flowing in both directions, it is our input and its effect that distinguishes it from non-interactivity” (p. 455).

Interactivity, in general, as Lee (2000) suggests, should not be measured by analyzing process or by counting features, but rather how users perceive and/or experience interactivity. Therefore, “perceptions are far more influential than reality defined more objectively” (Reeves & Nass, 1996, p. 253).

Dimensions of perceived interactivity.

McMillan (2000) compared the definitions of interactivity and classified them as: definitions that focus on features; definitions that focus on perceptions; definitions that focus on the process of communication; and definitions that combine process, features, and/or perception. She found that perceived interactivity is more relevant to express the perceptions toward the website and the subject. McMillan and Hwang (2002) recognize that the dimensions of communication, control, and time are among the most present dimensions of the studies on perceived interactivity. The direction of communication involves response and exchange; control involves the concept of user participation with offered interactive features; and finally, the time is conceived based on the time of feedback and the time of finding the information. However, if the main dimensions of actual interactivity are, as mentioned earlier, user control, two-way communication or responsiveness in real-time, the perceived interactivity is therefore based on how the user perceives these dimensions.

Perceived control.

Perceived control can be defined as “the perceived ease or difficulty of performing the behavior and ... is assumed to reflect past experience as well as anticipated impediments and obstacles” (Ajzen, 1988, p. 132, cited in Wu, 2006). Hoffman and Novak (1996) state that the essence of websites is user control. Perceived control is related to the extent of its effect on intentions and actions. Therefore, Ajzen (1988) considers perceived control more important than real control. Wu (2006) demonstrates that there is a lack of distinction between real control and perceived control, arguing that several interactivity theorists understand that the control dimension is only recognizable once an individual is in an interactive environment.

For example, Bezjian-Avery et al., (1988) declare that “interactivity is fundamentally the ability to control information” (p. 24), on the basis that users in any interactive system are seen as they are in control. Likewise, Liu and Shrum (2002) assert that “they are constantly controlling their experiences” (p. 56), on the grounds that the Internet is perceived as the key provider of the highest level of interactivity, on the one hand, and that the users are always more active with these high interactive systems, on the other hand. Although these new systems are assumed to be high interactive, this does not in fact guarantee a continuous interaction by the users, where interactivity or control can be interrupted at any stage of the users’ experiences

(Wu, 2006). However, Wu (2006) provides a practical definition of the perceived control dimension as: “perceived control over (a) the site navigation, (b) the pace or rhythm of the interaction, and (c) the content being accessed” (p. 91). Thus, several interactivity theorists position perceived control as the key ground of interactivity (e.g., McMillan, 2000, McMillan & Hwang, 2002, Wu, 1999, 2006), or as a result of perceived interaction (Hoffman & Novak, 1996).

Perceived responsiveness in real time.

Wu (2006) identifies the perceived responsiveness from: “(a) the site-owner, (b) from the navigation cues and signs, (c) the real persons online” (p. 91). He argues that the high level of responsiveness is related to the website that can allow the user to participate with other online users who have the same interest. Further, perceived responsiveness is linked with real-time response, where the users’ and systems’ actions and reactions in immediate environments are similar to interpersonal conversations. In the same context, Rafaeli (1988) identifies responsiveness as a fundamental dimension of interactivity, where interactivity is viewed as an expression of the individuals’ attributes rather than the means attributes, and where the responsiveness in the communication process is dynamic between the communicator and the user.

In general, Wu (2006) classifies perceived personalization, as a third dimension of perceived interactivity. Kiosks (2002) offers two main dimensions of perceived interactivity among other dimensions: interpersonal communication and the awareness of telepresence. Sohn and Lee (2005) based on Wu’s (1999) dimensions, designate three dimensions of perceived interactivity including: control, responsiveness and interaction efficacy.

Furthermore, Liu and Shrum (2002) recognize perceived interactivity based on comparison between structural and experiential aspects of interactivity, where the perceived interactivity is “the interactivity of the communication process as perceived by the communication parties” (p. 55). In addition, they specify three dimensions of perceived interactivity including: active control, reciprocity and synchronicity.

As noted, the dimensions of perceived interactivity vary from study to another. For example, the responsiveness dimension is a description or a definition of McMillan’s and

Hwang's (2002) communication dimension, whereas Wu (1999) regards it as a main dimension of perceived interactivity. Moreover, while Wu (1999) considers efficiency, speed and real time as aspects of the responsiveness dimension, McMillan and Hwang (2002) identify time as a main dimension of perceived interactivity.

Scales of perceived interactivity.

Measuring perceived interactivity could help to understand and expect the perceptions toward the website, and thereby develop the websites' services (Ahren et al., 2000; McMillan, 2000). Wu's (1999) scale is considered to be the first to quantitatively measure perceived interactivity, and with later modification (Wu, 2006), it has become one of the most used among other scales (e.g., Jee & Lee, 2002; Macias, 2003; Sohn & Lee, 2005). However, there are other previous works that were considered to be as an instructional guide for perceived interactivity scales (e.g., Churchill, 1979; Devellis, 1991; Gerbing & Anderson, 1988).

Cho and Leckendy (1999) define interactivity as "the degree to which a person actively engages in advertising processing by interacting with advertising messages and advertisers" (p. 163). They divide interactivity into human-human interaction and human-message interaction. They consider the dimension of human-human as a dimension of perceived interactivity and they classify it into designed interactivity and perceived interactivity. On the other hand, McMillan and Hwang (2002) structure a scale of perceived interactivity based on literature review. Their scale includes 28 items examined by a qualitative methodology that employed academic professors of interactivity and focus group. The items of this scale have become 18 after the modification. This final scale is intended to measure these following dimensions: active control, reciprocity and synchronicity. Active control indicates the optional ability of users to be active in the communication process; whereas reciprocity indicates the flow of two-way communication; and lastly, synchronicity indicates the speed of interaction. However, Wu (2006) criticizes this scale for it has overlapping dimensions with the main dimensions of perceived interactivity.

Furthermore, Liu and Shrum (2002) define interactivity as "the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized" (p. 54). Liu and Shrum (2002) have devolved a scale of 12 items based on three dimensions: active control, reciprocity

and synchronicity to measure the perceived interactivity of the website. They have suggested expanding this scale to measure other forms of online communication. However, Wu (2006) criticizes both Cho's and Leckendy's scale and Liu's and Shrum's scale because they both used a less formal scale and that they were more likely to deal with actual interactivity than perceived interactivity.

Interactivity as a Communication Process

Several studies have concentrated on interactivity as communication process (e.g., Cho & Leckenby, 1999; Haeckel, 1998; Heeter, 2000; Pavlik, 1998; Rafaeli, 1988; Steuer, 1992). Exchange, interchange, responsiveness, participation, and action and reaction were used as keywords to regard the given definition of interactivity as an indicator of the communication process (McMillan, 2000). Exchange communication between senders and receivers is seen as a main factor of interactivity as a process. In this context, Haeckel (1998) states, "the essence of interactivity is exchange" (p. 63). Regardless of these essential keywords used to describe interactivity, two-way communication is viewed as the core of interactivity as a communication process (Chen & Li, 2010). The two-way communication refers to reciprocal communication that could occur between companies and users, or users and others (Liu & Shrum, 2002, 2009) "which captures the bi-directional flow of information" (Liu, 2003, p. 208). Similarly, Pavlik (1998) consider two-way communication as the main dimension of interactivity: "interactivity means two-way communication between source and receiver, or, more broadly multidirectional communication between any number of sources and receivers" (p. 137). Moreover, Macias (2003) proposes that "interactivity is the state or process of communicating, exchanging, obtaining and/or modifying content (e.g., ideas, entertainment, product information) and/or its form with or through a medium (e.g., computer, modem, etc.)" (p. 37).

The key factor of this definition is its emphasis on interactivity as a communication process. Interactivity is essentially based on the exchange between the two members of communication. In other words, when two-way communication is enabled, it is possible therefore for users to influence or modify the content. On the other hand, some definitions of interactivity as a communication process are centered on the responsiveness dimension as another term of two-way communication. For example, Ha and James (1998) state that "interactivity should be defined in terms of the extent to which the communicator and the audience respond to, or are willing to facilitate, each other's communication needs" (p. 461). Ha

and James constructed five dimensions of interactivity based on this definition: playfulness, choice, connectedness, information collection and reciprocal communication. The reciprocal communication dimension expresses the potential of a system to provide a constant feedback, and response based on the audience's needs. Likewise, Miles (1992) defines interactivity as "an interactive communication involves responsiveness of the displayed message to the message receiver" (p. 150).

Furthermore, Rafaeli (1988) defines interactivity as "an expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even earlier transmissions" (p. 111). Responsiveness in this definition is viewed as the basis of interactivity in which the capacity of a medium can be measured in terms of being responsive to the user input. It is, however, a measure of the media capacity of making the message, in the communication process, as an indicator of the previous message. These messages that occur in the communication process can be classified as: one-way communication, two-way communication and two-way flow of information.

In the one-way communication, the message is always in one direction and adaptive to the sender and receiver model but without feedback. Although the message reflects the directional communication, this does not prevent the exchange of roles between both sender and receiver. The receiver can become sender and vice versa, but this exchange of roles is not applicable on messages. This type of communication is in the lowest level if the sent message cannot refer to each other. In the two-way communication, the possibility of exchanging messages and roles between sender and receiver is possible. Therefore, this type of communication is considered to be responsive, where exchanged messages between sender and receiver refer to their predecessors. In the two-way flow communication, the communication is regarded as in the highest level of responsiveness. In this type of interactive responsiveness, the messages between senders and receivers are two-way as in two-way communication and the roles can be exchanged. However, the main difference is that the message, in the two-way flow, does not only refer to previous messages but it includes them and builds the next on them. It is a process of construction, where each message is a unit based on the previous ones with reference, inclusion and establishment for the subsequent message. This type of communication may occur

in normal life between two or more persons, and may occur among people through a mediated environment.

Based on Rafaeli's model, Avidar (2013) has developed an interactive model and has called it the 'response pyramid' that distinguishes between response and interactivity. This model suggests that:

All messages, sent as a reaction to a previous message, are responsive, although they can be non-interactive (a response that does not refer to the request), reactive (a response that solely refers to the request), or interactive (a response that refers to the request and initiates an additional turn/s) at the same time. In other words, an interactive response is a highly responsive message. (as cited in Ariel & Avidarp, 2015, p. 23)

However, action and reaction were the focal point of some definitions that have focused on interactivity as a communication process. For example, Heeter (2000) defines interaction as "an episode or series of episodes of physical actions and reactions of an embodied human with the world, including the environment and objects and beings in the world" (p. 7). In a different position in the same study, she limits the interaction to the interaction experience by the participant who is "capable of observing through one or more senses over whatever channels exist to connect the participant to the experience" (p. 11). Thus, interactivity "is what occurs on the channels, not the channels themselves or their characteristics. The technology affords the interactivity but does not define interactivity" (Tremayne, 2005, p. 41).

Nevertheless, Rafaeli and Ariel (2007) argue that interactivity is a variable related to the process and is not an inherent feature of the medium. According to them, interactivity can be found in classic and new media, because interactivity is perceived as a communication process.

However, McMillan has also provided a fourth classification of interactivity that included those definitions that combined process, features, and/or perception. There are several definitions that fall under this fourth classification (e.g., Coyle & Thorson, 2001; Hanssen et al., 1996; Heeter, 1989; Lieb, 1998; McMillan, 2002; Zack, 1993).

Dimensions of Interactivity

Most of the studies that endeavored to conceptualize interactivity have presented varied dimensions since interactivity is perceived as a multidimensional construct. The dimensions of interactivity range from one to six. The following section of the study discusses these dimensions.

One dimension of interactivity.

Some researchers have conceptualized interactivity based on one dimension (Rafaeli, 1988; Rogers, 1986). Rogers (1986) defines interactivity as “the capability of new communication systems (usually containing a computer as one component) to ‘talk back’ to the user, almost like an individual participating in a conversation” (p. 34).

Rogers interprets interactivity based on the capacity of a medium to create two-way communication. Rogers’ communication model is limited to communication between the new system and user. Therefore, Rogers’ definition of interactivity excludes the old media, although it is discussed in his model as low interactive media. In addition, his definition also excludes the communication between one user to another or others through a system. Further, Rogers (1986) distinguishes between levels of interactivity based on the used medium. Old media, such as television and radio, are considered low interactive compared with new media. The interactive communication between machine and human for Rogers is understood to be similar to interpersonal communication or to consultative communication in general. Jensen (1999) found that Rogers’ model could not provide clear criteria for distinguishing the capabilities of means in producing interactivity.

Likewise, the definition of Rafaeli (1988) is one of the definitions that focus on one dimension of interactivity. According to Rafaeli, interactivity is centered on the responsiveness dimension as a basis for assessing the medium. Rafaeli’s model implies that the message is two-way, and the interactive communication in this two-way process is perceived based on the interaction of the subsequent message with the preceding. The full interaction implies the capacity of the subsequent message to respond to the sum of previous messages. This concept of interactivity, unlike Rogers’ concept, refers to the model of registrational communication, which is the capacity to record users’ actions and inputs, and then using these records to communicate or interact with the users. In Rafaeli’s perspective, the media express technological intelligence

in their capacity to represent human communication based on action and structural reaction.

Two dimensions of interactivity.

Some researchers have conceptualized interactivity based on two dimensions (e.g., Bordewijk & van Kaam, 1986; Szuprowicz, 1995). The model of interactivity provided by Bordewijk and van Kaam (1986) consists of information sources and control of time and choice. The control dimension is perceived as a four-part typology and it is located at the center of the source or with the individual. It includes four parts: transmission, consultation, registration and conversation. In the transmission part, the communication is one way with little feedback. This form could be found in mass communication and other forms of communication such as lectures. In the second part, individuals search for information from certain sources. This includes (CMC) computer-mediated communication, DVDs, and the database of any medium. The registration part refers to the capacity of the media to record the users' inputs and actions, and this requires a system to be capable of observing the users as in cookies. Finally, the conversation part refers to the direct interaction between individuals who exchange control. Individuals in this case are able to choose the time and subject, and whom they call.

Additionally, Szuprowicz (1995) presents two dimensions of interactivity and asserts that the basic roles to understand the interactive multimedia are by defining and classifying the levels of interactivity. According to Szuprowicz, "interactivity is best defined by the type of multimedia information flows" (p. 14). Szuprowicz's two dimensions included information flow and interactive multimedia elements. The information flow is divided into user-to-documents, user-to-computer and user-to-user. User-to-document expresses the communication and the traditional dealings with specific documents. The users can choose the time and material they want to deal with, but the probability of modifying the content is negligible. The flow of information here is similar to the pattern of interaction in communication studies, which corresponds to the pattern of consultative communication as in Bordewijk's and van Kaam's (1986) model. User-to-computer indicates a higher level of interaction presented in options available, including the ability to modify. In user-to-user form, interactivity "is explained as collaborative transactions between two or more users" (p. 14), and what distinguishes it from others is that it functions in real-time. In the second dimension, 'interactive multimedia elements', the interactivity flow, therefore, depends on these elements: object-oriented

manipulation, distribution (broadcasting) and interactive access (links).

Three dimensions of interactivity.

Kiosis (2002) was one of those who have defined interactivity on a three-dimensional basis. These dimensions are: structure of technology that refers to speed, range, timing flexibility and sensory complexity; communication context that refers to third-order dependency and social presence; and lastly, user reception that refers to proximity, sensory activation, perceived speed and telepresence.

In addition, Laurel (1991) constructs three dimensions of interactivity: frequency “how often you could interact”; range “how many choices were available”; and significance “how much the choices really affected matters” (p. 20). Coyle and Thorson (2001) assert on perceived interactivity and identify three dimensions of interactivity: mapping, speed and user control.

Similarly, McMillan and Hwang (2002) identify three dimensions of perceived interactivity: direction of communication, user control and time. The fundamental focal point in these dimensions is how the user perceives two-way communication, control based on navigation, options; and time based on time to load, to find data and to communicate with others. In a similar way, Wu (2006) presents and measures three dimensions of perceived interactivity: control, responsiveness and personalization.

Four dimensions of interactivity.

Zack (1993), Goertz (1995) and Jensen (1999) have structured four dimensions of interactivity. For example, Zack’s (1993) dimensions are simultaneous and continuous exchange of information; use of multiple, non-verbal cues; potentially spontaneous, unpredictable and emergent progression of remarks; and the ability to interrupt or preempt. Goertz’s (1995) dimensions are: degree of choice available; degree of modifiability; available selections and modifications; and degree of linearity/non-linearity. The first dimension refers to the capacity of media to provide options to the user where there are differences between traditional and new media in this regard. In the traditional media, choices are limited to a specific type of options such as program choice, color adjustment and sound. In the new media, options extend from time to editing content. The second dimension refers to the capacity of a medium to enable the user to add or modify the content. In the third dimension, one can distinguish between one medium to

another based on the quantitative number of options and adjustments. The fourth dimension concerns user control over the concept of time in the communication process.

Jensen (1999) criticizes these dimensions illustrating that there was a kind of repetition among these four dimensions, where the third and fourth dimensions conflict with the first two dimensions that concern choice and modification. On the other hand, Jensen (1999) provides an important notice about Goertz's model:

Among many other things, this chart can be used to show that there are media which give the user a high degree of modifiability but a low degree of choice (such as e-mail) and, on the contrary, there are other media which give the user a low degree of modifiability but a very high degree of choice (such as multi-channel TV, pay-per-view, Gopher, World Wide Web).
(p. 199)

In the same context, Jensen (1999) develops four dimensions of interactivity after a comprehensive review of interactivity literature. These four dimensions of interactivity that were frequently emerged in the literature are the following: transmissional interactivity, consultational interactivity, conversational interactivity and registrational interactivity. Transmissional interactivity expresses the one-way communication in which the user can select content but without feedback. In consultation interactivity, two-way communication is activated, where the user can choose and make requests with the presence of feedback. In the third dimension, two-way communication is also enabled with the user's ability to influence the content through contributions and modification in real-time. Registrational interactivity expresses the capacity of media to adapt to users' inputs and actions through the storage of information. Both sender and receiver are able to adapt through a structural process of communication based on creating meaning of the users' entries.

Five dimensions of interactivity.

Ha and James (1998) have defined interactivity as "the extent to which the communicator and the audience respond to, or are willing to facilitate, each other's communication needs" (p. 8). They have divided interactivity into five dimensions: playfulness, choice, connectedness, information collection, and reciprocal communication. The playfulness dimension refers to the level of satisfaction that the communicator can provide to meet the audience's needs. The choice

dimension is related to the first dimension ‘playfulness’ and it links between audience’s satisfaction and the ability to make choices available for the audience. The third dimension is related to the quality of choices or tools given to the audiences, where they can feel connected with the medium/system such as providing video-clips, audio, and graphics. The fourth dimension refers to a system’s ability to gather information about users in order to develop channels of communication. Lastly, the fifth dimension (reciprocal communication) is related to the fourth dimension, since the presence of continuous effective communication is based on the data collection from users’ actions. Similarly, Downes and McMillan (2000) have presented five dimensions of interactivity as following: direction of communication, timing flexibility, sense of place, level of control and responsiveness, and perceived purpose of communication.

Six dimensions of interactivity.

Heeter (1989) has provided six dimensions of interactivity as following: complexity of choice available; effort that users must exert; responsiveness to the user; monitoring of information use; ease of adding information; and facilitation of interpersonal communication. Complexity of choice available concerns “the extent to which users are provided with a choice of available information” (p. 222). The second dimension concerns the amount of effort that the user should exert to access the information. The third dimension concerns the capacity of a medium to respond to user input. The fourth dimension concerns the capacity of a medium to constantly and spontaneously monitor user behavior in order to build the right responses. The fifth dimension refers to the capacity of a medium to provide the user with options to add content that others can access. The sixth dimension concerns “the degree to which a media system facilitates interpersonal communication between specific users” (p. 225). However, Jensen (1999) believes that there were complications in these dimensions because of an over abundance and overlap with each other.

Studies on Actual Interactivity and Perceptions

Several studies have found a positive correlation between actual interactivity and attitudes toward the website (e.g., Cho & Leckenby, 1997; Hwang & McMillan, 2002; Jee & Lee, 2002; McMillan, 2002; Wu, 1999, 2005; Yoo & Stout, 2000). In contrast, other studies have not found this positive correlation between actual interactivity and attitudes toward the website (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001). Some studies have defined

interactivity as a key motivation for customers online (Eighmey, 1997; Papacharissi & Rubin, 2000); and that the level of interactivity has a positive impact on the customers' attention; on developing a strong relationship between the company and the audience; and on increasing the degree of satisfaction while purchasing online (Agarwal & Venkatesh, 2002).

In the field of marketing and advertising, there is a connecting between the level of interactivity and revisiting the website, recommending the website to others, and purchasing online (Bezjian-Avery et al., 1998; Cooley, 1999; Rodgers & Thorson, 2000; Singh & Dalal, 1999; Sundar, Narayan, Obregon, & Uppal, 1998).

On the other hand, several studies have analyzed and examined the websites' interactivity through the presence of interactive features. For example, Ghose and Dou (1998) classified 23 interactive features into five categories: customer support, marketing research, personal choice helper, advertising promotion and entertainment. Customer support includes features such as software downloading, comments, feedback, etc. marketing research includes features such as site and product survey and new product proposal; personal choice helper consists of features such as keyword search and virtual reality; advertising promotion covers features such as user groups, online order and pushing media; lastly, entertainment encompasses features such as electronic postcards, surfer postings, and games. Based on these interactive features, the researchers analyzed 121 corporate websites. Their study found that increasing the level of interactivity was related to the high number of interactive features in websites. According to the study, this result was an important factor and essential indicator, where the attraction and quality of corporate websites would improve with the increased levels of interactivity.

Likewise, Ha and James (1998) identified interactivity based on the presence of interactivity devices for each demotion of interactivity. Interactivity devices include: curiosity arousal, choice devices, connectedness devices, monitoring devices and response devices. Features of interactivity in these devices include among others: games, question and answer format, choice of color and languages, hyperlinks and e-mail address. They found that high level of interactivity can enhance the audience's perceived quality of the website, and they concluded that "the quest for improving interactivity guides future technological development for the web" (p. 459).

In the same context, Bucy et al., (1999) chose 496 websites as a random sample of the 5,000 most visited websites. They analyzed formal features of commercial versus non-commercial websites. The study found that there was a significant relationship between the number of visits and the structure of the websites. Moreover, Aikat (2000) selected a random sample of 264 websites from the list of 5,000 companies and analyzed the presence of interactive features. The study showed that the majority of the companies' websites did not significantly use the features that are provided by the Internet such as: graphics, multimedia applications, unlimited high-speed access, search features and digital hyperlinks. The study also found that few of these companies' websites provided product and service information. Similarly, Avidar (2013) conducted a content analysis of 799 organizational Israeli businesses based on the responsive pyramid model, adopted from Rafaeli's interactivity model (1988), which clarifies the relationship between responsiveness and interactivity. The study found that organizational representatives did not use the interactive and dialogic potential of their online responses.

On the other hand, several empirical studies have examined the relationship between levels of interactivity and users' perceptions. For example, Coyle and Thorson (2001) examined the relationship between interactivity and vividness and user's attitude toward the website, strong feelings of telepresence and greater attitudes-behavior consistency. The vividness covers features such as audio, video, and animations. They conceptualized interactivity based on mapping and choice availability. Mapping refers to "how similar the controls and manipulation in the mediated environment are to controls and manipulation in a real environment" (p. 67). Choice availability concerns the "number of possibilities for action at any given time" (p. 67). The researchers manipulated the interactivity into high, medium and low. The website with a high level of interactivity has a high number of choices and mapping presence. It includes 5 to 10 clickable areas as a representation of choice conditions, and has a clickable image map on the opening page as a representation of mapping conditions. The website with a medium level of interactivity is the website that has either high choice availability or mapping presence. At last, the website with a low level of interactivity is the website that has low choices with only two clickable areas, and an absence of mapping or the clickable image map. The findings showed that there was a significant relationship between the high level of interactivity and the feelings of telepresence, and that the increase of vividness was positively associated with the attitude toward the website.

Furthermore, Wu (2005) conducted an experimental study on the relationship between actual interactivity, perceived interactivity, and attitude toward the website. There were 157 participants who took part in this experiment. Two websites were designed and manipulated: one of them had a high level of interactivity and the other had a low level of interactivity. Levels of interactivity were manipulated based on the presence or absence of interactivity features. The researcher classified these features in six elements, where the website with the high level of interactivity had a presence of these six interactive elements, and the website with the low level of interactivity had an absence of those elements. These six interactive elements were adopted from Frazer and McMillan including: e-mail hot-link as a feedback system; JavaScript-enabled mouse-over effects, which refers to a responsive clickable website such as changing color or image when the mouse moves over a specific element in the website; online chat room that allows two-way communication in real time; searchable pull down menu; product image and dynamic creation of content. The study found a positive relationship between actual interactivity and perceived interactivity and attitude toward the website; and between perceived interactivity and the attitude toward the website.

Additionally, Sundar et al., (2003) indicated that interactivity is related to customization, which is the combination of online messages and the user's experience. The study showed a significant relationship between perceived interactivity and perceived involvement with attitude toward the website. In their study, they also manipulated the hyperlinks in the designed websites. The study found that there was a positive correlation between perceived interactivity and the number of hyperlinks included in the website. Likewise, Johnson, Bruner and Kumar (2006) proposed four facets of interactivity: reciprocity, responsiveness, non-verbal information, and speed of response. They found that responsiveness, non-verbal information, and speed of response were significantly related to perceived interactivity. Moreover, Liu, Min and Liu (2014) conducted a study on the relationship between micro-blogging and perceived interactivity. They offered a conceptual framework based on the literature review and the stimulus-organism-response. The features of micro-blogging such as subscriptions, broadcasting and interoperability were found to be an influential factor on the users' perceptions and that indicated a major effect on users' sense of tolerance and social presence. Lastly, Sundar and Kim (2005) conducted an experimental study with 48 participants who were exposed to 12 news-articles webpages, where one ad was included in each one of them. These website ads were

divided into three levels of interactivity: low, medium, and high. The results showed that the level of interactivity was positively associated with ad and product attitudes; and that users' interaction with animation and ads were found to be influential factors on the persuasion process.

However, other studies were conducted on interactivity and involvement. For example, Jiang, Chan, Tan and Chua (2010) identified the website's interactivity as active control and reciprocal communication. A group of 186 participants were exposed to non-fiction books or greeting cards on websites with different levels of interactivity. They found a positive correlation between the high level of active control involvement with cognitive involvement and affective involvement. Websites with reciprocal communication were also found to have a positive relationship with effective involvement. In addition, results showed that the higher the increase in the website's involvement the higher the participants' intention to purchase. Similarly, Palla, Tsiotsou and Zotos (2013) conducted an experimental study about the role of interactivity in online advertising effectiveness. The study employed websites with various levels of interactivity (low, medium and high). The results showed that the website with a medium level of interactivity and a low involvement were more influential than other factors. In conclusion, the website with the medium level of interactivity was significantly associated with positive attitudes, intentions to revisit and purchase behavior. Moreover, Yoo and Stout (2001) found that the perception of consumers were influenced by the interactivity of the website and product involvement.

In a study on perceived interactivity, Jee and Lee (2002) conceptualized a model that included general factors based on literature review: need for cognition, product involvement and product expertise; and three Internet factor that included: skip, challenges and online shopping experiences. They considered attitude toward the website and purchase intention as a consequence of perceived interactivity. The study found a significant predictor between need for cognition and perceived interactivity. Purchase intention was also led by the consumers' attitude toward the website and not by the perceived interactivity. In another empirical study, Lee (2005) conducted an empirical study on perceptions of interactivity and customers' trust and transaction intention in mobile commerce. Users' perceptions were identified as control, responsiveness, connectedness, ubiquitous connectivity and conceptual offer. The findings revealed that users' perceptions had a significant impact on mobile commerce. Also, two elements of perception,

conceptual offer and ubiquitous connectivity, were positively associated with transaction intention in mobile commerce.

On the other hand, several studies have found positive correlations between high product involvement and consumers' extensive search (Engel & Blackwell, 1982; Hawkins, Best, & Coney, 1989). However, Snyder-Dutch's (1996) believes that interactivity can be improved by offering hypertext links. Amichai-Hamburger, Fine and Goldstein (2004) connected between increase of interactivity and the number of available hyperlinks. In a political study, Sundar et al., (2003) conceptualized interactivity based on functional and contingency views. They employed the contingency view of interactivity in an experimental design on political campaign websites. The participants were divided into three groups. The first group was exposed to a low interactive website that did not include hyperlinks; the second group was exposed to a medium interactive website that had a single layer of hyperlinks, and the third group was exposed to a high interactive website that has two hierarchical layers of hyperlinks. The results of their study showed that the level of interactivity had a significant impact on perceptions of the candidate and his/her policy.

Summary

Briefly, the previous section has discussed the term '*interactivity*' in three main directions: actual interactivity, perceived interactivity, and interactivity as a communication process. These three trends are the results of many years of controversy and debate over the term '*interactivity*'. By reviewing these three trends of interactivity, it was obvious that actual interactivity is concerned with the technological characteristics of the medium, whereas perceived interactivity is concerned with users' perceptions of those technological characteristics. Finally, interactivity as a communication process recognizes the importance of both actual interactivity and perceived interactivity through emphasizing on exchange roles and information between members of the communication process.

On the other hand, two-way communication in real-time and user control are some of the most important dimensions used to define actual interactivity. In parallel, perceived interactivity is concerned with how users perceive these two dimensions: two-way communication in real-time and user control. Thus, interactivity as a communication process is intrinsically giving

actual and perceived interactivity the same importance. Interactivity is therefore the result of the interaction between interactive technological characteristics and users' perceptions.

Moreover, to study the interactivity more broadly, the previous section has reviewed in detail the studies of interactivity dimensions whether the dimensions of actual interactivity or perceived interactivity. Through the studies on the dimensions of interactivity, it can be concluded, as mentioned earlier, that all these dimensions have revolved around enabling two-way communication in real-time and user control. In two-way communication, the review has evidently shown that the assessment of the medium usually depends on its ability to enable this type of communication, and how users, therefore, perceive such a communication. Also, the review has clearly revealed that most of the studies were essentially seeking to make the two-way communication through intermediate environments similar to interpersonal communication. Therefore, interpersonal communication is considered to be a criterion for assessing the communication that occurs through a mediated environment. On the other hand, in user control dimension, it has been obvious that such a concept cannot exist without enabling two-way communication. These two concepts of two-way communication and user control are essentially relational concepts. The concept of user control has emerged as a possible outcome of enabling the two-way communication. However, user control, in interactive contexts, can be understood based on the user's ability to influence content. Influencing content may take several forms such as contributions, participation, modification, etc. This cannot therefore occur without a responsive system or medium that can absorb and respond to users' entries.

Furthermore, the previous section has also presented experimental studies that examined the relationship between actual interactivity and users' perceptions, whether those perceptions are related to perceived interactivity or involvement, or the attitude toward the interactive website. Reviewing these previous studies is important, because one of the objectives of this study is to examine users' perceptions toward the interactive documentaries.

Finally, the importance of the previous section has been derived from the assumption that interactive documentary is perceived as a relational concept with interactivity. Understanding interactive documentary is therefore relied on clearly comprehending the interactivity.

The following construct of the literature review discusses interactive documentary through two main contexts: interactive documentary in the context of interactivity; and interactive documentary in the context of documentary.

Interactive Documentary

The second construct of the literature review discusses, under the scope of interactive documentary, the following elements: interactive documentary a compound term; Internet 2.0 and interactive documentary; existing definitions of interactive documentary; interactive documentary: taxonomy and features; and representing reality in linear and interactive documentaries.

Interactive Documentary as a Compound Term

Interactive documentary is a controversial term despite its frequent use among researchers and filmmakers (e.g., Almeida & Alvelos, 2010; Dovey & Rose, 2013; Gaudenzi, 2013; Gifreu, 2014; Nash, 2014a, 2014b; Vázquez-Herrero et al., 2017; Whitelaw, 2002). The first controversial issue with this term can be related to its association with other terms such as: cross-media documentary, trans-media documentary, new media documentary, digital media documentary, and webdocumentary.

On the other hand, the term '*interactive documentary*', as it is adopted in this study, involves other controversial issues that arise mainly from: the documentary itself, and from the adjacent adjective '*interactive*'. The presence of the two terms '*interactive*' and '*documentary*' constructs principally an interrelated relationship between interactivity and documentary. Theoretically, this relationship consists of a group of components that share the process of making an interactive documentary, including: the author, the medium, the narrative and the viewer/user. In this sense, the interrelationship between the components cannot be bypassed when defining the interactive documentary. Nevertheless, these components are basically considered to be a major problem when conceptualizing the interactive documentary. Each component has its own controversial history in regard with conceptualization, history, conventions and the connection with other dialectical terms.

At first glance, the elements that form the interactive documentary seem to be so entangled that none of them can be argued without overlapping one another. For instance, the

concept of interactivity cannot be argued without considering the new media, nor the concept of media can be argued without distinguishing between the old and new media. Nevertheless, wide lines can be generally drawn as a guideline of the interrelated problems and concepts of the interactive documentary.

First of all, the adjacent adjective '*interactive*' assumes that the most appropriate means to carry the interactive content is noticeably the new media offered by the Internet (Leadbeater, 2009; O'Reilly, 2005; Shirky, 2008). Traditional media are not capable of exchange, and the communication process is considered to be one-way for economic and high-cost factors compared to new media (e.g., Rafaeli, 1988; Wu, 2005). Interactivity should not be understood as an inherent feature of the medium, but it can be understood as an attribute of the communication process (e.g., Cho & Leckenby, 1999; Haeckel, 1998; Heeter, 2000; Pavlik, 1998; Rafaeli, 1988; Steuer, 1992). Additionally, the term '*interactivity*' did not emerge as new media appeared, but it was principally activated with them. Therefore, the new media provided by the Internet seem to have changed the form of the relationship between the author, the text, and the user to be theoretically described as an interactive relationship (O'Flynn, 2012).

On the other hand, the presence of the term '*documentary*' without the adjacent adjective '*interactive*' raises other controversial issues related to the complications of its definition since the first attempts to define it (e.g., Grierson, 1933). It raises mainly the problem of reality or the representation of reality. Although it is possible to distinguish between the documentary and the fictional film based on the arrangements of reality, the presence of reality itself demonstrates a dialectical relationship between the author, the text, the user and the theories related to each one of them. Interactive documentary, with its correlation to new media and the Internet, establishes another question: Are we still talking about the documentary? Are we in a separated or connected relationship with the documentary traditions and conventions? If the interactive documentary is perceived as having a communicative relationship with the traditional documentary, it is clear that its outstanding problems and classical concepts should be dealt with. If the interactive documentary is understood as having a separate relationship with the traditional documentary, it is also clear that alternative approaches should be established that are different from traditional approaches.

Moreover, the presence of the adjacent adjective '*interactive*' can emphasize that these links between the components have changed from their classical linearity to new interactive concepts. Generally, interactivity evokes a wide history of controversy between researchers: Is it a trait of the medium (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001)? Is it user perception (e.g., Day, 1998; Kioussis, 2002; Newhagen et al., 1995; Wu, 1999, 2006)? Is it a communication process (e.g., Cho & Leckenby, 1999; Haeckel, 1998; Heeter, 2000; Pavlik, 1998; Rafaeli, 1988; Steuer, 1992)? Or is it a combination of all the previous dimensions (e.g., Hanssen et al., 1996; Lieb, 1998; Zack, 1993)?

Restricting the definition of interactive documentary to medium features is considered to be controversial. It is indispensable to recognize that the technological characteristics (interactive features) have given the documentary other ways to express itself in this digital age. But at the same time, individuals' perceptions and interactions cannot be excluded from developing these technological characteristics (e.g., McMillan & Hwang, 2002; Sohn & Lee, 2005; Wu, 2006). It is very important to recognize that we are talking about a tangled relationship, where both parties of the process are involved in changing and developing each other. No party can be understood without recalling the other. Interactivity, therefore, cannot be understood out of context. It is fundamentally a relational concept that includes users' perception, the characteristics of medium, the author and the documentary narrative. However, the technological characteristics provided by the Internet are meaningless without users' participation (Rafaeli & Sudweeks, 1997). These features, therefore, are latent unless activated by the user. As mentioned earlier, the adjective '*interactive*' designates implicitly a user in a relationship described as interactive with the documentary author and discourse. This indicates that the interactivity and the author acquire their presence from the user involvement. However, the user is practically absent from the studies that discuss the interactive documentary, or rather the user is both absent and present due to lack of identification or measurement. Despite the emphasis on the importance of user participation (viewed as an interactor in advance), the existing studies have concentrated on defining interactive documentary and gone beyond measuring the user participation in digital narratives.

The paucity of experimental studies on the user has kept the concept of interactive documentary ambiguous. Theoretically, the term '*interactivity*' could implicitly refer to the

design of interactive features that aim to get the user involved in a documentary story, but with the absence of experimental studies, the user is still therefore undefined in terms of how he/she perceives or engages with these interactive features. Although interactive features may be similar from one medium to another, the levels of individuals' interactions or perceptions may differ depending on many factors including among others: the story, gender, age, online experience, etc.

Notwithstanding, in the presence of interactivity in the documentary genre, the interactive documentary has conceptually the capacity to establish an interactive relationship between the author and the user described as a collaborative relationship (Nash, 2014b). In the classic documentary, the relationship appears to be linear, where the author seems to be the only dominant voice, and where is no structural relationship based on user feedback. The author has full control over the text addressed to the user. The user task seems to be limited within receiving the author's text, where there is no choice to change, modify, or add to the documentary content (Favero, 2013; Odorico, 2015). In the interactive documentary, we are no longer talking about a negative relationship between the author and the user, but rather an interactive relationship since both members are able to exchange communication and roles. The author is no longer a standing term with the prevailing presence of assistant director or designer (e.g., Gaudenzi, 2013; Gifreu, 2011; Odorico, 2015). The user is becoming a possible director (e.g., Gaudenzi, 2013; Gifreu, 2011). As a result, the form and the structure of new narratives presented by interactive documentary require exchanging roles and dealing with the documentary as a product of the interactive relationship.

Internet 2.0 and Interactive Documentary

Interactive documentary can be traced back for more than three decades (Davenport, 1997; Duijn & Koenitz, 2017), although it is considered a new form (Hales, 2015). Generally, when digital technology and documentary get together, the audience becomes an active voice, able, at the same time, to participate in constructing meaning on the Internet (Aston, Gaudenzi, & Rose, 2011).

Gaudenzi (2013) sees that the Internet 2.0 has introduced multiple video channels such as YouTube and documentary channels. YouTube, for example, relies exclusively on users'

contributions and evaluations. It may actually be called the contributors' channel, where the value of the channel depends heavily on user input and interaction. Gaudenzi argues that these channels can be called interactive documentaries if they are viewed as large containers of documentaries that allow a certain amount of interactivity, but if they are perceived as a documentary representation of a certain reality for a specific theme, these channels may not be included as interactive documentaries.

Soulez (2014) states that the new dimension of interactive documentary is not a technological shift rather than a recognition of these new devices in enabling the user to participate in making documentaries. The shift to digital technology has initially empowered the users in making interactive media including interactive films, drama and news (Williams, Kegel, Ursu, Pals, & Leurdijk, 2007). Interactive documentaries use multimedia and database structures, where they can be updated in real time with the possibility of expansion and continuity (Fisher, 2016). They can be supported by the web, physical installations, multi-productions, platforms and texts (Gifreu, 2017a). Interactive documentaries are distinguishably capable of documenting the personal and social history associated with the physical world, where the power of authorship is transformed into the possibility of participation (Fisher, 2016). Therefore, the presence of web 2.0 has helped the interactive documentary field emerge, where it can invite the audiences to participate, contribute or create content. Consequently, the Internet can be considered as a creator, a re-definer, and a founder of the logic of engagement (O'Flynn, 2012). The new culture offered by the Internet can be therefore called a participatory culture (Jenkins, 2006).

On the other hand, the Internet 2.0 is a platform for sharing videos with the ability to comment on them. It also provides a basic platform for documentary filmmakers to build communities around specific issues of their own (Gaudenzi, 2013; O'Flynn, 2012).

Unlike traditional media, the basic concept offered by the Internet 2.0 is the two-way communication. Therefore, many writers, who have discussed the concept of interactivity and connected it to the medium's features, focus on the concept of two-way communication in real-time as a basic role for understanding the meaning of interactivity (e.g., Ahren et al., 2000; Campbell & Wright, 2008; Chesebro, 1985; Coyle & Thorson, 2001; Deighton, 1996; Downes & McMillan, 2000; Duncan, 1989; Durlak, 1987; Novak et al., 2000). User control, as a result of

enabling the two-way communication, can be understood as the user's ability to communicate in real time with the media or through the media (e.g., Berthon, Pitt, Katsikeas & Berthon, 1999); and as the user's ability to choose and exchange with communicators, content, and other users (O'Flynn, 2012). The user control may not be considered absolute but it can vary in terms of used medium, subject, documentary story, etc. Consequently, the digital environments used by the interactive documentary allow for varying degrees of control over the content in terms of participation in constructing the documentary story. The story in the digital space may therefore become so sophisticated in which the users/participants can be able to make their own stories and experience them at the same time (Murray, 1998).

The Internet 2.0 as a two-way communication tool has offered the audiences the means to be active as they can communicate effectively with the sender or the media, or to be participant members in the platforms of the Internet 2.0. Internet 2.0 has allowed participants to share and sell videos on a particular subject. These video clips can be used by other filmmakers, either for making a linear documentary or as fragments for making web platforms such as *Man with a Movie Camera: Global Remake* (2007) *Mapping Main Street* (2009); *Life in a Day* (2010); and, *Jonney Cash Project* (2010) (Gaudenzi, 2013, p. 59). In general, since the Internet 2.0 supports the two-way communication as a global network and platform, interactive documentary is viewed as an ongoing project that can provide users/participants with the opportunity to present their content and hence participate in constructing meaning online (O'Flynn, 2012).

Traditional documentary is considered a preauthorized form of narrative, in which the viewer is unable to participate or change the narrative structures. Odorico (2015) argues that the main difference between traditional documentary and interactive documentary is that the traditional documentary discourse is final by the end of the editing process, while interactive discourse is an ongoing production with random access. Odorico (2015) concludes that "equivalents to classic continuity editing are almost absent in interactive documentaries and fragmentation is dominant" (p. 216). The user has the opportunity to access the content through multiple options or windows. This free access, in turn, is reflected in the narrative structures and their arrangement. In this case, the narrative is subject to modification and change each time it is being accessed.

In addition, interactive documentary profits from hypertext provided by new technology and the Internet 2.0. From the hypertext perspective, interactive documentary is built on the logic of non-sequential writing (Nelson, 1981). In this case, the narrative ceases to be replaced with participation and exchange, which are the core of the Internet (e.g., Leadbeater, 2009; O'Reilly, 2005; Shirky, 2008). Therefore, the viewer, in this context, has a cooperative relationship with the text, and the journey of navigation in an interactive documentary database is mainly to “construct meaning out of the contradictory voices” (Belsey, 2002, p. 129).

Nevertheless, although the Internet is viewed as the medium of interactivity, traditional television has proven its capacity to deliver interactive features. Interactive TV offers side services such as games and advanced teletext. Although the main programs are still linear, the choices are considered to be interactive such as play, pause, forward, backward, stop, programs on demand and other features (Ursu et al., 2009).

However, using the Internet 2.0 and modern technology does not principally make the documentary narrative interactive (Le Grice, 2001). There are many documentaries that use new forms of technology and the Internet 2.0, but their narratives are still linear. On the other hand, interactive documentaries may conflict with web documentaries in which they use the web as a means of communication with the audience, although they are essentially linear with few or no interactive features. O'Flynn (2012) provides examples of those documentaries that have a mixed approach of linearity and interactivity such as: *Caine's Arcade* (2012), and *Invisible Children* (2012). These two documentaries have achieved remarkable success using the web and social media platforms by sharing these documentaries from one user to another. However, the use of analogue and digital techniques in the documentary industry may make the conceptualization of the documentary very complicated (O'Flynn, 2012), which can eventually lead to inaccurate standards for analyzing and studying the interactive documentary and its components.

In addition, despite the advancement of digital and narrative environments, they are still limited in terms of their ability to respond to user input without being preauthorized (Grasbon & Braun, 2001). Therefore, the concept of participation here is often viewed as a misleading concept because users' choices are pre-built. In a sense, these options cannot be called users'

options as much as they can be called ‘*given options*’. In this situation, users do not appear to have real freedom to interact with media artifacts.

Existing Definitions of Interactive Documentary

Defining interactive documentary may cause confusion and misunderstanding between the interactive documentary itself and other terms such as digital documentary. Any definition of interactive documentary may be temporary since it is a sophisticated, developing, changing and relational concept influenced by the surroundings. In general, interactive documentary as a genre began to appear in the 1980s, but has started to confirm its presence practically and academically in recent years (Gifreu, 2017a). Davenport and Murtaugh (1995) were the first who coined the term “evolving documentary” (p. 1) in an indication of interactive documentary.

The first use of the term ‘*interactive documentary*’ was by Mitchell Whitelaw (2002) to describe those documentaries that open their narrative structure, which were called previously “Open works” by Umberto Eco (1989). This type of documentary has provided the audience with a special environment for participating and influencing the documentary content, and with a variety of interpretations for each single story (Aston & Gaudenzi, 2012; Nogueira, 2015). Generally, these documentaries have dated for fundamental transformations in the relationship between the user, the text, and the director (Gifreu, 2011).

Although the concept of interactive documentary is still ambiguous and imprecisely defined, like the case of linear documentary and interactivity, several studies have involved in make this term more prominent (e.g., Almeida & Alvelos, 2010; Aston & Gaudenzi, 2012; Gaudenzi, 2013; Gifreu, 2011; Whitelaw, 2002). Consequently, general guidelines from existing studies can be drawn for what the term ‘*interactive documentary*’ could mean. It might be useful at first to state that any interactive documentary is necessarily digital, but not any digital documentary is interactive (Gaudenzi, 2013). The digital documentary describes digitally the process of producing a film, and the distribution process over the Internet (Galloway et al., 2007). Thus, ‘*interactive*’, as a conjugated adjective to the documentary, refers mainly to a presence of at least two parties that have the opportunity to use a two-way communication through an intermediate environment (often the Internet). This process includes in general a constant feedback since the two-way communication concept itself involves participation and

exchange with multimedia.

Interactive documentary is not only limited to be published over the Internet, but to create an interactive relationship between two parties or more including user-user, users-users, or user-system. The capacity of producing such interactive communication is the result of what the technology or features of the Internet can provide. This communication is not built solely on browsing and clicking the multimedia and the included interactive features, but it may require from users to carry out other interactive activities related to their physical world when the connective lines between reality and virtual reality becomes transparent (e.g., Aston & Gaudenzi, 2012; Galloway et al., 2007; Goodnow, 2004; Koenitz, Ferri, Haahr, Sezen, & Sezen, 2015; Nash, 2012). Therefore, despite the different forms, themes and designs of interactive documentary, it mainly requires a positive interaction between the user and its content.

The problem in defining interactive documentary is that there are a few agreements between practitioners and academics about the appropriate term, content, and approach. The academic approach of dealing with the genre is generally by positioning the interactive documentary between documentary and interactivity, emphasizing the necessary presence of the user and the gradual absence of the author. However, the presence of the user is not yet precisely measured and there are shallow academic studies on this documentary genre. The reason could be as Gaudenzi (2013) states “that most new media artists do not consider themselves documentary makers, and therefore they call their work anything but interactive documentaries” (p. 26).

The integration between digital technology and linear documentaries is a primary factor for the transformation into interactive documentaries that has reshaped the productions and practices. The existence of digital platforms has led to a second stage in which aesthetics and documentary discourse have begun to form and adapt (Gifreu, 2017a). Therefore, digital platforms have changed the classical culture of the documentary from representation of reality offered by Bill Nichols (Nichols, 1991), to aesthetics, and the culture of participation (Jenkins, 2006). Thus, interactive documentary compared to traditional media is promising of multi-understandings and interpretations of each story (Aston & Gaudenzi, 2012; Nogueira, 2015; Whitelaw, 2002).

Furthermore, the growth of interactive narratives was the result of the advancement in information and communication technology (ICT). The ICT has presented new users who are capable of creating content and meaning, and who are capable of becoming storytellers (Ursu et al., 2009). Thus, the growing role of the user in forming the interactive narrative has threatened the classical role occupied by the author (Fisher, 2016; Nash, 2014b).

Nevertheless, there is a constant critique of the growing enthusiasm of interactive documentaries. This critique has been aimed at the exerted efforts and minimum engagement and integration of filmmakers with the possibilities offered by new media (e.g., Berenguer, 2004; Whitelaw, 2002). The high expectations were disappointing for the slow progress of documentaries to benefit from the interactive media (Berenguer, 2004). Although practitioners have enthusiasm for this genre, there is a real setback in production. This enthusiasm has been limited to addressing the content of the traditional documentaries, using interactive features to emphasize that any user activity should always lead to a united content with the possibility of multiple interpretations (Whitelaw, 2002). According to Whitelaw (2002), “new media doco [documentaries] need not to replay the conventions of traditional, linear documentary storytelling; it offers its own ways of playing with reality” (p. 3). In the same context, Galloway et al., (2007) state that “the interactive documentary should not be viewed as a replacement for documentary but as a valid, additional creative form for allowing people to explore and contribute to our understanding of the world” (p. 21).

This view would later find its resonance with Gaudenzi’s (2013) and Gifreu’s (2011) works where they both considered that the interactive documentaries have other points of view to present, reconstruct or simulate the reality. Therefore, Gaudenzi (2013) distinguishes between linear documentaries and interactive documentaries as following:

If linear documentary demands a cognitive participation from its viewers (often seen as interpretation) the interactive documentary adds the demand of some physical participation (decisions that translate in a physical act such as clicking, moving, speaking, tapping etc.). If linear documentary is video, of film, based, interactive documentary can use any existing media. And if linear documentary depends on the decisions of its filmmaker (both while filming and editing), interactive documentary does not necessarily have a clear demarcation

between those two roles. (p. 32)

For his part, Gifreu (2011) calls interactive documentary ‘*interactive multimedia documentary*’, and defines it as “interactive online/offline applications, carried out with the intention to represent reality with their own mechanisms, which we will call navigation and interaction modalities, depending on the degree of participation under consideration” (p. 358). Despite Gaudenzi’s (2013) disagreement with this definition as it is limited to online-offline digital documentary, and that it does not include other forms, Gifreu (2010) explains the correlation of these terms to each other: interactive, multimedia and documentary. According to him, the term ‘*interactive*’ comes because these documentaries use navigation and interaction modalities; the term ‘*multimedia*’ is preferred because it is a more comprehensive term than others such as digital, hypermedia, web, etc., and it is, thus, a special characteristic that can be added to the documentary, where it is open to various media compared to traditional documentary. Finally, it is documentary for it documents and represents reality. In this model, Gifreu (2011) adopts Bill Nichols’s (1991) model of documentary definition based on director, text, and viewers, and analyzes interactive documentary and differentiates it from the linear documentary. Moreover, Gifreu (2017b) in his *MIT Open Documentary Lab* website exerted a big effort with interviewing many known practitioners and academics in order to define the interactive documentary. The majority of definitions were concentrated on the importance of user engagement.

However, Galloway et al., (2007) define interactive documentary as “any documentary that uses interactivity as a core part of its delivery mechanism can be called an interactive documentary” (p. 330). Although this definition treats the interactive documentary as a separate entity, it appears to be wildly limited as Aston and Gaudenzi (2013) point out that “interactivity in i-docs often goes beyond ‘delivery mechanism’ to incorporate processes of production” (p. 126).

However, Galloway et al., (2007) developed four interactive documentary forms making the user the central of these modes. The users in these documentary forms can be characterized as following: the unconscious users who are observed and given content depending on their responsiveness; the conscious users who are in control of the documentary content; the

immersive users who are fully involved with the documentary virtual reality and separate from the outside world; and, the participatory users who are able to contribute and modify the documentary content.

In *An Interactive Documentary Manifesto* article, Almeida and Alvelos (2010) adopt Galloway's et al., (2007) definition and place the interactive documentary between the film and the interaction, emphasizing on animating the user interface. In the same context, Martin Percy (as cited in Gaundzi, 2013) makes the web as a unique medium for interactive documentary not only as a distributive tool but also as a main player for making a documentary interactive. This new type of documentary gathers between the documentary events and web features, where they can be called "Internet Native Films" (Percy as cited in Gaundzi, 2013, p. 30)

Moreover, Nash (2012) specifies the different terms used and the two specific elements (multi-media and interactive) that make this type an interactive documentary. She suggests this definition: "The name webdocumentary (sometimes webdoc, interactive web documentary or web documentary) describes a body of documentary work, distributed via the Internet that is both multi-media and interactive" (p. 197).

On the other hand, Choi (2010) provides a definition that focuses on content, platforms and navigation. The documentary in Choi's definition is seen as a production model for structuring the documentary reality. Choi's proposed model is based on three types of users: users as authors, users as contributors and users as observers. The content/system in this model responds to user input in real time, and it is expandable because of participatory multimedia. The narrative is the result of the interaction between the multimedia database and system's components. The authorship in this model is based on the design of the basic rules that organize the documentary contents and the interactive options.

According to Nina Simoes (as cited in Bercu, 2011), unlike interactive documentaries, traditional documentaries do not have charisma in communicating with the audience, where classical documentary rules are no longer useful in the field of interactive documentaries. The collaborative and participatory fields of interactive documentary have announced the death of the author (Simoes as cited in Bercu, 2011). However, analyzing many documentaries on the Internet by Hosseini and Wakkary (2004) contradicts Simoes's point of view. Their analysis has

shown that a group of conventions are still present between classic documentaries and interactive documentaries. They have also found that there is a tendency in online documentary practice to reflect the historical world with a confirmation of the relationship with the real world. In addition, the documentary hypertext database on the Internet uses an informational logic and models of interactions to convey the point of view. This hypertext database consists of a commentary or an interview and exchange conventions with diaries and articles (Hosseini & Wakkary, 2004).

Moreover, several theorists have conceptualized interactive documentary as a development of the traditional documentary (e.g., Berenguer, 2004; Goodnow, 2004; Miller, 2004). For instance, Berenger (2004) identifies interactive documentary as a type of interactive narrative. When this narrative becomes interactive, it spreads in three main directions: interactive narrative, interactive documentary and games. In addition, Miller (2004) points out that interactive documentary is a type of non-fiction genre and the viewers “can be given the opportunity of choosing what material to see and in what order. They might also get to choose among several audio tracks” (p. 345).

On the other hand, Goodnow (2004) concentrates on the user’s physical experience in navigating the database. This physical activity will be later considered a basic activity, among many theorists, that expresses the interactive documentary genre (e.g., Aston & Gaudenzi, 2012; Goodnow, 2004; Koenitz et al., 2015; Nash, 2012). Finally, Aston and Gaudenzi (2012) suggest that interactive documentary:

Should not be seen as the uneventful evolution of documentaries in the digital realm but rather as a form of nonfiction narrative that uses action and choice, immersion and enacted perception as ways to construct the real, rather than to represent it. (p. 125)

Interactive Documentary: Taxonomy and Features

Dankert and Wille (2001) adopted Bill Nichols’s (1991) modes of documentary representation to classify the interactive documentary. Nichols’s modes of representation of the traditional documentary are the expository, observational, interactive and reflexive modes. For Nichols, these modes of representations are “basic ways of organizing texts in relation to certain current features or conventions” (p. 32). Dankert and Wille (2001) adopted these modes and

applied them to the new documentary. In the expository mode, the documentary is viewed as a tour guide of previously recorded scenes of reality. The user in this mode can choose the appropriate path from various paths available to display the documentary sequences, where the narrative voice is replaced with hypertext. In observational mode, the camera represents an avatar of recorded events or events in real-time, where the user is invisible in the observational world. In the interactive mode, the camera also represents an avatar as in the observational mode, but the user is visible in the observed world based on the levels of permitted interactivity. The camera's presence as an avatar is aware and it enables interaction with the themes presented in the virtual world. The user has visual access to the virtual world and can control one or two avatars. In the reflexive mode, the user is more self-aware. This mode is seen as one of the most difficult to produce for it is conceived as a comment on the conventions of the documentary language and audience expectations; where the film is framed between dialectical relationship of form and content and of reality and fiction. The user, as in the previous modes, is an active avatar in the virtual world without knowing the depicted reality (Dankert & Wille, 2001).

Similarly, Gifreu (2011) adopted Nichols's (1991) definition of documentary to identify the interactive documentary based on three constructs: author, text and viewer. He provided a comprehensive view of the interactive documentary characteristics, which he called interactive multimedia documentary. Gifreu (2011) replaced Nichols's three main constructs of documentary with these terms: director, narrative or discourse, and interactor.

Gifreu (2011) argues that the characteristics of interactive documentary from the author's perspective revolve around the concept of control. The interactive documentary interaction and navigation modalities have dispossessed the author's control over the documentary narrative. Depending on the levels of interactivity available in a documentary, the user has been given an important role to participate in constructing the documentary story or to influence its content. As a result, the concept of control becomes a mutual concept between the author and the user rather than a monocular concept as in traditional documentary (Ribas as cited in Gifreu, 2010).

From the narrative perspective, Gifreu (2011) argues that although there are various terms used to describe the interactive documentary, they all refer to the same product such as:

multimedia applications, hypermedia applications, hyper-documents, etc. However, Gaudenzi (2013) sees that using various terms of interactive documentary, such as digital documentaries and new digital documentaries, can affect the study of this genre. The interactive documentary as a narrative is identified as a non-fictional genre for it is linked to the reality. It uses this reality, despite the problem of its conceptualization, as a criterion to differentiate itself from other movie genres (e.g., Cohen, 2012; O'Flynn, 2012).

Gifreu (2011) understands interactive documentary narrative as a hypertext multimedia that includes nodes, links and anchors. The discourse is subject to change, and modification compared to linear narrative. Interactive narrative depends on databases and it expresses the concept of fragmentation and inconsistency, where the text is open for user input (Hudson, 2008; Miles, 2008). Therefore, Whitelaw (2002) questions the extent to which a story can be conveyed in an open narrative.

From the interactor's perspective, Gifreu (2011) sees the user as an "interactor-participant" (p. 385), because interactive narratives constantly provide interactive, participatory, and contributive relationships. The main difference between online and offline reception is that the Internet has given the user an active participatory environment. Therefore, the interactor can be a participant and a contributor, unlike the offline environments where they are perceived as a closed environment to user input. Collaboration and participation are not limited to mental activities (observation, interpretation) but they also include physical activities (Gaudenzi, 2013). The new digital narratives have created a digital generation as the linear narratives did with previous generations (Berenguer as cited in Gifreu, 2010).

In their article, *From Michael Moore to JFK Reloaded: Towards a working model of interactive documentary*, Galloway et al., (2007) present four categories of interactive documentary: the passive adaptive category, the active adaptive category, the immersive category and the expansive category.

The passive adaptive category can be defined as a "responsive monologue" due to the absence of user awareness", and it "is characterized by user input that takes place on a sub- or un-conscious level" (Galloway et al., 2007, pp. 332-333). This type of documentary is based on users' feedback, where they make changes accordingly. The process of interaction with the

content occurs naturally, where the participants are viewed as receivers rather than users. Technology or intelligent systems can be used to detect reactions or receivers' inputs. This technological system deals with the receivers as observable subjects, where their entries can be traced by eye tracking, in which the users' interest and behavior can be monitored. The system therefore interacts according to the analysis of signals that carry the users' interests and actions.

In the active adaptive category, the users, in this type of documentary, are aware of their actions. The system/documentary gives them the freedom to navigate the documentary database. The documentary also enables users to communicate with the filmmakers or the producers via audio or textual communication, physical movements and facial gestures. In these documentaries, the users are aware of their actions and their living experiences during their physical interaction with the documentary. Galloway's et al., (2007) describe this category of documentary as '*responsive dialog*', which is based on McMillan's (2002) models.

Interactivity in this category is conceived by activating two-way communication between the documentary as a system and users' feedback. Thus, this could help to understand and anticipate users' subsequent entries, and build appropriate responses accordingly. Therefore, increasing interactivity does not mean that there are unlimited possibilities, instead interactivity is a structural process that depends on understanding users' reactions.

In the immersive category, users' actions are fully participatory. It expresses a continuous level of interactivity that makes the users live an immersive experience. The users in this category live inside the portrayed world apart from the outside world. The virtual environment of the interactive documentary emphasizes the concept of physical participation. Therefore, this category is distinguished from others in which the two previous categories can be experienced through traditional systems such as television. In contrast, in the immersive category such as games and virtual worlds as documentary experiences, the users need an appropriate environment that emphasizes the immersive physical presence.

Finally, the expansive category focuses on the interactive experience of the community and provides users with a high level of interactivity so that they can modify or change the content and even challenge the viewpoints of other users. The users have the ability and the necessary space to create content that expresses their perspectives. Wikipedia, YouTube,

multiplayer games and social media can be examples of this category. Although this category allows users to strongly participate in creating content either by modification, addition or total creation, it raises ethical issues related to publishing, politics and society.

However, Nash (2012) analyses the documentary based on the relationship between users' actions and documentary argument. She uses the term '*webdocumentary*' and defines it as "a body of documentary work, described via the Internet that is both multi-media and interactive" (p. 197). According to her study, "interactivity is a representational strategy that does not inherently empower the audience" (Nash, 2014b, p. 386). She proposes three categories of interactive documentary: narrative, categorical and collaborative documentaries.

The narrative in the narrative category is similar to the linear documentary, where the narrator leads the narrative structures and the documentary is built on narrative authorship. The users' actions are defined based on the reinforcement of the filmmaker's point of view. In this category, the users have few options and the documentary structure comes to ensure that the users complete their documentary experience and follow the director's point of view (e.g., Beattie, 2008; Nash, 2014a; Skartveit, 2007). The users can interact with specific points made by the filmmaker. They can also discover the threads of the story, where "the temporal ordering of elements is less important than the comparisons and associations the user is invited to make between the documentary's elements" (Nash 2012, p. 205). The interactive documentaries such as *The Whale Hunt* (2007); *Prison Valley* (2010); and *Rapporteur de Crise* (2011) can be examples of this category (Nash, 2011, p. 34).

In the second category, the structure of traditional narratives by the narrator is absent and replaced with collective databases that are interconnected with networks of links and buttons. This type depends on fragments in which they intertwine with each other through general subjects or themes. Each subject or partial story can associate with an introductory section that introduces the narrative units linked with it. This category focuses on the users' freedom to choose the path that they want without being intervened by the author. The users are involved partly in making the story by choosing the path as "polyvocal, unstable and contested meanings, rather than fixed ones" (Hudson, 2008, p. 90). *Gaza/Sderot* (2008); *Waterlife* (2009); *Out My Window* (2010); and *6 Billion Others* (2003) can be examples of this category (Nash,

2011, p. 34). For example, the main page of the French documentary “*6 Billion Others*” contains multiple themes. Each theme contains a collection of individual stories of people from all over the world in which they all contribute to the general theme, “*6 Billion Others*”. The users can choose their favorite individual stories related to the subject of their choice. In other words, the users by navigation and selection can make their own story from available database stories.

Lastly, the collaborative category is perceived as a social dimension, which aims at developing the community by reciprocally promoting the concept of collaboration. The users can create real content and share it with others via online platforms such as social media. Although the social dimension of this category is important, it raises concerns about the impact of users’ practices on the Internet. The participation in this category is understood as users’ ability to influence content. *18 days in Egypt* (2011), *Mapping Main Street* (2009), *Goa Hippy Tribe* (2011) can be examples of this category (Nash, 2011, p. 34).

On the other hand, Gaudenzi (2013) uses interactivity as a criterion to distinguish between the documentary modes. She extracts four modes based on the type and the degree of interactivity included in each mode: the conversational mode, the hitchhiking (or hypertext) mode, the participatory mode and the experiential mode.

In the first mode (the conversational mode), Gaudenzi (2013) presents Aspen Moviemap (1980) as a model of this mode. This project, which was directed by Andrei Lippman in 1978 with financial fund by Advanced Research Projects Agency (ERPE), is considered to be the first example of the conversational mode in films. The project was a computer-based film about Aspen City, Colorado. The interaction of this film is based on the users’ ability to control the speed and direction while virtually traveling through the city.

The conversational mode is adopted from the concept of communication between people. From Lippmann’s (1978) point of view, the conversation should be reciprocal as an explanation of human-computer interaction (HCI). In his perspective, this type of communication should be unlimited, but the technology in Lippmann’s time was not advanced enough to implement his vision. In order for this interaction to be effective, it should not be interrupted, and it should lead to a smooth transition. The Aspen Moviemap cannot be described as a complete interactive documentary project, but instead as a virtual interaction between human

and machine. However, this project would later form the core of interactive documentaries as a simulation of reality by excluding the author's point of view and reconstructing reality through the user. Interaction in this mode is similar to making a conversation with the world, which presents countless possibilities through the interactive databases and features. The user, the real and virtual worlds converse and create environments that are built on each other. In this mode, the computer is considered as a simulator of reality; the stored elements on the computer are as the external reality; and the interactive features are, for example, as what can actually happen when driving a car (Gaudenzi, 2013). Driving a car is a representation of what one might actually do in the real world such as: stop, turn right or left, continue ... etc. Several examples were given in this study on this mode such as *Americas Army* (2002); *JFK Reloaded* (2004); and *Gone Gitmo* (2007) (Gaudenzi, 2013, p. 126).

In the second mode (the hitchhiking or hypertext mode), the advancement of technology, especially in the computer industries, was the main factor of the presence of this mode. According to Gaudenzi (2013), the *Moss landing project* (1989) is seen as a prototype of the interactive documentaries. This project represents a database of pre-authored closed videos. These videos are connected to each other through different links. In this perspective, the computer is viewed as the main actor in creating transformations, and the users are perceived as operators, which their responsibility is to click on these links to move from one video to another. The existing links do not allow for what is unexpected. Hypertext is originally based on text, but later used in video and audio materials. This mode is not seen as a conversational state but as an exploratory, navigable, and pre-authored project. The author presents certain paths or scenarios and the users choose from these paths their own path that unfolds gradually as they continue their navigation in the branched structures. The author has the option to have a fair control over the narrative, but this depends on the amount of branched structures that link the interconnected video pieces. When a user selects a particular path between interconnected structures, subsequent environments, based on his/her choice, are unexpected but discoverable once he/she moves towards them (Gaudenzi, 2013).

The logic in this mode is not a mutual creation between the author and the user depending on the two-flow communication, instead it is the logic of possibilities and choices, where the user is perceived as an explorer. Gaudenzi criticizes the description of the user as an

active agent as argued by the authors of hypertext multimedia. She instead believes that the choices in the branched narrative may have no similar effect to what we practice in our daily lives. However, there are exceptions such as *Journey to the End of Coal* (2008), where the few hyperlinks in this documentary maintain the narrative durability, so that the limited options work meaningfully, where the user is encouraged to visit the important points in the documentary (Gaudenzi, 2013). The low level of interactivity in this project is compensated by the power of narrative and by the beautiful scenes that can keep the users' attention instead of distracting them with many options and with successive navigation. In this type of documentary, what keeps the users' attention, as explorers, is the durability of narration and the continuous stimulation through drawing the users' desires to travel to another station in the documentary (Gaudenzi, 2013).

The documentaries with hyperlinks have common concepts in their attempts to capture reality and fragment it into a closed database, where the author and the user cannot open it or extend it. Documentaries that use this logic may therefore be considered to have a low level of interactivity, although the users are seen as the key engine for reviving or activating them (Gaudenzi, 2013). Thus, the users here act as navigators to identify the paths they want to navigate through. In contrast, the authors here, unlike the authors in the conversational mode, are considered to be the narrators who design a set of paths or scenarios within a controlled narrative framework. Gaudenzi (2013) gives a number of documentary examples of this mode such as: *Lewis and Clark Historic Trail* (2003); *Last Tourist in Cairo* (2006); *Forgotten Flags* (2007); *Becoming Human* (2008); and, *Brèves de Trottoirs* (2010).

The third mode (the participatory mode) was adapted from the work of interactive computation in physical space (Eberbach, Goldin, & Wegner, 2004). This mode is similar to hitchhiking mode, but differs in terms of user's ability to contribute to the content (Gaudenzi, 2013). This mode is derived from the experiments made by MIT's *Interactive Cinema Group* 1995 led by Glorianna Davenport. These experiments produced films such as *Boston Renewed Vistas* (1995-2004) and *Jerome B. Wiesner 1915-1994: A Random Walk through the 20th Century* (1994-1996) (Gaudenzi, 2013, p. 55).

The users' impact was limited in these projects because of limited technology at that

time. The users could contribute and influence the content, although they could not change the story events. However, with the transition from the Internet 1.0 to the Internet 2.0, and with the users' ability to contribute, it was possible to discuss a real revolution. The Internet 2.0 has created multiple video channels such as YouTube and has also provided rich platforms for adding videos with the possibility of commenting on them and sharing them with others. Therefore, it has become possible to see constructive communities on issues related to a particular topic. The Internet has opened up the full potential for filmmakers to share their films or video clips so that they can be used as fragments in other documentary programs. In short, the Internet has become a great platform for sharing, distribution, production and collaboration (Gaudenzi, 2013).

The participatory mode is essentially a structural mode, where the filmmaker sets the first foundations or the first databases of the project. The user, as an explorer, explores these structures by building on the first foundations provided by the filmmaker described here as a designer instead of the author or director. In general, the interactivity in this mode is defined as the user's ability to modify, contribute to, and generalize content. The documentary in this context is an open database that is constantly expanding and changing as a dynamic and changing world. This change and expansion is dependent on the size of openness in the database, and the user interaction. Examples of this mode can be found in the projects such as *Global Lives Project* (2009); and, *18 Days in Egypt* (2011) (Gaudenzi, 2013, p. 127).

In the experiential mode, the dynamic nature is identified based on the presence of an interactive-immediate environment between the user and the physical environment, which Gaudenzi (2013) calls it "a space of transformation", or as "a space of affective experience" (p. 63), which "it is a transitional state, the result of a complex and dynamic relation between physical abilities, cultural interpretations, different levels and understanding of space and time resulting from the constant changing relation between the individual and her environment" (p. 63).

Gaudenzi (2013) sees that games and other programs such as learning environments and locative arts had a great role to engage the user in a virtual environment. The user here does not change the artifact itself, but moving in a virtual environment transforms the user's emotional

sensations. Gaudenzi states:

“By moving through this new constrained space one can generate new understandings, and new forms, of both the environment and the participant. It is this bi-directional transformative effect of the experiential documentary that we can observe as characteristic of this form”. (p. 63)

In this type of documentary, the users can explore space in an effective way, by playing roles that require their physical participation. On the other hand, the author is seen as an author of the virtual experiences, where the main purpose of these experiences is to enable the user to interact and to be immersed in a dynamic virtual environment. *Greenwich Emotion Map* (2005) and *Rider Spoke* (2007) are some of the examples of this mode (Gaudenzi, 2013, p. 71).

Despite the different terms used to classify and describe the interactive documentary categories, they all can follow the categories of digital media. For example, Murray (1998, 2017) identifies four properties of digital media: procedural in a sense that they are based on rules; participation, where the system responds to user actions; spatial, where the narrative is based on a network of spatial relationships that allows the user to be an explorer; and finally encyclopedic, where the digital content is changeable and expandable because of continuous contributions (Murray, 1998, pp. 71-83).

Representing Reality in Linear and Interactive Documentaries

Representing reality is considered to be one of the most controversial issues in the documentary history. This section argues the concept of representing reality within three given representations: authorship, narrative and viewer. It proposes a criterion to analyze and comprehend these representations on the basis of their versions of reality and their logical contexts that connect each unit in a represented reality to another. This section also argues and compares the essential differences of representing reality between linear documentary and interactive documentary.

Reality or representing reality is widely known as a critical and crucial concept in human history and documentary in particular, because of the elastic nature of the term, and its correlations with many other fields such as philosophy, psychology and sociology.

There are three possible realities that can be argued and interpreted in documentary: the reality of authorship, of narrative and of viewer. These three realities are seen from the perspectives of their versions of reality, and of logic. Despite the fact that these three constructs present non-identical versions of reality, there is a possibility of having some similarities, because the categories related to human logic are considered similar to a large extent. Reality is not clearly comprehended through the presented version of authorship, of narrative and of viewer, but through the interdependent and interpretative logic that connects events and objects of an external reality to each other, and that creates a mutual meaning. Although it seems impossible to see the external reality in the same degree, the events of reality can be linked to each other with similar operations called cause and effect. Subsequently, the author, the narrative and the viewer present their versions of reality with varied degrees of representations. The common link between these versions is that they are interpreted within comparable logical contexts. Therefore, our understanding of reality is not through our versions of it, but through our ways of representation and interpretation.

On the other hand, interactive documentary is regarded as a revolution against classical contexts with regard to representing reality, where it has its own ways to make its version of reality, and its own methods to link events to each other. Technological evolution has urged this type of documentary to revolt against the known traditions and conventions in classical documentaries and cinema. The version of reality has become more complex than ever, because it can be read at different and sophisticated levels of interactivity. In addition, the logical contexts in interactive documentary have become more disseminated and contradictable since they do not rely on classical causality, but on the potential interactions, where users themselves have to deal with these possibilities, and reorder them in a logical way that they can understand. Therefore, the borders and connections between the viewer and the authorship in interactive technology have become intertwined and overlapped which that requires strenuous efforts to comprehend these incessant changes.

Reality before writing, filming and editing.

What is reality or representing reality, which is frequently mentioned in every book about documentary (e.g., Kevin & Cousins, 1996; Nichols 1991; Ward, 2006)? It might be useful to ask first: how do we see reality and how do we represent it? Does our representation reflect an

original version of what might be externally existed? Or is it only our version of the world as humans? These critical questions are an essential element in the philosophical approach, and are still posing a problem in our understanding of the surrounding world. For example, when a man informs an audience about an event, does he inform this event as he exactly sees it? In fact, his seeing could pose many interconnected questions related to the informant; the object or the event before being transformed to either text or audio or video or all together as a multimedia; the informed; the medium; and, the message or the event after being transformed. These preceding factors can be argued as following:

1. Language: The extent to which a language is able to express an event as it happens in a historical world. For instance, will different levels of language between individuals make different expressions of one event? This factor is also related to the used medium, which is the extent to which the characteristics of a medium can play a role of recording and informing an event. In other words, is the event heard, seen, pictured, or filmed? What type of media is used to deliver an event?

2. Time: Time refers here to a period of time between the first actual event (first impressions) as it is happening in front of an observer, and the next time the informant narrates, imagines, remembers, writes, draws or acts the event. Will the event be alike in both times? Time also refers to a certain period when an observer sees the event. For example, is it possible that the scene will be differently narrated if the time is day or night? Will the brightness or the dimmest lighting, for example, affect the transmission of the scene?

3. Psychological state and personal experiences: The extent to which the psychological structures and personal experiences could affect the individuals both senders and receivers when they see and transfer an event or an observed object. For instance, will the scene be different if several individuals with different characters inform it?

4. Social presence and factors: The extent to which the social presence and factors could have an impact on individuals both senders and receivers when they inform or receive an event. For instance, will an event be varied if it is being informed to friends, strangers or large audiences? What is the social status of an individual? Is he/she, for example, well known/unknown?

5. Place (the physical environment in which the event is occurring): Where does the scene happen? Where is one's location or angle as an observer when the event happens?

6. The nature of the event: The extent to which the nature of an object itself and/or the nature of the actions that surrounds an event. Generally, objects do not act solely, or rather; they act as an effect of a cause or a set of causes. Each event or object occurs is understood as a relational event or object. However, the nature of an event or of an object could deceive our visions as observers. For example, an object moving very rapidly would give different information and visions than an object moving very slowly.

These factors among many others are interrelated with each other, and it is difficult to isolate and deal with them separately. This is the first problem that reality is what we see not what it is. In other words, what we see is our version of reality and not the reality itself. The reality here is subject to the observer.

The second problem is how do we represent the world, and why do we represent it within mental contexts often called logic or logical categories?¹ In a sense, why do we see the world in such contexts? Can there be other existing contexts? Or would it be possible that at some stage of our human history we adopted such a mental context and left other potential ones? And therefore, the way we think today is a mere selection of certain context from other contexts.

Although individual differences, there seems to be a logic in general, there seems to be some categories that our mind works through (see Baumer, 1993; Kanterian, 2014). We say it is logical about something because it fits with our reason's laws, which is the law of cause and effect. We say this is not logical because it does not fit with the law of causality. But, does reality represent itself in such a manner? Do we see the world with our criterion, which probably do not exist anywhere else?

¹ Aristotle's categorical logic includes ten elements: substance, which is the object itself; the other categories are: quantity, quality, relation, location, time, position, habit, action and passion (Block, 1966). These categories in Aristotle's opinion are meant to represent the reality and the function of logic is to know (Block, 1966). Aristotle's categories were controversial for many other philosophers such as Spinoza, Hume, Kant, Hegel, and Heidegger (Studtmann, 2018).

The controversy of causality had found its resonance and heat with empirical philosophers such as Locke and Hume and transcendental idealists like Kant.² Hume's (1975) main argument of causality is that what we see or experience in our life is not necessarily happening in this way or that, it may happen in such a way because we only expect it to behave in this predictable action through a total experience that we have of a certain thing. Therefore, we do not see, for example, a falling stone to the ground because it has to fall down in this way, but we see it in such a matter, because we have expectational habits from previous experiences. Therefore, Hume's critique of causation revolves around that all we know is that things follow each other. If one hits a ball with another, for example, the second will move, but the seen sequence does not necessarily mean that the first ball was a cause of the second; there might be other unknown causes. We think the sequence of events is due to inevitable succession (cause and effect), because this is our experience of it; this is our habit of seeing it in this way.

Therefore, we need, as Hume suggested, to test alternative approaches in order to understand these laws of reason³ (Hume & Selby-Bigge, 1975). Regardless of Hume's philosophical doubts of causality, his argument seems to acknowledge its existence.

As a result, the world around us is a collection of images stored respectively in memory. All we do in the physical world turns into interconnected images of actual experience: our words, action or even our abstract concepts. These images, however, do not solely work, but they are causatively linked to a complex set of other images and sensations. The images and the way they are connected to each other are substantially our identity that we use to comprehend and even to

² For further discussion, see *Hume And The Problem Of Causation* (Beauchamp & Rosenberg, 1981); and *Kant And The Metaphysics Of Causality* (Watkins, 2005).

³ There was a controversy and disagreement between Kant and Hume with regard to causality and whether the knowledge is merely the information of senses or both reason and senses. In Hume's opinion: "the mind is carried by habit, upon the appearance of an event, to expect its usual attendant, and to believe that it will exist" (Hume & Selby-Bigge, 1975, p.75). Kant believed that Hume reached false conclusions because he had false hypotheses (Durant, 1961). However, one of Kant's responses to Hume's critique of causality and experience: "Experience tells us what is, but not that it must be necessarily what it is and not otherwise" (Kant, 1998, pp. 182-183).

judge the world and our existence.

Authorship: version of reality and logical perspective.

Since initial preparations and in every stage of production, documentary authors aim to convey a specific message of their visions of reality to the audiences who ultimately become potential authors. This message, which includes audiovisuals, comes to describe a certain event that happened, or is happening, or will happen into this life, or outside of it in front of an author's camera, or into design programs. It may include people, creatures and events that have certain stories to tell. This message could come in different contexts, and multiple forms depending on the composition of all elements within a story framework known as documentary.

The documentary authors endeavor to deliver their versions of reality as observers, and as creators. These versions are linked to us as viewers. It is given within a framework of our concerns and needs of knowledge, exploration, longing for beauty, curiosity, etc. Consequently, the documentary authors follow a narrative framework or structure with the awareness of audiences' and medium characteristics. They take from reality, as it is represented to them, what fits with their visions, audience expectations and medium features.

Therefore, the version of reality by the documentary authors is not only considered their version, but also our version as witnesses of their work. Regardless of the difficulty to reach a common understanding, we would praise certain work of an author if his/her contexts meet ours. Representing reality cannot be as it is due to the incapability of our tools and visions for providing an identical version, but rather the documentary authors represent what they perceive related to what we want, or what we need to know.

However, the structures adopted in documentary are basically subjected to logical processes, and hence to our logic of seeing reality. For example, linear documentaries in general may start with chronological sequences, and continue sequentially structuring the story elements by solving the documentary questions or leaving some of them unsolved (Crafton, 1994). The method of questions is consequently repeated in the whole documentary structures, which can expectedly lead to build a constant suspense as an attempt to find answers to those questions. Generally, the basic rule in making a documentary is that each unit in the documentary comes as an establishment of the next units or as a result of the previous ones. The documentary authors

are usually aware of the laws that bind a shot to another, and the reasons that require this kind of logic. Each shot's angle, movement, and size have a special story narrated within the whole context. The author's creativeness is basically based on constructing the internal documentary narrative; and hence, building reality is profoundly the knowledge of psychological structures of individuals, and of the given structures of reality, as we comprehend it.

However, the documentary history can tell us how the first documentary authors dealt with reality. For example, the works of Louis Lumière such as *Arrivée des Congressistes à Neuville-sur-Saône* (1895) and *L'arrivée d'un train en gare de la Ciotat* (1896) can be seen as the first pieces to refer to a documentary as an expressional concept of reality. These first examples of documentaries depict people's activities and routines. The reason why these films were considered to be documentaries is arguably because they portrayed what was supposed to happen, whether the camera had existed or not (Nichols, 2010). Viewing such terms 'event' and 'camera' can establish a later dialectical relationship between the theorists and practitioners of documentary.

Therefore, what distinguishes such an event from others is in fact the presence of the directors' camera, not only because of its ability to freeze a particular moment, but also because of its ability to record the actions of the event itself. The event and the camera can implicitly assume two other controversial relationships: the filmmaker and the viewer. Based on the above, the existence of this new genre of art at that time raised and still raises a controversial and philosophical question regarding reality, where the documentary term was used as a comparative concept to differentiate the documentary from other genres, especially the fictional films.

Agreeing that this documentary type presents/represents an event in a given reality (while taking into consideration the author's point of view, the subject, the time the event is recorded, the used medium, the viewer's interpretation of the film), may pose a complicated question: what reality are we talking about or what version of reality are we referring to? What is controversial in Lumière brothers' films is (for example, in *Sortie d'usine* (1895)) seeing the film characters pass naturally in front of the camera to give the impression that this was their real reactions, but when we talk about the time of making this film and about the camera size, the reality presented through the film can become doubtful, and that can clearly indicate that the

reality (although it happens as in the film) was remade and reconstructed based on the author's point of view (Favero, 2013).

The manipulation of reality can be clearly noticed in Robert Flaherty's *Nanook of the North* (1922), which is a real prototype of a documentary that records the lives of people as they struggle to live in a harsh Arctic environment (Galloway et al., 2007). It may be argued that the documentary final version is a realistic portrayal of what is happening (actually happened in the history of this family). But now we know that Flaherty has closely monitored the daily lives of these people. Based on the results of his observation, he represented and chose what might be considered a meaningful narrative based on temporality and causality. In the editing process, Flaherty chose the scenes and the clips that can provide a logical narrative in reliance on the appropriate cuts as an illusion of continuity.

Perhaps *Nanook of the North* film provides a good example of the so-called 'reality'. The reality in the documentary is not what happens, but rather what is chosen by an author and arranged in an attempt to present a selected version of an event that actually happened or is possible to happen.

Later, Grierson (1933) defined the documentary as "the creative treatment of actuality"(p. 8). This definition establishes a relationship between the reality, the author and the documentary, but it is framed within the aesthetics and the reconstructions; with a creative relationship that imposes on the filmmaker a great role of not only being as a mere observer, but even as an intervener in rearranging what actually happens in reality. This definition would later be cited as if it is a foundation of understanding the documentary concept and history. To this day, the concept of "creative treatment of actuality" is a guide for documentary filmmakers, where reality cannot be presented as it happens; but rather as a reconstruction embedded in an innovative narrative.

In general, photojournalism is a key factor in the emergence of the documentary genre, and later the set of documentary conventions. The photography of Eugene Atget is an example of traditional documentary as a representation that presents real and direct reality (Rothstein, 1986).

Authorship: reality between linear and interactive documentaries.

It is argued that the author of the traditional media used to have a final say in the construction of narrative, and the possibility of modifying or adding to narrative was slightly authorized if the viewer received it. However, the relationship between both realities (authors' and viewers' reality) in linear documentary does not look very passive, where the authors build their reality based on the equipment, medium, object and audiences. The audiences would eventually become the judges of their reality as well as the final authors whom they would produce their versions of reality from a given one. The final word is always going to be in the viewers' hands and mouths.

This relationship is an essential reference for the authors when intending to address the audiences. Therefore, the modification in linear documentary seems to be possible, but it remains in cognitive limitations. The viewers can modify what they see and hear based on their cognitive world, but they physically cannot do the same. In other words, this relationship is a productive relationship that does not end when the viewers finish watching the last moment of a documentary, because it is a knowledgeable circulation or a cognitive productivity that exchanges the meanings of reality and reproduces them as an endless product (Corner, 1996).

In general, "documentaries explore actual people and actual situations" (Rabiger, 1998, p. 1). The theoretical basis of any documentary is to present people and historical events (Juel, 2006). Any documentary story essentially expresses the author's point of view (Nichols, 2010). Thus, the documentary can be distinguished from a news bulletin on the basis of the author's point of view, which requires from the audiences to take a specific attitude on a particular issue (Jean Vigo as cited in Breschand, 2002). Instead of presenting an identical version of reality, the documentary can be understood as an attempt at presenting an unfiltered version of it (Favero, 2013).

In contrast, interactive documentary raises a fundamental question: are we still talking about the same authorship? In other words, does the author's reality remain the same in linear documentary and interactive documentary?

In this interactivity age, the authorship has become a blurry concept because of empowering the audiences through enabling the two-way flow of information in real time. This

relationship, which has arisen due to the correlation between the users and technology, has basically redefined the authorship, narrative and viewer, and also has redefined their reality that they refer to.

The author is traditionally regarded as an observer of the external world events, a chooser of certain pieces of this world, and an ultimate builder of it in a logical linear context. The author's point of view in the classic contexts indicates the way of seeing the historical world in a direct and non-symbolic way (Nichols, 2010). Therefore, Gifreu (2011) sees that the fundamental difference between classical documentary and interactive documentary revolves around control and authorship. The role represented by authorship in the classic documentary is to create a meaning from an observed reality and to present it to the user as an absolute version of the authorship. The classical documentary is simply existent because the authors have always wanted to present their stories of reality (Choi, 2009), in which they express their point of view about the historical world (Nichols, 2010). On the other hand, Bruzzi (2000) believes that the authorship is understood as negotiations with reality in which the author's work represents an attempt to understand this reality. Bruzzi (2000) sees the documentary as "a dialectical conjunction of a real space and the filmmakers that invade it" (p. 125). Therefore, the evolution of the documentary as seen by Gifreu (2010) reflects the transformations from representing reality to arranging it, and then to negotiating with it. According to Nichols (1991), the authors' involvement with the world and their social or political positions can be demonstrated by the documentary voice that addresses the audiences in two ways: the voice of commentary and the voice of perspective. In the first voice, the documentary expresses its point of view clearly while addressing the audiences directly. In the second voice, the audiences are responsible for concluding the author's point of view, where they implicitly feel that the documentary narrative is their narrative for the influence of its logic and rhetoric on their unconscious layers.

In contrast, the role of authorship in interactive documentaries has been gradually falling back when compared to traditional documentaries. The nature of interactivity has changed the authors' given reality: the authors in interactive documentaries have started to offer the audiences their mutual version of reality, not only as a cognitive version but also as a physical one. There are many interactive documentaries that allow the audiences to be authors to a certain degree. For example, the Egyptian interactive documentary *18 Days in Egypt* (2011) allows the

audiences to film the events of the revolution, and share them with the general story of the documentary project. This kind of documentary is called the participatory mode (Aston & Gaudenzi, 2012; Gaudenzi, 2013), which is one of the modes that can describe a certain type of interactive documentary.

The author's role in classic documentaries is to create meaning from a particular reality, and this is regarded as the author's version of reality and point of view. In contrast, the interactive documentary allows users to have control over narratives, which could consequently threaten the role of the classical authors, and thus their ability to construct meaning (Gifreu, 2010; Galloway et al., 2007). The author's one point of view in the classical narrative has changed to multiple points of view because of the active users' presence within an interactive environment. Generally, interactive documentary, in the scope of interactivity, conflict with the concept of author's control as one of its main features is to exchange (e.g., Haeckel, 1998; Zack, 1993). Thus, the responsibility for contextualizing the points of view becomes participatory between the author and the user. In this context, Berenguer (as cited in Gifreu, 2010) argues that the author's role turns to assist the users in exploring the content because the control over the interactive documentary discourse is no longer associated with the author.

As noticed in the interactive documentary classifications (e.g., Dankert & Wille, 2001; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012), most of the proposed classifications revolve around the user's ability to influence the documentary narrative, and hence, create a shared version of reality. As a result, with the user's ability to influence the documentary content, the authorship's control has shifted gradually to the benefit of the user.

Narrative: version of reality and logical perspective.

From the narrative perspective, Keith Beattie (2004) states, "central to the documentary presentation of an argument or arguments about the world is the role of narrative" (p. 19).

In general, the version of reality from the narrative perspective is limited and controlled with several main elements: medium, audience, user, the nature of observed objects, and the author's vision. These elements determine certain forms, rhythm, time and ethical standards of narrative structures. Therefore, the narrative version of reality is a version that operates within these criteria. The reality here is read within its correlation with other elements. Although there

is a united structural logic that the documentary uses to construct its own units, general themes or modes over the history of documentary have been used to represent reality. Nichols (2010) among others, for example, offered six modes of representation: the poetic mode which includes abstract and lyrical forms of documentaries; the expository mode: documentaries that imitate fiction films giving the author a substantial leadership and representing events with certainty; the observational mode: documentaries that observe objects without intervention; the participatory mode: documentaries that the filmmakers and participants are activity engaging and sharing experiences; the reflexive mode: those documentaries that focus on the process of making a documentary; and lastly, the performative mode that prefers motions instead of objectivity (Nichols, 2010, p. 34).⁴

However, in classical cinema and documentary, the existence of the subsequent shot or structure is a result of the previous one. The scene comes to link a series of shots in audiovisual context, mostly based on cause and effect (Dovey, 2002; Manovich, 1999) The Aristotelian method is essentially considered the basic role in constructing documentary, which is based on causality in order to create fluidity and continuity. The audiences are seen as observers, or as passionate critics of what they see (Marles, 2012). Manovich (2002) states that “cinema ... replaced all other modes of narration with a sequential narrative; an assembly line of shots which appear on the screen one at a time” (p. 69). However, instead of chronological order as a constructional process in making documentaries, evidentiary editing can be used as a method to argue a documentary issue based on logic (Nichols, 1991).

Consequently, each unit in the documentary narrative composes a small story. Each shot or unit in the documentary audiovisuals is an expression of certain logic taken from our logical categories, or rather the way we visualize reality. Therefore, documentary is a collection of

⁴ Bruzzi (2000) criticized Nichols’s models of representation and noticed that they have historical mistakes. For more critique of Nicholas’s models, see Carl Plantinga (1994). However, there are several other classifications of documentary representations. For example, Barnouw (1993) had descriptively categorized documentary into: “prophet”, “explorer”, “re- porter”, and “painter”. Similarly, Bordwell and Thompson (1997) classified four nonnarrative formal systems: “categorical”, “rhetorical”, “abstract”, and “associational”. Moreover, Michael Renov (1993) used several verbs to categorize documentary such as “to record, reveal, or preserve the image of a historical artifact”; and “to persuade or promote; to analyze or interrogate; or to express” (pp.12-36).

reality's logic. For example, cut as a transition is most commonly used in cinema and linear documentary for linking shots together as an expression of sequential continuity. It reflects our vision and logic of reality. Cut is our way to move from shot or scene to another, and in order to link two shots or scenes by cut, basic elements and conditions must be obtained such as the contrasts between objects, and between every two aliened shots concerning their angles, sizes, and movements. In contrast, jump cut is mostly avoided in classical films because it is regarded as an abrupt transition in a sequential film although it is now seen, when it is taken in a good way, as a violation of classical continuity, and as a magical effect of manipulating time and depicted objects.

Subsequently, a combination of shots, transitions and sounds is subject to our understanding of the external objects within their logical and relational contexts. Despite the fact that a narrative could have different templates, it is very similar in terms of internal linkages between a shot or structure and another. However, similarity between narrative logic and our logic does not mean it is logical, it is logical from our perspectives, and it is but a version of our vision of reality, not reality itself. It is known, for instance, that every element used in constructing the documentary narrative could distort the seen reality such as camera lenses and perspective distortion; editing and manipulating pace and time. Distortion of reality reflects the incapacity of our vision and tools to see an external reality as it is. Our tools and we are limited to only submit our version of reality.

Narrative: reality between linear and interactive documentaries.

Evolution of technology and equipment has recently added other dimensions of visualizing reality more than ever. Is it possible after all this technological evolution to argue the same narrative reality as in linear documentary? For example, cameras 8K UHD of total image dimensions of (7680 × 4320) twice the horizontal and vertical resolution of 4K UHD now have the capabilities that exceed the traditional system (DV, SD and even HD). With these cameras, it has become possible to see reality in more detail and clarity. Similarly, high-speed cameras such as Phantom v1610 can depict 1,000,000 frames per second. These cameras can give an opportunity to slow down the most rapid movements of objects, and to understand or see those movements that were impossible to see with neither a naked eye nor linear camera systems. In

addition, the technology of virtual reality has given the viewer the ability not only to view an event, but also to be physically a part of it.

Presented reality in a narrative through digital audiovisuals has mightily extended our vision, and it has become tangibly possible to have a total integration with a given reality as an alternative of an external one. Interactive documentary as a narrative is understood as a project that uses the Internet not only as a “delivery mechanism” in Galloway’s expression (Galloway et al., 2007, p. 12) but also as a mechanism of interacting with and of reconstructing the real.

The main difference between classical documentary and interactive documentary is mainly the change in the direction of communication, where the two-way communication offered by the Internet has enabled the user to be a real contributor in online content (O’Flynn, 2012). Considering the Internet as a constant communicational network, the interactive documentary can be, therefore, viewed as an ongoing project that depends on the multimedia provided by the contributors.

Therefore, technological characteristics have compelled the authors to have new ways of constructing the documentary narrative. They have shifted traditional narrative structures into complicated structures, where the structures of interactive documentary narrative do not go in one direction from A to Z, but it is considered as a complex network of possible points that go in different directions (Gifreu, 2011). Interactive documentary narrative does not follow a chronological order, but rather a database structure (Manovich, 2001). In contrast, narrative in linear documentary is often chronological, it is constructed on cause and effect (Dovey, 2002; Le Grice, 2001; Manovich, 2002), which make the continuity of a film sequentially logical, and it could be opened or closed narrative situated on the way of questioning the reality.

Nevertheless, the documentary explores and presents events, attitudes, people and historical facts (e.g., Juel, 2006; Nichols, 2010; Rabiger, 1998). According to Soulez (2014), interactive documentaries with this logic:

Are not only open texts but that they are themselves *part of the real world* (they are used as arguments and discursive tools in a public sphere in which we are ourselves immersed), they are part of what we can do ourselves in the world (commitment, action, and so on). (p. 162)

However, both documentaries share the fact that they try to present the reality although they may differ in the way they present it.

Medium or technological characteristics provided by the Internet has recently started to impose more or less new ways of filming and editing, and thus dealing with reality itself. This reality has become a potential entity, or it could be physically chosen from among multiple realities. Although reality in linear documentary is cognitively considered to be optional or potential; in interactive documentary, it is physically flexible and tangible, and it has more choices, where the user is able to physically participate in creating a reality from a given narrative structure. Andersen (1990) states: “an interactive work is a work where the reader can physically change the discourse in a way that is interpretable and produces meaning within the discourse itself” (p. 89).

What distinguishes the interactive documentary narratives is that they are presented as databases that require the audience to choose and construct (Hosseini & Wakkary, 2004). In this context, Manovich (2001) states, “Web-documentaries are databases, structured collections of items that can be accessed and organized in various ways” (p. 194). The reality presented in interactive documentary is a common reality (Chanan, 2007), since the user is perceived as a partner of its construction, not only as an explanatory role but also as a physical engagement (e.g., Aston & Gaudenzi, 2012; Goodnow, 2004; Koenitz et al., 2015; Nash, 2012). In the mutual sharing of reality, the user in selecting the content from a given database is seen as a constructor of meaning, where the meaning is unstable, changeable and extendable (Hudson, 2008).

In this technological age, the forms of interactive narratives challenge the concept of linear temporality as well as the principle of narrative coherence (Le Grice, 2001; Whitelaw, 2001). Digital narrative forms are basically not linear; the used tools such as the computer in storing these narrative forms do not need a linear process, where they are based on RAM (Random Access Memory) (Le Grice, 2001). Therefore, Manovich (2002) argues that “as a cultural form, database represents the world as a list of items and it refuses to order this list. In contrast, a narrative creates a cause-and-effect trajectory of seemingly unordered items (events)”(p. 225). Likewise, Hudson (2008) emphasizes that database documentaries “loosen assumptions about documentary from fixed modes (expository, observational, personal) and

towards open modes (collaborative, reflexive, interactive)” (p. 2).

The hypertext is a basic way to connect and access stored materials or databases, in spatial order rather than in linear order (Dovey, 2002). Nelson (1981) describes the language of hypertext used by the interactive documentary as “non- sequential writing”. In order for us to experience and understand the documentary story, we are required to navigate in these databases, so that the relationship between the portions is not understood based on the narrative order but through a network of links that binds one database and another (Dovey, 2002). Interactive documentaries are understood by means of navigation and interaction with using hypertexts (Gifreu, 2011). Documentaries that rely on the database or fragmentation give the user random access from several windows, which in turn can make the narrative changeable (Marles, 2012). The user becomes able not only to observe but to explore, modify and exchange (Meadows, 2002). Thus, the interactive documentary can be viewed as a connected multimedia through a network of hypertext that organizes the ways to reach them (Gifreu, 2011).

Consequently, the narrative structures of a reality in the interactive documentary seem to be adjustable and contributable. Although the plots made within a narrative are linked through a general topic, they may be considered less coherent compared to linear documentary narrative. Therefore, the narrative structure in interactive documentary is essentially a random proposal conditioned on the user to activate it or to make it logical, to create it and reconstruct it. It is participatory logic that breeds through individual interactions.

However, online interactive films, both fiction and documentary, could lack the ability to create real emotions with the user. According to O’Flynn (2012), the reason could lie in the structures of these films in which they are not based on consistency, where the interactive digital narratives abandon the strong dramatic plot that are built on logical sequences. The second reason can be in the way of structuring the fixed user interface, which often requires interaction operated by choosing the next or previous action.

On the other hand, although interactive documentary narrative is based on databases, the order between these databases in many documentaries is still linear. Thus, Manovitch admits through his critical question the dominant of linear forms in media: “why do narratives still exist in digital media?” (as cited in Hayles, 2005, p. 2); and with his another statement “that new

media does represent a new avant-garde of information society even though it often uses old modernist forms” (Monovich as cited in Marles, 2012, p. 81). Accordingly, our way of thinking is still linear regardless of using database logic as a non-linear narrative. In this regard, Hales (2002) articulates: “in this case the technology is not leading to a change in thinking simply a way of getting things done more efficiently and more economically”(p. 105). Similarly, Le Grice points out “the principles on which they (the edited segments) are combined in the finished product conform to linear narrative concepts. The technology allows non-linearity—the concepts remain linear” (Le Grice as cited in Marles, 2012, p. 80). Manovitch (2006) believes that there is a delay of changing the linear thinking and gives an example of this delay: “one way in which change happens in nature, society, and culture is inside out. The internal structure changes first, and this change affects the visible skin only later” (Manovitch, 2006, p. 2).

Furthermore, Manovitch (2001) explains the difference between the database and narrative in his book *The Language of New Media*, considering the narrative as linear and sequential, where the database “can support narrative, there is nothing in the logic of the medium itself which would foster its generation” (p. 201). Hayles (2005) argues that both database and narrative terms are insufficient to explain the new interactive media phenomenon. She instead proposes the term ‘*possibility space*’ as a flexible and broader concept for understanding and analyzing narrative and database.

Viewer: version of reality and logical perspective.

In traditional media, the viewer is perceived as the last construct in the models of the communication process. It is well argued that traditional mediums do not have real feedback between the author and the viewer. The relationship is characterized with passivity when compared to interpersonal communication and interactive technology.

Nonetheless, this relationship cannot be understood in this passive way, because the documentary authors, by constructing their version of reality, they in fact construct the viewers’ reality, or rather they produce within an artistic audiovisual process the viewers’ version of reality. Therefore, the success of receiving a mutual version of reality reflects the extent to which the documentary authors are able to make their versions of reality a quite similar to the viewers’ version (Nichols, 2010). Moreover, as the viewers receive a narrative, they cognitively reproduce

it in their own way and style (edited reality) based on their mental and psychological structures. On this account, it seems impossible to have similar interpretations of what individuals see or hear even though they use a homogeneous interpretative logic. Everyone has his/her own perspective even though what is happening in front of our eyes and cameras looks similar to each other. Individual differences can remarkably bring to life many realities from each single scene or story.

From the viewer's perspective, the documentary reality can be readable and editable as soon as a narrative is received, where the viewer becomes in return an author of another reality produced from a given one. The classic narratives usually imply the Aristotelian model of structuring the documentary events. The goal of this structure is to immerse the viewers into a given story; to evoke their emotions with its characters; and to draw a similarity between the film's reality and the viewers' reality (Rieser & Zapp, 2002). While watching a documentary, viewers become witnesses and emotional judges (Rieser & Zapp, 2002). The construction of the classic films, based on the linear sequence and causality, revolves around building identification with the audience (Dovey, 2002).

However, documentary is a joint product of many players including: the author, the narrative and the viewer. As it has frequently been argued in this section, the author and the viewer are considered to be a mutual author of causality. If the viewers, while watching a documentary, for example, hear a knock on a door, they will expect the presence of a door. If the door is not shown in the documentary, the viewers will create a door in their imagination (a picture of the door that they select from other possible pictures they have in memory). They choose one of these doors according to the sounds they hear, and according to their mood, psychological state, experience, etc., but if the door is shown, the viewers will expect the presence of a person or a subject that has made the sound, and the presence of a person or a subject means that there will be a series of events and actions. Consequently, the documentary authors may sometimes provide an incomplete version of reality (as it never has been complete, it is just a fragment of it) or they may present a version with logical contradictions, where the viewers have more cognitive work to logically reconstruct or reorder these missing or contradicting parts within their logical contexts.

In other words, a completely presented reality within a logical-sequenced plot is more likely that the viewers do not have a variety of choices to build their own logic of a given reality. In contrast, incomplete reality or a contradicted logic is regarded as an invitation for the viewers to exert more efforts to demystify or to build the missing structures. As a result, the viewers see reality within logical sequences based on causality whether a given reality is suitable with their mental sequences or not.

Viewer: reality between linear and interactive documentaries.

Although the experimental research on the viewer is considered to be scarce especially on interactive documentary domain, it can be assumed, through analyzing the technological features, that there are new viewers who have their own understanding of a given reality. The emergence of the new viewers is considerably argued either as a result of technological characteristics or as an interaction between both viewers and technology.

However, the viewers' version of reality in linear documentary is a modified version of the author's reality, but as a structural cognitive version that relies on how the viewers recognize it and interpret it. The viewers here are able to modify, contribute, create, and they could produce the whole version of a given reality, but this version remains in a cognitive scope, and in an imaginative framework. The cognitive interactivity depends on the permitted amount given by the author to be contributable or cognitively modifiable. For example, the more the authors make their version of reality exciting, addressing the viewers' concerns, and incomplete, the more it allows the viewers to cognitively and imaginatively interact. This, however, cannot be a law of getting the viewers' attention, sometimes a simple structure can play a magical impact of overwhelming the viewers with the documentary scenes; and sometimes incomplete or complex version of reality could fatigue the viewers and make them bored if such a version of reality is not profoundly constructed.

In the interactive documentary, users are invited to cognitively and physically participate in choosing and navigating the documentary content without following a temporal direction (Brown, Del Favero, Shaw, & Weibel, 2003). Users, by choosing and navigating the documentary database, are actually constructing their stories (Hudson, 2008). More precisely, they "construct meaning out of the contradictory voices" (Belsey, 2002, p. 129). Consequently, the given participatory roles convey some aspect of authorship to the users (O'Flynn, 2012),

where they can represent reality (Odorico, 2015), or reconstruct it every time the narrative is accessed (O'Flynn, 2012).

Cohen (2012) sees that “when audiences can contribute to the content of Database Documentaries, the work is open to new ideas and new forms of articulation... There are ways in which the content ceases to become an absolute narratively defined thing”(p. 335). Therefore, users' role in interactive narratives changes from observers to participants (Ascott, 1990). Nash (2012) understands interactivity in the interactive documentary as user control, which is “the user's ability to exert control over content” (p. 199). Thus, interactivity has given the user extra dimension of immersion, and a varied degree of control over the documentary sequences and even over the narrative outcomes (Murray, 2017).

In high interactive documentary, the user is considered as an author or as an assistant author who competitively presents a shared version of reality (Gifreu, 2011); or rather a full version of it. Therefore, this participatory version may be regarded as another version for potential users who only watch or cognitively interact. The users here are perceived with their ability to modify, add, and create by having the two-way communication enabled with the authors or with the documentary itself. The authors suggest certain points and the users have the ability to choose and build their own reality that they prefer throughout navigation, browsing, suggestions, filming, editing, etc.

On the other hand, as in the traditional documentary, the interactive digital narratives create empty spaces sometimes for the users to be filled with their reactions (Jenkins, 2004). Interactivity in the interactive documentary narrative can be recognized based on giving the user an essential role to fill in the story (Gaudenzi, 2013). This role can be categorized into three parts according to the participants' ability to influence the documentary content: semi-closed, semi-open, and completely open (Gaudenzi, 2013). The user, in semi-closed documentary content, cannot change the content despite the ability to browse and select; the user, in the semi-open content, can participate but without changing the documentary structure; and finally, the user and documentary exchanges the roles and are able to adapt to each other in a completely open documentary (Gaudenzi, 2013). However, Manovich (2001) believes that interactivity associated with computer-based media is tautological because the modern art has always been based on

interactivity in terms of leaving gaps in the work to be filled with the viewer's knowledge and explanations.

Summary

In conclusion, the previous construct of the literature review explored the interactive documentary in five contexts: interactive documentary as a compound term; Internet 2.0 and interactive documentary; existing definitions of interactive documentary; interactive documentary: taxonomy and features; and representing reality in linear and interactive documentaries.

In the context of interactive documentary as a compound term, the section has presented a general view concerning the problem of defining the interactive documentary genre from two perspectives: the perspective of documentary and the perspective of interactivity. In the first perspective, the documentary term was often associated with reality as a strategy to differentiate it from other genres. However, using reality as a comparative instrument can make the definition more complex. Therefore, in the last part of this section, the study has proposed to treat reality into three directions: reality of authorship, of narrative and of viewer. Reality thus becomes as an instrument of analyzing and understanding the common factors of presented versions and of creative treatment rather than being only a comparative instrument. From the perspective of interactivity, the problem of defining interactive documentary involved the fact that interactivity is also a term that has a long history of inconsistency argued into three main directions: interactivity as characteristics of a medium, interactivity as a perception and interactivity as a communication process. Interactivity in this study is perceived as a communication process that includes both interactive features and individual perceptions. As a result, the interactive documentary can be understood as a product to communicate with the world by exchanging our vision of it as mutual authors.

In the context of the Internet 2.0 and interactive documentary, the study endeavored to understand how the Internet 2.0 influenced the documentary. The study considered the Internet 2.0 to be the cornerstone on which the new form of the documentary has emerged.

In the context of the existing definitions of interactive documentary, the study observed that there were no substantial agreements on the definition of this genre. However, it can be

concluded that most given definitions of the documentary revolved around viewing and analyzing the documentary within the interactivity context and what users can do toward an interactive content. The repeated concepts used in defining interactivity such as control, exchange, participation, contributions and influencing content are remarkably reused in the field of interactive documentary. Therefore, the dimensions and concepts of interactivity seemed to be the theorists' greatest preoccupation when defining the interactive documentary. However, the term '*documentary*' itself in these definitions is overridden in the studies of interactive documentary because of the wide historical problems.

In the context of the interactive documentary: taxonomy and features, it can be concluded that although different terms and taxonomy were used to classify existing interactive documentaries, they all revolved around measuring the user's ability to influence an interactive documentary discourse. Therefore, based on the given space for the user to influence the content, the interactive documentary can be accordingly classified.

In the context of representing reality in linear and interactive documentaries, it can be argued that despite persistent attempts by scholars to define reality in the documentary domain, the concept still raises ongoing controversies. If the interactive documentary is seen as an extension of classical documentary, a profound comprehension of linear representations seems to be an indispensable way forward. The three main elements of producing a documentary, author, narrative, and viewer, could offer an essential key to unlock the uncompromising concepts of reality, where the documentary can be operationalized as a product that melts down these representations. However, disassembling these three representations is basically necessary in order to study and examine the common characteristics that compose them. One of the suggested methods in this section is to look at these representations of reality through their versions of it, and the contexts that connect the fragments of reality to each other. Therefore, this part was an attempt to establish contexts that can help to understand the represented reality in both classical documentary and interactive documentary. As a result, it is difficult to provide identical versions of the external reality provided by the three elements: author, narrative and viewer. Furthermore, although viewers have a mutual interdependent and interpretative logic, their representations and interpretations of reality are constantly diversified.

User and Interactive Documentary: Toward Experimental Research

This section of the literature review aims to provide a guideline that can first assist in defining and analyzing the interactive documentary, and then measuring the relationship between the user and interactivity within the framework of interactive documentary. It can be concluded from the first two sections of the literature review that this type of documentary has emerged as a result of advanced technology and the transformation from the Internet 1.0 to the Internet 2.0. The technological characteristics have basically activated the latent interactive aspects in linear documentary such as two-way communication in real time, which eventually has activated the role of the user as an effective participant. These interactive features have redefined the relationship between the viewer/user, author and narrative.

Nevertheless, although this new documentary genre has several terms, the term '*interactive documentary*' has been applied to this study, because of two main reasons: first, many recent studies have begun to apply this term (e.g., Almeida, & Alvelos, 2010; Choi, 2010; Galloway et al., 2007; Gaudenzi, 2013; Gifreu, 2011); and second, this study considers the term '*interactivity*', associated with the interactive documentary, to be more accurate than other used terms, especially that the transformations that the documentary has passed through could fall under the umbrella of the same transformations experienced by most of the media. Therefore, the interactive documentary term extends to include: interactive features; relational transformations in classical communication models, including the activation of two-way communication channels; the growing importance of the user; and lastly, the gradual decline of the author's control.

After studying the literature review on interactivity and on interactive documentary, it is perceptible that the documentary, without being associated with interactivity, raises many questions, all of which centralize on the documentary itself such as: the problems of definition (e.g., Nichols, 1991) and the problems of reality or representing reality (e.g., Kevin & Cousins, 1996; Nichols 1991; Ward, 2006). Although it is possible to accept that the documentary is a non-fiction genre as a comparison with fictional films, this does not prevent documentary traditions, associated with the theoretical framework, to emerge to the surface. One of which is the relationship between the viewer and the author, which was usually conceived as a passive

relationship due to the lack of two-way communication between both members.

However, linking documentary with interactivity implies that there is a participatory or interactive process that occurs among members of the communication process within the framework of documentary as a non-fiction structure. On the other hand, the emergence of interactivity along with the documentary has caused heated debates among scholars that were concerned with founding an accurate definition of interactivity. In a general sense, interactivity was often viewed as an independent variable to describe media and their capacity of producing interactive experiences (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001); and as a dependent variable to measure the audiences' attitudes toward the media or the included interactive features (e.g., Day, 1998; Kioussis, 2002; Newhagen et al., 1995; Wu, 1999, 2006).

Consequently, documentary as a traditional form generally involves the process of production, the constant debate of reality and definition. The presence of a documentary on the Internet and the use of interactive features have generally positioned this new genre in the scope of interactive media. This new form imposes new classifications, most of which can follow the classifications of interactive media themselves (see Dankert & Wille, 2001; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012). It is therefore possible to assume, based on the literature review, that interactive documentary is related to the traditional documentary in terms of its objectives, including "the creative treatment of actuality" (Grierson, 1933, p. 8) away from the attempts to represent reality as it is. However, the communicational relationship, with the presence of interactivity, conceals transformative relationships in all contributing constructs of documentary. In other words, the author, message, medium and viewer are still present in the interactive documentary not as a vertical relationship, but as an interactive and interchangeable relationship, so that the author can become a viewer and the viewer can become an author.

As argued earlier, interactivity requires the presence of active users, where they can be in an interactive relationship with the documentary and its author, and where they can influence the content. In this regard, there are constant assertions of many researchers that interactivity is only potential (e.g., Jensen, 1999; Rafaeli, 1988). Yet, users are practically absent from the scene for several reasons, including: Several studies on interactivity and interactive documentary have treated users as active members without providing empirical studies on their interactions; most of

the studies and definitions on the interactive documentary have come to classify this type of documentaries (e.g., Galloway et al., 2007; Nash, 2012). As a result, it can be assumed that interactivity is designed to engage users in a system/documentary, but we still do not know how these users understand it especially in the domain of interactive documentaries.

Nonetheless, while several studies have recently applied on users' perceived interactivity, especially in the field of advertising and marketing (e.g., Jee & Lee, 2002; McMillan & Hwang, 2000; Wu, 1999, 2005), their results were varied. This suggests that more experimental studies should be applied in an effort to understand the relationship between the user and interactivity, but in the context of the documentary story. Interactive documentary is a relational concept that is not only related to user perception, but also to the documentary story that uses interactive features to convey a message to the audience.

The following part of this section provides a framework for measuring the relationship between the user and the interactive documentary. This framework is derived from the studies on interactivity and interactive documentary. In this perspective, the study believes that the relationship between the user and interactive documentary can be analyzed and studied in the scope of interactivity studies, since interactive documentary uses interactivity as a mechanism of communication, of constructing reality, and exchanging it with all participating parties.

To measure the relationship between the user and the interactive documentary, the study presents and discusses these basic elements: interactivity documentary as an actual interactivity, interactivity documentary as a perceived interactivity, interactive documentary as a communication process, narrative engagement, attitude toward the interactive documentary website, perceived involvement, and users' actual interaction.

Interactive Documentary as an Actual Interactivity

Actual interactivity can be defined as "a characteristic, feature, property or capability inherent in a medium, or an interaction system that enables or facilitates an interaction between two parties" (Wu, 2006, p. 88). By reviewing the studies on actual interactivity (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001; Fiore & Jin, 2003; Sundar et al., 2003), it is possible to conclude that the main focal point of these studies was centered on three essential dimensions: two-way communication or responsiveness, real time and user control.

In the two-way communication dimension (e.g., Beniger, 1987; Bretz, 1983; Chesebro, 1985; Duncan, 1989; Durlak, 1987; Garramone et al., 1986; Heeter, 1989; Kirsh, 1997; Pavlik, 1998; Zack, 1993), most of the studies were concerned with conceptualizing actual interactivity based on the capacity of a medium or a system to provide two-way communication. The capacity of a medium or a system in the scope of actual interactivity is understood in three directions or assumptions: a system that is capable of providing two-way communication/responsiveness, exchange and participation in real time; the effectiveness of this system depends on the presence of active users; and the conversational mode is mainly used and resembled in interactive media (Wu, 2006).

Therefore, the adequacy of a medium is sometimes measured by its capacity to continuously respond to user input, where the sender and receiver can exchange roles. The dimension of responsiveness is often conceptualized on the basis of interpersonal communication (Bretz, 1983; Heeter, 1989, Williams et al., 1988). In this regard, DeFleur and Ball-Rokeach (1989) assert that “interactivity generally refers to the processes of communication that take on some of the characteristics of interpersonal communication” (p. 341). Interpersonal communication is an ideal model to be resembled in interactive media “because the sender and receiver use all their senses, the reply is immediate, the communication is generally closed circuit, and the content is primarily informal or ‘adlib’” (Durlak, 1987, p. 744). Nevertheless, it is difficult for digital media to reach the full potential of interpersonal communication for they both have different natures (Schudson, 1978).

In the real-time dimension, most of the previous studies have linked the responsiveness dimension with the real-time dimension (e.g., Campbell & Wright, 2008; Coyle & Thorson, 2001; Novak et al., 2000; Steuer, 1992); and sometimes, the presence of interactivity depends entirely on the real-time: “We will use the term interactivity to refer to situations where real-time feedback is collected” (Straubhaar & La Rose, 2000, p. 12). McMillan and Hwang (2002) conceive the time dimension in two ways: time to find and time to load, referring to the period of time that could take from a user to search for given information; and the time needed for a site/system to process the user input. Rice (1984) connects real-time with user control. Williams et al., (1988) link options, as an expression of control, to time. Steuer (1992) associates time with interactivity, and defines the interactivity as “the extent to which users can participate in

modifying the form and content of a mediated environment in real-time” (p. 84). Real-time in a mediated system refers to the speed of absorbing users’ actions. Steuer (1992) stresses the importance of the time factor because the distance between intermediate experiences and the experiences of daily life can be approximated. The time spent by the user to view a website may reflect a behavioral measure that can be used to assess interactivity (Hoffman & Novak, 1996; McMillan et al., 2003; Wu, 2006).

In the user control dimension, the majority of the previous studies have focused on the efficiency of a system in which the user can influence the content. For instance, Jensen (1999) defines interactivity as “a measure of a media’s potential ability to let the user exert an influence on the content and/or form of the mediated communication” (p. 201). Likewise, Lombard and Snyder-Dutch (2001) consider interactivity as “characteristic of a medium in which the user can influence the form and/or content of the mediated presentation or experience” (p. 10). In the same way, Steuer (1992) identifies interactivity through the capacity of a system to enable the user to modify the content in real time; while Rogers (1995) connects control with the ability to exchange roles. In particular, user control can be defined as:

The degree to which an individual can choose the timing, content, and sequence of a communication act, search for alternatives, enter message content into storage, etc., the two or more participants in the interactive communication usually share control over their exchange of information. (Rogers & Allbritton, 1995, p. 180)

Therefore, the user’s ability to control and to interact depends on the degree of available choices (e.g., Bezjian-Avery et al., 1988; Liu & Shrum, 2002); the degree of modifiability (Goertz, 1995); and the ease of adding information (Heeter, 1989). In general, the concept ‘*users in control*’ reflects the potential of media to offer the user the facility to select, add, participate and modify.

However, actual interactivity is functionally studied and analyzed based on the presence of interactive tools in a website or a system (e.g., Ahren & Stromer-Galley, 2000; Ha & James, 1998; Massey & Levy, 1999; McMillan, 2000; Neuman, 2000; Schultz, 2000). For instance, Ha and James (1998) point out that “the measurement of interactivity of a website begins with the presence of interactive devices for each dimension of interactivity” (p. 465). Ghose and Dou

(1998) state: “We expect that the attractiveness of sites would increase with the increase in the number of interactive functions” (p. 30). Likewise, Aoki (2000) suggested that degree of interactivity “may be measured by the number of tools presented in a website” (p. 5).

Nevertheless, a comprehensive look at the literature review can reveal the size of inconsistency among the researchers about appropriate tools that can express the actual interactivity dimensions. In general, the studies on actual interactivity tended to classify the media into two categories: high interactive media and low interactive media. The high interactive media are the media that have interactive tools characterized with two-way communication in real-time, and user control. The technical forms of these tools depend entirely on the used medium, subject, target audience and intended goals. For instance, interactive tools of marketing websites can differ completely from those of the interactive documentary websites. Nevertheless, there are common interactive tools that can relatively be found in all websites: search engines, registration form, mapping databases, transitions, monitoring applications, response devices, hyperlinks/clickable buttons and texts, graphics, animations, etc. The low interactive media are those media that lack the appropriate interactive tools that can supposedly help to exchange communications with users.

However, in the interactive documentary domain, an overview of the interactive documentary literature can provide a clear evidence that interactive documentary was implicitly classified based on the basis of actual interactivity. Interactive documentary as an actual interactivity is perceived on the capacity of a documentary in which the user can influence its content in real time. Although the terms used to classify interactive documentaries are varied, they all revolved around measuring the effectiveness of documentary in responding to user action. All the classifications of interactive documentary (e.g., Dankert & Wille, 2001; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012) can be summarized in what Gaudenzi (2013) suggested: conversational documentary, hypertext documentary, participatory documentary and experiential documentary. In the conversational documentary, the user interacts with the system similar to the way of conversation with a computer; In the hypertext documentary, the user is an explorer of the documentary multimedia databases; in the participatory documentary, the user can attribute to the content and can involve the online production such as editing and shooting; and finally, in the experiential documentary, the user is physically experiencing the virtual

reality.

Nevertheless, it is common practice to find documentaries that combine a mode and another. For example, all types of interactive documentary can be based on hypertext to connect their databases. Classifying an interactive documentary as a hypertext documentary, for instance, means that the dominant feature used by its system is apparently the hypertext. Likewise, classifying an interactive documentary as a conversational documentary means that the dominant feature used by its system is the conversational mode and so forth. Essentially, the common features in interactive documentaries regardless of their classifications are multimedia, databases, and interactive features that range from navigational tools, to editing and modifying the content.

Consequently, it can be deduced from the above that there is a similarity between the studies of actual interactivity and of interactive documentary. Both studies are concerned with the extent of a system/documentary to be able to respond in real time and to let the user influence its content. In the course of responsiveness dimension, the interactive documentary can be understood through its capacity to enable two-way communication, exchange and participation. This dimension is not limited to the response of the documentary team, but it involves the interactive documentary itself through providing the effective tools that can reflect the documentary willingness to be influenced by user input. Describing a documentary as a responsive system indicates its ongoing capacity to interact with the user.

Furthermore, the real-time dimension indicates the capacity of an interactive documentary to respond in real-time or the speed of interaction to user input. The speed of interaction can refer to three types: the Internet speed as a technical concept; the speed of interaction with the documentary itself expressed in navigational tools and interactive features; and lastly the speed of the documentary team to respond to user inquiries.

Finally, user control in the course of interactive documentary refers to the capacity of a documentary to let the user influence its content. This influence may take many forms including: modification, contributions, participation, editing, etc.

Interactive Documentary as a Perceived Interactivity

By exploring the previous literature review of perceived interactivity, it can be

concluded that there were three main dimensions used to understand, conceptualize and examine the perceived interactivity: perceived two-way communication or perceived responsiveness, perceived real-time and perceived user control. Typically, perceived interactivity can be defined as “a psychological state experienced by a site-visitor during the interaction process” (Wu, 2005, p. 30).

In a general sense, if the main dimensions of actual interactivity were two-way communication or responsiveness in real-time and user control, perceived interactivity is therefore centralizing on how individuals conceive these dimensions, and how their conceptions, for example, influence their attitudes toward the website, involvement, etc.

The importance of perceived interactivity is originated from its use as an essential tool to evaluate the actual interactivity. Individual perceptions are a substantial evaluator to say, for example, this website is enjoyable or boring. Therefore, understanding users is premised on analyzing their perceptions of interactive tools (Downes & McMillan, 2000; Morrison, 1998; Rodgers & Thurson, 2000; Sohn & Lee, 2005). In this sense, Schumann et al., (2001) emphasize that “ultimately it is the consumer’s choice to interact, thus interactivity is a characteristic of the consumer, and not a characteristic of the medium. The medium simply serves to facilitate the interaction” (para. 11). Consequently, several studies have attached importance to perceived interactivity more than actual interactivity (e.g., McMillan & Hwang, 2003; Sohn & Lee, 2005; Wu, 1999).

In the perceived two-way communication or perceived responsiveness, exchange roles and information between both members of the communication process is essential to develop an interactive relationship (McMillan & Hwang, 2002). In this respect, Wu (2006) identifies the perceived responsiveness from: “(a) the site-owner, (b) from the navigation cues and signs, (c) the real persons online” (p. 91). Perceived responsiveness focuses on real-time communication and exchange with a system, other users, applications and products. Technology may provide effective tools that can allow the user to exchange communication and interact with the product or system in real time, but the real meaning of two-way communication, of real time relies on how users perceive both concepts.

Communication experiences may occur between user-to-user, user to multiple users and

users to systems. These experiences can also indicate the degree of involved interactions (e.g., Hoffman & Novak, 1996; Rust & Oliver, 1994). On the other hand, Lary (1990) asserts that the success of a medium depends on having aspects similar to interpersonal communication. Interpersonal communication seems to be a criterion for evaluating interactive experiences (e.g., Bretz, 1983; Heeter, 1989; Williams et al., 1988).

Furthermore, many studies of interactivity have incorporated the real-time as an inevitable factor of perceived interactivity since it is an intrinsic component of interpersonal communication (e.g., Lombard & Ditton, 1997; Wu, 2005; Zeltzer, 1992). The time factor is very important in interactive media because users “can work in their own time and at their own pace, choose their preferred navigational pathways and delivery systems and develop their own mental models and schemata” (Latchem et al., 1993, p. 23). Furthermore, linking interactive communication with real-time makes these media more attractive (e.g., Finn, 1998; McMillan, 2000), and similar to daily life experiences (Steuer, 1992). However, Finn (1998) suggests that interactive experiments should not always be fast or in the real-time. On the other hand, Kiouisis (2002) stresses the need to distinguish between the objective criteria of speed as a technical term and the individuals’ perceptions of speed since they are both changeable concepts over time (Kiouisis, 2002). Consequently, from users’ perceptions, the speed of a responsive system during navigation and access to information is essential to enjoying an interactive experience (e.g., Mahood et al., 2000; Nielson, 2000; Wu, 1999).

In general, Wu (2006) prefers using the term ‘*responsiveness*’ rather than the term ‘*two-way communication*’, because old and new media cannot be distinguished on the basis of two-way communication since the old media can support such communication in several forms such as direct marketing and television advertising. In the same context, Rafaeli (1988) employs the term ‘*interactive communication*’ instead of the term ‘*two-way communication*’ because two-way communication is non-interactive and can be “present as soon as messages flow bilaterally” (p. 119).

Perceived control dimension is identified as a concept of participation (McMillan, 2000). Wu (2006) proposes a practical definition of perceived control: “Perceived control over (a) the site navigation, (b) the pace or rhythm of the interaction, and (c) the content being accessed”

(p. 91). Thus, many interactivity theorists have positioned perceived control as the core of interactivity (e.g., McMillan, 2000; McMillan & Hwang, 2002; Wu, 1999, 2006), or as a result of perceived interactivity (Hoffman & Novak, 1996). Perceived control is viewed as users' sense of being in control over the site, content, and speed (Wu, 2006). The technology has changed the nature of communication from one-way to two-way or multi-directional communication. The linear relationships between the user, author and product/story have transformed into non-linear relationships. However, technological features remain essentially facilitated tools, where the whole process depends on user perception.

In addition to the previous dimensions, Wu (2005) adds personalization, as an important dimension of perceived interactivity. Wu (2006) practically defines personalization as: "Perceived personalization of the site (a) as if it were a person, (b) as if it wants to know the site visitor, and (c) as if it understands the site visitor" (p. 91).

In general, personalization has been studied in different fields such as e-commerce, computer science, information science, and social sciences. For example, in e-commerce, Kasanoff (2002) defines personalization as "the capability to provide users, customers, partners, and employees, with the most relevant web experience possible" (p. 15). In computer science, personalization could refer to "a toolbox of technologies and application features used in the design of an end-user experience" (Kramer, Noronha, & Vergo, 2000, p. 44). In information science, Kim (2002) identifies personalization as "delivering to a group of individuals relevant information that is retrieved, transformed, and/or deduced from information sources" (p. 30).

There were several terms used interchangeably with personalization such as customization (e.g., Wachob, 2002; Nielsen, 1998) and adaptation (e.g., Schneider-Hufschmidt, Malinowski, & Kuhme, 1993). Adaptation, for instance, refers to the characteristics of a system or a website to be able to adapt to users' inputs or actions. According to Amoroso and Reinig (2003), personalization can be categorized into four dimensions: user-behavior tracing technologies, personalization database technologies, personalized user interface technologies, and customer support technologies. User-behavior tracing technologies are responsible for providing data of users' online behavior, which can help to identify users and respond to them accordingly. This dimension consists of cookies and tracking software packages. Personalization

database technologies include among others statistical analysis, recommender system and user profiling. Personalized user interface technologies contain user interface design and adaptive hypermedia. Customer support technologies include intelligent applications that can dedicate user location, activity and surrounding environments.

On the other hand, Blom (2000) distinguishes three motivations to personalize: access to content, achieving work goals, and adapting to individual differences. Rossi, Schwabe and Guimarães (2001) distinguish between what users perceive and how they perceive. Their framework revolves around personalization for links, the structures of navigation, and the context of navigation. Likewise, Wu, Im, Tremaine, Instone and Turoff (2003) present two dimensions of personalization in e-commerce. In the first dimension, four aspects are related to content itself, user interface or how the content is presented, the channel in which the content is achieved, and what users can do with the system/website. The second dimension concentrates on the target of personalization, where the system can be adaptive to individual needs.

However, although technological features can provide users with control and choice, little is known about users' perceptions of these features and their suitability to meet their needs. The impact of interactivity is not necessarily about the considerable amount of interactive features. Users sometimes do not tend to use interactive features and settings after being adjusted for the first time (Williams, 1996). Likewise, a group of researchers believe that high level of interactivity may not have an impact on users (e.g., Ariely, 1989; Bezjian-Avery et al., 1998; Liu & Shrum, 2002). For example, Sundar et al., (2003) conclude that high interactivity may be negative as it may require a lot of efforts and may lead the user to feel bored. Thus, Wu (2006) emphasizes the necessity of measuring perceived interactivity, while Williams et al., (1988) suggest developing a scale to measure both actual interactivity and perceived interactivity.

Nevertheless, some theorists see that users are in control once they are in an interactive system (e.g., Bezjian-Avery et al., 1998), and they are always more active with high interactive systems (e.g., Liu & Shrum, 2002). Although these new systems are assumed to have a high level of interactivity and of user control, this does not guarantee a continuous interaction, where the interaction or control can be interrupted at any stage of user experience (Wu, 2006). This indicates that much work remains to be done in order to understand how users understand this

interaction and control through empirical studies on the relationship between users' perceptions and interactive documentary.

Furthermore, there are many studies in specific fields, such as advertising and marketing that have applied perceived interactivity to measure the relationship between actual interactivity and perceived interactivity. The results of these studies were varied: while some studies have found a significant relationship between the two variables (e.g., Haseman et al., 2002; Macias, 2003; Raney et al., 2003; Sundar et al., 2003), others have not found the same positive relationship (e.g., Bezjian-Avery et al., 1998; Coyle & Thorson, 2001). Other studies have examined the relationship between perceived interactivity and users' attitudes and have found a positive correlation (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Lee, 2005; Schlosser, 2003; Wu, 1999, 2005; Yoo & Stout, 2001).

Interactivity in general, as Lee (2000) proposes, should not be measured by analyzing the process or by counting the features, but rather how users perceive and/or interact with them. Therefore, "perceptions are far more influential than reality defined more objectively" (Reeves & Nass, 1996, p. 253).

In the course of the interactive documentary, it is difficult to find theoretical and practical approaches that have studied perceived interactivity for several reasons, including: interactive documentary is considered a new field; inconsistency on a clear definition or term; and existing studies are more about analyzing and classifying this new genre than examining user engagement. Nonetheless, although the existing studies in this field do not explicitly deal with perceived interactivity, many of them emphasize the importance of user engagement (e.g., Dankert & Wille, 2001; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012).

Based on the above, this study understands interactive documentary in the context of interactive media. In particular, it deals with it in the course of actual interactivity and perceived interactivity. In other words, the study concerns with how individuals perceive these interactive properties designed to engage them in an interactive documentary experience. Therefore, it is possible in this perspective to deal with the interactive documentary as a perceived interactivity, and measuring quantitatively and qualitatively the user perception, to understand and develop interactive documentary experiences.

On the other hand, since there are no scales for measuring the relationship between user and interactivity in the interactive documentary field, this study adopts a scale from other fields and adjusts it to the scope of interactive documentaries. The study believes that interactivity from other fields, as dimensions and measures, can be applied to interactive documentary, since all fields of interactivity comparatively discuss the same concepts such as responsiveness and user control. Nevertheless, understanding users' engagement with a specific product is not limited to their perceptions of interactivity; there are other factors that may interfere with users' experiences such as the documentary story.

As a result, the interactive documentary in this study is recognized as a perceived interactivity within the framework of how individuals perceive the designed interactivity of a documentary, and how their perceptions can evaluate the degree of their experiences. The interactive documentary is therefore a combination of interactive features and individual perceptions, as well as other factors such as narrative engagement, attitude toward the documentary website and perceived involvement.

Interactive Documentary as a Communication Process

By reviewing the studies that have concentrated on interactivity as a communication process (e.g., Cho & Leckenby, 1999; Haeckel, 1998; Heeter, 2000; Pavlik, 1998; Rafaeli, 1988), it can be argued that the key concepts used to conceptualize and understand the relationship between the communicator, user and system were based on these concepts: exchange, interchange, responsiveness, action and reaction, and participation. In this regard, Haeckel (1998) states that "the essence of interactivity is exchange" (p. 63).

Interactivity as a communication process focuses on the exchange of communication roles (Williams et al., 1988); and on the ability of producing a sustainable interactive relationship. Mahood et al., (2000) conceptualize interactive exchange into a dialogue view and a message-based view. In the dialogue view, the conversational-model exchange is considered the focal point of communication, whereas the message-based view concerns with the structural relationship between the exchanged messages. Similarly, Naimark (1990) emphasizes this reciprocal feedback, which "always requires information flowing in both directions, it is our input and its effect that distinguishes it from non-interactivity" (p. 455). Pivlik (1998) sees that

exchanged communication or multidirectional communication could occur between a source and a receiver or a set of sources and receivers. Macias (2003) considers interactivity as a process of communication, where the content can be accessible and modifiable with or through a medium.

However, Rafaeli (1988) focuses on the concept of responsiveness as a two-way flow of information. From his perspective, two-way communication can exist in both old and new media. Therefore, what distinguishes two-way flow from two-way communication is that the message, in the two-way flow, does not only refer to previous messages but it includes them and builds the next based on them. It is a process of construction, where each subsequent message is based on previous ones with a reference and an inclusion. This type of communication may occur in normal life between two or more persons, and may occur among people through a mediated environment. Thus, interactivity “is what occurs on the channels, not the channels themselves or their characteristics. The technology affords the interactivity but does not define interactivity” (Tremayne, 2005, p. 41).

Interactive documentary as a communication process is not merely interactive tools or perceptions, but a communication process in which participants can exchange roles and tasks. By linking documentary to interactivity, it becomes possible to perceive it in the scope of interactive media, where the roles and information constantly flow in two directions. In a general sense, interactivity can be understood in four main categories: observation, exploration, modification, and reciprocal change (Meadows, 2002). The stage of modification and reciprocal change is viewed as a result of the flow of information in two directions that can distinguish interactive media. This interactive flow/reciprocal change in the interactive documentary domain has changed the relationships between the user, author, and documentary discourse from linearity to a collaborative and participatory culture.

In the context of the user, the mission is not only limited to observe and explore but also to construct meaning and to become authors. These users can now intervene, criticize, share, participate and build (Favero, 2013). Interactive documentary has reinforced the culture of participation (Jenkins, 2006); which goes beyond clicking and selecting to producing a common meaning or common reality (Odorico, 2015). Therefore, users in interactive documentary are viewed as creators and participants of constructing the documentary events, of filling the empty

space in a told story (Gaudenzi, 2013; Jenkins, 2004), where they are required to “assert autonomy over the temporal direction of the narrative” (Brown et al., 2003, p. 314).

In the context of the author, the growing importance of users has basically redefined authorship and the presented reality. The role of authorship in interactive documentaries has been gradually falling back when compared to traditional documentaries. Users, with having control over narratives, could remarkably threaten the role of classical authors and their ability to construct meaning (Galloway et al., 2007). The author’s one point of view has changed to multiple points of view because of the presence of active users. Generally, interactive documentary, in the scope of interactivity, conflicts with the concept of author’s control, as one of its main features is to exchange (e.g., Haeckel, 1998; Zack, 1993). Therefore, the role of the author turns to assist the users in exploring the content (Berenguer as cited in Gifreu, 2010).

In the context of documentary discourse, interactive documentaries “address a shared reality and form part of our collective conversations” (Chanan, 2007, p. 16). Within this framework, interchangeable reality can be understood in two contradictory views. In the first view, the possibility of exchange has put documentary conventions and the myth of representing reality in real trouble. The user’s ability to exchange and modify the reality has led to the revocation of the documentary task, which is presenting unfiltered reality (Favero, 2013). In this sense, Hudson (2008) states “that database documentaries loosen assumptions about documentary from fixed modes (expository, observational, personal) and toward open modes (collaborative, reflexive, interactive)” (p. 2).

In the second view, communicating and exchanging with reality by authors and users can ensure that reality itself can be available to be re-created, reinterpreted and re-exchanged not as part of a single process, but as a mutual process. The reality here is not viewed as a fixed and final version, but as a version that can be extendable, sustainable and exchangeable. Thus, interactive documentary as a communication process is understood at the extent in which a presented reality can be in a constant happening, and in a changeable and expandable state due to the flow of communication between all involved members. It is therefore much more similar to the reality itself in terms of its constant change.

In conclusion, interactive documentary as a process of communication refers to a

constant process between each structure and another for building a mutual meaning; and for reconstructing an interactive story, based on the level of interaction, user participation, and development of interactive documentary narrative. The two-flow of communication, as a high level of interactive communication, is the essence of the interactive documentary as a communication process, where each structure in the communication process maintains the flow of communication. Therefore, based on how the communication flows, the level of interaction among members of the interactive documentary can be determined, re-evaluated and developed.

Narrative Engagement

In this study, narrative does not only mean linearity based on temporality and causality, but the concept concentrates on the documentary discourse/story, regardless of whether the internal arrangement of a story is linear or database. In other words, '*narrative*' in this study extends to include all the elements that appear in the final product regardless of the used mechanisms in constructing the story.

Although several studies have used the term '*narrative*' in the course of causality and temporality, the term is wide enough to include any written or audiovisual narrative whether it is linear or database, documentary or fiction. Nevertheless. It cannot be denied that linear narrative is different from database narrative. Narrative in linear documentary is often chronological; constructed on cause and effect; one-way communication; and completely closed (e.g., Dovey, 2002; Le Grice, 2001; Manovich, 2002).

In contrast, narrative structures in interactive documentary are principally based on the logic of spatial database, abandoning the chronological order and cause and effect relationship (Manovich, 2002). The logic of databases provided by digital environments is mainly constructed on fragmentation and random access (e.g., Le Grice, 2001; Marles, 2012); where the user can have several choices to deal with and navigate in, including access to databases from multiple directions.

This change in the nature of narrative was accompanied by a change in the relationship between the author and user. While the author has full control over the text in classical documentaries, the author and user share this control in interactive narratives (e.g., Gifreu, 2017a; Nash, 2012; O'Flynn, 2012). Nevertheless, Hayles (2005) argues that both database and

narrative terms are insufficient to explain the new interactive media phenomenon. She suggests a broader concept of dealing with linearity and non-linearity, calling it the concept of “probability space” given that linearity and non-linearity are not considered to be in an adversarial or competitive relationship, but they both can coexist.

However, one of the objectives of this study is to examine the dialectical relationship between both linear and interactive documentaries. It aims to answer how the user engages and understands the narrative in three designed documentary projects: linear documentary, low interactive documentary, and high interactive documentary.

In this perspective, the study uses a scale of narrative engagement adopted from Busselle and Bilandzic (2009). This scale is based on the mental models’ perspective which supposes to “provide a theoretical framework for disentangling and interpreting processes that should be related in narrative experiences, and also provide a framework for understanding how such processes may moderate a story’s influence” (Busselle & Bilandzic, 2009, p. 322).

However, there are several terms or constructs used to describe narrative engagement such as transportation (Green & Brock, 2000, 2002); identification (Cohen, 2001); presence (Biocca, 2002; Lee, 2004); and flow (Csikszentmihalyi, 1997). Narrative engagement is applied in several fields, including consumer researchers (e.g., Escalas, 2007); psychology (e.g., Green & Brock, 2000); communications (e.g., Bilandzic & Busselle, 2011); education (e.g., Slater & Rouner, 2002); and advertising (e.g., Chang, 2009). Most of these fields conceive narrative as an effective means of persuasion.

The used scale of Busselle and Bilandzic (2009) consists of four main dimensions: narrative understanding, attentional focus, narrative presence, and emotional engagement. These dimensions reflect concepts such as enjoyment, persuasion and social reality construction (Busselle & Bilandzic, 2009). The narrative engagement scale can be applied to all media content, and it is viewed “as a mental representation, [a] story is not tied to any particular medium and is independent of the distinction between fiction and non-fiction” (Ryan, 2007, p. 26 as cited in Busselle & Bilandzic, 2009).

The dimension of narrative understanding concerns with how users understand and

recognize a story, its characters and its thread. In order for users to understand a story, they construct mental models of meaning that reflect a story (e.g., Graesser, Olde, & Klettke, 2002; Roskos-Ewoldsen, Davies, & Roskos-Ewoldsen, 2004; van Dijk & Kintsch, 1983; Zwaan, Langston, & Graesser, 1995). These mental models that viewers adopt include objects such as settings, characters and situations, which represent a combination of information about life or related subjects (Busselle & Bilandzic, 2009). Viewers' precognitive knowledge derives from the experiences of life itself, and from intermediate fiction and non-fiction experiences (Fiske & Taylor, 1991; Ohler, 1994). Consequently, understanding narrative "requires that a viewer or reader locate him or herself within the mental model of the story" (Busselle & Bilandzic, 2009, p. 323). Therefore, narrative understanding is mainly conceptualized "as lack of difficulty in comprehending", where "audience members should be unaware when comprehension progresses smoothly, and become aware only when comprehension falters" (Busselle & Bilandzic, 2009, p. 341).

The dimension of attentional focus is related to the extent to which users are able to focus on a narrative (story) without being occupied with the outside world (outside the narrative), or with any distortion that could arrive from the narrative itself or the outside world. According to Busselle and Bilandzic (2009), describing participants as being involved implies that they are not aware of focus or they are not aware that, for example, they should focus. Their realization that they are focused means that there is a deviation in their focus that requires to be readjusted. In other words, the focus process in a narrative should occur naturally and unconsciously.

The dimension of narrative presence refers to the viewers'/users' sense of being out of the real world because of being present in a given story. According to Busselle & Bilandzic, 2009, narrative presence involves two main phases. The first phase occurs when viewers/users have an intensive focus that could lead to a loss of self-awareness and of the surrounding environment, and this can be found in many flow activities. The second phase occurs from being in an alternative world, where the real world diminishes. The narrative presence in this interpretation has a positive correlation with the intensive concentration and the alternative world.

Narrative presence is consistent with other constructs such as transportation experience (Green & Brock, 2000); flow (Csikszentmihalyi, 1997); and absorption (Tellegen & Atkinson, 1974), in which they all measure users' intensive concentration of a particular activity that can ultimately lead to a loss of self-awareness and of surrounding environment. In general, flow and absorption are associated with general concepts and may occur in response to a particular set of activities. In contrast, narrative presence and transportation are more specific in which they occur in response to narratives (Hamby, 2014).

In media fields, users may perceive the virtual world or the mediated world in more immediate and direct ways than the real world. The narrative presence in this sense can be similar to the telepresence dimension that has evolved from computer literature (Biocca, 2002; Lee, 2004); and transportation that has developed from the literature of narrative experiences (Green & Brock, 2002).

Nevertheless, narrative presence is remarkably associated with the concept of flow (Csikszentmihalyi, 1997), because flow, compared to previous concepts, is able to explain the sense of presence in a narrative (Busselle & Bilandzic, 2009). The term '*flow*' has been associated with a loss of self-awareness and of environment as a result of a complete focus on a given activity, and was applied to sports activities, reading and work. Green (2004) states that readers/users "lose track of time, fail to observe events going on around them, and feel they are completely immersed in the world of the narrative" (p. 247).

Busselle and Bilandzic (2009) argue that there are two levels of flow/narrative presence. In the first level, engaging in a narrative may be indifferent from non-narrative activities; individuals in both cases focus on a given activity, where their concentration may lead to a loss of self-awareness and of surrounding environment. On the second level, flow/narrative presence with a narrative is distinctive because events, characters, and alternative worlds become available, and it is possible for individuals to be present into these narrative worlds. Narrative presence is perceived as "the sensation of being present in a narrative world due to comprehension processes and perspective taking" (Busselle & Bilandzic, 2009, p. 325).

The dimension of emotional engagement is "the process by which recipients develop an emotional connection with characters. This connection includes feeling emotions for characters

(sympathy), sharing emotions with characters (empathy), and having feelings of arousal” (Van Leeuwen, Van Den Putte, Renes, & Leeuwis, 2017, p. 196). Emotional engagement is similar to identification with characters (Busselle & Bilandzic, 2009; Cohen, 2001). Identification theory suggests that viewers/users may change their attitudes as a result of involving with a given narrative (Green, 2006; Slater & Rouner, 2002). When viewers/users experience a narrative environment from the perspective of a character, they tend to adopt this perspective, where their attitudes may, therefore, correlate with the character’s attitudes (Mar & Oatley, 2008). In this regard, Cohen (2001) states that identification and emotional engagement are similar to parasocial interaction, although the two concepts may differ in which identification may lead to greater affinity with the character than the parasocial interaction. From the perspective of media psychology, identification means the adoption of a character’s perspective, where the viewers/users are able to see events in a narrative through the perspective of a character. Therefore, viewers/users become identified with a character, they cease “to be aware of his or her social role as an audience member and temporarily (but usually repeatedly) adopts the perspective of the character” (Cohen, 2001, p. 251).

Identification/emotional engagement is associated with three key levels according to Busselle and Bilandzic (2009). In the first level, viewers, while seeing characters in a narrative, become aware of their perspective and their interpretation of events, and of motivations related to events, other characters, and events. The viewers’ roles are not limited to observe but to engage with these characters. In the second level, when the viewers adopt the characters’ perspective, they become able to understand their emotions, and able to empathize with them. In the third level, viewers share these emotions aroused by the characters with them.

However, several empirical studies have been applied to examine the relationship between narrative engagement and the entertainment-education impact. The results of these studies were varied: While some of them have found that narrative decrease undesirable thoughts (e.g., Dunlop, Wakefield, & Kashima, 2010; Green & Brock, 2000), others have not found any relationship (Busselle, Bilandzic, & Zhou, 2009).

In other studies, transportation and narrative engagement were significantly related to enjoyment (Bilandzic & Busselle, 2008; Green, Brock, & Kaufman, 2004); and flow/narrative

presence was also associated with enjoyment (Csikszentmihalyi, 1997; Sherry, 2004). Other studies conclude that individuals tend to adopt the characters' attitudes and beliefs in a narrative, even though they know it is a fictional narrative (Dal Cin, Zanna, & Fong, 2004; Escalas, 2004; Green 2004; Green & Brock, 2000; Wang & Calder, 2006).

Green and Brock (2000), and Green (2004) have reported that the participants, who were more engaged with narratives than others, had stronger attitudes and beliefs that were consistent with the given narrative. Sestir and Green (2010) manipulated identification and transportation in an experimental study. They found that participants who had a high level of identification were more quickly responsive to characters' traits. Likewise, De Graaf, Hoeken, Sanders and Beentjes (2009) manipulated the levels of identification using different perspectives. The results showed that characters' perspective significantly influence the participants' identification and attitudes.

Busselle's and Bilandzic's (2009) scale of narrative engagement is very important because it can give rich information about how users understand a narrative; their level of focus, their sense of being present in a given narrative out of the real world; and their identification with the characters. As demonstrated above, several terms and scales were used to measure narrative engagement, including transportation (Green & Brock, 2000) and absorption (Slater & Roner, 2002). Yet, Busselle's and Bilandzic's (2009) scale of narrative engagement is the only scale among others that incorporates several dimensions, each of which measures an aspect of narrative engagement. Thus, it is possible by using this scale to have more detail and to differentiate specific aspects of the narrative impact on viewers/users. In addition, it is easy to apply this scale to audiovisual materials (Van Leeuwen, Van Den Putte, Renes, & Leeuwis, 2017), and to old and new media. In contrast, other scales, such as transportation, were limited to reading experiences.

Busselle and Bilandzic (2009) argue that, although the transportation model has been applied to the literature of narrative persuasion, the concept is still ambiguous and the scale is inaccurate for it overlaps with other structures such as perceived realism. Also, there is a contradiction between the proposed components, such as attention, perception, and the use of the one-dimensional scale to measure all of these components.

Although Busselle's and Bilandzic's (2009) scale of narrative engagement is consistent

and overlapping with the transportation scale in certain aspects, it is difficult to interpret some aspects of the transportation scale if applied to audiovisual materials. For example, it is difficult to apply the mental imagery model from the transportation scale to films or audiovisual programs because this image is already presented to viewers. It is also difficult to differentiate between identification, attitudes, settings, and emotional response (Busselle & Bilandzic, 2009).

In this study, narrative engagement forms an important objective since interactive documentary is not only based on interactivity, but also on narrative (the documentary story). The study, in particular, seeks to compare interactive documentary story with linear documentary story by examining users' levels of engagement with both narratives. Therefore, this study adopts Busselle's and Bilandzic's (2009) scale, because it can be applied to media regardless of content or form, and it can be used to compare user interaction with different narratives, where it can predict, for example, if linearity or interactivity has a negative or positive relationship with narrative engagement. This scale can give rich data about how users engage with a given narrative in four dimensions: how users understand narrative in terms of ease and difficulty; the level of their concentration on a given activity; the loss of self-awareness and of the surrounding environment for being present in a narrative; and, finally, emotional engagement that expresses the degree of identification between users and narrative characters, in which users can adopt their attitudes and share their emotions.

Attitude toward the Interactive Documentary Website

Attitude can be defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1). Similarly, Kotler, Keller, Brady, Goodman and Hansen (2009) define it as "a person's enduring favorable or unfavorable evaluations, emotional feelings, and action tendencies toward some object or idea" (p. 261). More simply, "attitudes are likes and dislikes" (Bem, 1970, p. 14).

According to Rodgers and Thorson (2000), examining attitudes toward the website is the first stage of measuring the effect of a website. Attitude toward the website can be a useful construct in understanding many other human behaviors on the Internet. From this perspective, several studies have shown a positive relationship between perceived interactivity and attitude toward the website (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002;

Lee, 2005; Schlosser, 2003; Wu, 1999, 2005, 2006; Yoo & Stout, 2001). For example, Cho and Leckenby (1999) found a positive correlation between perceived interactivity and attitude toward the ad, attitude toward the brand and purchase attention. Wu (1999) found that perceived interactivity and attitude toward the website were positively related. Furthermore, Wu (2005) conducted an experimental study to examine the relationship between actual interactivity, perceived interactivity and attitude toward the website. Levels of interactivity were manipulated into low and high levels. The high interactive website was the website that included full interactive features, and the low interactive website was the website that had no interactive features. The results of the study showed a positive correlation between actual interactivity and perceived interactivity, on the one hand, on the other hand, and between perceived interactivity and attitude toward the website, on the other hand.

McMillan (2000) developed four websites to examine the relationship between different levels of interactivity, attitude toward the website, and user involvement. The study revealed a positive correlation between perceived interactivity and attitude toward the website. Moreover, McMillan et al., (2003) examined the relationship between interactive features and perceived interactivity, user involvement, and attitude toward the hotels' websites. They found a positive association between perceived interactivity and attitude toward the hotels' websites.

Moreover, Ha and James (1998) concluded that high level of interactivity can enhance the users' attitude toward the website. Sundar et al., (2003) manipulated the hyperlinks in designed websites. The study found a significant correlation between perceived interactivity and perceived involvement, and attitude toward the website. Additionally, Sundar and Kim (2005) conducted an experimental study, where 48 participants viewed 12 news-articles on websites. They manipulated the interactivity into low, medium and high levels. The results showed a positive association between advertising and product attitudes. Furthermore, Jee and Lee (2003) considered attitudes toward the website and purchase intention as a consequence of perceived interactivity. Their study found that purchase intention was predicted by attitude toward the website and not by perceived interactivity. More recently, Palla, Tsotsou and Zotos (2013) conducted an experimental study on online advertising effectiveness. They manipulated the interactivity into three levels: low, medium and high. The findings of the study were significantly associated with positive attitudes and intention to revisit and purchase behaviors. Yet, studies on

attitudes may be unstable due to constant change of human attitudes. Therefore, some researchers believe that the studies of attitudes are valuable at the time of conducting the research (e.g., Schwarz & Strack, 1991).

In the field of interactive documentary, it is clear, after reviewing the literature, that there were no studies that have been done on attitudes toward interactive documentary. Therefore, the current study deals with documentary in the logic of interactivity studies, and looks at the interactive documentary as an online documentary story that contains multimedia and interactive tools.

Most of the results of the previous studies have proven that there is a positive relationship between actual interactivity and perceived interactivity, and between perceived interactivity and attitude toward the website. Therefore, one of the objectives of this study is to measure the relationship between actual interactivity and attitude toward the interactive documentary website, and between perceived interactivity and attitude toward the interactive documentary website.

Perceived Involvement

Although involvement has been considered as “a vague concept” (Rothschild, 1979, p. 72), it is widely used in different research fields such as products, advertising and purchasing (Zaickousky, 1985). In general, involvement has recently been used to study user behavior online (Cho, 1999; McMillan et al., 2003). Several research fields have applied involvement such as fashion involvement (e.g., Tigert, Ring, & King, 1976); purchase decision and purchase involvement (e.g., Beharrel & Denison, 1995; Slama & Tashchian, 1985); and product involvement (e.g., Bloch, 1981; Cho, Lee, & Tharp, 2001; Kapferer & Laurent, 1985; Michaelidou & Dibb, 2006; Mittal & Lee, 1989; Traylor & Joseph, 1984).

Zaichkowsky's (1985) definition of involvement is one of the most frequently cited, as “a person's perceived relevance of the object based on inherent needs, values and interests” (Zaichkowsky, 1985, p. 342). User involvement can be classified into two categories: users who involve developing a system (Ives & Olson, 1984); and users' psychological state while involving in a given activity (Barki & Hartwick, 1989). More precisely, involvement can be identified as “the degree of perceived relevance and personal importance of a certain product or

service” (Yoo & Stout, 2001, p. 54).

Stone (1984) suggested considering user involvement as a mental state and a behavioral process. However, user involvement is generally associated with the communication process, where it can happen and end up based on the flow of information (Muncy & Hunt, 1984). On the other hand, it is user reactions that can determine the presence or absence of involvement (Hoffman & Novak, 1996); and it can be determined based on “personally relevant” (Zaichkowsky, 1985, p. 211).

According to Langer (1975), involvement can be active or passive based on the way that users become involved with a product during the communication process. User involvement can include several activities such as navigation, informational search, etc. (Kim & Hirtle, 1995). Active users’ involvement can be applied to those users who are involved with mental and physical activities in a given system, while passive users’ involvement can be applied to those who are mentally and physically less engaged with given activities. The level of involvement can explain the depth of the users’ cognitive and behavioral engagement (e.g., Houston & Rothschild, 1978; Laurent & Kapferer, 1985).

This study considers user’s perceived involvement as an important factor, where it is used as an explanatory variable of user behaviors (Dholakia, 1997). From user’s perspective, involvement means how important this product or service is in his/her life (Zaichkowsky, 1994). Therefore, the more the product is important to users’ lives, the more likely they are to exert an effort to get involved with it, or the more likely their levels of need to obtain it will increase (Cardozo, 1965; Hupfer & Gardner, 1971). In contrast, the less a product or a service in the users’ lives is important, the less likely the users will be involved with it (Suh & Yi, 2006). For example, Macias (2003) found that users with high product involvement and perceived interactivity were more likely to have higher comprehension of the website. She also found that the level of interactivity and involvement were significantly related, where users with a high level of involvement had more comprehension of the higher level of interactivity. On the other hand, several studies found a positive correlation between high product involvement and user extensive search (Engel & Blackwell, 1982; Hawkins, Best, & Coney, 1989). In contrast, users with low levels of involvement tend to exert less effort to process information (Chung & Zhao,

2004).

User involvement and attitude are different concepts even though they are related (Barki & Hartwick, 1989). Several studies have measured the relationship between involvement and attitude (Cho & Leckenby, 1999; McMillan, 2000; Yoo & Stout, 2001). For example, McMillan (2000) examines the relationship between user involvement and perceived interactivity, and attitude toward the website. The results showed a significant relationship between the three constructs. Likewise, Elliott and Speck (2005) found that attitude toward the website was influenced by the level of involvement.

Furthermore, Sundar et al., (2003) manipulated the number of hyperlinks in designed websites. Their study showed a significant relationship between perceived interactivity and perceived involvement with attitude toward the website. Jiang, Chan, Tan and Chua (2010) classified website's interactivity into active control and reciprocal communication. The level of interactivity was manipulated, where 186 participants took part in this experiment. The results revealed a significant association between high level of active control involvement and cognitive involvement and effective involvement. In addition, users with high involvement with the website were more likely to have more intention to purchase. Similarly, Cho (1999) found that product involvement was a significant motivation factor of participants toward online advertising. Yoo and Stout (2001) found that interactivity and involvement were positively influencing users' perceptions.

However, several studies found no significant relationship between involvement and attitudes (Ahren, Stromer-Galley, & Neuman, 2000; Oginanova, 1998). For example, Balabanis and Reynolds (2001) examined the relationship between user involvement and attitude toward the website. Their hypotheses associated involvement positively to the attitude toward the website, and the length of time users spend on a website. The results of their study could not positively support their assumption.

This study adopts Zaichkowsky's (1985) scale called product involvement inventory (PII) to measure user involvement with three documentary projects. The scale has high reliability and has been used by several scholars (e.g., Hwang & McMillan, 2002; McMillan, 2000; Wu, 1999; Yoo & Stout, 2001).

Users' Actual Interaction

In this study, users' actual interaction can be defined based on three constructs: (a) user's time spent on the interactive documentary website; (b) users' actual view which includes page views, average time on page, unique page view and page depth; and (c) users' tendency to use the available interactive features. Users' actual interaction can be used as an important tool to define the user, and to evaluate the product, and the interactive experiences. However, users' actual interaction, as a term used in this study, may interfere with other terms used to express user's online activities such as focus attention, endurance, richness and control, user context, user engagement, etc. For example, focus attention, in some studies, concerns with the measurement of distorted perception of time and eye tracking (e.g., Baldauf, Burgard, & Wittmann, 2009; Ikehara & Crosby, 2005; O'Brien & Toms, 2008, 2010). Likewise, endurance concerns with remembering an experience and the willingness to repeat or recommend it such as bookmarking and sending emails (Read, MacFarlane, & Casey, 2002; O'Brien & Toms, 2010; White & Dumais, 2009). In addition, richness and control concern with measuring user's online activity such as interaction with the website, time spent and mouse pressure (e.g., Keyson & Ridder, 2009; Ulken, 2009).

User engagement, as a commonly used term, can cover user's cognitive and physical activities, although many studies have linked this term to only user's actual behaviors, where the term '*engaged users*' refers to those individuals who often visit the site, spend substantial time and view many pages (Calder, Malthouse, & Schaedel, 2009).

Although this study has designed three documentaries, in which one of them was a linear documentary, actual interaction is only used to measure user's actual behaviors with the two interactive documentaries. The reason for this procedure was because viewers' activities while watching a linear documentary are fundamentally different from users' activities while viewing and navigating an interactive documentary. In the linear documentary, viewers use only their cognitive activities (the action of watching the documentary). These cognitive activities may vary from one documentary to another and from one user to another depending on the subject of the story, or the given space in the documentary narrative to be filled with user's cognitive activities. In contrast, users in the interactive documentary are invited, in addition to cognitive activities, to exert a physical effort to obtain the available information, to interact with, and to

participate in constructing the interactive documentary story (e.g., Aston & Gaudenzi, 2012; Galloway et al., 2007; Goodnow, 2004; Koenitz et al., 2015; Nash, 2012). These physical activities such as browsing, clicking, editing, writing, etc., vary based on the subject, the user, and the level of participatory space. Thus, a number of clicks, and time spent, for example, may determine the degree of engagement, and may be an effective tool for defining the user and evaluating interactive experiences and the interactive documentary.

Any interactive/non-interactive behavior of the user on the web can provide a rich physical and mental map and unlimited scenarios that can be interpreted and read at multiple levels. This physical map of the user can remarkably be used and invested to develop interactive experiences in the context of the interactive documentary.

However, finding a precise measurement of users' actual interaction can be extremely difficult, where any physical behavior of the user may give contradictory meaning. For example, a high number of clicks may indicate a high level of interaction, but at the same time, it may indicate that the user does not find what he/she is looking for, or for some reason, he/she is confused. Similarly, a high number of page views can mean, for example, that the user has just made a quick view of the given pages without taking the necessary time to deeply review them.

Therefore, this study examines time spent on the website not as an isolated factor, but through its correlations with users' perceptions. According to Hoffman and Novak (1996), interactivity can be measured on the basis of the duration of time spent by the user as well as the number of viewed pages (Hoffman & Novak, 1996). The time spent by the user may reflect a behavioral measure of engagement, and could help researchers to understand user behavior (McMillan et al., 2003). Wu (2006) also regards time viewing the site or page as key factors in building a conceptual framework of interactivity and understanding the context of the website through the information about the website traffic. On the other hand, the study seeks to compare the two interactive documentary websites by providing a statistical description for both documentary websites regarding the number of page views, unique page views, average time on page, and page depth. Finally, the study endeavors to test the degree of users' tendency to use the available interactive features in the high interactive documentary.

Summary

Based on the literature review of interactive documentary, it is clear that the majority of the studies were concerned with exploring and analyzing certain aspects, dimensions or sub-conceptions of the term or other relational terms. In a general sense, there were some agreements between these studies on the four constructs that can help in determining the position of interactive documentary: interactivity, author, user, and documentary narrative. Yet, these four constructs, which can form the term '*interactive documentary*', have been partially organized in previous studies. Therefore, this study was an attempt to develop the three constructs of interactive documentary by first conceptualizing, analyzing and classifying the interactive documentary, and secondly to study quantitatively and qualitatively the relationship between the user and other connecting elements, including perceived interactivity, documentary narrative, perceived involvement, and attitude toward the interactive documentary website.

In this study, it is important to note that interactivity, user, author, and documentary narrative rely on each other to produce an interactive documentary, and an interactive experience. It is difficult to understand interactive documentary without understanding users' attitudes and physical behaviors. In other words, the interactive documentary gains its existence and meaning from users' interaction with its content. In addition, it is difficult to understand the position of interactive documentary without comparing it with linear documentary. Comparing interactive documentary with linear documentary can highlight the future of both interactive documentary and linear documentary in this interactive age.

Therefore, a key question that emerges from the literature review is the relationship between actual interactivity and both perceived interactivity and attitude toward the website. Several studies have found a significant relationship between the high level of actual interactivity and perceived interactivity (e.g., Sundar et al., 2003, Wu, 2005); and between the high level of actual interactivity and attitude toward the website (e.g., Haseman et al., 2002; Macias, 2003; Raney, Arpan, Pashupati, & Brill, 2003; Sundar et al., 2003). Thus, the first two hypotheses examine the relationship between the level of actual interactivity and both perceived interactivity and attitude toward the interactive documentary website:

H1a: The higher the level of documentary interactivity, the more positive the perceived

interactivity.

H1b: The higher the level of documentary interactivity, the more positive the attitude toward the interactive documentary website

On the other hand, several studies on the literature review have examined the relationship between perceived interactivity and perceived involvement and found a positive correlation between the two variables (e.g., McMillan, 2000; Sundar et al., 2003; Yoo & Stout, 2001). In addition, several studies have examined the relationship between perceived interactivity and attitude toward the website and found a significant correlation (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002, 2003; Jee & Lee, 2002; Lee, 2005; McMillan et al., 2003; Schlosser, 2003; Wu, 1999, 2005; Yoo & Stout, 2001). Nevertheless, a key question and argument that grows from the literature review is whether the perceived interactivity has a positive relationship with narrative engagement. Thus, the following set of hypotheses examines the previous variables:

H2a: Perceived interactivity of an interactive documentary is positively related to the narrative engagement.

H2b: Perceived interactivity of an interactive documentary is positively related to the perceived involvement.

H2c: Perceived interactivity of an interactive documentary is positively related to the attitude toward the interactive documentary website.

However, major questions that emerge from the literature review are about the relationship between the level of actual interactivity and the level of users' actual interaction (time spent on the interactive documentary website), as well as the correlation between the users' actual interaction and their perceptions. In addition, to understand interactivity more broadly, the study intends to employ users' actual page views to compare between both interactive documentary websites in terms of the following: page views, average time on page, unique page view and page depth. Moreover, it is important to examine the degree of the user's intention to use the available interactive features on the high interactive documentary. Accordingly, the study presents the following questions:

RQ1a: Does the level of actual interactivity significantly influence users' actual interaction?

RQ1b: Is there a correlation between users' actual interaction and their perceptions (perceived interactivity, narrative engagement, perceived involvement and attitudes toward the interactive documentary website)?

RQ1c: What are the differences between high interactive documentary and low interactive documentary in terms of users' actual page views?

RQ1d: What are the most frequently used interactive features in the high interactive documentary?

Another key question that grows from the literature review is whether the level of interactive narrative (high or low) is significantly more influential on users than the linear narrative; and whether users are more involved with interactive documentaries than linear documentaries. Therefore, the second question compares interactivity with linearity in terms of narrative and perceived involvement:

RQ2: Are there significant differences between actual interactivity and linearity in terms of narrative engagement and perceived involvement?

Finally, the sophisticated nature of human attitudes/behaviors toward the documentary encouraged the use of a qualitative method employing an in-depth interview instrument. The main purpose of the qualitative method is to profoundly understand how users perceive the documentary narrative in the three designed documentaries, and interactivity, in the two interactive documentaries. Thus, the third question asks:

RQ3: How do users perceive the documentary narrative and interactivity?

Chapter 3: Methodology

The purpose of this study was to examine the relationships between actual interactivity manipulated in two interactive documentaries (high and low) and users' actual interaction (measured by time spent on each interactive documentary website), and how both variables influence their perceptions (perceived interactivity, narrative engagement, perceived involvement and attitude toward the interactive documentary websites). In addition, the purpose of this study was to examine the relationship between interactivity and linearity in terms of documentary narrative and involvement. The study used two methodologies to investigate these relationships among the variables of interest. In the first method, the research design employed a quantitative method, using closed-ended questions on the survey instrument. Participants were divided into three groups; each group was instructed to navigate or watch one of the three manipulated documentaries; and to indicate how strongly they agreed or disagreed with a number of statements relating to their attitudes and behaviors toward these documentaries. In addition, the quantitative method applied two software packages to track and monitor the user behavior online. In the second method, the study used a qualitative method that employed an in-depth interview instrument. The purpose was to profoundly understand how users understand narrative, in the three designed documentaries, and interactivity, in the two interactive documentaries.

Klynt was the special application used for designing the two interactive documentaries. Generally, this application is widely used in designing interactive documentaries and interactive news. Interactive features in each designed documentary were basically created based on the literature of interactivity in general, and of interactive documentary in particular, as well as the analysis of well-known online interactive documentaries. Commonly, the fundamental differences between the levels of interactivity in documentaries lie in the design of the interactive technological features that surround the documentary story. These features can be described as low or high interactive features, depending at most on the flexible space that the documentary can give the user to influence its content. The flexible space could be perceived as user control in forms such as participation, contribution and co-production.

Nevertheless, it seemed difficult to enumerate the interactive patterns in the entire existing interactive documentaries, as it was difficult to measure all of them. Several reasons could justify

these difficulties including: the interactive documentary forms are various and increasingly growing; the interactive documentary definitions are still considerably vague; the interplay between the interactive documentary and other forms of films or interactive media; and lastly, the lack of an explicit taxonomy of interactive documentary.

Therefore, the study sought to understand interactivity through the individuals' attitudes and engagement in the scope of the interactive documentary. It sought in principle to understand if the positive level of users' interaction and engagement depends entirely on the levels or a number of interactive features embedded in a documentary project, or rather, could adding more interactive features to a documentary damage the users' positive engagement? In addition, what is the relationship between interactivity and linearity in the eyes of users and under the framework of both interactive documentary and linear documentary? Furthermore, the measurement of interactivity was substantially inseparable from other factors, such as the documentary story. Therefore, on the grounds that this study was interested in measuring users' attitudes and actual engagement, it has intentionally endeavored to employ three main instruments: the questionnaire for measuring perceptions and cognitive engagement; 'Google Analytics and Inspectlet' for measuring the participants' actual engagement; and, the in-depth interview for profoundly measuring the participants' cognitive engagement. The study, on the other hand, aimed to compare and examine the differences between the three groups of participants when exposed to the three designed documentaries: the linear documentary group, the low interactive documentary group and the high interactive documentary group.

This chapter of the dissertation discusses in detail the following: design of the stimuli: the designed documentaries, population and sample, the instruments, the pilot study, data collection procedures, and quantitative and qualitative methods: variables of interest.

Design of the Stimuli: The Designed Documentaries

To achieve the purpose of this study, the researcher designed three documentaries: linear documentary, low interactive documentary and high interactive documentary. The researcher used "Klynt" software among other software packages to design the three documentary projects.

Klynt is an editing and publishing software that helps to create and to design interactive storytelling in fields such as interactive news reports, documentaries, E-learning, etc. In this

application, the editors can create their own interactive project using the Klynt interactive templates. These templates are designed based on users' behaviors and can adapt to computers', tablets' and mobiles' screen sizes. In addition, the application can be connected to other software packages such as Photoshop and work consistently with multiple pictures' or videos' formats. Moreover, the interactive product of the Klynt application can be published and shared on social media such as Facebook, Twitter, LinkedIn and Tumblr. It also allows the interactive storyteller to connect the application to Google Analytics, which can help to collect statistical data of users (Klynt, 2018).

Consequently, the Klynt application was used in this study to create two interactive documentaries from an original linear documentary called: '*Alharah Alfoqah: A Story of Seasons and Departure*' directed by the researcher. Adobe Premiere was primarily used to first create the linear documentary and to export the clips that were used in the two interactive documentaries.

The synopsis of original linear documentary.

The documentary '*Alharah Alfoqah: A Story of Seasons and Departure*' was originally divided into two parts as following: the first part was 54:00 minutes; and the second part was 54:00 minutes. The documentary language was originally Arabic with English subtitles.

'*Alharah Alfoqah: A Story of Seasons and Departure*' documentary was filmed over a period of four years on an old village in the north of Jordan called Gadara, or its modern name Um Qais. The village was called Gadara up until almost 1850 when the people began to resettle there after a long period of time of being uninhabited. This documentary narrates the story of the old village in four seasons: winter, spring, summer, and departure. It interviews nine people who had once lived there and recounts the story of the village based on their accounts and memories.

In the late seventies of the last century, the Jordanian government decided to deport people from the old village on the grounds that the village was built on Roman and Byzantine ruins. In the 1980s, a departure decision had been applied and the last inhabitant left the old village by the end of that decade, turning '*Alharah Alfoqah*' into an empty village.

The edited version of the documentary for the study.

The original linear documentary was cut down to 30 minutes. These 30 minutes became the new linear documentary of this study. The 30 minutes of new linear documentary was later

divided into several clips (23 clips/2 minutes each or less). Texts, pictures, graphics and hypertexts were added to these clips (see Table 1).

Table 1

The Used Clips in the Two Interactive Documentary Projects

<i>N</i>	Title	Time (Min: Sec)
Introduction		
1	Film Homepage	01:09
2	About <i>Alharah Alfoqah</i>	00:50
3	<i>Alharah Alfoqah's</i> Inhabitants	01:46
4	<i>Alharah Alfoqah's</i> Specialty	01:57
5	Seasons of <i>Alharah Alfoqah</i> Homepage	02:00
Winter Season		
6	Winter Homepage	01:34
7	Winter Preparations	00:41
8	Winter Games	01:03
9	Winter Memories	01:44
10	Winter Philosophy	01:48
Spring Season		
11	Spring Homepage	01:02
12	Spring Specialty in <i>Alharah Alfogah</i>	02:18
13	Spring Memories	01:38
14	Spring Philosophy	01:02
Summer Season		
15	Summer Homepage	00:56
16	Summer Hard Works	02:05
17	Summer Games	00:38
18	Searching for Water	01:40

19	Summer Philosophy	00:40
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Departure Season

20	Departure Homepage	00:59
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21	Departure Emotions	00:52
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22	Departure Resistance	01:08
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23	Departure Wishes	01:31
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All the three edited documentaries were divided into the scale of linear documentary, low interactive documentary and high interactive documentary. The raw story that was included in the clips and sounds were the same in the three-edited documentaries. Nevertheless, the story itself differed from one project to another based on the way of editing the documentary and the included interactive features. Interactive documentary, as mentioned in the literature review, is not only the interactive features that the website or the application offers, interactive documentary essentially means the website, the documentary order, the story, the editing, the mapping, etc. In general, the selected and designed documentaries constructed essentially on these factors:

1. The language: The original language of this documentary was the Arabic language. The language factor was one of the reasons that the sample was picked from native Arabic speakers. The participants in this study were chosen from the Mass Communication College at Yarmouk University in Irbid, Jordan. The study could depend on the subtitles to conduct the experiment in other countries, but because the documentary subtitles could have a negative influence on the participants' engagement, the study preferred to isolate the subtitle factor. In addition, there were various results from several studies on the cognitive effectiveness of subtitles on the viewers showed that the subtitles could negatively distract the viewers from the audiovisuals (e.g., Bisson, Van Heuven, Conklin, & Tunney, 2014; d'Ydewalle & Gielen, 1992; d'Ydewalle & Pavakanun, 1997; d'Ydewalle, Praet, Verfaille, & Van Rensbergen, 1991; d'Ydewalle, Van Resenbergen, & Pollet, 1987; Kruger, & Steyn, 2014; Perego, Del Missier, Porta, & Mosconi, 2010). The official language in Jordan is the Arabic language. The participants from the university may have other languages but Arabic is the educational language at the university and

the students have to speak it to be accepted in the university.

2. The documentary story: The story of the original documentary took place in the north of Jordan, in a city called Umm Qais (the modern name of *Alharah Alfoqah*). The locations and the events of the documentary are familiar to the Jordanian people who live in the north of Jordan. Nevertheless, even though the official language of most the Arab countries is Arabic especially in the Middle East, there are various dialects even inside the country itself. The dialect of designed documentaries is significantly suitable to where the study was conducted which was a city called Irbid in the north of Jordan.

3. The practical and theoretical experience of the researcher in filmmaking: The researcher has been working in this field for almost 15 years as a TV and Radio trainer, TV and Radio instructor and filmmaker (writer, cameraman, editor and director). This practical and theoretical knowledge could explain the reasons of the researcher's involvement of making these designed documentaries.

4. The level of interactivity, linearity, and the purpose of study: this study was designed to examine the users' perceptions and actual interaction toward different levels of interactivity and linearity in three designed documentaries, the researcher, therefore, designed these documentaries based on the measurements of linearity and interactivity, using scales created from the literature review of interactivity, interactive documentary and online existing interactive documentaries. Nevertheless, the perceived interactivity is not only influenced with a low or a high level of interactive features but other mentioned factors such as the documentary narrative. Interactivity does not work individually; it is essentially a relational concept.

Result of editing: the three designed projects.

Three documentary projects were produced to be used in this study as following: linear documentary, high interactivity documentary, and low interactive documentary. The following part of the study explains in detail how these projects were produced and the main features of each one of the projects.

Linear documentary.

To maintain a consistent story of the linear documentary, the duration of new version for

the study was unavoidably 30 minutes, taken from the original documentary (108:00 minutes). Although 30 minutes could be considered to be long, the montage technique took into consideration the time period that each participant could spend watching the documentary plus the time the questionnaires could take to be answered. In addition, the montage technique took into account that 30 minutes were meant to produce three parallel documentaries: linear documentary, high interactive documentary and low interactive documentary. The following steps explain in detail the main factors used to produce the linear documentary:

1. The length of documentary and questionnaire versus the duration of the participants' classes: One hour was the maximum duration for viewing and navigating each documentary, and for answering the questionnaire of the three documentary projects. Conducting the study depended entirely on the duration of the participants' classes. Each Sunday, Tuesday, and Thursday class at the University is one hour long; and each Monday and Wednesday class is an hour and a half long. In principle, it seemed that the best days to conduct the experiment were Monday and Wednesday based on the duration of each designed documentary and the questionnaire. However, the selected days were conflicted with the number of enrolled students. The majority of Mass Communication College students were enrolled on Sunday, Tuesday, and Thursday. Therefore, an hour of viewing, navigating, and answering the questionnaire would be considered a major problem if the experiment was conducted on Sunday, Tuesday and Thursday classes, because participants might feel that the time allowed for the experiment was completely not enough. However, it was recommended that the experiment should be conducted on these days due to the larger number of students. In order to solve the problem, faculty members were contacted about the possibility of giving official permission to those students who were registered on Sunday, Tuesday and Thursday to be exempt from the consecutive classes. Faculty members cooperated in this regard and the results were as following: Students who enrolled on Monday and Wednesday had an hour and a half, and students who enrolled on Sunday, Tuesday and Thursday had two hours. Therefore, after these steps were taken, the overall period for students to participate in the experiment every day of the week was flexible of more than half an hour on Monday and Wednesday and an extra hour on Sunday, Tuesday, and Thursday.

2. Creating suspense and cognitively shortening the documentary duration: Although the

duration of the final documentary was 30 minutes, the goal was to cognitively shorten this period, so that the viewers would not feel bored. Therefore, the researcher relied on several key factors to create a sense of suspense, including: Each shot was approximately no longer than four seconds, and the appearance and disappearance of each documentary character were often no more than four seconds; the documentary narration was accelerated but without negatively affecting the documentary flow; natural sound effects were added to each shot; musical elements were used to drive the documentary events faster; tracking shots were mainly adopted as a key element to live the documentary events; and lastly, conflict and contrast in colors, characters, shots, seasons, and narration were the most important elements used in building the events of the documentary story.

After producing the first version of the documentary, it was viewed by many ordinary people and documentary experts. The majority of respondents were more likely to agree that the perceived time of the documentary was between 10 to 15 minutes. Some suggestions from filmmakers and people were taken regarding certain music cuts and some tracking shots.

3. The documentary narrative followed the scale of narrative engagements adopted from Busselle and Bilandzic (2009). The dimensions of this scale consist of narrative understanding, attentional focus, narrative presence, and emotional engagement. In the narrative understanding dimension, the editing of the documentary was concentrated on making the documentary events, characters, and the thread of the story clear and recognizable. In the attention focus dimension, all sound effects, music, voice over, color and shots were constructed to get the participants' attentional focus. In the narrative presence dimension, the researcher carefully selected all the unique footage of the documentary, and took into account that the footage should be able to astonish the participants. These documentary shots were taken over the period of four years and carefully selected. Preliminary tests indicated that the documentary was able to amaze the first samples of the preparatory experiment, where the majority of the volunteers asked to visit the location in which the documentary events took place. In the emotional engagement dimension, the documentary itself is an emotional story in the sense that it narrates the story of people who were forced to leave their homes.

High interactive documentary versus low interactive documentary.

The study designed three documentaries: linear documentary, low interactive documentary, and high interactive documentary. Based on the literature review of the interactive documentary, the design of the low interactive documentary in this study can correspond to these following classifications: the hypertext documentary, where the user is an explorer of the documentary multimedia database (Gaudenzi, 2013); the narrative documentary/the categorical documentary, where users, in the narrative documentary, are able to interact with specific points of the given narrative that looks similar to traditional documentary narrative at specific points, and where users, in the categorical documentary, can freely choose the story or the video they like from various individual stories (Nash, 2012); the active adaptive documentary, where users have the ability to consciously navigate the documentary databases (Galloway et al., 2007); users as observers, where they can view and choose without being able to change the documentary content (Choi, 2010); and spatial documentary, where the documentary narrative is based on a network of spatial relationships that allows users to act like explorers (Murray, 1998, 2017). On the other hand, the design of the high interactive documentary, in this study, can correspond to these following classifications: the participatory documentary, where users can contribute to the content and can involve the online production such as editing and shooting (Gaudenzi, 2013); the collaborative documentary, where users can actively add content and share with others (Nash, 2012); the expansive documentary, where users are able to modify or change the content and even challenge the viewpoints of other users (Galloway et al., 2007); users as authors/users as contributors, where they can act like real authors with a documentary and can constantly contribute to the expandable content (Choi, 2010); and encyclopedic documentary, where the digital content is changeable and expandable because of continuous contributions from users (Murray, 1998, 2017).

However, by reviewing the literature review on actual interactivity, it is clear that the studies were interested in dividing the media into either high interactive media or low interactive media. The high interactive media refer to those media that have a high presence of interactive tools characterized with two-way communication, real-time response, and user control. The low interactive media refer to those media that have few interactive tools/no interactive tools. Therefore, the design of high interactive documentary corresponds to those media that have a

high presence of interactive tools that ensure the activation of two-way communication with the documentary itself and its team; user control as an expression of the ability to influence the documentary content; and personalization as an expression of the documentary ability to adapt to users' entries. In comparison, the design of low interactive documentary corresponds to those media that have a low presence of interactive tools.

Nevertheless, by reviewing the literature review, it was difficult to precisely obtain an accurate representation of the interactive documentary categories since the interactive documentary is a sophisticated and developing genre, and its categories are noticeably overlapping. In addition, it was difficult to represent interactive documentary categories with a single documentary story since each single story may require a certain form of interactivity.

In general, the editing of the first linear documentary was meant to preserve logically the flow of the story. The final cut of the film was 30 minutes. These 30 minutes formed three documentaries: linear documentary, high interactive documentary, and low interactive documentary. Since the documentary story can be different between the three projects, the goal was therefore to maintain the same content despite manipulating the chronological order and the interactive features in both interactive documentaries. Consequently, the researcher relied on the measurement of the small units, so that each unit was designed to represent a short documentary composed by the shots, interviews, music and sound effects. For this purpose, the documentary was divided into five chapters in which each chapter was designed to represent an integrated story that can be separated and connected without affecting the documentary flow. These chapters were: introduction, winter, spring, summer and departure. Those chapters were afterwards divided into smaller units (clips, 1–2 minutes). Each small unit also formed an integrated story pouring into its chapter (see Table 1). As a result, a 30-minute period was important and essential to maintain the linearity of the linear documentary and to produce the two interactive documentaries.

The following section discusses in detail the features of the two interactive documentary projects in five categories as the following: the similar features in both interactive documentaries; the manipulated features in both interactive documentaries; the special features in the high interactive documentary, the mind-map of high interactive documentary, and the mind-map of low interactive documentary.

The similar features in both interactive documentaries.

In both interactive projects, there were key features remaining on the bottom of each webpage as footers despite moving from one video or page to another. The main features of that footer in both interactive documentaries were:

1. About: A separate page that gave general information about the documentary project.
2. Credit: A page with a background image that included the names of the documentary crew.
3. Share the whole project: The participants could share this entire project with others through social networking websites.
4. Sound: The sound could be adjusted and/or muted.
5. Full screen: The participants had the option to control the screen size since it was set to be responsive of any size without affecting the video and/or the text materials inside the screen.
6. Search engine: The participants could search for any video or information that was included in the project.

The manipulated features in both interactive documentaries.

The following features were manipulated in both interactive documentaries.

1. Index Menu: A list of all included videos within the project, where the participants could scroll all the clips, and watch what they wanted.

Manipulation: In low interactive documentary, all the index videos were in chronological order. In high interactive documentary, all the index videos were randomly listed.

2. Geographic map: A map that showed where the documentary events took place.

Manipulation: In low interactive documentary, only the landing page was linked with the geographic map. In high interactive documentary, all the videos in the project were linked with the geographic map.

3. Mind-map (navigation guide): A page that showed the mind-map of the project, where the participants could view this map to understand and analyze what they would see or what they would interact with. They could also use it to playback all the included videos. Moreover, this mind-map could give the participants the chance to see how the videos were related to each other. By viewing the documentary mind-map, those participants could make recommendations

to help the filmmakers adjust their documentary story or mind-map.

Manipulation: In low interactive documentary, the participants could see the map but they were not able to navigate it. In high interactive documentary, the participants could see the map and navigate all the linked videos.

4. Contact: The contact page contained multiple choices through interactive icons placed on a separate animated page. The contact page was accessed through clicking over the contact footer.

Manipulation: In low interactive documentary, the only option to communicate with the team was via e-mail. In high interactive documentary, contact options were: call via cell phone; Skype calls or chat or voice messages; e-mail via Gmail, Facebook, Twitter, and LinkedIn. This page was also provided with two other options, to return to the index menu or to the start page.

5. Titles: Each page had several titles that give the participants the choices of viewing and navigation.

Manipulation: In low interactive documentary, although the same titles were used in both interactive projects, the titles of low interactive documentary were less interactive. The participants could click on the title they wanted, but the titles were not responsive with appearances, disappearances, transitions and color change. In high interactive documentary, all the titles were highly interactive and responsive. The participants had the full option to click the title they wanted. Each title was highly responsive with appearances, disappearances, transitions and color change.

6. Interactive buttons: Each page in both projects had several interactive buttons that were meant to give the participants a leading path to navigate. These buttons were responsive with appearance, disappearance, or color change.

Manipulation: In low interactive documentary, the number of interactive buttons and the included interactive features were decreased to minimum. In high interactive documentary, the participants had the highest number of interactive buttons.

The special features in the high interactive documentary.

High interactive documentary is a collection of hyperlinked multimedia, responsive texts, and buttons. Each individual clip in this project had a similar copy on YouTube and contains the following hyperlinked icons: like, dislike, share, download, and comment. These icons allowed

the viewer to return to the main menu, to share or download the individual clip, and/or make a comment. (see Figure 1).

The following features were only present in the high interactive documentary to serve the study purpose. These features were as following:

1. Upload your film or story: If the participants wanted to add to the documentary story, they could upload their films to be displayed in a special section of the documentary website. This option also included text, pictures and audio.

2. Edit or add to our story: Participants were referred to a separate page, where they had two choices: editing or adding to the actual story. In the editing option, they were connected to a program that had all the documentary videos in which they could edit what they wanted. Participants could also add to the documentary story by making a suggestion, linking, mixing their own story/product to the actual documentary story. In both options, they could export the final work and share it with the documentary project.

3. Timeline Annotation: This feature was meant to give the participants the full option to navigate the narration inside each audiovisual element, where they could move from one footage to another.

4. Like/dislike: The participants could give their opinion through like and dislike icons.

5. Download: The participants could download each individual video in the documentary project.

6. Share individual video: The participants could share the whole project with other participants. They could also share each individual video in the project.

7. Comment: The participants could write a comment for each video, share it with others and express their opinion.

8. Subscribe: The participants could use this icon to be updated with the latest news and videos.

9. My page: a page that had multiple options that personalize the interactive documentary website. These options were: my documentary account, my documentary production, my documentary library, my documentary history and, my documentary future plans.

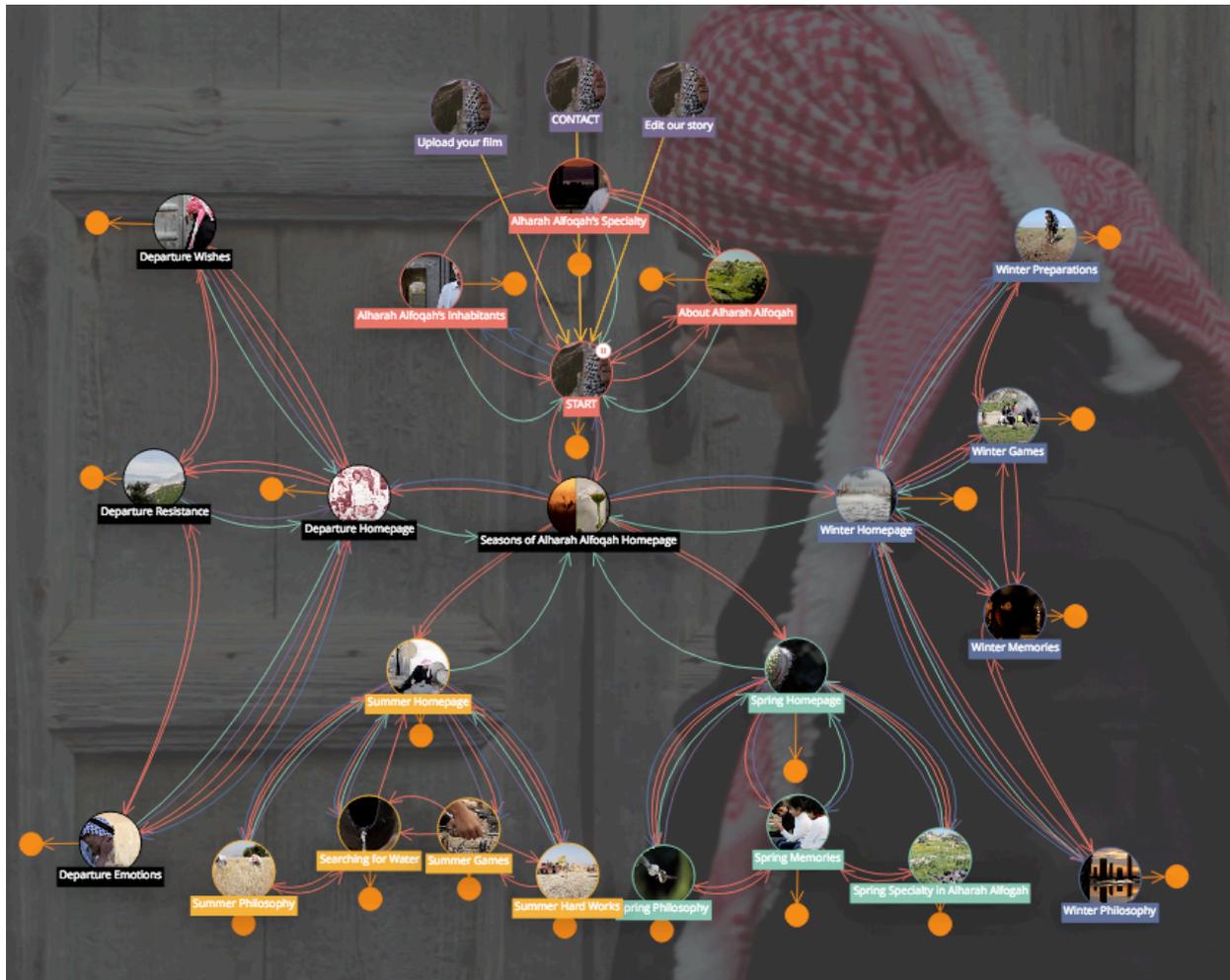


Figure 1. The mind-map of high interactive documentary

The mind-map of high interactive documentary.

The high interactive documentary was divided into three main parts as following (see Figure 2):

1. Introduction: The introduction began with a main video or a start video. The main menu of the documentary project appeared after a few seconds of the played back video. The participants had the full control and options to go to any story from the video collections of the introduction such as (*Alharah Alfoqah's* Inhabitants, *Seasons of Alharah Alfoqah*, etc.), or they

could go to index menu where they could view any clip from the video collection in the project. They could also select the chapter of (*Seasons of Alharah Alfoqah*) which was an initial page showing the participants all the possible options, or paths that they could choose: navigating from one season to another, returning back to the start menu or index, etc.

2. Graphics of '*Seasons of Alharah Alfoqah*': It was an interactive page designed in Photoshop, containing music and four interactive pictures (see Figure 2). Once the button or the title of any season was selected on the introduction page, the music would start and loop if no other options were clicked. The four interactive pictures were taken from the seasons' chapters. Each responsive image represented clearly the season that was captured from. Each picture also contained responsive titles and buttons. There were four titles and four buttons. These titles and buttons were entirely interactive. They appeared and disappeared once the participants would hover the mouse over any one of them. For example, if the participants hovered the mouse on the winter chapter, the pictures, and titles of other seasons would disappear to be replaced with the image of winter, its title, and button. The colors of these titles and buttons would also change from white to red once the mouse was placed on any of them. If the participants wanted to move to another season, they had to click on a title or a button to move to a desired season.

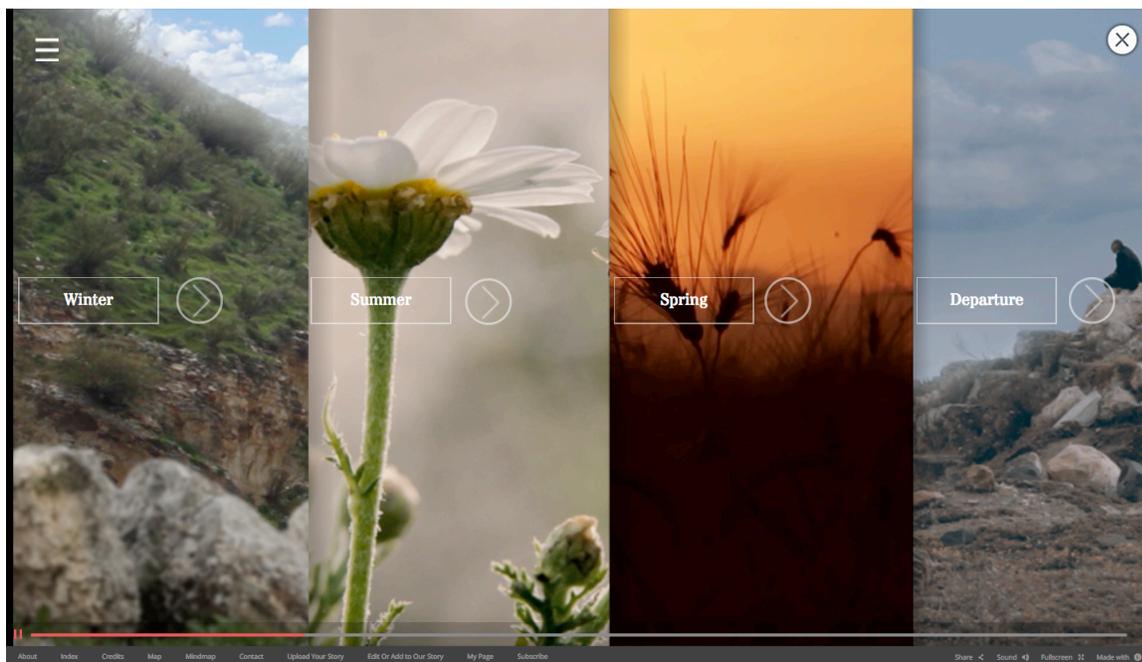


Figure 2. Graphics of '*Seasons of Alharah Alfoqah*'

3. Collections of '*Seasons of Alhara Alfoqah*': winter, spring, summer and departure. Each

season formed a group of interconnected videos through a variety of networks, buttons, titles and texts. Each season consisted of four to five interconnected videos. The start page of each season contained a clip that introduced the whole season through motion pictures, titles, and buttons. This introductory video distributed to the remaining videos by interactive titles that would appear when the participants started the journey through watching the start video of each season. The participants had multiple options in this introductory video: they could go back to ‘*Seasons of Alharah Alfogah Homepage*’ or to the index menu. The participants could also switch to other connected videos by pressing the interactive titles. If the participants hovered, for example, the cursor on any of them, the selected one would appear where the others would disappear. Further, the color of the titles and buttons would constantly change from white to red, and if they were pressed, they would move to the desired video. Other videos, associated with the season’s introduction, had options to go back to the introduction homepage, index menu, or to any video from the season’s video collection.

The mind-map of low interactive documentary.

The mind-map in the low interactive documentary was divided into three main parts as in the mind-map of the high interactive documentary (see Figure 2). Although the videos used in this project were the same as in the high interactive documentary project, the links and the relationships between these videos were different and manipulated. The low interactive documentary project can be described and compared with the high interactive documentary as following:

1. Limited options: Options refer to the participants’ ability to select, communicate, transmit, close and exit, return back, edit, determine specific points of view, etc. These options were made by: animations and interactive buttons, pictures, and text. These options were internally and externally interconnected via hyperlinks that connect the videos and pages to each other. In the high interactive documentary project, all the links that could give the user full control over the project were activated, so the participants’ ability to build their mind-map was possible. However, in the low interactive documentary project, the options were reduced to the minimum, so the participants’ control over the given content was weak, since they had to partially follow the director’s mind-map/point of view.

2. Chronological order: The participants in the high interactive documentary were given the full potential and power, so that they can build their own version from an existing project or external audiovisuals. Many of the linear orders were manipulated in the high interactive documentary project, allowing the participants to rearrange the documentary logic as it could fit their interests. In addition, the participants had the choice to create their own documentary and their own chronological order through re-editing the entire project. Further, if the high interactive documentary participants did not want to follow, for example, the documentary mind-map through available buttons and titles, the index menu was arranged in a random order, so that the participants had the chance to rearrange it according to their own logic. In contrast, the available limited options in the low interactive documentary were meant to reduce the participants' capacity to build their own mind-map, and to make them partially follow the director's point of view. The chronological order of the low interactive documentary was greatly manipulated, where its order was closer to the linear documentary order. This limitation to act was because of the limited choices available that intended to passively affect the participants' ability to rearrange the documentary order. In addition, if the participants chose, for example, to watch the documentary videos through the video list, the list was arranged in a chronological order as if it were linear. The participants did not have to re-arrange the video list into chronological order, but they could instead choose a random map of viewing.

3. Contact: In high interactive documentary, the participants could communicate in two ways with the documentary team in real time as in normal life. Real time was expressed through: chatting at the same time; call us; comment; and constant messaging by using social media in real time. In the low interactive documentary, the means of communication were limited to one option, which was the e-mail option. Although this contact is considered to be a two-way communication, it is still limited and not in real time as well as there is no guarantee of response from the part of communicator.

4. Narration: The exclusion of narration in both interactive documentaries and the replacement with written text were meant to reduce the dominance of the narrator on the process of documentary events. The only difference in both interactive documentaries was that the high interactive documentary had more options to navigate through the narration than the low

interactive documentary.

5. Responsiveness: Responsiveness is generally related to two-way communication in real time with the documentary itself and with the documentary team. It expresses the extent to which the documentary can be able to respond to user input. In the high interactive documentary, all the multimedia materials and hyperlinks were highly responsive in color, transition, size, etc. In the low interactive documentary, all the multimedia materials and hyperlinks were partially responsive. This manipulation was meant to limit the participants' ability and control to freely navigate the low interactive documentary project.

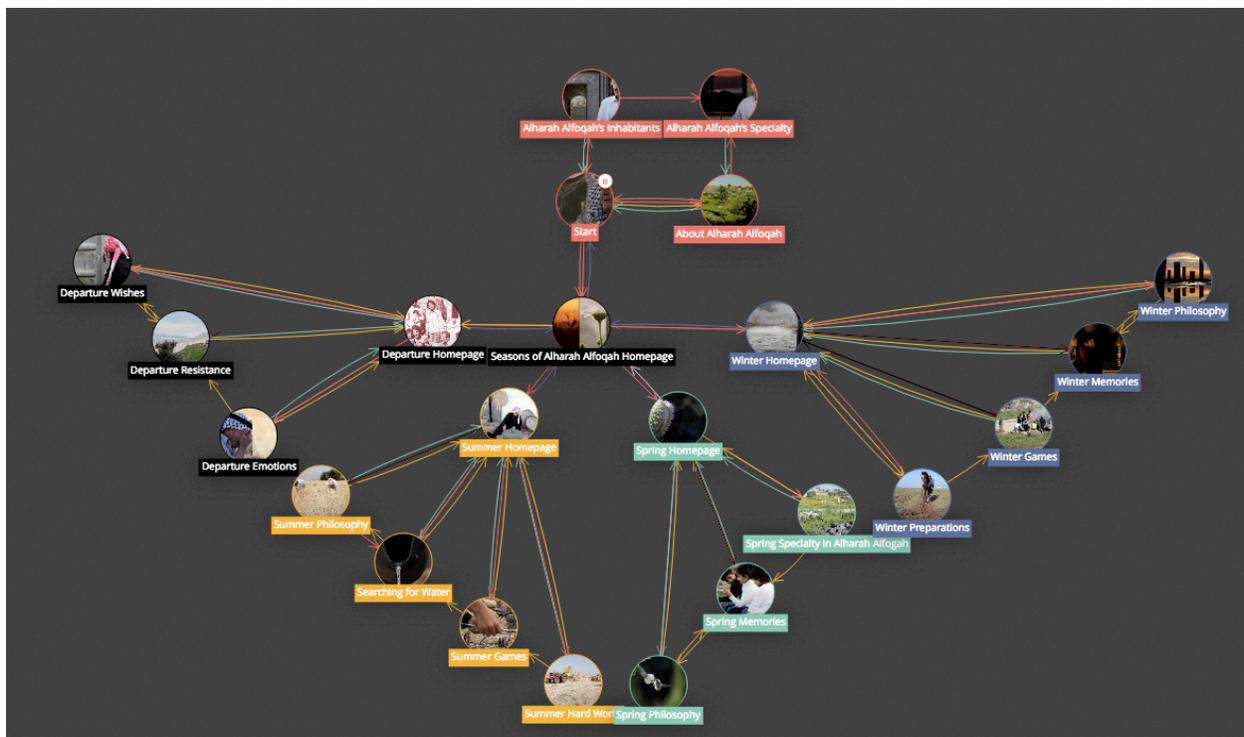


Figure 3. The mind-map of low interactive documentary

Population and Sample

The population of this study was the Jordanian society for several reasons: the documentary story, the language, and the Internet usage in Jordan. The Internet was first accessed by Jordanian society in 1995 (Freedom House, 2011). 35 % of Jordanians had access to the Internet in 2011 according to the International Telecommunication Union (ITU) (ITU, 2009), and the number increasingly reached 41 % in 2011 (ITU, 2012). The majority of Jordanian users are

young, ranging between 16 to 24 years old (Ghazal, 2012).

In addition, the use of mobile and smartphones has equally expanded in recent years. 7.4 million was the number of subscriptions in 2011, exceeding the Jordanian population (Ghazal, 2011). Furthermore, according to a study by Pew Research Center (2011), 95 % of the Jordanian population owned cell phones, 94 % made phone calls, 63% sent text messages, 43 % took pictures or videos, and 23 % used the Internet. The study also found that 29 % used social networking websites and that young people were much more likely to use these sites.

Another study in 2013 (Pew Research Center, 2013) found that Jordan was ranked as having a high smartphone ownership rate among other countries such as Egypt, Tunisia and Turkey. Apparently, the use of the Internet has remarkably become a daily habit in Jordanian society, where the number of social media users has also increased rapidly, reaching 84 % in 2014, sending messages was significantly the most common activity among Jordanian users (Ghazal, 2014a) followed by taking photos and videos 48 % (Ghazal, 2014b). However, Jordanian Internet users tend to watch news videos, a survey was conducted by one of Qatari universities in 2013 on people from Lebanon, Egypt, Saudi Arabia, Bahrain, Qatar, United Arab Emirates and Jordan, found that 91 % of Jordanian Internet users watched news videos much more than other Arabic users. Moreover, the survey found that the majority of Jordanians significantly used social media, primarily Facebook (Dennis, Martin, & Wood, 2013). According to the previous study, Jordanian men spent around 15.2 hours per week on the Internet, whereas Jordanian women spent less with about 4.4 hours per week (Dennis et al., 2013).

Facebook and YouTube are apparently the most favorable social networks in Jordan. According to a study conducted by DSG's Governance and Innovation Program in 2015 on 18 Arabic countries, Jordanian users were ranked as the highest percentage of using and accessing on daily basis Facebook 63 % and YouTube 75 % compared with other Arabic countries (ArabSocialMediaReport-2015, 2015). According to IWS (2018), Jordanian Internet users in Dec 2017 reached 87.8 % of the population. Table 2 shows the percentage of Internet use in Jordan.

Table 2

The Percentage of Using the Internet in Jordan by Years

Year	Users	Population	% Pop.	Usage Source
2000	127,300	5,282,558	2.4 %	ITU
2002	457,000	5,282,558	8.7 %	ITU
2005	600,000	5,282,558	11.4 %	ITU
2007	796,900	5,375,307	14.8 %	ITU
2008	1,126,700	6,198,677	18.2 %	ITU
2009	1,595,200	6,269,285	25.4 %	ITU
2010	1,741,900	6,407,085	27.2 %	ITU
2012	2,481,940	6,508,887	38.1 %	IWS
2015	5,700,000	6,623,279	86.1 %	IWS
2016	5,700,000	7,747,800	73.6 %	IWS
2017	8,700,000	9,903,802	87.8%	IWS

Source: (<http://www.internetworldstats.com/me/jo.htm>)

Sample.

The sample of this study was students from Yarmouk University, Jordan. Generally, students are considered to be the major users on the Internet (e.g., Jones, 2002; Lim, Sia, Lee, & Benbasat, 2006; Rainie & Hitlin, 2005). Other studies showed that the vast majority of the Internet users were young people (Greenwood, Perrin, & Duggan, 2016; McGann, 2005). Similarly, several studies showed that the majority of Jordanian Internet users were significantly young and students (e.g., Abu-Shanab & Al-Tarawneh, 2013; Al-Qudah, 2001; AL-Shdayfat et al., 2016; Eyadat, Alzghoul, & Sharqawi, 2012; Lingwood & Hussein, 2012).

Yarmouk University is one of ten governmental universities in Jordan. There are also 19 private universities, which cover most Jordanian governorates. Yarmouk University is considered to be the second-largest university in Jordan after the University of Jordan in terms of the number of enrolled students, with the number of (37,244) female and male students for the academic year 2017/2018 in bachelor's, master's and doctoral degrees (Yarmouk University,

2018).

Population demographics of this study were undergraduate and graduate students of the Mass Communication College at Yarmouk University, Jordan. The Mass Communication College has (1234) male and female students in total. The college is divided into three departments: TV and Radio, Journalism, and Public Relations and Advertising. The college also offers master's degree in the three departments.

A systematic sample of 360 undergraduate and graduate students of the Mass Communication College engaged in a designed experiment and were surveyed at the end of April 2018 over a course of three days. The students were divided equally into three groups, where each group was asked to randomly view and navigate one of three designed documentaries.

The Instruments

This study used three instruments to measure the participants' perceptions and actual interaction with the three designed documentaries: linear documentary, high interactive documentary and low interactive documentary. To achieve this purpose of the study, the researcher used two methods to examine the relationships among the variables of interest. The study first used a quantitative method, employing a survey instrument that included closed-ended questionnaires, and special applications to monitor and record the entire actual engagement of the participants with the designed experiment.

To fully understand the participants' attitudes and behaviors with the three documentary projects, the study secondly used a qualitative approach by employing an in-depth interview. The three instruments used in this study were as following:

Questionnaire.

In the qualitative study, a questionnaire was employed to measure the participants' attitudes after viewing and navigating the three designed documentaries. The questionnaire was used mainly to measure the level of cognitive engagement with the three designed projects. It was designed by using the online SurveyMonkey. There are several advantages of using the online survey, including: multiple options and templates for designing the questionnaire; It is considered to be easier to design and faster to obtain and analyze the data than the written

survey; and, the online survey is more accurate and easier to handle by participants, more interesting and enjoyable than the written survey (Stanton, 1998).

The questionnaire contained different variables as following: demographic background, media activity, narrative engagement, perceived interactivity, perceived involvement, and the attitude toward the interactive documentary website. (For more details, see the procedures and the variable section).

Google Analytics software.

Google analytics software is one of the software packages that can track the behaviors of online users and provide information about a website's traffic. It is generally free analytical software and to use this application, the researcher needed to create an account, set the dashboard of the needed statistics, and connect the application to the desired traceable websites. There are several advantages of using this software, including: It can generally report what is happening online in real time; and it can also give rich details of social activity on the online publication (Google Analytics, 2018).

Furthermore, Google Analytics can provide statistical data of the online visitors' behaviors relating to several categories: demographic and geographical data of the online users; page which includes page views, unique page views, the average time on pages; video, which refers to video loading, the number of times the video window is played, opened or closed; sound, which indicates the number of times audio window is switched on or off; external links embedded in the website, which includes the number of referrals to external pages, video, or sound; and image, which refers to the number of times the user clicks on images (Google Analytics, 2018). Moreover, this free account application can report other useful information such as downloads, prints and searches.

The Inspectlet software.

Another application called 'Inspectlet' was used side by side with Google Analytics software. The Inspectlet application can give accurate data about each individual user. This online application has a significant capacity to record the entire session of each individual user with these statistical data and features:

A- Screen capture: The application can record videos of the entire user visitation to the traceable website. It gives the researcher the opportunity to see or download the whole activity of each individual user.

B- Filtering: The program could significantly filter the online activity, which as a result can allow the researcher to find and identify any user or visitor.

C- Eye tracking: It is a powerful feature that can remarkably indicate where each individual user looks at, watches, reads, or visualizes certain materials. It can show the correlation between the eye movement and the mouse clicking or navigation.

The application also has other features such as user engagement rate, time spent, conversion funnel analytics, in-depth form analytics, etc.

In-depth interview.

The in-depth interview was used to profoundly understand the user engagement with the designed documentaries. The study conducted an in-depth interview with 21 volunteers divided into three groups: linear documentary group, high interactive documentary group, and low interactive documentary group. Each one of the volunteers viewed and navigated one of the three designed documentaries, and each one of them was then separately interviewed. The study used open questions and recorded each interviewee using an audio recorder. (For more details: see the procedures part).

The Pilot Study

The researcher conducted a pilot study before the intended main study to test whether the questionnaires and the three designed documentaries were representative to the purpose of this study. This pilot study helped to test the research process and/or protocol, to develop the reliability of the variables of interest and to operationalize each one of them.

First, after designing the three projects and before starting the main study, the researcher made several tests and procedures to ensure conducting the main experiment would be successful. These initial procedures included: technical procedures related to the three documentary projects; questionnaire procedures; software procedures that were responsible for recording users' actual interaction with the two interactive documentaries; and finally, initial laboratory procedures.

Technical procedures.

After producing the three documentaries, three filmmakers, and three designers were asked to view and navigate them. It took them a week to evaluate these three documentaries. The evaluation was based on five basic factors: sound quality, image quality, editing quality, sequentiality, especially in the linear documentary; and lastly, the design of interactive features. The evaluation was rated on five measures with written justification: poor, medium, undecided, good, and excellent.

The results of the evaluation were excellent, with valuable notes. In linear documentary, most suggestions were about minor problems related to some wrong editing cuts of video, music and sound effects. Other suggestions were related to re-leveling the volume of some parts of the documentary; shortening some interviews; and, modifying some phrases in the documentary narration. For the interactive documentary projects, the suggestions were concentrated on modifying the font size, color, and transition from one database to another; readjusting the size and directions of some still images and graphics; and removing some unnecessary links. Most of the suggestions were applied to the three documentary projects.

Questionnaire procedures.

The questionnaire was given to a group of specialists in the research community for five days. The required suggestions were related to the language of the questionnaire, its items' order and its relevance to the population of the study. Several suggestions were made about language and arrangement of the items. The researcher applied most of the suggestions.

On the other hand, 18 students were recruited to conduct a preliminary assessment and to examine the practical relevance of the questionnaire to the three designed documentaries. In the experimental lab, the 18 participants viewed the documentaries and answered the related questionnaire. The participants were divided into three main groups: the linear documentary group, the high interactive documentary group, and the low interactive documentary group. After finishing viewing and navigating the documentaries, they were asked to fill out a questionnaire and to record their suggestions on whether the questionnaire was consistent with what they viewed or navigated. Short interviews were conducted with the participants, and their suggestions were mostly applied. Most of their suggestions were about the repetition of some items and the problems in SurveyMonkey designs and choices. In general, the majority of

participants were likely to agree that the questionnaire reflected the designed documentaries that they viewed and navigated and measured what was designed for.

Software procedures.

Essentially, the two interactive documentaries were linked with two main software packages to track and register the participants' activities. These two software packages were: Google Analytics and Inspectlet software packages. Google Analytics was linked to the interactive documentaries in order to give data about the participants' actual interaction related to viewed pages, time spent, etc. The Inspectlet software was linked to the interactive documentaries to provide data such as eye-tracking heatmaps, click heatmaps, scroll heatmaps, and to record the entire session of each participant. The linear documentary, on the other hand, was uploaded to YouTube to record the duration of time the participants would spend viewing the linear documentary. During conducting the initial experiment with the 18 participants, both software packages were functionally examined. The results showed that the two software packages were working and that they were able to record user input with only some minor technical problems that were solved in the same day.

Initial laboratory procedures.

In general, the main study required main physical elements to be accomplished such as a proper lab, high-speed and high-definition computers, high sound quality headsets, and high-speed Internet access. However, the Internet speed was a real problem that did not happen once, but on several occasions. As a preliminary measure, the laboratory that was selected for the main study was tested in terms of numbers and quality of the computers, headsets, and the access to the Internet.

Computers and headsets with technical problems were excluded. In addition, all three documentaries were run simultaneously online on multiple computers to test the capacity of the Internet speed. The physical environment seemed appropriate in the first test, but on the day of the actual experiment, the problem of the Internet speed suddenly surfaced which later led to a partial cancellation of the first day of the experiment.

Initial tests of the Internet speed were mostly done after two pm Jordanian time, and most of them indicated that there was no problem with the Internet speed regardless of the number of participants. However, the procedures of the main experiment began at nine am and the number

of students was commensurate with the initial tests. The Internet speed at the laboratory varies according to complex administrative procedures at the university. The Internet was slow in the morning because of the considerable presence of the students at the university. The Internet became faster in the evening because fewer students were at the university. This was not suitable for the experiment because most participants were not at the university in the evening.

The research team provided the main lab with the Internet routers and added an extra lab. The research team also reduced the number of participants in each session, which contributed greatly to solving the problem. The announcement of the experiment was made two days after the partial failure of the first day.

Data Collection Procedures

This dissertation employed two main studies: the quantitative study and the qualitative study. The purpose of the quantitative study was to provide statistical data about the participants' perceptions and engagement with three designed documentaries. On the other hand, the purpose of the qualitative study was to profoundly provide data about how users perceive the documentary narrative in the three-designed documentaries and how they perceive interactivity in the two interactive documentaries. This section of the data collection procedures is divided into quantitative study procedures and qualitative study procedures.

Quantitative Study Procedures.

The first study of this dissertation was the quantitative study that employed two instruments: the questionnaire and the two monitoring applications. The questionnaire was used to examine and compare the participants' attitudes of narrative engagement and perceived involvement in the three designed documentaries. The questionnaire was also used to examine and compare the participants' attitudes of perceived interactivity and their attitudes toward the interactive documentary websites. The participants of this study were equally divided into three groups based on the documentary that they viewed and navigated: the linear documentary group, the high interactive documentary group, and the low interactive documentary group. The two monitoring applications (Google Analytics and Inspectlet) were mainly used to examine and compare users' actual interaction with the two interactive documentaries. The following part of the study is divided into: building the websites' procedures; Google Analytics and Inspectlet procedures; computer lab procedures; and participants' procedures.

Building the websites procedures.

After designing the three projects, the high and low interactive documentaries were exported for the web in HTML format and HD 1080p resolution, where the linear documentary was exported in HD 1080p resolution and the encoding was chosen to be compatible with the YouTube channel.

A network expert was hired to create two domains in order to upload the two interactive projects on the purchased website host. The two purchased domains were as following:

- www.hgadara.com: It represented the high interactive documentary, where “h” is an abbreviation for “high” and “Gadara” is the ancient name of where the documentary events took place.

-www.lgadara.com: It represented the low interactive documentary, where “l” is an abbreviation for “low” and “Gadara” is the ancient name of where the documentary events took place.

However, the third project (the linear documentary) was uploaded to the researcher’s YouTube channel. Viewing the linear documentary in a YouTube channel was restricted to ‘Unlisted’ option, so that no one could see this linear documentary without having the documentary URL link. The reason why the researcher chose to upload the linear documentary to YouTube was to benefit from the statistical data that YouTube can provide.

The research was trained on how to activate and deactivate the high and low websites. Generally, each project was activated by placing its index on the web manager. To deactivate the websites, the researcher would delete their index from the web manager. This step was very important because it made the two websites only available for those participants who would be involved in the experiment. In short, the websites were activated minutes before the participants entered the lab and were deactivated after the participants finished their task. The whole process was meant to prevent anyone other than the selected participants to be able to view the documentary projects online.

Google Analytics and Inspectlet procedures.

To understand users’ actual interactions, each interactive documentary website was linked to a tracking software in order to record the following: the actual time spent by the

participants on the documentary websites; the number of viewed pages; and other users' actual interactions that are explained in detail in the variables' section.

After building the two interactive documentary websites, the two designed websites were connected to Google Analytics and Inspectlet in order to observe participants' actual interactions while viewing and navigating the two projects. Connecting the two projects to Google Analytics and Inspectlet applications followed these procedures:

Google Analytics was set up for the two interactive websites and the final step was to create a tracking ID for both websites. The researcher made sure to set up Google Analytics and get the code before publishing the websites. The Google Analytics code ID was then pasted into the Klynt application. After exporting the project to HTML format, the final file was uploaded to the domain (<http://hgadra.com> and <http://lgadara.com>) using an agent called FileZilla. The process of uploading the file took more than four hours for each website based on the Internet speed and the project size. After finishing the uploading process, the researcher and his team tested Google Analytical with both websites. In the admin page, the results of recording users' online behaviors were successfully approved for both websites (<http://hgadra.com>) and (<http://lgadara.com>).

On the other hand, to get more useful information of users' actual interactions, the researcher created two pages on Inspectlet website to track (<http://hgadara.com>) and (<http://lgadara.com>). The Inspectlet website created a code for each website. To make the Inspectlet software work, the created code required to be copied and pasted into the index of each website. The researcher followed the instructions of coping and pasting the codes that were available in the Inspectlet website. To make sure that the Inspectlet was ready to record users' sessions, the researcher and his team tested the software, and the results showed that Inspectlet was successfully set up.

Computer lab procedures.

Several lab procedures were taken to ensure that the experiment would be conducted in appropriate conditions that could meet the study purpose and measure the study variables. These procedures were as following:

1. The researcher selected a team of five graduate students who were studying for a master's degree at the Mass Communication College. This team of students was chosen to help the researcher in preparing and organizing the lab and controlling the entry of the participants

into the lab. The researcher trained his team over the course of a week prior to the experimental day and informed them of all the necessary procedures and possible scenarios that could occur during the experimental process.

2. The researcher visited the Faculty of the Mass Communication at Yarmouk University in the middle of February 2018, and tested the validity of the computer labs in the college in order to conduct the experiment. The researcher talked about the intended experiment to some of the professors and the dean of the Mass Communication College in Jordan. They were all willing to cooperate with him to conduct the study in the college.

3. The Faculty of the Mass Communication had four computer labs divided as following: the TV and Radio lab, the Journalism lab, and the Public Relations and Advertising lab. However, the fourth lab, the Multimedia lab, was still not prepared. Nevertheless, the Multimedia lab was remarkably the best option to conduct the study because it was recently installed; equipped with 80 high-resolution computers and headsets; provided with high-speed Internet; and lastly, It had not been used before. In contrast, each one of the three labs could only accommodate a maximum of 40 students per session, most of them had no headsets, and they had been used for several years. However, although the Multimedia lab was the best option for the current study, the researcher had to wait until April 29, 2018, which was the date when the Multimedia lab would be open to the students. After visiting the available computer labs and testing each one of them, the researcher decided to wait until the Multimedia lab would be open since that the computer engineers in the college suggested that the most appropriate lab in the three departments for conducting the experiment would be the Multimedia lab.

4. The researcher and his team visited the Multimedia lab several times, and tested the available computers and headsets. They made sure that they all worked well in a functional and quality manner. However, the researcher and his team tested the speed of the Internet by running the documentary websites on more than forty computers (<http://hgadara.com>, <http://lgadara.com> and the linear documentary on YouTube). The results were positive for (<http://hgadara.com> and <http://lgadara.com>) and negative for the linear documentary on YouTube. It was obvious that some of the websites were blocked in the Multimedia lab such as YouTube and Facebook. The researcher transferred the problem to the vice Dean of Mass Communication College. After the Vice Dean called the computer center at Yarmouk University, it turned out that the university administration had deactivated some of the sites to minimize the students' uploading and

downloading on the Internet. However, these websites can be activated based on the college request and need. Therefore, the Vice Dean wrote an official letter to the computer center at Yarmouk University to activate these websites for 10 days. On the same day, after the official letter was sent, YouTube, the other websites, and the Internet speed were tested. The test showed that all the websites were successfully working.

5. On April 29, 2018, after the ceremony of opening the Multimedia lab, the researcher with his team started to prepare the lab for the experiment. The mission was to create one log window and a code number for each computer in the Multimedia lab. The log window and the code number were created in order to only have access to the page that includes the instructions and the websites' URLs for the designed documentaries and the survey. Each computer had a page for one of the three-designed documentaries. The three URL links of the designed documentaries were distributed equally over the entire computers in the Multimedia lab.

6. The Multimedia lab was equally divided into three sections: the HID section which stands for high interactive documentary, the LID section, which stands for low interactive documentary; and the LR section, which stands for linear documentary.

The meaning of these numbers was not explained to the participants. On the other hand, each participant was asked to write his/her computer's code number on the questionnaire. Therefore, the questionnaire included a preliminary question about the device code number.

7. Each computer desktop in the Multimedia lab had an open PDF document that included several instructions. These instructions were divided into two phases. The first phase was meant to encourage the participants to write the device code placed in front of each computer (HID, LID, or LR), to use the available headsets, and to take their time viewing and navigating the included documentary in their devices by clicking the available link. The second phase was meant to encourage the participants to answer the questionnaire by clicking the included link.

8. Although the webpages of the three designed documentaries were distributed equally to the number of computers, as previously stated, the choice of the participants was random. The researcher alone placed stickers on each computer with a code number, indicating the type of designed documentary on each computer. Later, this procedure helped the researcher to link the type of designed documentary with the questionnaires. This procedure also helped to divide the

participants into three categories: the category of participants with the linear documentary, the category of participants with the high interactive documentary, and lastly, the category of participants with the low interactive documentary.

9. All computers in the computer lab were similar in terms of speed, screen size, color accuracy and sound. In general, they had to function in a manner that was appropriate to the nature of the experiment, so that the experimental environment had to be equal for all participants, and that there were no factors that could create variations in the experimental environment.

10. Each computer was equipped with a suitable headset. The researcher and his team functionally tested the validity of all the headsets. This procedure was indispensable, because all the designed documentaries equally contained music, narration, and sound effects, all of which played an important role to understanding the documentary story. Moreover, the use of the headsets was very important, so that none of the participants would disturb the others in the same lab. Before each experiment session, the participants were encouraged to use the available headsets.

11. The two interactive documentaries (www.hgadara.com) and (www.lgadara.com) had several features that required to be connected to Gmail, YouTube and other editing websites. All the clips edited and linked in Klynt application had a similar version uploaded to YouTube channel. Enabling participants to use these features required a connection between Klynt and YouTube. However, because the researcher and his team wanted to minimize the efforts exerted by the participants while dealing with specific interactive features, they made a special account on Gmail to upload the same clips and allow the participants to be connected. The problem was that the participants needed to log into YouTube each time they wanted to comment or share the videos. To solve this problem, the team signed into Gmail in the entire computers of the Multimedia lab and stayed logged in during the time of the experiment. Therefore, the participants were able to use those features easily without requiring signing in each time they wanted to share or download the documentary videos.

Participants' procedures.

Several participants' procedures were implemented to conduct the experiment in convenient conditions that could achieve the purpose of this study and measure its variables. These procedures were as following:

1. For the participants, the researcher communicated with the professors of the Mass Communication College about the number of enrolled students, their preferred times, and their classes' schedules. After getting the lists of the enrolled students from the college, the researcher and his team divided the classes depending on the class time, class period, and number of students. The period of each class on Monday and Wednesday is usually one hour and half, where the period of each class on Sunday, Tuesday and Thursday is usually one hour. Regular class time usually starts from eight am and finishes at four pm for the undergraduate students, and from three pm until six pm for the graduate students. The number of students in each class is varied from one to another.

2. The best time to conduct the experiment was on Monday and Wednesday, because both days had the longest time in which the participants could view the documentary, and answer the questionnaire without being distracted by thoughts of their next class, since that the majority of students had consecutive classes. Further, viewing the documentary project could range between 30 to 40 minutes and answering the questionnaire could range between 15 to 20 minutes. Time of the experiment was planned to take one hour maximum. Those students who had subsequent classes either in or outside of the college could be troubled with the experimental period and that could negatively affect their engagement. Therefore, one hour and a half could be the best option for the students to participate in this experiment. However, it seemed difficult to have a fair number of students from the classes on Monday and Wednesday because the majority of the mass communication college students were enrolled in classes on Sunday, Tuesday, and Thursday. Therefore, the researcher and his team re-included the classes on Sunday, Tuesday, and Thursday but with a new arrangement with their professors.

3. To solve the time period problem of the Sunday, Tuesday, and Thursday classes, the researcher had several meetings with the professors of the Mass Communication College who taught in those days. He asked them if they could give their students the permission not to go to their following classes if they had a following one. The majority of the professors in the college cooperated with the researcher and his team and accepted to write a permission letter to those

students who would like to participate in the experiment. As a result, the maximum time for viewing the documentary and answering the questionnaires was one hour; the maximum time that the students had, who were enrolled on Monday and Wednesday, was one hour and half, and the maximum time that the students had, who were enrolled on Sunday, Tuesday and Thursday classes, was two hours. In short, the whole undergraduate students of the Mass Communication College had enough time to participate in the experiment and answer the questionnaires.

4. The researcher went to the selected classrooms and talked to the students about the procedures of the experiment. He provided them with a short summary of the importance of the experiment and the general rules for conducting the experiment. He also informed them that their participation would entirely voluntary, where there would be no penalties if they rejected to participate or stopped at any time from completing the experiment. On the other hand, the professors and the researcher encouraged the students by explaining the purpose of the study and by offering them extra course credit with this announcement: “Those who participate in this experiment will have additional marks in their classes. Therefore, each participant’s name will be given to their professors in order to get the additional marks”.

5. The sample of this study was numerically systematic and the designed documentaries were chosen at random. The study required an equal number of participants in each category: the linear documentary category, the high interactive documentary category, and the low interactive documentary category. The final number of the study sample was decided after the first day sessions based on the highest number of the participants in any one of three documentary projects.

Before entering the labs or sections, each participant was asked to randomly pick up a sealed paper that included the documentary code and lab: LR, HID, and LID. The participants did not know what these codes meant until they started viewing or navigating the designed documentaries randomly. Depending on his/her choice of the sealed paper, the participants were directed to a marked lab or section. In other words, the researcher never interfered in the students’ seating area or their choice of designed projects. Each participant did not know what he/she was going to view or navigate; his or her choice of the computer was entirely a random choice of one of the designed documentaries.

At the end of the second day of the experiment, the researcher and his team analyzed the number of the participants and the valid answers. The highest number of the participants was in

the linear documentary category with 129 participants, but those who completed their survey were 120 participants. The rest of the numbers of the participants was determined based on the number of the first volunteers on the two first days. Therefore, in another announcement on the third day sessions, the researcher determined, based on the first group of volunteers, the rest of the needed participants for the study in order to have an equal number in each category of the three documentaries. The sessions of the third day were limited to HLD and LID (high interactive documentary and low interactive documentary). The participants of these sessions had to choose one of the two sealed papers that included the code and the labs or sections. The researcher and his team kept reviewing the valid and completed surveys after each session of the second day to determine the needed number of participants in each documentary category. Consequently, the systematic sample in this study was necessary, as previously stated, because one of its purposes was to equally measure the participants' attitudes and behaviors toward three designed documentaries.

6. Data obtained from the experiment, whether from the actual interaction or questionnaire, were entered directly into the SPSS program and analyzed based on the research hypotheses and questions.

Day one of the experiment.

Although the Multimedia lab was ready and prepared for the experiment, several obstacles awaited the research team. The obstacles started to surface after the experiment was implemented on the first day. These obstacles could be summarized into two main problems: the problem with Internet speed and the problem with SurveyMonkey.

The problem with Internet speed.

The first session was conducted on April 30, 2018, which included the entry of about 40 students to the Multimedia lab. Five minutes after the session started, it was found that more than fifteen students could not view or navigate the documentaries located on the following sites (www.hgadara) and (www.lgadara.com) due to the fact that the Internet speed was not enough to operate these websites. For the third project (the linear documentary), the participants did not face any problem related to the Internet speed or other different troubles. The team tried to solve the problem in the same day, but every effort was in vain. Later, the team found a temporary solution including: Those participants who had trouble viewing the documentaries could use

their smartphones to watch the selected documentary, and then they had to return back to their main lab computers to answer the questionnaire. Some of the participants had smartphones, but they consumed their personal Internet data usages. Therefore, the team brought three Internet routers to the Multimedia lab and wrote their names and password numbers on a large white board. This process was kind of a success for those who did not have Internet data usages. Although these solutions were somewhat acceptable at first sight, the disruption and distraction were among others a negative factor that might negatively affect the experiment.

After the partial failure of the first session, the researcher ceased the experiment for a limited time. The computer center at Yarmouk University was contacted and a special engineer was sent to the Multimedia lab. Unfortunately, the deputy engineer did not solve the problem, but he suggested that the best time to solve the problem of the Internet speed was to conduct the experiment sometime after two pm or on Saturdays, so that the pressure of downloading and uploading would be less than in the week days or times. Nevertheless, the problem in his proposal was that the number of students was always less after two pm, and almost no student on Saturdays. However, it was difficult to ask the students to stay after two pm, and it was more difficult to ask them to come on Saturdays for many reasons. Many of them lived in cities far from the university and would spend a lot of time using public transportation to get to their home.

On the other hand, it was found that the partial success of the test for the Multimedia lab before the start of the actual experiment was in fact due to the time of the test. The team tested the lab after two pm, which was the main reason that the problem did not appear at that time. The amount of pressure on the Internet was less after two pm. The team had not considered that the Internet speed could vary from time to time during the weekdays. After a short time of meeting with the team, a temporary solution was reached, which was to reduce the number of participants per session to no more than 30 students. In the second session, there were no more than 30 students. Although the problem with the Internet speed was less than before, it was still present. The team, therefore, decided to reduce the number of students in subsequent sessions to 20 or less.

Nevertheless, there were more than 100 participants who were involved in the experiment on the first day. The only participants who did not have any trouble of watching or answering the questionnaires were those who viewed the linear documentary. Later, the team validated 41

participants of those who viewed the linear documentary and included them in the final analysis. However, for the participants who viewed and navigated the high interactive documentary and the low interactive documentary, the team concluded that all the procedures of those two groups (the high interactive documentary group and the low interactive documentary group), which were modified during the first day, worked unfortunately to distract the participants, and the successive interventions by the team negatively affected their environmental experiment. Therefore, the team decided to consider the first day as a new test of Multimedia lab capacity and of the Internet speed to accommodate the appropriate number of students, especially the high interactive documentary participants and the low interactive documentary participants. To solve the problems that occurred on the first day, the team reached the following solutions:

A- Making a new section in the Multimedia lab to contain 10 high-resolution laptops. Those laptops were supplied with seven routers with high-speed Internet. The reason for using personal laptops was because it was difficult to connect the desktop computers in the Multimedia lab with the Internet routers. They could be connected but it would require buying special devices to be wirelessly connected. This section was named the HID section.

B- Assigning only 10 desktop computers from the Multimedia lab to the LR (the linear documentary participants): The reason behind this step was to overcome any problem related to the Internet speed.

C- Assigning a third lab located in another building. The chosen lab was the Journalism lab because it was nearby the Multimedia lab. This lab was called the LID section and was prepared to accommodate the low interactive documentary participants. Some of the desktop computers with their headsets were transferred from the Multimedia lab to the Journalism lab. The LID section was prepared and equipped in a similar fashion as the Multimedia lab. The reason for distributing the participants to three labs was to reduce the pressure on the Internet since each lab had a special Internet package. With this action, the probability of video buffering was dropped to the minimum and the smoothness of viewing and navigating the documentaries reached a higher percentage.

The problem with SurveyMonkey.

At the beginning of the second session on the first day, it was found that the SurveyMonkey's URL link of the questionnaire did not work when the participants would click

on it. The experiment of the second session was paused for half an hour in an attempt to fix the problem. The team tried to return to the SurveyMonkey website to get some tips for solving the problem, but that was in vain. One of the team tried to get some recommendations from network experts, but also ended without a decisive solution.

The goal was to find out the cause of the defect and then treat it. After multiple attempts, it was found that the URL link of the survey in the second session did not work because the IP address was the same as in the first session and the second session. Therefore, the URL survey link needed a new IP address for each new participant who would use the same computer and wanted to use the same link to answer the survey after the previous participant would finish answering the questionnaire.

Theoretically, the new participants had to have a different IP address, which seemed to be a very difficult solution. Seemingly, the new participants could not use computers that had been used by previous participants. One member of the team suggested that a clear history should be done on the Firefox engine each time a new participant would want to use the same device. The team tested this idea within the first half hour of the second session and found that it was working. The team, therefore, decided that, after each session, a clear history should be done on Firefox on each used computer.

However, this process led to the emergence of another problem. It was noticed that each time the history was cleared from Firefox, signing out from Gmail would automatically occur. This sign out required from all the participants to resign in if they want to use several interactive features such as share and like. Therefore, the team realized that each time the data was cleared from Firefox, the password box must be left unchecked.

Day two and three of the experiment.

After solving the two problems, Internet speed and SurveyMonkey, all the sessions on the first day were canceled except the sessions of linter documentary participants.

Two days were set for conducting the experiment on May 2nd and 3rd, 2018. The recommendations of the first day of the experiment were carefully followed. At the end of the third day, the sample reached 360 participants after filtering the participants' answers. SurveyMonkey was closed after the end of the last session. All URL links of the documentaries were deactivated.

The Qualitative Study

The second study of this dissertation was the qualitative study that employed an in-depth interview instrument. The purpose of this second study was to profoundly understand the participants' attitudes toward the documentary narrative in the three documentary projects and their attitudes toward interactivity in the two interactive documentary projects. This section of the study is divided into sample selection procedures, preparatory procedures for the in-depth interview, and in-depth interview procedures.

Sample selection procedures.

The selected sample for the qualitative experiment was from the Jordanian society, for the reasons mentioned earlier. In addition, some procedures for conducting the in-depth interview were based on these following factors:

A. The face to face in-depth interview: This qualitative study selected the face-to-face interview because of the nature of the experiment that required the physical presence of the researcher and the presence of the appropriate tools, to avoid any technological problems related to the documentary projects, and to overcome them before and during the experiment if they occur. Therefore, the researcher excluded the use of interviews via Skype or any communication tools via Internet platforms.

B. Geography: Since the researcher chose the in-depth interview as an instrument for this qualitative study, this procedure placed limitations concerning geography and time, which were key factors for determining the numbers of the voluntary sample that participated in this experiment. In terms of geography, it seemed very complicated to conduct such interviews in the entire Jordan because of geography, cost and time. Therefore, the researcher decided to select these volunteers from the northern provinces of Jordan. These centers were Amman and Irbid.

The personal Facebook of the researcher was used to make announcement for volunteers to participate in the study. The research team shared the announcement for a week on their online pages, and at the end of the week; there were about 32 respondents ready for the in-depth interview. E-mails, contact information and further details of the in-depth interview were sent to all respondents. However, after they reviewed the full details of the experiment, the number dropped to 25 participants due to the inconvenience of time or location. In addition, after setting up the days and time to conduct the experiment, four other participants could not come to the

interview. The final number of participants became 21 participants.

Preparatory procedures for the in-depth interview.

After the number of respondents reached 21, they were divided into three main groups. Each group contained seven participants as following: the high interactive documentary group, the low interactive documentary group, and the linear documentary group.

A lottery method was used to select a documentary out of three documentaries for each group. The names and the addresses of the 21 participants were written on sheets and placed in a bowl. Three assistants of the researcher were appointed to withdraw the samples. Each assistant represented one of the three documentary projects and drew seven papers (names) out of the total names. That is, each assistant was named as following: the linear documentary representative, the high interactive documentary representative, and the low interactive documentary representative. Each one of the representatives chose seven papers that included the names of the participants.

After dividing the groups evenly, ten days was set for conducting the in-depth interviews based on the participants' times, locations, and distance. In general, six sites were selected to conduct the experiment over a period of ten days.

In-depth interview procedures.

Before starting any of the in-depth interviews, the participants were asked to sign a release form. They were also briefed on the details of the experiment, which included the following:

- Watching or navigating the selected documentary.
- Using the headset to better experience the documentary sounds.
- Participants can stop watching, answering the questionnaire, or doing the interview at any moment they want.
- Answering the attached questionnaire.
- Conducting the in-depth interview after finishing watching/navigating the selected documentary and answering the questionnaire.

To avoid any technological problems that may affect the experiment, the researcher took in his consideration the following procedures:

- Using a unified computer for all the interviewees. The computer had high-speed

ram and a high-definition screen.

- Using a laser mouse to help the participants navigate easier in the documentary projects.
- Using a Bluetooth headset with a high sound quality.
- Using a high-speed mobile Internet router to avoid any problems related to the Internet speed.
- Using an audio recorder to record all the interviews after getting the participants' permission. Using the recorder was important in these interviews rather than writing because it allowed the interviewer to focus more with the interviewees without being preoccupied with writing, which in turn helped the interviewer and interviewees to better communicate.

In general, the total time to watch or navigate each documentary, answer the questionnaire, and conduct the in-depth interview with each participant lasted almost from one and a half to two hours. This can be divided into three categories: (a) documentary duration: 30 minutes for each category; (b) Questionnaire duration: approximately 20 minutes; and (c) In-depth interview: 30 to 45 minutes.

This was the approximate time for conducting the experiment, but the duration of the experiment varied from one participant to another depending on the nature of the participant and the use of the interactive features.

After conducting the in-depth interviews, all the audio interviews were transferred to a transcript and final report was structured on three main categories: descriptive statistics of qualitative study; narrative engagement report, and perceived interactivity report.

Quantitative and Qualitative Methods: Variables of Interest

The purpose of this study was to measure the users' perceptions and actual interactions with the three designed documentaries. To achieve the purpose of the study, the researcher used two methods to examine the relationships among variables of interest. The study first used a quantitative method, employing a survey instrument that included closed-ended questionnaires and two applications (Google Analytics and Inspectlet) to record the participants' actual interactions. The researcher secondly used an in-depth interview as a qualitative instrument to

fully understand participants' attitudes and perceptions in terms of documentary narrative and interactivity.

The quantitative study adopted an experimental design that included two key independent variables: the designed documentaries and the users' actual interaction. The designed documentaries were manipulated based on linearity and the levels of interactivity. Three groups were divided equally to view and navigate these three designed documentaries: the linear documentary group, the high interactive documentary group and the low interactive documentary group. Therefore, the first independent variable was the actual interactivity and linearity manipulated in the three designed documentaries.

The second independent variable was users' actual interaction. Users' actual interaction was only applied to the two interactive documentaries since the user's actual activities are essentially different in linear documentary and in both low interactive documentary and high interactive documentary. Users' actual interaction in linear documentary is based on watching the linear documentary, while users' actual interaction in both interactive documentaries ranges from viewing/navigating the documentary to modifying the documentary content. Therefore, users' actual interaction was divided into three categories:

1. Users' time spent on the interactive documentary website: This category was used to first examine if there were significant differences between users' time spent on the low interactive documentary and users' time spent on the high interactive documentary; second, it was used to examine the correlation between users' actual interaction (time spent) and their perceptions including: narrative engagement, perceived interactivity, perceived involvement, and attitude toward the interactive documentary website.

2. Users' actual page views: this category was used as a comparative instrument to give more details and to compare between both interactive documentary websites in terms of the following: page views, average time on page, unique page view and page depth. According to Google Analytics (2018), page view is the total number of pages viewed. Repeated views of a single page are counted; Average time on page is simply the average amount of time all users spend on a single page; unique page views is the number of sessions during which the specified page was viewed at least once. A unique page view is counted for each page URL + page Title combination; page depth creates a histogram of values by a number of pages, ranging from 1 - 20+, which are then applied across visitor sessions. The intersection of the two shows the

number of pages viewed in a session. For example, the report might show that 1000 visits accounted for views to one page only, 250 visits accounted for views to 2 pages, 50 accounted for views to 3 pages, and so on through the distribution of possible numbers of pages viewed in a session⁵

3. Users' tendency to use the available interactive features: This category was used to examine the use of interactive features in only the high interactive documentary since those special features were only present or manipulated in the high interactive documentary. This measure was based on user's percentage of access and use of these following tools: "Search Engine; Contact; Like/Dislike; Comment; Share the Project; Share Individual Videos; Download; Upload Your Film/Story; Edit/add to Our Story; MindMap; Index Menu; Geographic Map; Video Annotation; My Page; Subscription". The goal of this procedure was to examine the level of the user's intention to use these interactive features.

On the other hand, the study used an online survey created by SurveyMonkey website as an instrument of the quantitative research. The survey included several sections with closed-ended questions. In the questionnaires, participants were asked to address their attitudes using a 7-point Likert-type scale ranging from (Strongly disagree SD=1 to strongly agree SA=7).

To obtain general information of the participants, respondents were asked to select from a list of media the medium or mediums they usually use: "TV; Radio; Movie Theaters; Print: Newspapers/ Magazines; VCR Player; DVD Player; PlayStation/ Video Game Console;

⁵ Although the study used two applications (Google Analytics and Inspectlet) to record the users' actual interaction, not all available data were used in this category/study. The study believes that the size and value of the observed data from the two applications were large, frequent, and often identical to each other or not useful. For example, features, such as eye-tracking heatmaps, click heatmaps, scroll heatmaps were considered to be useless because first, most of the data on the two interactive documentary website were videos, and second these features did not reveal the differences between the two interactive documentary websites that the study was looking for. Likewise, many available features of Google Analytics such as new visitors vs. returning visitors were not used because they often require long-term experiments/time to be used efficiently. reveal the differences between the two interactive documentary websites that the study was looking for. Likewise, many available features of Google Analytics such as new visitors vs. returning visitors were not used because they often require long-term experiments/ time to be used efficiently.

Computer/Laptop; Smart Phones; Tablets; Internet; Social Media; Broadcast TV News Websites; Internet Radio; Internet Print (Newspapers/Magazines)”.

In addition, respondents were asked to identify the amount of time they spend on the Internet with these items: “Less than 1 hour; 1–2 hours; 2–4hours; 5–6 hours; More than 7 hours”. Moreover, respondents were asked to mark the activity they do on the Internet with these following items: “Watching video, films; writing (blog, articles, comments); chatting or vocal communicating with others; and, playing games; reading (articles, comments, research, books)”.

Furthermore, respondents were asked to identify the film genre they like to watch. The film genres were generated from the IMDB website, including: “Classics; Drama; Romance; Comedy; Biography; Crime; Action & Adventure; Anime & Animation; Children & Family; Faith & Spirituality; Sports & Fitness; Horror & Thrillers; Music & Musicals; Sci-Fi & Fantasy; History; Western; War; Documentaries”. Finally, demographic data related to gender, age, and education were also collected.

On the other hand, this study measured four dependent variables as following:

Narrative engagement scale.

The study adopted the Busselle’s and Bilandzic’s (2009) modified scale to measure the narrative engagement. The modified items of Busselle’s and Bilandzic’s scale (2009) below show the four demotions of narrative engagement: narrative understanding, attentional focus, narrative presence, and emotional engagement (see Table 3). The participants were asked to evaluate the documentary narrative using a 7-point Likert-type scale ranging from (Strongly disagree SD=1 to strongly agree SA=7).

Table 3

Items of Narrative Engagement Adopted from Busselle’s and Bilandzic’s (2009) Scale

Items	Dimensions
Narrative understanding dimension	
1	At points, I had a hard time making sense of what was going on in the documentary.
2	My understanding of the characters is unclear.
3	I had a hard time recognizing the thread of the story.
Attentional focus dimension	

- 4 I found my mind wandering while the documentary was on.
- 5 While the documentary was on, I found myself thinking about other things.
- 6 I had a hard time keeping my mind on the documentary.

Narrative presence dimension

- 7 During the documentary, my body was in the room, but my mind was inside the world created by the story.
- 8 The documentary created a new world, and then that world suddenly disappeared when the documentary ended.
- 9 At times during the documentary, the story world was closer to me than the real world.

Emotional engagement dimension

- 10 The story affected me emotionally.
- 11 During the documentary, when a main character succeeded, I felt happy, and when they suffered in anyway, I felt sad.
- 12 I felt sorry for some of the characters in the documentary.

Note. Items 1–6 were reversely coded in the final analysis.

Perceived interactivity scale.

To measure the perceived interactivity that was defined as “a psychological state experienced by a site-visitor during the interaction process” (Wu, 2006, p. 30). The study adopted a modified scale from Wu (2006). Participants were asked whether they agree/disagree with the following modified statements (see Table 4) on a 7-point Likert-type scale ranging from (Strongly disagree SD=1 to strongly agree SA=7).

Table 4

Items of Perceived Interactivity Adopted from Wu’s (2006) Scale

Items	Dimensions
Perceived control dimension	
1	I was in control of my navigation through the documentary website.
2	I had some control over the content that I wanted to see in the documentary website.
3	I had total control over the pace of my visit to the documentary website.

Perceived responsiveness dimension

- 4 I could communicate with the documentary team directly for further questions about the documentary or other documentary productions.
- 5 The documentary website had the ability to respond to my specific requests quickly and efficiently.
- 6 I could communicate in real-time with other viewers who shared my interest in the documentary.

Perceived personalization dimension

- 7 I just had a personal conversation with a social, knowledgeable and warm representative from the documentary team.
- 8 The documentary website was like talking back to me while I clicked through it.
- 9 The information in the documentary website was personally relevant and interesting to me.
-

Perceived involvement scale.

It was defined as “a person’s perceived relevance of the object based on inherent needs, values and interests” (Zaichkowsky, 1985, p. 342). To measure the documentary involvement, the study used Zaichkowsky’s scale (1994) with a 7-point semantic differential scale with these items: “Important/Unimportant; Boring/Interesting ; Relevant/Irrelevant; Exciting/Unexciting; Means nothing/Means a lot to me; Appealing/Unappealing ; Fascinating/Mundane; Worthless/Valuable; Involving/Uninvolving; Not needed/Needed”.

Attitude toward the documentary website scale.

It was defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (Eagly & Chaiken, 1993, p. 1). The study adopted Chen’s and Wells’s (1999) modified scale to measure the participates’ attitudes toward the documentary website employing a 7-point Likert-type scale ranging from (Strongly disagree

SD=1 to strongly agree SA=7) with the following statements: “This documentary website makes it easy for me to build a relationship with this documentary team; I would like to visit the documentary website again in the future; I am satisfied with the service provided by this documentary website; I feel comfortable in surfing this documentary website; I feel surfing this documentary website is a good way to spend my time; Compared with other websites, I would rate this documentary website as one of the best”.

However, in the qualitative method, the independent variable was the actual interactivity manipulated in the three designed documentaries. The participants were divided into three groups based on the documentary that they viewed and navigated. The variables of this qualitative study can be divided as following:

1. Descriptive statistics of qualitative study: This section included information about the participants such as: age, gender, media use, and time spent on the Internet, etc.

2. Narrative engagement report: This section compared how the participants perceived the narrative engagement in the three documentary projects: linear documentary, low interactive documentary and high interactive documentary.

3. Perceived interactivity report: This section compared how the participants perceived the interactivity in the two interactive documentaries: low interactive documentary and high interactive documentary.

Chapter 5: Results

The purpose of this study was to examine the relationship between actual interactivity manipulated in two interactive documentaries (high and low) and participants' actual interaction (measured by time spent on each interactive documentary website), and how both variables influence their perceptions (perceived interactivity, narrative engagement, perceived involvement and attitude toward the interactive documentary websites). Moreover, the purpose of this study was to explore the relationship between interactivity and linearity by examining how participants perceive narrative and involvement in three designed documentaries (linear documentary, low interactive documentary and high interactive documentary). The study used two methodologies to investigate these relationships among the variables of interest. In the first method, the research design employed a quantitative method, using closed-ended questions on the survey instrument. Participants were divided into three groups; each group was instructed to navigate or watch one of the three documentary projects; and to indicate how strongly they agreed or disagreed with a number of statements relating to their attitudes and behaviors toward the assigned documentaries. In addition, the quantitative method applied two software packages to track the participants' behaviors online. In the second method, the sophisticated nature of human attitudes/behaviors toward the documentary encouraged the use of a qualitative method. The main purpose of the qualitative method, that employed an in-depth interview instrument, was to profoundly understand how participants understand the documentary narrative, in the three designed documentaries, and the interactivity, in the two interactive documentaries.

This chapter is divided into two sections: quantitative study findings and qualitative study findings.

Quantitative Study Findings

This section presents the basic and advanced multivariate analysis techniques used to examine the quantitative research questions obtained from the data collection process. The analysis includes descriptive statistics, correlation analysis, independent-samples *t* test, and one-way ANOVA. However, after collecting the data, a total score of each item of the dependent variables was created for the following scales: narrative engagement scale, perceived interactivity scale, perceived involvement scale, and attitude toward the documentary website

scale. The following section is ordered into: manipulation checks and scale reliability, descriptive statistics of respondents, and tests of hypotheses and analysis of research questions.

Manipulation Checks and Scale Reliability

To examine if the manipulation of the independent variable, level of interactivity, had achieved its intended effect, an independent samples *t*-test was conducted to test if the perceived interactivity of the documentary website varied significantly among the two groups of the participants: those who were exposed to the high interactive documentary website, and those who were exposed to the low interactive documentary website. From the analysis, the perceived interactivity varied significantly across the interactivity levels. The mean of perceived interactivity increased by increasing the level of interactivity (see Table 5).

Table 5

Perceived Interactivity Across Interactivity Levels

	<i>N</i>	<i>M</i>	<i>SD</i>
High Interactive Documentary	120	51.67	10.21
Low Interactive Documentary	120	31.03	8.85

On the other hand, all scales used in this study as dependent variables were tested for internal consistency using the Cronbach's alpha reliability procedure (Cronbach, 1951). Table 6 displays descriptive statistics and the results of the Cronbach's alpha tests. All variables have relatively high internal consistency ranging from .82 to .94.

Table 6

Descriptive Statistics for Scales Used in the Experiment

Scales	No of Items	<i>M</i>	<i>SD</i>	Cronbach's Alpha
Perceived Interactivity	9	42.54	12.59	0.85
Narrative Engagement	12	68.10	16.57	0.94
Perceived Involvement	10	56.59	8.94	0.86
Attitude toward the Interactive Documentary Website	6	32.15	6.34	0.82

Note. Maximum score = 63 for Perceived Interactivity; 84 for Narrative Engagement; 70 for Perceived Involvement; and 42 for Attitude toward the Interactive documentary Website.

Descriptive Statistics of Respondents

A sample of 360 participants was completed in a multimedia lab of the Mass Communication Collage at Yarmouk University, Jordan. The participants were (41.4 %) males and (58.6 %) were females. The average age was 20-22 years (63.3 %) among different ages including “18–19, 23–25, 26 - 30 and 31 - or older”. Junior students were the major participants (28.3 %) followed by sophomore students (23.6 %) among different levels of education including “freshman, sophomore, junior, senior, graduate school and others”. A significant number of participants were registered in Radio & TV (36.4 %) followed by Public Relations & Advertising (29.2 %). The demographics of the participants are shown in Table 7.

Table 7

Demographic Variables of the Participants

Variables		<i>N</i>	Percent
Gender	Male	149	41.4 %
	Female	211	58.6 %
Age	18-19	52	14.4 %
	20-22	228	63.3 %
	23-25	55	15.3 %
	26-30	14	3.9 %
	32-or older	11	3.1 %
Education Background	Freshman	54	15.0 %
	Sophomore	85	23.6 %
	Junior	102	28.3 %
	Senior	69	19.2 %
	Graduate School	32	8.9 %
	Others	18	5.0 %
Field of Study	Radio and TV	131	36.4 %
	Journalism	89	24.7 %
	Public Relations & Advertising	105	29.2 %
	Others	35	9.7 %

In addition, “Smartphones” (67.7 %), “Social Media” (62.1 %) and “Internet” (57.4 %) were largely used media among the participants (see Figure 4).

Media Use Frequencies

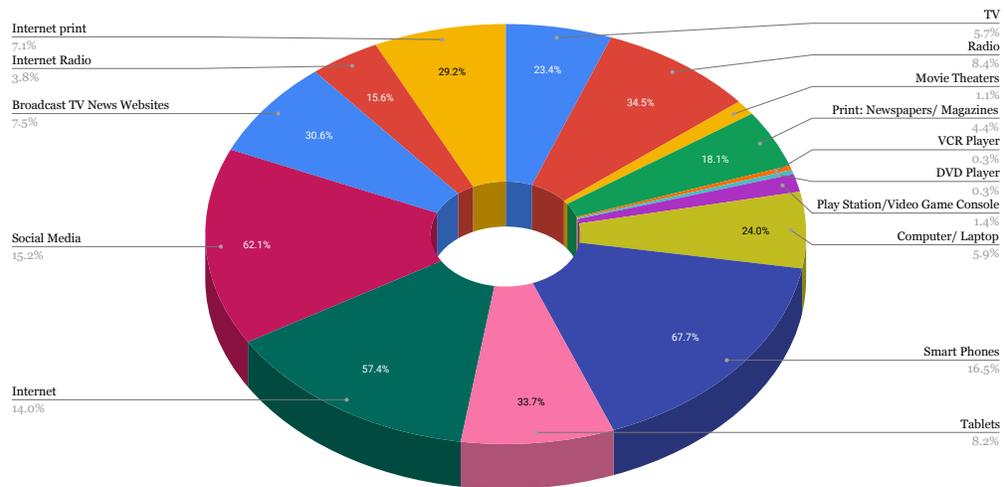


Figure 4. Participants' media use frequencies

The majority of participants spend 2-4 hours on the Internet (34.5 %) followed by 5-6 hours (31.8 %) (see Table 8).

Table 8

Time Spent on the Internet

	Frequency	Percent
Less than 1 hour	11	3.15 %
1-2 hours	50	13.9 %
2-4 hours	124	34.5 %
5-6 hours	114	31.8 %
More than 7 hours	60	16.7 %

“Watching videos and films” was significantly the most common activity selected by the respondents (70.1 %) followed by “Chatting or vocal communicating with others” (37.6 %) (see Table 9).

Table 9

Internet Activity Frequencies

		<i>N</i>	Percent
Internet Activity	Watching videos, films	248	70.1 %
	Writing (blogs, articles, comments)	49	13.8 %
	Chatting or vocal communicating with others	133	37.6 %
	Playing games	25	7.1 %
	Reading (articles, comments, news, books, etc.)	94	26.6 %

Finally, among different film genres, the participants were more likely to prefer watching “Drama Films” (45,7 %); “Action & Adventure Films”(40.9 %); and “Comedy Films” (35.7 %). However, “Documentaries” (26.7 %) were less selected among the respondents (see Figure 5).

Most Popular Film Genres among the Participants

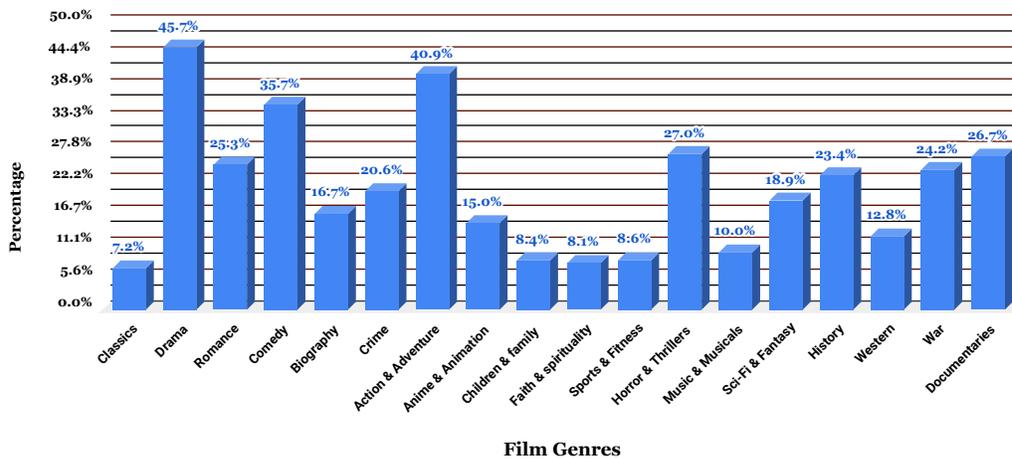


Figure 5. Participants’ favorite film genres

Tests of Hypotheses and Analysis of Research Questions

Actual interactivity.

Two hypotheses emerged from the literatures review about the relationship between different levels of actual interactivity and both perceived interactivity and attitude toward the interactive documentary website:

H1a: The higher the level of documentary interactivity, the more positive the perceived interactivity.

H1b: The higher the level of documentary interactivity, the more positive the attitude toward the interactive documentary website.

To test these two hypotheses, the level of actual interactivity, as an independent variable, was manipulated in two different levels of interactivity (low interactive documentary and high interactivity documentary). Two of the three groups were assigned to navigate the two interactive documentary websites and evaluated their experiences on two scales of dependent variables: perceived interactivity scale and attitude toward the interactive documentary website scale. First, to examine if there is a significant influence of level of actual interactivity on the dependent variable (perceived interactivity), an independent samples *t*-test was conducted. The results indicated the means differed significantly (see Table 10). The mean of perceived interactivity increased by increasing the level of interactivity. The participants who viewed and navigated the high interactive documentary ($N = 120$) were associated with numerically greater perceived interactivity ($M = 51.67, SD = 10.21$). By comparison, the participants who viewed and navigated the low interactive documentary ($N = 120$) were associated with numerically smaller perceived interactivity ($M = 31.03, SD = 8.85$). The assumption of homogeneity of variances was tested and satisfied via Levene's *F* test, $F(238) = 1.64, p = .202$. The Levene's test is not significant. Therefore, equal variances are assumed. The independent samples *t*-test was associated with a statistically significant effect, $t(238) = 16.72, p = .001$ (see Table 10). Thus, the participants who viewed the high interactive documentary were associated with a statistically significant larger mean with perceived interactivity. Cohen's *d* was estimated at 2.16, which is a large effect based on Cohen's (1992) guideline. Thus, hypothesis 1a is supported.

Table 10

Independent Samples t-Test Comparing Level of Actual Interactivity with Perceived Interactivity of Both Groups

Groups	HID		LID		<i>t</i>	<i>p</i>	<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
	51.67	10.21	31.03	8.85	16.72	.001	2.16

Note. ^a The *p* is significant at the < 0.05 level. ^b *N*=120 for each group. ^cHID=High Interactive Documentary; LID = Low Interactive Documentary.

Second, to examine if there is a significant influence of level of actual interactivity on the dependent variable (attitudes toward the interactive documentary website), an independent samples *t*-test was also conducted. The results indicated the means differed significantly. The mean of attitudes toward the documentary website increased by increasing the level of interactivity. The participants who viewed and navigated the high interactive documentary (*N* = 120) were associated with numerically higher level of attitudes toward the documentary website (*M* = 34.52, *SD* = 5.40). By comparison, the participants who viewed and navigated the low interactive documentary (*N* = 120) were associated with numerically lower level of attitudes toward the documentary website (*M* = 29.78, *SD* = 6.34) (see Table 11). The assumption of homogeneity of variances was tested and satisfied via Levene's *F* test, $F(238) = 2.11, p = .147$. The Levene's test is not significant. Therefore, equal variances are assumed. The independent samples *t*-test was associated with a statistically significant effect, $t(238) = 6.23, p = .001$. (see Table 11) Thus, the participants who viewed and navigated the high interactive documentary were associated with a statically significantly larger mean with attitude toward the interactive documentary website. Cohen's *d* was estimated at 0.80, which is a large effect based on Cohen's (1992) guideline. Thus, hypothesis 1b is supported.

Table 11

Independent Samples t-Test Comparing Level of Actual Interactivity with Attitudes toward the Interactive Documentary of Broth Groups

Groups	HID		LID		<i>t</i>	<i>p</i>	<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
	34.52	5.40	29.78	6.340	6.23	.001	0.80

Note. ^a The *p* is significant at the < 0.05 level. ^b *N*=120 for each group. ^c HID=High Interactive Documentary; LID= Low Interactive Documentary.

Perceived interactivity.

Three hypotheses were generated from the literature review that examine the relationship between perceived interactivity and narrative engagement, perceived involvement, and attitude toward the interactive documentary website:

H2a: Perceived interactivity of an interactive documentary is positively related to the narrative engagement.

H2b: Perceived interactivity of an interactive documentary is positively related to the perceived involvement.

H2c: Perceived interactivity of an interactive documentary is positively related to the attitude toward the interactive documentary website.

To test these hypotheses, a series of Simple Linear Regressions, using perceived interactivity as an independent variable, was conducted to examine if there is a significant influence of perceived interactivity on the dependent variables. The results of the regression analyses suggested that there were significant relationships between perceived interactivity and both perceived involvement $\beta = .25, t = 5.56, p < .00$; and attitudes toward the interactive documentary website $\beta = .350, t = 18.97, p < .001$. However, the results of the regression analyses predicted no significant correlation between perceived interactivity and narrative engagement (see Table 12). Perceived interactivity explained (11 %) of perceived involvement, $R^2 = .11, F(1, 2) = 31.00, p < .001$; and (60 %) of attitude toward the documentary website, $R^2 = .60, F(1, 2) = 31.00, p < .001$.

60, $F(1, 2) = 359.85$, $p < .001$. However, attitude toward the interactive documentary website showed a stronger correlation with perceived interactivity than perceived involvement. Thus, hypothesis 2a is not supported and both hypotheses 2b and 2c are supported.

Table 12

Regression Results Using Perceived Interactivity as a Predictor

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Narrative Engagement	-.153	.121	-.082	-1.26	.206
Perceived Involvement	.255	.046	.339	5.56	.001
Attitude toward the Interactive Documentary Website	.350	.018	.776	18.97	.001

Users' actual interaction.

Several research questions were developed from the literature review. Research question **RQ1a** asked: Does the level of actual interactivity significantly influence users' actual interaction?

Users' actual interaction in this question was measured by time spent on the interactive documentary website. The data of average time spent on both interactive documentary websites were collected for each participant who viewed either the low interactive documentary or the high interactive documentary. However, the study excluded the time factor from those participants who viewed the linear documentary. The nature of viewing the linear documentary, concerning the spent time as a behavioral measure, is completely different from navigating and viewing both interactive documentaries since that linear documentary did not have any interactive features. In addition, the maximum time for each participant to complete watching the linear documentary was 30 minutes, whereas the time to navigate and view both interactive documentaries varied based on the levels of using the interactive tools embedded in each interactive documentary website. Therefore, the aim of this question was to compare between the two groups who viewed and navigated both interactive documentary websites.

First, to test if there is a difference between the two interactive documentary websites in terms of users’ actual interaction (measured by time spend on each documentary website), an independent samples *t*-test was conducted to examine if there is a significant influence of level of actual interactivity on users’ actual interaction. The results indicated the means differed significantly. The mean of users’ actual interaction increases by increasing the level of interactivity (see Table 13). The participants who navigated the high interactive documentary were associated with numerically longer time spent on the website ($N = 120, M = 1180.00, SD = 706.31$). By comparison, the participants who navigated the low interactive documentary were associated with numerically shorter time spent on the website ($N = 120, M = 895.62, SD = 686.32$). The assumption of homogeneity of variances was tested and satisfied via Levene’s *F* test, $F(238) = 0.24, p = 0.621$. The Levene’s test is not significant. Therefore, equal variances are assumed. The independent samples *t*-test was associated with a statistically significant effect, $t(238) = 3.22, p = .001$ (see Table 13). Thus, the participants who viewed and navigated the high interactive documentary were associated with a statically significantly larger mean with time spent on the documentary website. Cohen’s *d* was estimated at 0.416, which is a fairly medium effect based on Cohen’s (1992) guideline.

Table 13

Independent Samples t-Test Comparing Level of Actual Interactivity with Users’ Actual Interaction

Groups	HID		LID		<i>t</i>	<i>p</i>	Cohen’s <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
	1180.00	706.31	889.73	686.47	3.22	.001	0.41

Note. ^a The *p* is significant at the < 0.05 level. ^b $N=120$ for each group. ^c HID=High Interactive Documentary; LID= Low Interactive Documentary.

Research question **RQ1b** asked: Is there a correlation between users’ actual interaction and their perceptions (perceived interactivity, narrative engagement, perceived involvement and attitudes toward the interactive documentary website)?

A series of Simple Linear Regressions was conducted to assess whether users’ actual interaction (time spent on the documentary website) significantly predict narrative engagement,

perceived interactivity, perceived involvement and attitude toward the interactive documentary website. The results of analyses suggested that there were significant correlations between users' actual interaction and all dependent variables: narrative engagement $\beta = .006$, $t = 2.51$, $p < .012$; perceived interactivity $\beta = .016$, $t = 22.06$, $p < .001$; perceived involvement $\beta = .005$, $t = 5.81$, $p < .001$; and attitude toward the interactive documentary website $\beta = .006$, $t = 2.51$, $p < .001$. Users' actual interactivity explained (02 %) of narrative engagement, $R^2 = .02$, $F(1, 2) = 6.34$, $p < .012$; (67 %) of perceived interactivity, $R^2 = .67$, $F(1, 2) = 487.04$, $p < .001$; (12 %) of perceived involvement, $R^2 = .12$, $F(1, 2) = 33.79$, $p < .001$; and (38 %) of attitude toward the interactive documentary website, $R^2 = .38$, $F(1, 2) = 146.97$, $p < .001$. However, perceived interactivity followed by attitude toward the interactive documentary website showed a stronger correlation with users' actual interactivity than other dependent variables (see Table 14).

Table 14

Regression Results Using Users' Actual Interaction as a Predictor

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
Narrative Engagement	.006	.002	.162	2.51	.021
Perceived Interactivity	.016	.001	.820	22.06	.001
Perceived Involvement	.005	.001	.353	5.81	.001
Attitude toward the Interactive Documentary Website	.006	.000	.618	12.12	.001

Research question **RQ1c** asked: What are the differences between high interactive documentary and low interactivity documentary in terms of users' actual page views?

Users' actual page views was categorized as page views, average time on page, unique page view and page depth. Page view is the total number of pages viewed. Repeated views of a single page are counted (it is the measurement of how many time the user clicks on the page/pages). Figure 6 shows a different number of pages viewed between the high interactive documentary and the low interactive documentary. The total pages viewed in the high interactive

documentary were associated with numerically greater number ($N = 23, M = 109.17, SD = 125.28$) than the total pages viewed in the low interactive documentary ($N = 23, M = 105.21, SD = 107.11$).

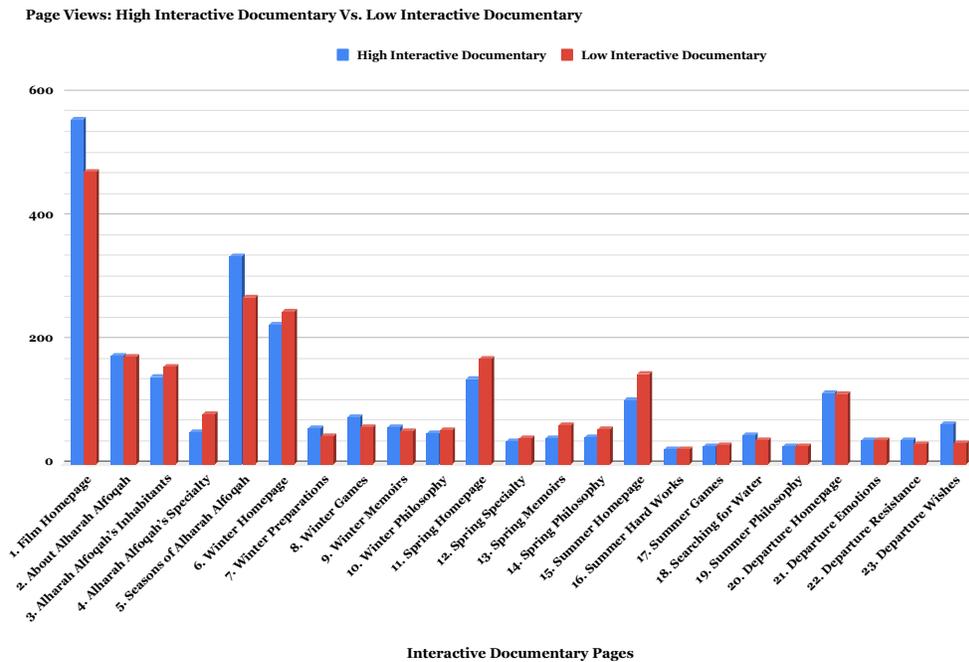


Figure 6. Participants' page views

Furthermore, average time on page is simply the average amount of time all users spend on a single page. Figure 7 shows the difference of the average time on both high interactive documentary and low interactive documentary. The average time spent by the participants who navigated the low interactive documentary was associated with numerically higher number ($N = 23, M = 0:01:12, SD = 0:00:33$) than the average time spent by the participants who navigated the high interactive documentary ($N = 23, M = 0:00:54, SD = 0:00:22$).

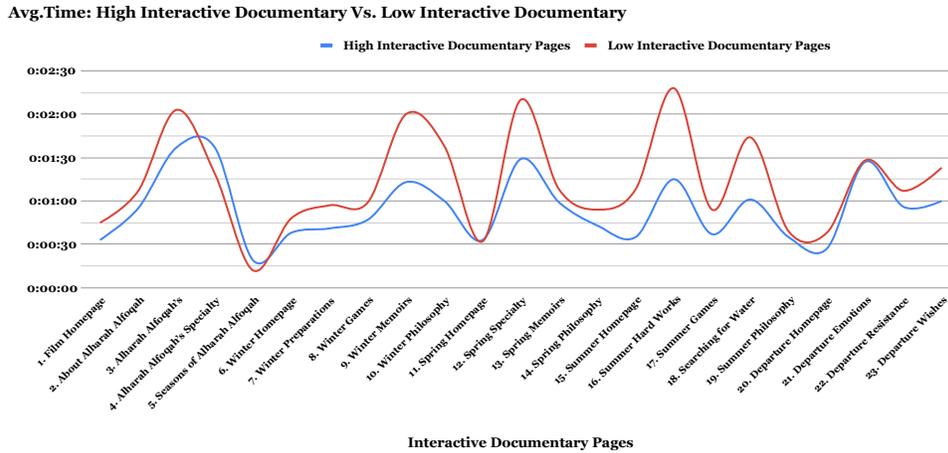


Figure 7. Average time on interactive documentary pages

Unique page views are the number of sessions during which the specified page was viewed at least once. A unique page view is counted for each page URL + page title combination. Figure 8 shows the difference of the unique page views between the high interactive documentary and the low interactive documentary. The average of unique page views of the low interactive documentary ($M = 51.56, SD = 28.83$) was higher than the average unique pages of the high interactive documentary ($M = 47.39, SD = 30.80$).

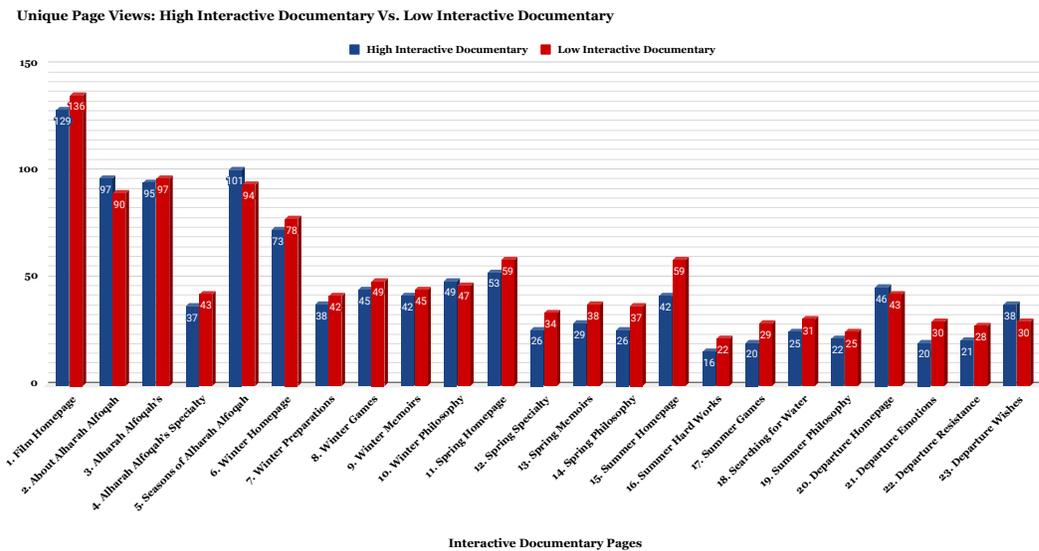


Figure 8. Unique page views

Finally, page depth was identified as the average number of pages, ranging from 1-20+,

that the participants view during a single session. As can be seen in Figure 9, 2291 visits accounted for views to 20+ pages in 53 sessions on the high interactive documentary, where 2095 visits accounted for views to 20+ pages in 56 sessions on the low interactive documentary. The average of page depth (views) on the high interactive documentary ($M = 156.57$, $SD = 517.46$) was larger than the average of page depth on the low interactive documentary ($M = 142.00$, $SD = 473.35$).

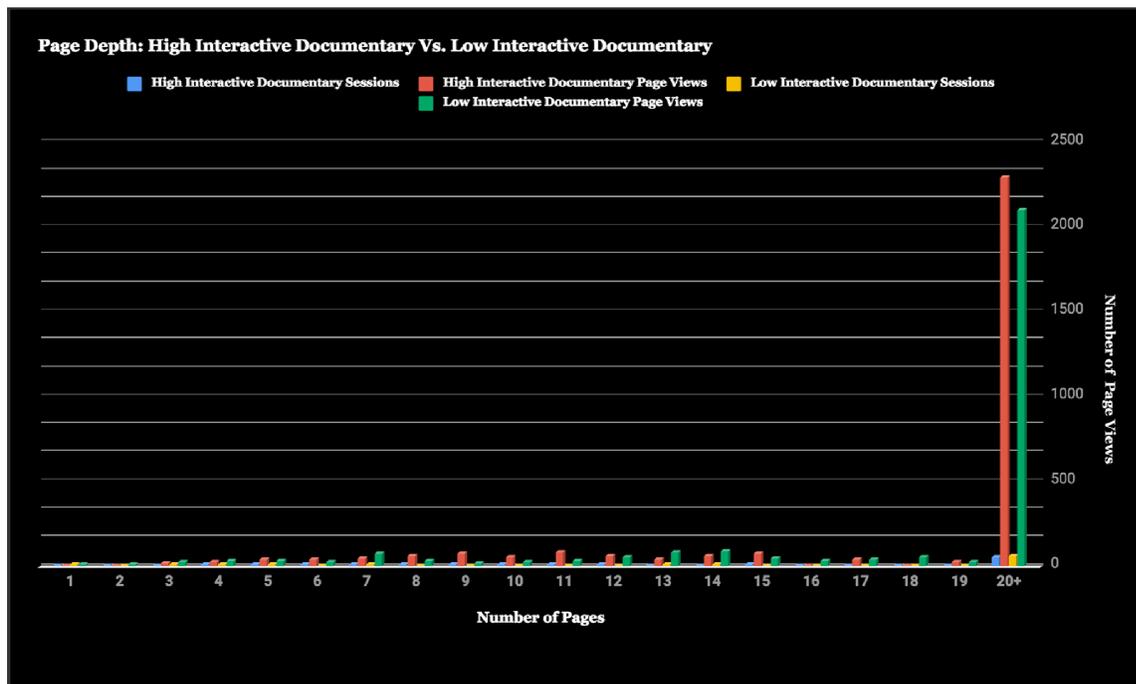


Figure 9. Page depth views

Research question **RQ1d** asked: What are the most frequently used interactive features in the high interactive documentary?

The purpose of this question was to examine the level of users' tendency to use the available interactive features in the high interactive documentary since those special features were only present or manipulated in the high interactive documentary. This measure was based on users' percentage of access and use of these following tools: "Search Engine"; Contact; Like/Dislike; Comment; Share the Project; Share Individual Videos; Download; Upload Your

Film/Story; Edit/Add to Our Story; Mind-Map; Index Menu; Geographic Map; Video Annotation; My Page; Subscription”.

As can be seen in Figure 10, features such as “Like/Dislike” (57.4 %), Mind-Map” (50.4 %), “Subscription” (45.2 %), and “ Index Menu” (37.1 %), were largely used by the participants who viewed and navigated the high interactive documentary. However, features such as “Upload Your Film/Story” (3.5 %), “Download” (7.0 %) and “Share Individual Videos” (8.7 %) were slightly used by the participants.

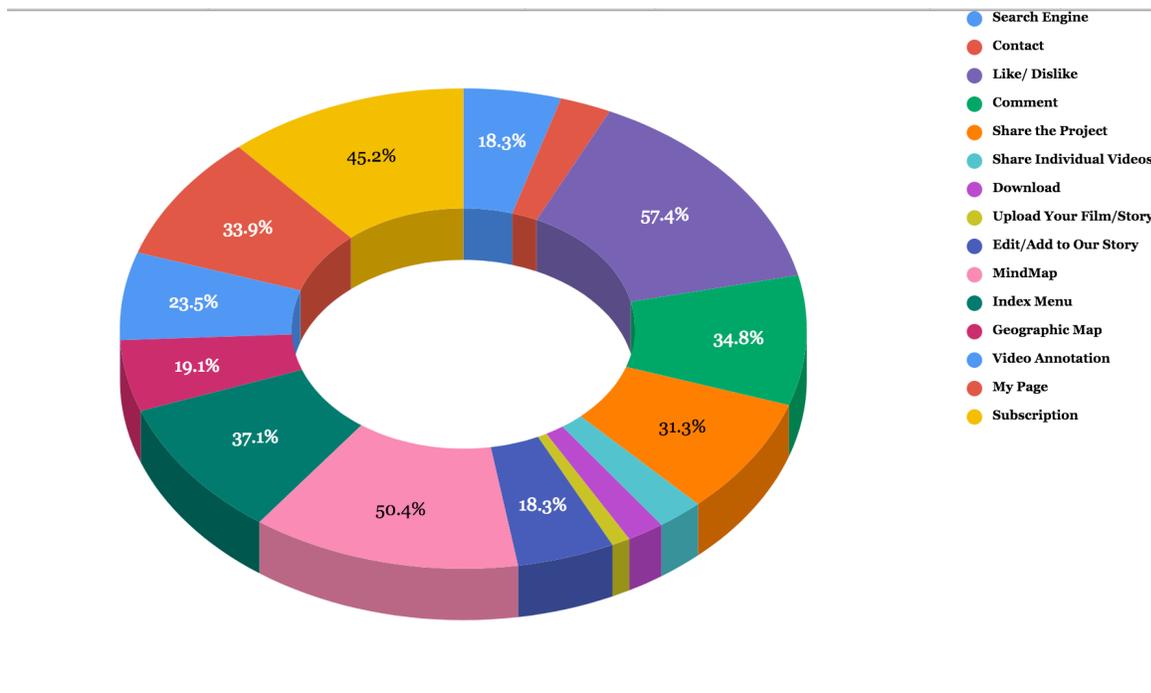


Figure 10. Using the interactive features in the high interactive documentary

Interactivity and Linearity.

A main research question developed from the literature review was to examine the relationship between interactivity and linearity in terms of narrative engagement and perceived involvement:

RQ2: Are there significant differences between actual interactivity and linearity in terms of narrative engagement and perceived involvement?

To answer this question, the study created a third linear documentary in addition to the two interactive documentaries. Although the documentary story was the same in the three documentaries, they all differed in terms of narrative order and the amount of interactive tools. In other words, the linear documentary narrative was based on linearity without any interactive tools, and the narrative of two interactive documentaries was based on the database and interactive tools. Therefore, the independent variable in this question was the three manipulated documentaries (linear documentary, low interactive documentary, and high interactive documentary). The three groups of the participants were assigned to view and navigate the three designed documentaries and evaluated their experiences on two scales of dependent variables: narrative engagement scale and perceived involvement scale.

First, to investigate the relationship between actual interactivity and linearity in terms of narrative engagement, a series of one-way ANOVAs was conducted to test whether or not the three designed documentaries had a significant effect on the dependent variable (narrative engagement). The descriptive statistics associated with narrative engagement levels across the three groups are reported in Table 15. The high interactive documentary group was associated with the numerically smallest mean level of narrative engagement ($M = 52.57$, $SD = 26.43$), and the linear documentary group was associated with the numerically higher mean level of narrative engagement ($M = 65.47$, $SD = 28.24$).

Table 15

Narrative Engagement Description Across the Three Documentary Groups

	<i>N</i>	<i>M</i>	<i>SD</i>
High Interactive Documentary	120	52.57	26.43
Low Interactive Documentary	120	57.22	25.98
Linear Documentary	120	65.47	28.24

The assumption of homogeneity of variances was tested and satisfied based on Levene's *F* test, $F(2, 35) = 1.06$, $p = .34$. The independent between-groups ANOVA yielded a statistically significant effect, $F(2, 35) = 7.07$, $p = .001$, $\eta^2 = .038$ (see Table 16).

Table 16

Analysis of Variance (ANOVA) between the Three Groups and Narrative Engagement

	SS	df	MS	F	p	η^2
Between Groups	10243.80	2	5121.90	7.07	.001	.038
Within Groups	258476.17	357	724.02			
Total	268719.97	359				

To evaluate the nature of the differences between the three means further, the statistically significant ANOVA was followed-up with the Tukey HSD test since equal variances were tenable. Tests showed a significant pairwise difference between the mean scores of the participants who viewed the linear documentary with the participants who either viewed the low or high interactive documentaries $p < .05$. However, the participants who viewed the high interactive documentary do not significantly differ from the group who viewed the low interactive documentary $p > .05$. (see Table 17).

Table 17

Multiple Comparisons of Narrative Engagement Across the Three Documentary Groups by Using Tukey HSD Test

Groups	MD	p	
HID	LID	-4.650	.375
	LD	-12.900*	.001
LID	HID	4.650	.375
	LD	-8.250*	.047
LD	HID	12.900*	.001
	LID	8.250*	.047

Note. ^a The p is significant at the <0.05 level. ^b $N=120$ for each group. ^c HID=High Interactive documentary; LID= Low Interactive Documentary; LD = Linear Documentary.

Second, to investigate the relationship between actual interactivity and linearity in terms of perceived involvement, a one-way analysis of variance (ANOVA) was also conducted to evaluate the relationship between the three groups in terms of perceived involvement. The descriptive statistics of the groups are: (a) the high interactive documentary group ($M = 53.31$,

$SD = 8.77, N = 120$); (b) the low interactive documentary group ($M = 57.12, SD = 11.85, N = 120$); and (c) the linear documentary group ($M = 56.01, SD = 13.28, N = 120$) (see Table 18).

Table 18

Perceived Involvement Description

	<i>N</i>	<i>M</i>	<i>SD</i>
High Interactive Documentary	120	53.31	8.77
Low Interactive Documentary	120	57.12	11.85
Linear Documentary	120	56.01	13.28

The assumption of homogeneity of variances was tested and found tenable using Levene's test, $F(2, 35) = 2.00, p = .13$. The ANOVA was significant, $F(2, 35) = 3.50, p = .03, \eta^2 = .019$ (see Table 19). Thus, there is a significant difference between level of interactivity and linearity with perceived involvement.

Table 19

Analysis of Variance (ANOVA) between the Three Documentary Groups and Perceived Involvement

	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	η^2
Between Groups	920.872	2	460.43	3.50	.031	.019
Within Groups	46885.05	357	131.33			
Total	47805.93	359				

Post hoc comparisons to evaluate pairwise difference among group means were conducted with the use of Tukey HSD test since equal variances were tenable. Tests revealed a significant pairwise difference between the mean scores of the participants who viewed the low interactive documentary $p < .05$. However, the participants who viewed the linear documentary do not significantly differ from the other two groups $p > .05$. (see Table 20).

Table 20

Multiple Comparisons of Perceived Involvement Across the Three Documentary Groups by Using Tukey HSD Test

Groups		<i>MD</i>	<i>p</i>
HID	LID	-3.808 [*]	.028
	LD	-2.700	.163
LID	HID	3.808 [*]	.028
	LD	1.108	.734
LD	HID	2.700	.163
	LID	-1.108	.734

Note. ^aThe *p* is significant at the <0.05 level. ^b*N*=120 for each group. ^cHID=High Interactive documentary; LID= Low Interactive Documentary; LD = Linear Documentary.

Qualitative Study Findings

This section of the study was designed to answer the research question three that asked: How do users perceive the documentary narrative and interactivity? The qualitative results of this question are divided into three parts: descriptive statistics of qualitative study; narrative engagement report ; and perceived interactivity report. The narrative engagement report consists of four dimensions: narrative understanding, attentional focus, narrative presence, and emotional engagement. The perceived interactivity report contains three dimensions: perceived control, perceived responsiveness, and perceived personalization. Mainly, the qualitative study was conducted to profoundly understand and compare participants' perceptions of documentary narrative, in the three designed documentaries, and of interactivity, in the two interactive documentaries.

Descriptive Statistics of Qualitative Study

An in-depth interview of 21 participants was completed in several appropriate locations, Jordan. The participants were (61.9 %) males and (38.1 %) females. The average age of respondents was 26-30 years (28.6 %) among different ages ranging from "18-21, 22-25, 26-30, 31-35, 36-40 and 41- or older". The majority of respondents had bachelor's degrees (81.0 %) followed by master's degrees (19.0 %). Among the participants, there were five interviewees who had completed their studies in media and communication, and worked in the media fields as filmmakers, designers, video editors, and journalists. The other interviewees completed their studies in different fields of study: law, social studies, language and literature, art, political science, engineering, marketing, economics, and others. They worked in different fields such as schools, private companies and business.

"Smartphones" (81.0%), "social media", "the Internet" (66.7 %), and "TV" (47.6 %) were largely used media among the participants. The majority of participants spend 2-4 hours on the Internet (42.9 %) followed by 1-2 hours (28.6 %). Watching videos and films was significantly the most common activity selected by the respondents (85.7 %) followed by "Reading (articles, comments, news, books, etc.)" (52.4 %), and "Chatting or vocal communicating with others" (42.9 %).

Finally, among different film genres, the participants were more likely to prefer watching “Action & adventure” (66.7 %); “Drama” (61.9 %); and both “Romance” and “documentaries” (52.4 %).

Narrative Engagement Report

Narrative engagement is divided into four dimensions: narrative understanding, attentional focus, narrative presence and emotional engagement. The participants’ conceptions and experiences were divided into three groups based on the documentary that each group was assigned to view as following: linear documentary group, low interactive documentary group, and high interactive documentary group. In general, the group who watched the linear documentary was significantly more involved in the documentary narrative than the other groups. On the other hand, the group who viewed and navigated the high interactive documentary was less involved in the documentary narrative than the group who viewed and navigated the low interactive documentary. The following findings report in detail the participants’ perceptions and experience with the documentary narrative.

Narrative understanding dimension.

The three groups of participants, after viewing the three documentary projects, were asked to describe their perceptions and experiences of the narrative in terms of the following questions: (a) describe if you had a hard time making sense of what was going on in the documentary?; (b) describe if your understanding of the characters was clear; and (c) describe if you had a hard time recognizing the thread of the story. The following part is the interviewees’ accounts of the narrative understanding divided into three sections: linear documentary group, low interactive documentary group, and high interactive documentary group.

Linear documentary group and narrative understanding. In general, the majority of linear documentary group was more likely to agree that there was no difficulty in understanding what was going on in the linear documentary. According to them, the documentary narrative was clear; the documentary structures were in logical order; a decent integration was outstandingly presented between narrative structures and internal divisions of the story; and the documentary story was performed in high quality of footages and sounds. One of the participants stated about the clearness of the story: “The story events went smoothly, as if I were myself driving smoothly

on a clear road...I never got stuck at any point in this documentary ... this, of course, does not mean that the smoothness and simplicity in this documentary are synonymous with absurdity. Indeed, I can say that the power of this documentary has emerged from the fact that its events were simple and clear”.

Another participant argued about the difficulty and ease of understanding the documentary events: “Many of my friends sometimes claim that the beauty and the level of assessment of a story lie in its complexity. I totally disagree with them. In this particular documentary, the ease of the story events was a fascinating factor. The genius of any story, as I claim, is not in its complexity, but in its ability to simulate our feelings; its ability to say in the right time and situation what can be said in our daily conversations”.

Another participant believed that the smoothness of the documentary story and logic derived from imitating the logic of seasons, seasons of the year and of life itself: “Seasons of the year are four, as you see, and our life’s seasons can be divided into four chapters or season.... The last chapter of this film was called the departure season instead of fall... This was strange and raised questions at first, but after watching the documentary, one can understand that it was the last season, the end of people’s lives who once lived in that old district. The departure season matched clearly the fall, where it was an expression of the end of one of our lives’ seasons”.

On the other hand, the majority of participants had clear understanding of the documentary characters. One of the participants stated: “Although I do not know the documentary characters, I felt, while watching the documentary, that I knew them all because of their skillfulness to express what I always wanted to say”.

Another argued that the documentary characters were carefully selected, so there was consistency between the characters’ profession, age, gender and what they were narrating: “My clear understanding of the characters was associated with their ability to profoundly express the documentary events. The documentary characters were real, narrating their true status deeply and their role in life”.

Moreover, the majority of the linear documentary group seemed to believe that the differences in the documentary characters’ perspectives were what created a dramatic internal

conflict, which helped the documentary to move and present itself deeply in their emotions. One asserted on this point of view: “There was a real conflict. You can perceive it as a viewer in their perspectives.... The [documentary] characters, especially the older ones, were as if they were talking about a time that we no longer know; an unknown time that calls for curiosity.... The younger characters were speaking in contexts similar to ours ... this conflict of perspectives made the documentary more dynamic and experiential”.

Although the majority of participants claimed that the documentary characters were clear, two participants believed that some of the characters were out of context. One of them stated: “I feel that some of the characters did not say everything they wanted, as if they had been cut off at the wrong time. I think therefore that this has negatively affected my understanding of the documentary characters”.

In the context of recognizing the documentary thread, the participants were more likely to agree that they did not have a hard time getting to know the plot of the story. The reasons of their agreement were generally the following: the harmony between narrative, sound and image, and the narrative structures that adopted logical human concepts. One of these participants commented on the synthesis between narrative, image and sound: “It is easy for any viewer to recognize the plot of the story. You are in front of a sequential narrative, which makes you entirely experience the documentary events. I understand this narrative as the total correspondence between narration, sound and picture. When the narrator started talking [for example] about the winter, there was a spectacular winter scene; when he started talking about the harvest, there were real scenes and sounds of the harvest events”.

Low interactive documentary group and narrative understanding. Five out of seven participants in the low interactive documentary believed that there was no difficulty in understanding what was going on in the documentary. The reason behind their convictions derived from the fact that although the documentary story was fragmented, anyone can quickly understand its logic, either by directly entering the database or using the video list or the mind-map. One articulated: “The documentary story was clear, as soon as you start navigating the first scene, the story unfolds by itself.... Understanding the story comes from its good arrangement”. Another added by the same token: “I did not have any problem with understanding what was

happening in the documentary.... The reason could be that I was impressed by the story itself. The story itself pushed me to exert more effort to follow and navigate from one scene to another”.

In contrast, other participants believed that the story was not clear because the database had a negative impact on understanding what was going on in the documentary. One of them expressed the difficulty of understanding the story: “I do not like this method at all ... I still do not know why this form was chosen to tell a story. Sometimes I was confused whenever the documentary stopped and asked me to press the mouse”. Likewise, another participant added: “I understood the story, but the way the story was built made me exhausted.... I felt that I had to do something against my will to complete the story”.

On the other hand, the majority of low interactive documentary participants agreed that the characters were clearly understandable, where they were able to obviously express themselves and the documentary events. According to them, the characters maintained the documentary rhythm because when the documentary moved forward to a new event, the characters were adaptable in changing their tone in order to match the new event. One of the participants described the documentary characters: “The documentary characters as if they were talking to me. I felt that they understood what I wanted to say ... they were clearly touching the core of the subject without repeating.... Everything was in its place in this documentary”.

Moreover, one of the participants complained about the difficulty of understanding the real roles of the documentary characters: “I did not understand.... I felt at first that the film was not able to clearly present its characters ... this lack of clarity began to vanish as soon as the documentary came to an end.... Yes, I started to understand the role of the characters and I started to sympathize with them”.

Although the majority of the participants agreed on understanding the documentary characters, one of them criticized the lack of a real presence of some characters in the documentary: “Some of the characters were not clear. They could not confirm their presence despite the space that was given to them.... One feels sometimes that they could be dispensed with or even replaced ... I feel that their presence was annoying, and instead of leading the documentary events, they made it unclear. The reason could be the database itself in which the

viewer is unable to maintain the characters' narrative".

However, all low interactive documentary participants agreed significantly that there was no difficulty in recognizing the thread of the documentary story because of these following factors: there was a theoretical connection between the parts of the story through the ease of choices available; there was no stress in navigating from one video to another; and, the documentary structures made it easy for them to compare between one video to another or one story to another. One of the participants said: "Although the documentary is theoretically coherent, the viewer must activate this coherence by navigating and discovering. Any choice made by the viewer might create another story".

Another participant summarized his understanding of the narrative thread: "There is a strong correlation between the parts of the story even though it is built on fragmentation. This correlation puts you in front of life's seasons that the documentary was grounded on". Another participant added along the same line: "There was no difficulty in recognizing the thread of the documentary story for it was based on the seasons' logic. On the other hand, the short stories in any season were the same in each season. If the documentary talks about the games in winter, you as a viewer will find the games in summer.... This segmental logic allows me to compare, balance, and create special contrasts in each season and between one season and another"

High interactive documentary group and narrative understanding. Three participants of the high interactive documentary believed that this distinctive form of the documentary helped them to understand what was going on in the story. Their positive perceptions revolved around the ease of navigation in the documentary database, and the organized and connected narrative. These factors helped them to move freely in the documentary database and to clearly understand the documentary story. One said in this regard: "It was a unique experience.... I never had a problem of understanding the documentary story. Everything was clear, as if you were sailing in clear weather". Another participant emphasized the same idea: "On the contrary, the style used in this documentary made me eager to learn more, and this was what prompted me to navigate more in order to reinforce my understanding and experience". Similarly, one added: "It is my first time watching this kind of documentary, I can therefore say that I felt that this method reinforced my understanding of the story".

In contrast, four participants considered that this documentary project made them have a hard time of fully understanding the documentary project. One of them expressed: “I did not understand well. There were many disconnected points which sometimes made me reluctant to watch or to navigate more”. Likewise, another added: “Although I enjoyed the story, I had a problem of understanding ... there were missing things ... perhaps the many options that the documentary had made me confused.... I cannot, however, say that the documentary was not effective. It was especially at the beginning”.

However, four participants of the high interactive documentary agreed that the documentary characters were clearly understandable, where their accounts matched the logic of the documentary narrative. As reported by them, the documentary characters were able to create rich diversity, and the interactive options were a useful instrument that helped the documentary characters developing and emerging. One stated in this matter: “I think the characters were clear and proportionate to the documentary events. One can feel that they were talking back to the viewer, inviting him [/her] to understand the events more and more.... The interactive style of this documentary made these characters closer to the viewer”. Another proceeded in the same track: “The documentary was real for it expressed real and active characters; for it expressed real events linked and intertwined with the characters. Anyone who has the opportunity to see the documentary will be happy to be one of its characters, or at least to be able to visit the location that the documentary characters were talking about”.

One of the participants argued about the relationship between the clarity of characters and this kind of documentary: “It came to me while navigating in the documentary: what if I watched this documentary on television? Would the documentary characters feel closer to me than now? I think if I saw it on television, I would not have the same experience that I had. This method of databases, of navigation and multiple options brought the characters to the light, and made them more reflective of the events”.

On the other hand, some participants claimed that this documentary style, the many options it had, and the effort to search for information, led to form a complicated relationship described as a non-constructive relation with the documentary characters and events. One remarked in this regard: “Whenever I clicked on a link or button from the links or buttons

available, the more I would lose the emotional thread that I built at the previous time with the documentary characters”. Another commented on this line of thinking: “I really felt lost ... the documentary story and characters seemed to fade away as if they were disappearing behind the options”. One also concluded accordingly: “My understanding of the characters depended mostly on the movement of my hands ... It was a little tiring, as if the documentary was more interested in buttons, options and participation than the story and characters themselves”.

On the other hand, the majority of the high interactive documentary participants did not have difficulty in recognizing the thread of the story. Based on their statements, the ease of recognizing the thread of the documentary story was due to the clear division of the documentary story and various options, where viewers could change the narrative temporality, re-edit, and reconstruct the whole documentary. One said in this framework: “What really distinguishes this documentary project from other projects is the convenient division, and the ease of movement between seasons and scenes, and between interactive choices. It means that the viewers have the full potential to choose, and to change the narrative temporality and database. Each small unit was an interesting story that was both disconnected and connected with the whole project at the same time. Another added consequently: “I felt that the documentary events were sequentially linked to each other. However, the documentary gave me space to select or to produce my own documentary. For example, each season in this documentary has its own games and philosophy; it is thereby possible for me as a viewer to build my own story that contains the philosophy of seasons. I can say that the documentary was theoretically sequenced. That is, although it was not sequential, it provided the possibility to be sequenced”.

However, two participants complained that the documentary thread was sometimes lost between multiple options and random video list. One proclaimed: “the unnecessary choices negatively covered the thread of the documentary story. I was lost while navigating this documentary project.... It seemed that I had to understand the links and the principles of navigation before starting to understand the story”. Another complained in the same direction: “I am going to tell you the truth ... I really got tired while trying to tie the story pieces together. Worse than that is when I got despaired of understanding the documentary mind-map, I went to the video list, and here came the great catastrophe. The list was unorganized ... It was apparently required of me to organize it.... Was I watching or was I being examined in crossword

puzzles?”.

Attentional focus dimension.

The three groups of participants, after viewing the three documentary projects, were asked to describe their perceptions and experiences of the attentional focus in terms of the following questions: while the documentary was on, (a) describe if you found your mind wandering; (b) describe if you found yourself thinking about other things; and, (c) describe if you had a hard time keeping your mind on the documentary. The following part is the interviewees' accounts of the attentional focus divided into three sections: linear documentary group, low interactive documentary group, and high interactive documentary group.

Linear documentary group and attentional focus. For the attentional focus dimension in linear documentary, there was a significant agreement between all participants that while the documentary was on, they did not find their mind wandering or thinking about other things; and they did not have a hard time keeping their minds on the documentary events. One stated in this regard: “The documentary was apparently able to take me from my world. It captured all my senses. I do not say that as a fake compliment ... I can give you clear evidence ... I am a kind of person who is completely occupied by smartphones.... You can ask my friends about the crazy relationship between the smartphone and me. I check my smartphone every second. But for the first time, throughout the documentary, I did not check my smartphone at all, although I later found lots of missed calls and unread messages”. Another participant also claimed in this vein: “The documentary may fully reflect the concept of attentional focus that you are talking about... All my feelings were clearly reflected on my face. Sometimes, in many scenes, I would daydream, smile and sigh.... I was completely immersed with the documentary”.

Others asserted that the linear documentary did not allow the viewer to think of anything other than the documentary itself. One said: “I was confused before watching the documentary, especially for emotional reasons. I was a bit resentful.... But when I started watching the documentary, everything changed. I was taken by the documentary even from thinking about my emotional problems”. Another participant added on this account: “The documentary was able to steal me from all my thoughts. I can give you an example. I came today with other plans. I always feel that when I plan for something, my mind is completely occupied. It is a memory

problem that sometimes hinders me from dealing with things separately, but today when I started watching ... ironically, I forgot what I had planned early today ... instead of being preoccupied with what I had planned for, I was completely taken by the documentary. My focus was on even small detail inside the documentary”. Another participant reasserted the previous view: “For some reason, I was distracted, because I am a businessman and I rely absolutely on my phone. This phone is my livelihood. Therefore, there was a kind of distraction ... not entirely but partly. Usually I am completely distracted, but by watching this documentary, the distraction was significantly faded away compared to other situations”.

Low interactive documentary group and attentional focus. Four out of seven interactive documentary participants agreed that when the documentary was on, they did not find their mind wandering or thinking about other things; and they did not have difficulty in keeping their minds on the documentary events. One claimed: “My mind never went anywhere else.... In fact, when I finished watching and navigating the documentary, and then I looked at my watch; I was surprised at the period that I had spent watching this documentary. I felt the time was much shorter. The reason could be the high degree of enjoyment that the documentary gave to me”. Another participant described his focus on the documentary: “I did not think about other things. I mean ... the documentary never made me think about other things. It was apparently not my choice, I was entirely guided by the documentary”.

Concerning the lack of difficulty in keeping the participants’ minds on the documentary, one of the participants said: “On the contrary, I found it hard to get my mind off the documentary, and even now, while I am talking to you, I feel like my mind is still held there in winter and spring seasons. The natural sounds are still filling my ears.... I assure you that I have lived a real experience”.

Two other participants believed that the documentary structures could not prevent them from thinking about other things, and that they had difficulty in keeping their minds on the documentary. One of them stated in this regard: “I would have preferred to have the documentary in one piece, not as a database.... The idea of many options might be good for others since it could give some kind of freedom to the viewer to choose the video.... Psychologically, I loved the story but I could never stop thinking of other things”. Another added

in the same context: “I did not like having to move from one video to another.... It was confusing to do so. I could never stop asking why I had to do that.... I could not emotionally find myself overwhelmed with the documentary because I was forced to do something to get other things”.

High interactive documentary group and attentional focus. The participants’ perceptions were varied on whether watching a high interactive documentary could make the participants find their minds wandering, thinking about other things; or having difficulty in keeping their minds on the documentary. Those who felt more focused on the documentary than others, they referred their attentional focus to the agreeable and enjoyable documentary story; the quality of sound and image; the ease of navigation and the variety of smooth choices. One said on this behalf: “I was never distracted while watching the documentary.... One of the most important things, when I navigated this documentary website, was the feeling that I could produce my own vision and my own story. I felt that all these fragmented scenes were like a set of Legos, requiring me to compose and produce my own story.... The sound effects in particular were as if they were designed to enter a documentary that had no exit”. Another added in the same vein: “I certainly did not think about other things.... I felt that the documentary lasted many hours, although I know that its real duration was about a half an hour. This long period of time could mean that I felt bored. On the contrary, this long period meant to me that I was overwhelmed with the documentary story, and I did not want to get out”. Another participant stressed the same view: “I was not really conscious to even ask my mind to focus on the documentary ... I was in an enjoyable life journey from winter to departure. This project is so interactive, where one can feel that the documentary site could understand the viewers, understand their needs, and therefore offers all possible options for the experience to be overwhelming”.

In contrast, those who could not maintain their focus on the documentary claimed that the main problem with their lack of focus was that the documentary website was asking them to connect the story through complicated databases and options. The focus was therefore on establishing a relationship by connecting the documentary parts rather than focusing on the story itself. One said in this respect: “There is no doubt that this documentary is enjoyable.... But the structure that was chosen to express the story, I mean the links and buttons; all worked

negativity and prevented keeping my mind on the documentary. My mind was focused on building a relationship between the documentary's fragmental parts". Another remarked in this context: "It is a completely new experience ... my mood was good. I loved this project. At the same time, because it is a new experience that needs some skills in dealing with the site, I felt that I was lost between too many choices. I did not know exactly how to use this site, so I felt that I lost some of my focus".

Narrative presence dimension.

The three groups of participants, after viewing the three documentary projects, were asked to describe their perceptions and experiences of the narrative presence in terms of the following questions: (a) while watching the documentary, describe if your body was in the room but your mind was inside the world created by the documentary story; (b) describe if the documentary was able to create a new world and then that world suddenly disappeared when the documentary ended; and (c) describe if the story world was sometimes closer to you than the real world. The following part is the interviewees' accounts of the narrative presence divided into three sections: linear documentary group, low interactive documentary group, and high interactive documentary group.

Linear documentary group and narrative presence. Linear documentary participants agreed significantly that their mind was inside the world created by the story; that the documentary created a new world; and that the story world was sometimes closer to them than the real world. One of the participants described the experience with the documentary story: "The documentary has completely captured my imagination. I could not get out of the painting that the documentary had drawn for me. The documentary encouraged me to visit the place, to strengthen my attachment to it, trying to recreate its events by wandering through those old districts". Another confirmed that the documentary: "enabled me to enter into the narrated story even though I have never experienced life the way the documentary had narrated. I hope that way of life will return as it once was, simple and full of life".

Concerning the new world that the documentary created, one participant stated: "The documentary has created a new world. In fact, this world frightens me because I know it is over. I am fully aware that I cannot restore it. Unconsciously, I would prefer to live in the world that

the documentary created away from the outside world”. In the same context, another participant commented: “At first I felt that I belong to this world, which was created by the documentary, although I did not experience it at all. It came to my attention, while watching the documentary, that the documentary was able to draw a pure world that made me feel nostalgic, nostalgic for whom I may have been in the past”.

Moreover, concerning the story world, if it was closer to participants than the real world, one claimed: “Even though I live in the same location where the documentary took place, I had not been able to see what the camera has just shown me.... Do we really have these flowers in spring? Do we have these kinds of butterflies? How was I not lucky to see them! Of course I feel that the documentary was closer to me than my real world”. Another participant added in this perspective: “The documentary made me doubt my real world ... I felt ashamed that many surrounding things I did not notice, I did not see them even though I am from the same region. I felt that I missed a lot.... I have lived here all my life and I couldn’t realize that there was this beauty and that level of grief dwells in a part of my country”. Another participant stated respectively: “Although I do not know the city at all, the documentary amazed me with the power of its image, its sound and its elements as a whole. I could not imagine more than what the documentary has drawn”.

Low interactive documentary group and narrative presence. The majority of the low interactive documentary participants believed that their minds were within the world created by the story; that the documentary was able to create a new world; and that the story was sometimes closer to them than the real world. For them, the motion pictures and natural sounds were able to bring them into the realms of the story. Also, the absence of documentary narrator did not prevent the narrative to be present. One of the participants described the status of being in the world that the story had created: “I think that this documentary project has created a beautiful world.... In general, I am a fictional person. When I see my favorite historical scene, I always try to imagine myself in all the scenes I see.... So my questions remain constant: What would I do if I were there? The documentary has deepened my imagination, or rather, it has positioned me in most of its scenes”. Another participant added consequently: “Yes I did not even feel that my body was in the room. My body and my mind were in those worlds created by the documentary”.

Concerning the new world that the documentary created, one said: “I never expected that such places would exist in our country. I visited the place several times but it is as if I am seeing it for the first time... Yes, there is another world that the documentary was able to create”. One of the participants described the experience of having the world of the story closer than the real world: “what can I say? I am no longer young. This documentary has confirmed to me that I am no longer that girl.... I long for that world and prefer it to the real world.... The story of childhood games has brought me back into my childhood, especially that my daughters do not know these games.... How much I want my daughters to know those games!”.

Another participant believed the opposite of what the majority believed: “No, I did not feel that the documentary created a new world ... it could not make this world [the documentary world] closer to me than the real world.... On the contrary, I felt that I could not perceive the world that the documentary tried to engage me with.... The reason could be that I do not like this type of documentary.

High interactive documentary group and narrative presence. The majority of the high interactive documentary participants agreed that the documentary project made them experience the world created by the story; that the documentary was able to create a new world; and that this world was sometimes closer to them than the real world. According to them, the natural sounds and the quality of footage were behind their agreement. In addition, the database, buttons and interactive links made their experience exceptional and unique, although the majority of them were viewing this interactive project for the first time. One said: “I was tired today, especially that I spent the day away from my city.... I was very tired and needed to relax. This documentary has really made me relaxed especially when I was navigating between different seasons of the documentary. I had an enjoyable experience, as if I were a real person traveling through these seasons in real life. Therefore, of course, I believe that my attention was completely on the story”. Another stated in the same context: “I can call this documentary, if you allow me, the story of departure, because it allowed me to access the old village with full detail. I was in its alleys, watching with the director those passing inhabitants. Then, the documentary transferred me to the anguish of departure. The documentary story made me feel like I lost some value by leaving that village.... The story was able to reflect the place and its spirit that once existed... The options within this project were truly amazing. The viewers have the option to choose from

any season the scenes they want. If one does not like summer, for example, there is winter, and if one does not like winter, there is spring ... and so on”.

In the same regard, one stated: “The [documentary] sounds were another world. It is a sort of medicine to improve the mood. Sound effects and music can make anyone in a constant excitement. The documentary footage, on the other hand, look real and was able to masterfully draw reality”. Another asserted respectively: “The image and sound were able to integrate me in reality ... the sound and image were integrated in terms of technical aspects.... I saw what we would see in reality, and I was able to hear the voice of reality”.

On the other hand, two participants believed that the interactivity negatively affected the narrative presence, because it needed special awareness of the total required actions in order to get the meaning of the story. One said within this framework: “Although I like this type of documentary, my awareness was present, and I could not forget that I was inside the room, because it was required of me to make great efforts in order to get the story from a complicated database”. Another claimed in this respect: “For a moment, the documentary world was closer to me than the real world. In another moment, I could not keep my attention on the story world. Too many options prevented me from following the story”.

Emotional engagement dimension.

The three groups of participants, after viewing the three documentary projects, were asked to describe their perceptions and experiences of the emotional engagement in terms of the following questions: (a) describe if the documentary story affected you emotionally; (b) during the documentary, describe if you felt happy when a main character succeeded, and if you felt sad when they suffered in some way; and (c) describe if you felt sorry for some of the characters in the documentary. The following part is the interviewees’ accounts of the emotional engagement divided into three sections: linear documentary group, low interactive documentary group, and high interactive documentary group.

Linear documentary group and emotional engagement. The majority of the linear documentary participants agreed that they were emotionally engaged, where the documentary story and characters affected them emotionally. One of the participants described the documentary emotionally: “I never wanted the documentary to end; I never wanted the

inhabitants to be departed from their home. There were many questions that the documentary did not answer, and that left me with agony and anguish. Another added in the same regard: “I did not understand why they left... In my mind I wanted to bring them back. I wanted to reproduce the documentary, and delete the departure season”. Likewise, another participant stated: “I feel that the documentary is one of our old stories filled with innocence, love and childhood ... it is very painful that we are no longer living in this innocent age”.

Most of the participants claimed that the documentary did not offer what could make them happy; the characters were full of sadness and memories. One said in this regard: “Did these games exist?!... At least we now know that we are different, so different that they [the documentary characters] had their own world ... it is a sad world that we no longer have”. Another participant felt sorry for childhood memories of a character in the documentary: “The childhood love story that engaged one of the documentary characters and a girl from his neighborhood made me really sad.... It is unbelievable that when he smells that yellow rose, he would still remember the girl whom she is no longer in this world.... This is sad ... really sad”. Similarly, another participant stated: “The old man in this documentary made me really sad when he said at the end of the documentary *“It is over”* in response to a young character whom he wished if he would come back to live in his old house”.

Low interactive documentary group and emotional engagement. The perceptions of the low interactive documentary group of the emotional engagement were varied. According to them, their emotions were interrupted whenever they started; and that the required actions to do something or to enjoy more was like asking them to return back to the consciousness by focusing on mouse movement, or dealing with buttons and choices. This, in their perspectives, created an emotional fluctuation, and distort emotionally, in one way or another, some attributes of the story. One said in this sense: “I was emotionally moved, no doubt about it, but I started to get confused after one or two times of cutting off the emotional thread.... For me, I had to stop my mind from thinking about options”. In the same vein, another added: “I liked the story. Suddenly I became emotional, and suddenly I also went back to think about the mouse ... once I was in the story world, and once again I was in the room”.

One the other hand, one of the participants described the sympathy for the documentary

characters: “I was sad ... I was very sad for their departure. The options were as if they were a temporary pause of thinking, and getting out of context.... Perhaps they [the options] were an expression of returning back to reality and then re-engaging in an emotional adventure for one minute or two”. In the same context, another added: “I would prefer to have an automatic linkage between the short stories in the documentary.... Playing within the project was as if to reduce the impact of characters and put them in a hypothetical atmosphere rather than a human perspective”.

High interactive documentary group and emotional engagement. The perceptions of the high interactive documentary participants of the emotional engagement were varied. The participants claimed that although the documentary story was generally enjoyable, and the designed website was fairly unique in terms of color, structure and quality, high numbers of choices available and fragmented database had a negative impact on their emotional excitement, which did not eventually succeed in building a clear and complete emotional line with the documentary story. According to some of the participants, the preoccupation with navigation, seeing or activating options, or thinking about participation or production made the documentary bidirectional. Therefore, the awareness of such numerous options was more present than the emotional identification. In this perspective, one stated: “Whenever I started to think that I was emotionally immersed **in** the story, whenever the choices would appear, inviting me to participate ... this matter puzzled me, and there was a constant question I had during the time of watching: do I have to participate? Do I have to click on this option or that? I think this was enough to spoil the emotional enjoyment that could have been obtained”. Another added by the same token: “I like the documentary website, and I navigated it all with pleasure.... However, I felt I was doing it because I liked the documentary story and its characters not because of the documentary website’s design”.

Moreover, one of the participants claimed that the documentary characters were calling for sympathy: “The departure season was very painful ... therefore, it seems that I will forget that I have exhausted myself to connect the fragments of the story”. Likewise, another added: “I wished that there were two options in this documentary, one of which is the documentary itself as it is now with its complex choices; and another option that can present the story without any interruption. I believe that the first viewing should be linear, and the subsequent viewing can be

interactive. The first view is for emotional involvement and evaluation, and the second view is for participation and interaction. In my opinion, the first [linear] view is very important for simply “like/dislike” the documentary, and it can be considered an essential engine, if the film is good, to go to the next interactive steps”.

In contrast, one of the participants believed that the documentary project was emotionally engaging: “I think that one of the documentary beauties is that every small unit [clip] was an integrated story, in which the beginning, the climax and the end, were short and full of events. So every unit was an emotional splash ... this interactive design may not be comfortable. I mean the random database and the many choices, but mastering small units is what makes it distinctive and capable of emotionally mapping the individual with the narrative”.

Perceived Interactivity Report

Perceived interactivity is divided into three dimensions: perceived control dimension, perceived responsiveness dimension, and perceived personalization dimension. The participants' conceptions and experiences were divided into two groups based on the documentary that each group was assigned to view as following: low interactive documentary group and high interactive documentary group. In general, the high interactive documentary group had significantly greater positive perceived interactivity than the low interactive documentary group. The following findings report in detail the participants' perceptions and experiences of the perceived interactivity.

Perceived control dimension.

The two groups of participants, after viewing the two interactive documentary projects, were asked to describe their perceptions and experiences of the perceived control in terms of the following question: While viewing the website, describe how you perceived the control dimension over: (a) the site navigation; (b) the pace or rhythm of the interaction; and (c) the content being accessed. The following part is the interviewees' accounts of the perceived control divided into two sections: low interactive documentary group and high interactive documentary group.

Low interactive documentary group and perceived control. There was a convergence between all low interactive documentary participants that they perceived a weak level of control.

The participants attributed the reasons for perceiving weak control to the low number of choices in the documentary website. According to them, limited choices have negatively influenced the story, making the access to the content very uncomfortable and the thread of the story dramatically confusing. One claimed in this matter: “No ... I did not feel that I had absolute control when I navigated the documentary website ... I do not know how to say it ... but ... I felt that the options, links and buttons, were remarkably few, which negatively affected my degree of control over the documentary website.... Nevertheless, I am not really interested in the range of options within the documentary website. I never felt that the few choices could limit my ability to follow the documentary story”.

Another participant argued about the documentary mind-map as an option to navigate and a way to understand the fragments of the story: “Frankly, I never understood what the mid-map meant in this documentary, especially that I could see [the documentary mind-map], but without being able to playback the included clips... It was a sort of lost, but because of the organized video list as another option, I often went back to it to rearrange the fragments of the documentary story”. Moreover, one of the participants associated between available options and his personality: “Control was limited.... In this documentary website, I can understand control by my ability to choose.... [However] the documentary I saw was tight in terms of choices. I felt that the functions of these choices were only as a transition from this point to that point.... In human and natural life, many options could be tedious and tiresome, where one needs to take a lot of procedures, caution and anticipation ... but as a person I may be different since I feel that I have always wanted to have a lot of choices, and therefore, a lot of motivation.... This documentary was out of control, I felt I had to imaginatively create my own choices since the documentary website could not offer its own”.

Remarkably, one of the participants connected between perceived control and preauthorization: “Control means, in this documentary, the ability to freely navigate.... In the context of life itself, control can mean that I have some authority over things, people, etc. After visiting this documentary website, I can say that there was a certain authority but you can say that it was very slight. That is, I had the options to choose the time and the direction of navigation, but in my consciousness, I was aware that the given options were not mine. The documentary was predetermined and monitored as well”.

High interactive documentary group and perceived control. Although the majority of the high interactive documentary participants agreed that they had control, their conceptions of perceived control were varied. Some of them linked control to ease and plenty of interactive options; some others connected control to the ability to produce their own documentary and to edit the documentary content; and others linked control to choices available but with confusion and distraction. One said in this regard: “I felt completely in control in a way that I could apparently do what I wanted ... I did not press on anything and something else came out.... All were in place.... The full control I had in this documentary website helped me to understand the story more clearly. The website gave me the ability to comply with the director’s vision as well as my own vision. These options enabled me, in one way or another, to produce my own product or story”. In the same vein, another stated: “What distinguishes this documentary website from others is the simple and creative interactive tools.... This kind of documentary has given me a real satisfaction for I was the one who controlled the viewing and not the documentary or its maker who controlled me”.

Some of the participants believed that the high number of interactive options were confusing. One said in this respect: “My control was strained.... I think I had a problem with the documentary website. For some reason, I felt nervous; I felt there was some kind of heavy burden in dealing with this website ... I know there were enough options that can theoretically allow for a full control, but that took a long time from me to understand the documentary story”. Another one said in the same context: “Compared to television ... yes, I had enough control in terms of having multiple options. I enjoyed the documentary website because I had the opportunity to rearrange my story from the video list. But for a moment, I felt that there were many unnecessary options ... these options dispersed my thought and did not help me to focus. For me, I prefer this type of documentary because it can give me a freedom of choice, but not at the expense of the documentary story”.

One of the participants differentiated between control in the sense of multiple options, and control in the sense of modification and contribution: “I am not an expert ... but based on my understanding, control as a concept leads me to wonder: control over what or who? If the intention was about offering enough choices, it would be possible then to say that the documentary has given me sufficient control, but if the intention was about the possibility of

modification and contribution, I would say that I could not find what can be modified in or contributed to this story. It is seemingly an integrated story.... On the other hand, I am from those people who prefer fewer options, the more options I have, the more I fail to focus or even to choose. A lot of options fit well with the concept of anxiety and tenseness”. In contrast, one of the participants linked the available interactive options with active participation: “The options that can give me the ability to be an active participant, such as participation in montage and the possibility to add to the story, made me really think that I was the director of this documentary... I felt that I could rearrange the story or build the thread of the documentary.... Moreover, the video list was unorganized. I mean it did not follow a chronological order. This could be a sort of fatigue when one is asked to reorder the story. I felt, on the contrary, that the documentary website was like a puzzle asking me to piece together my own story”

Perceived responsiveness dimension.

The two groups of participants, after viewing the two interactive documentary projects, were asked to describe their perceptions and experiences of perceived responsiveness in terms of the following question: Describe how you perceived the responsiveness dimension from: “(a) the site-owner; (b) from the navigation cues and signs; and, (c) the real persons online”. The following part is the interviewees’ accounts of the perceived responsiveness divided into two sections: low interactive documentary group and high interactive documentary group.

Low interactive documentary group and perceived responsiveness. Four out of seven participants articulated that the interactive documentary website had a low level of responsiveness. They considered that this responsiveness was weak from the documentary team; from the signs and features of navigation; and from the real viewers online. The participants believed that the responsiveness with the documentary team was limited to e-mail, which was, in their point of view, a feeble two-way communication tool. They also believed that the navigational signals and features were not enough for they lacked the multi-responsive options and were unable to respond fluidly to their input. Finally, according to the majority of the participants, what a user can do with other users online who could share the same interest was only limited to sharing the entire project, where the documentary website seemed to lack active participation, such as sharing each individual video, commenting, liking or disliking, downloading or uploading, etc.

Two of these four participants recognized the importance of the responsiveness dimension, where one of them said: “I never felt that the documentary website was provided with enough channels of communication in order to communicate with others or with the documentary team.... I remember that e-mail was the only option to communicate with the documentary team. I feel that the channels of communication were not well presented ... personally, I would like to express my opinion about some things, and I do not want to use the e-mail, but rather, I would like to use a communicational channel in real time ... it seemed that the website was not interested in taking care of its viewers”. Another participant added in the same context: “The concept of having a responsive website may interest those who work in the media field like me. I would like to participate, to communicate, and to add to the closed narrative. In this documentary website, I cannot communicate with those in my circle of interest. I can only communicate with the team through a weak tool such as e-mail. As a result, it seems that I cannot build a real relationship with this documentary. All I can do in this website is to move from here to there”.

Although the majority of the participants were aware of the responsiveness dimension, some of them did not acknowledge its importance, especially in communicating with the documentary team or with other online viewers, because they considered themselves as inactive online users. According to them, the only activity they do online is viewing the content. One said in this matter: “I honestly did not look for communicational channels, I do not care much about communicating with the documentary team. My focus was fully on the story”. Another added respectively: “I have no interest in communicating with other viewers online... My presence online is as an observer rather than a real participant. I watch news and some films, and I read some comments and so on”.

Another participant believed that the presence of communicational channels in this documentary could be important, but not for the first time. The viewer must first build a long-term relationship with the website: “In fact, I did not realize, or rather I did not pay attention to any feature that could allow the communication. My full attention was on the story. Usually, the first time I visit a website, my concern is about watching. On the second return, if the website is really fun and enjoyable, I usually scan the entire website, I would even intensively read all the visitors’ comments”.

High interactive documentary group and perceived responsiveness. All participants of the high interactive documentary recognized that the documentary website was highly responsive. They believed that the documentary website's choices of communication were rich, and prominent, as they were almost identical with the documentary story. For the majority, the documentary website was interactive in terms of responsiveness from the documentary team; from the signs and features of navigation; and from the real viewers or users online. Therefore, this documentary website remarkably revealed that the site/team was highly taking care for its users. One said in this sense: "I was able to communicate, and able to effectively choose from a variety of options the tool I like such as: phone call, call via Skype, or sending messages through e-mail, Facebook, Twitter ... etc. The documentary website also allowed me to like, share, download, upload, edit ... and other such tools. The multiplicity of existing options meant to me that the documentary website was not only addressing a particular audience, but also allowing everyone to communicate with the team, the website itself, or with other online viewers. This generally means that the director or the team is notably caring for me as a viewer and considers my point of view. This documentary website wants to build a strong relationship with the viewer, where my opinion seems to be very important". Another stated within this framework: "This responsive website has given me in fact a sense of importance and confidence as a viewer which in turn, my love and interest have increased of this documentary".

Another participant added consequently: "The presence of all these responsive tools made me feel that there was no border between the director and me. Add to that the various options for navigation, control and contribution. One feels therefore that it is possible to produce, in one way or another, this documentary or at least a part of it".

Although one of the participants was not interested in interactive communication channels, she was aware of its importance for others: "My online activities are limited and centered on reading and viewing. However, communicational options in this documentary website could be important for others; I mean for those who are considered to be active online, or for those who work in the field of filmmaking".

Perceived personalization dimension.

The two groups of participants, after viewing the two documentary projects, were asked

to describe their perceptions and experiences of the perceived personalization in terms of the following: Describe how you perceived the personalization dimension of the documentary website in terms of : (a) if it was like a person for you; (b) if it wanted to know you as a site visitor; and (c) if it understood you as a site visitor. The following part is the interviewees' accounts of the perceived personalization divided into two sections: low interactive documentary group and high interactive documentary group.

Low interactive documentary group and perceived personalization. The majority of the low interactive documentary participants did not agree that the interactive documentary was a good example of the personalization dimension. They claimed that the documentary website did not express their personality; did not deal with them as a person; and did not seem to want to build a personal relationship with them. According to them, the documentary website lacked various features that could assert a participatory relation with the team or with the documentary such as: fluid navigation; customization; bilateral communication, where there were no sufficient and effective communicational tools, and real space for the viewers to participate, subscribe, build a page or account on the documentary website, etc.

One of the participants stated in this regard: "I relied on the video list, because it was difficult to deal with this documentary website.... I wish that the relationship between the videos was unsophisticated, and did not need me to press a button every time I wanted to do something.... This documentary website did not express my personality, and I did not feel that it was talking back to me neither through navigation nor by opening up enough space for me to communicate or participate". Another added in the same context: "It can be said that the design of the documentary website or the general characteristics such as color, database order was fairly good. But at the same time, this documentary website has apparently missed a lot. I feel that the website's responsiveness was limited, and that the interactive and fluid navigation was slow and complex. Therefore, this documentary website in the scope of interactive media has a low level of interactivity ... in fact, it can be called linear documentary if there is no database". Another participant stated in that vein: "No ... I did not feel at all that this web project was an expression of my personality or my way of thinking. In my normal life, I am a very serious person; I like things to be clear. [For example] I like open and clear roads, and I do not like those mysterious roads, those full of twists and turns. Even when I drive my car, I often choose straight roads. In

comparison with the documentary website, I felt that I had to twist back and forth, up and down, to choose my way, and this somehow made me feel dizzy. The only reason why I followed this tortuous path in the documentary narrative was obviously the documentary story. Indeed, without the quality of the documentary story, I would never have followed those winding paths. On the other hand, the tools, described as interactive tools, were really unnecessary. They may have their own use in other stories, but I never felt they were personally relevant within this documentary story”.

Two participants believed that the documentary project emphasized personalization. One of them said: “This type of documentary reflected my personality. I felt that one of its characteristics was the constant desire not to control but to choose”. The other said: “Yes, this documentary design was an expression of my personality, because it allowed me if I do not like anything inside the documentary project to skip it for something else”.

High interactive documentary group and perceived personalization. The majority of the high interactive documentary participants confirmed that the documentary website was an ideal reflection of personalization, because it was a sort of real person who wanted to build a real relationship with the viewer through its previous understanding of the viewers’ personality and their needs. As explained by the participants, the reflection of this dimension can be found in the way the story was organized; the facility of navigation; the adequate and diverse options; and the various communication tools and channels for participation in the project, etc. One said in this perspective: “I do not know how to explain that.... In a way, I have a latent thought of particular things, this documentary design helped my latent thoughts to reveal themselves. In other words, when I internally thought of something that I wanted to do, the documentary was explicitly able to express it. The total links, channels and buttons in the documentary were, in one way or another, a reflection of my latent thoughts”. Another added within the previous view: “The documentary mind-map was really amazing. For instance, when I was watching the summer events, or the summer games, a question came to me: would I find the same games in winter? Where would they be? I would go to winter, and I would find the winter games ... and so on. Therefore, the mind-map and the documentary as a whole were very exact and elaborate. It really expressed my thoughts while navigating in the documentary website”.

Another asserted the previous perspective: “To me, as a music teacher, this documentary represented a very interesting musical rhythm, merging the speed and slow pace of its events into a musical narrative, in which the audience was an active participant of adjusting the rhythm. The transitions and the mind-map as a whole were entirely commensurate with the quality of the events, as if they were not merely random links, but rather a reflective expression of our way of thinking. On the other hand, the information provided by the site was rich, intensive, and not cumbersome. Each piece of information had its own purpose, which contributed to the important goal of this documentary. So I felt that this documentary website was in line with my personality”.

On the other hand, although the majority of the participants considered that the documentary website was a real expression of the personalization dimension, two of the participants did not agree with the majority. One of them stated: “It may be difficult to answer this question. For me, reaching a conclusion whether the documentary website expressed my personality or not lies in its accessibility and categorization. In the documentary website I saw, there was some initial order, but if you go beyond the introduction, I am sure that you will get lost in the documentary events, and the video list will not help you because it is not arranged or based on the sequence of the events. In fact, there were many options, and for me, this was very tiring and did not reflect my personality”. In the same regard, another participant claimed: “In general, I liked the design of the website in terms of colors, quality of sound, image and video, the interface and certain options such as customization ... etc., but, as I said earlier, I was not satisfied while moving from one video to another. It was required of me to make an effort at every stage. I really preferred to enjoy watching without moving the mouse or doing anything else”.

Summary

The aim of this study was to examine the relationship between actual interactivity and users’ perceptions in terms of perceived interactivity and attitudes toward the interactive documentary website. The level of actual interactivity was manipulated in two levels of interactivity represented in two interactive documentary projects: a documentary with a low level of interactivity and a documentary with a high level of interactivity. Two of the three groups were assigned to view and navigate these two interactive documentaries. Results indicated that

there was a significant relationship between the high level of actual interactivity and both perceived interactivity, and attitude toward the interactive documentary website.

On the other hand, the correlation between perceived interactivity and users' perceptions was measured by using a Simple Linear Regression. Perceived interactivity was operationalized as an independent predictor of three dependent variables: narrative engagement, perceived involvement, and attitude toward the interactive documentary website. The results revealed that there were a positive correlation between perceived interactivity and both perceived involvement $\beta = .25, t = 5.56, p < .00$; and attitude toward the interactive documentary website $\beta = .350, t = 18.97, p < .001$. Attitudes toward the interactive documentary website showed a stronger correlation with perceived interactivity than perceived involvement. However, the study did not find a correlation between perceived interactivity and narrative engagement.

On the other hand, the quantitative study investigated whether there was a positive correlation between users' actual interaction (measured by time spent on each documentary website) and users' perceptions that included: narrative engagement, perceived interactivity, perceived involvement, and attitude toward the interactive documentary website. Results first showed that the participants, who viewed and navigated the documentary with a high level of actual interactivity, were significantly associated with longer average time spent on the documentary. Second, the results showed that users' actual interaction was positively correlated with narrative engagement $\beta = .006, t = 2.51, p < .012$; perceived interactivity $\beta = .016, t = 22.06, p < .001$, perceived involvement $\beta = .005, t = 5.81, p < .001$; and attitude toward the interactive documentary website $\beta = .006, t = 2.51, p < .001$. However, perceived interactivity followed by attitude toward the interactive documentary website showed a stronger correlation with users' actual interaction than other dependent variables.

To investigate the relationship between actual interactivity and linearity in terms of narrative engagement and perceived involvement, the study then compared the three groups of participants. The independent between-groups ANOVA showed that there was a statistically significant difference between the three groups with narrative engagement $F(2,357) = 7.07, p = .001, \eta^2 = .038$; and with perceived involvement $F(2,43) = 3.50, p = .03, \eta^2 = .019$. However, further tests using Tukey HSD revealed that the participants, who watched the linear

documentary, were significantly involved with the narrative more than other groups. Furthermore, the linear documentary group did not significantly differ from the other two groups in terms of perceived involvement.

Lastly, to profoundly understand and compare users' perceptions of narrative, in the three designed documentaries, and of perceived interactivity, in the two interactive documentary, a qualitative study was followed the main study, employing an in-depth interview instrument. By analyzing the participants' statements, it was found that the group, who was exposed to the linear documentary, was significantly more involved in the narrative than other groups. On the other hand, the group, who viewed and navigated the high interactive documentary, was less involved in the narrative than the group who viewed and navigated the low interactive documentary. Moreover, the group, who viewed and navigated the high interactive documentary, had significantly greater positive perceived interactivity than the group who was exposed to the low interactive documentary.

Chapter 5: Discussion

The purpose of this study was to measure users' attitudes toward different levels of actual interactivity. Actual interactivity was manipulated in low and high levels by designing two interactive documentary projects. Although the documentary story was the same in the two interactive documentaries, they all differed in terms of narrative order and the amount of interactive tools. Users' attitudes were categorized in this study as: narrative engagement, perceived interactivity, perceived involvement, and attitude toward the documentary website.

Perceived interactivity is defined as "a psychological state experienced by a site-visitor during the interaction process" (Wu, 2005, p. 30). It fundamentally centralizes on how individuals perceive the dimensions of control, responsiveness and personalization, and how these perceptions, for example, affect their attitudes toward the documentary website, narrative and involvement. Narrative engagement concerns with the influence of a narrative/story on individuals in four dimensions: narrative understanding, attentional focus, narrative presence and emotional engagement. Perceived involvement was identified as "a person's perceived relevance of the object based on inherent needs, values and interests" (Zaichkowsky, 1985, p. 342). Finally, attitude toward the interactive documentary website was defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 1993, p. 1).

Consequently, another objective of the study was to examine the relationship between users' actual interaction toward different levels of actual interactivity and their perceptions: narrative engagement, perceived interactivity, perceived involvement, and attitude toward the interactive documentary website. Users' actual interaction was measured by time spent on the documentary website. Perceived interactivity as a very important construct in this study was used as a predictor of narrative engagement, perceived involvement and attitude toward the interactive documentary website.

On the other hand, the study sought to compare interactivity with linearity in terms of narrative engagement and perceived involvement. The study with this comparison, aimed to particularly answer this question from user's perspective: What is the future of linear

documentary in the age of interactivity? To understand the previous question in depth, the study additionally applied a qualitative study using an in-depth interview with regard to narrative engagement and perceived interactivity.

To achieve the objectives of the study, a laboratory experiment was conducted with a systematic sample of 360 participants who were randomly divided into three groups. Each group was assigned to watch and /or navigate a documentary and to answer the related questionnaire containing several dependent variables. The study also used software packages to measure and monitor users' actual behavior. However, the qualitative study was conducted with 21 volunteers who were also divided randomly into three groups. Each group was assigned to view and navigate a documentary of the designed ones, and each volunteer was then interviewed.

The results of the present study suggest that there is a significant influence of the high level of actual interactivity on perceived interactivity; and on attitude toward the interactive documentary website. The participants who viewed and navigated the high interactive documentary have a greater level of perceived interactivity and attitude toward the interactive documentary website than the other groups. In other terms, the more the level of actual interactivity increases in an interactive documentary, the more likely the users would have positive perceived interactivity and attitude toward the interactive documentary website. This finding is consistent with many studies of interactivity that measured the relationship between the level of actual interactivity and attitudes (e.g., Cho & Leckenby, 1997; Coyle & Thorson, 2001; Hwang & McMillan, 2002; Jee & Lee, 2002; McMillan, 2002; Yoo & Stout, 2000; Wu, 1999, 2005).

This result shows that actual interactivity plays an important role in forming positive perceptions towards the interactive documentary. In this context, interactivity, as characteristics of a medium, is evaluated based on the number or appearance of interactive features (e.g., Ghose & Dou, 1998; Ha & James, 1998; Bucy et al., 1999). As the results showed, respondents are more likely to evaluate the documentary with a high level of interactivity based on the presence of interactive tools. In comparison, the evaluation level is lower for the documentary with a low level of interactivity that has less interactive tools. Many of the actual interactivity studies in fields such as, economy, advertising, marketing, games, education and computer and information

science, have emphasized the importance of actual interactivity (e.g., Coyle & Thorson 2001; Fiore & Jin 2003; Haseman et al., 2002; Raney et al., 2003; Sundar et al., 2003).

In the interactive documentary context, many studies have implicitly emphasized the significance of actual interactivity (e.g., Almeida & Alvelos, 2010; Dovey & Rose, 2013; Galloway et al., 2007; Gaudenzi, 2013, Nash, 2012; Whitelaw, 2002) by focusing on the interactive tools that allow users to be in control and in an interactive communication context. In other words, these studies were concerned with the space or capacity that an interactive documentary can offer the user to influence the content (e.g., Gaudenzi, 2013; Nash, 2012) For example, many studies, that tried to classify the interactive documentary genre, conceptualized users within the logic of actual interactivity, or rather, how much participatory space is theoretically occupied by the user in the domain of interactive documentary based on opening or closing narrative structures (e.g., Aston & Gaudenzi, 2012; Choi, 2010; Nash, 2012).

Therefore, the previous result shows that interactivity can be understood in the same way regardless of whether the applied field is marketing or interactive documentary. However, it is undeniable that no experimental studies in the interactive documentary domain have been done on the relationship between actual interactivity and perceived interactivity or attitude toward the interactive documentary website.

Moreover, the results of the quantitative study indicate that there is a positive correlation between perceived interactivity and perceived involvement; and between perceived interactivity and attitude toward the interactive documentary website. However, the study finds no correlation between perceived interactivity and narrative engagement.

This result is consistent with many fields of study that measured the correlation between perceived interactivity and perceived involvement (e.g., McMillan, 2000; Sundar et al., 2003; Yoo & Stout, 2001); and between perceived interactivity and attitude toward the website (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Schlosser, 2003; Wu, 1999, 2005, 2006; Yoo & Stout, 2001).

This result shows the important role of perceived interactivity in evaluating interactive experiences regardless of form, medium or field of study. Therefore, many scholars have

attached importance to perceive interactivity (e.g., Day, 1998; Kiouisis, 2002; Newhagen et al., 1995; Wu, 1999, 2006). Nevertheless, none of the previous studies in the literature review have examined the relationship between perceived interactivity and narrative engagement. There were several studies that examined the relationship between narrative engagement and other variables such as the entertainment-education impact (e.g., Dunlop, Wakefield, & Kashima, 2010; Green & Brock, 2000; Busselle et al., 2009); and enjoyment (Bilandzic & Busselle, 2008; Green et al., 2004). On the other hand, other studies found that individuals tend to adopt the characters' attitudes and beliefs in a narrative, even though they know it is a fictional narrative (Dal Cin et al., 2004; Escalas 2004; Green, 2004; Green & Brock, 2000; Wang & Calder, 2006). Green and Brock (2000) and Green (2004) found a stronger positive relationship between the high level of narrative engagement and attitudes and beliefs related to narrative. De Graaf, Hoeken, Sanders and Beentjes (2009) found that identification, as a dimension of narrative engagement, and attitudes were influenced by perspective.

The reason for studying the relationship between perceived interactivity and narrative engagement is that this study was based on the documentary as a narrative/story regardless of whether it is a database narrative or linear narrative. The study, from the very beginning, believed that interactivity could not be understood as an isolated term, but rather as a relational concept. In the interactive documentary domain, interactivity cannot be isolated from other factors such as narrative, users' actual interaction, and individual perceptions. Therefore, the study aimed to measure the degree of correlation between perceived interactivity and narrative engagement, or more precisely, whether the individual perceptions influence their assessment of a narrative.

Nevertheless, it is obvious from the results that perceived interactivity and narrative are in a negative relationship, and this demonstrates that individuals' perceptions of interactivity are different from their perceptions of narrative. Relationships between both measures appear to be sectioned, where perceived interactivity could be used to evaluate and predict attitudes toward an interactive documentary website and perceived involvement rather than to assess narrative experiences. On the other hand, although there is a significant correlation between perceived interactivity and perceived involvement, it is less stronger than the correlation with the attitudes toward the interactive documentary website. Therefore, the relationship between perceived

interactivity and attitude toward the documentary website seems to be more present in interactivity studies than the relationship between perceived interactivity and involvement. For example, several studies have found no correlation between perceived interactivity and involvement (e.g., Ahren et al., 2000; Oginanova, 1998). This reaffirms that perceived interactivity could be more predictable of attitude toward the interactive documentary website than perceived involvement.

Moreover, although there are no experimental studies in the interactive documentary field on the relationship between perceived interactivity and both perceived involvement and attitude toward the interactive documentary website, it is important to consider measuring these variables in order to evaluate the interactive documentaries based on individuals' perceptions of interactivity.

However, users' actual interaction in this study was operationalized in terms of average time spent viewing or navigating an interactive documentary. Initially, the results reveal that there is a significant difference between the two levels of actual interactivity in terms of time spent on the documentary website. Respondents who viewed or navigated the high interactive documentary are more likely to spend longer periods of time on the documentary website than those who viewed or navigated the low interactive documentary.

Additionally, the study also measured the correlation between users' actual interaction and their perceptions. The results show that there is a positive correlation between time factor and all dependent variables. However, perceived interactivity followed by attitude toward the interactive documentary website demonstrate a stronger correlation with users' actual interaction than other dependent variables. In addition, it is worth to mention that narrative engagement is the weakest linear association among the other variables with users' actual interaction.

This finding may explain the previous finding that shows no correlation between perceived interactivity and narrative engagement. It seems that the level of interactivity may not be considered as a criterion for evaluating the narrative experiences. Users' actual interaction is important in interactive studies, where it could give real and effective answers of the users' involvement in interactive experiences (Hoffman & Novak, 1996; McMillan et al., 2003; Wu, 2006). In this context, measuring users' actual behavior online is a common use today among

most of the known websites, where analyzed data can be used to develop a constant and fruitful relationship between the user and the system/product. In other words, understanding the user through the actual online behavior is an effective way to develop appropriate responses and services.

Furthermore, one objective of the study was to measure the relationship between linearity and interactivity in terms of narrative engagement and perceived involvement. These two factors (narrative engagement and perceived involvement) were what can be used to compare interactivity with linearity. In other words, the narrative engagement scale concentrates on how users perceive a narrative regardless of whether it is a digital database or linear in terms of narrative understanding, attentional focus, narrative presence and emotional engagement (Busselle & Bilandzic, 2009). Perceived involvement from users' perceptions means how important this product or service is in their lives (Zaichkowsky, 1994). On the other hand, other dependent variables, such as perceived interactivity and attitude toward the interactive documentary website, cannot be used to compare linearity with interactivity. Therefore, the third group (the linear documentary group) answered a questionnaire that only included the possible co-dependent variables with the other two groups (the group of low interactive documentary and the group of high interactive documentary).

The results suggest significant differences between the three groups in terms of narrative engagement; and perceived involvement. However, respondents who were exposed to the linear documentary are more likely to be involved with the documentary narrative than the other groups. At the same time, the results do not show that respondents who viewed the linear documentary differ from other groups in terms of perceived involvement of the whole documentary.

This finding may indicate that linear documentary still maintains its importance and entity in the age of interactivity. In the linear narrative, viewers seem to be more focused on the documentary story since nothing else may distract them from being immersed with a given narrative. In comparison, users in the interactive narrative, especially the narrative with the high level of interactivity, seem to be distracted between the narrative and interactive tools. Therefore, respondents who viewed and navigated the documentary with the low level of interactivity are

significantly more engaged with the narrative than those who viewed or navigated the documentary with a high level of interactivity.

Another result can justified the previous result is that the participants in the low interactive documentary show that they spend more time on interactive documentary pages, although the participants in the high interactive documentary show that they spend more time on the documentary website as a whole. It is worth mentioning that the comparison between both documentaries was based on the page views (both have the same pages that include audiovisual materials and only differ in interactive features within the pages). Spending more time on the low interactive documentary '*pages*' could mean that the participants are more involved with the documentary narrative than other things, where spending more time on the high interactive documentary '*website*' could mean that the participants are more involved with other things than the documentary narrative such as the interactive features. The results also suggest that the participants in the high interactive documentary have a higher number of viewed pages (measured with how many time the user clicks on the page) than the participants in the low interactive documentary. It is simply because the high interactive documentary has more clickable/ transitive and interactive buttons and titles within each page than the low interactive documentary.

In fact, this interpretation may be consistent with several interactive documentary studies. For example, Whitelaw (2002) questions the extent to which a story can be conveyed in an open narrative. O'Flynn (2012) sees that both interactive fiction and interactive documentary could lack the ability of creating real emotions with the user for two main reasons: first, the structures of these interactive films are not based on consistency, where the interactive digital narratives abandon the strong dramatic plot that is built on logical sequences; second, the way of structuring the fixed user interface, which often requires an interaction operated by choosing the next actions (O'Flynn, 2012).

In perceived involvement, although there are significant differences between the three groups, the level of differences are less strong than the level of differences with narrative engagement. All groups show some degree of convergence with their positive assessments of perceived involvement. Therefore, perceived involvement, as an expression of the importance of

a product/service in an individual life, could be compatible between the three groups. That is, the three documentaries could be important in the participants' lives even though they do not equally engage with the given narrative.

Lastly, to profoundly understand and compare users' perceptions of narrative, in three designed documentaries, and of perceived interactivity, in the two interactive documentaries, a qualitative study followed the main quantitative study employing an in-depth interview instrument.

By analyzing the interviewees' statements of their engagement in the narrative, it is clear that the interviewees who viewed the linear documentary are significantly more engaged in the narrative than the other interviewees. On the other hand, the interviewees who viewed and navigated the high interactive documentary are less engaged in the narrative than the interviewees who viewed and navigated the low interactive documentary.

These results are in line with the results of the quantitative study. In the linear narrative, the viewers have only one activity, which is mainly to watch the documentary. In the digital narrative, the users have a range of physical and mental activities including: navigation, clicking, browsing, sharing, reading options, making decisions, etc. These activities may limit the impact of a documentary story on viewers. Demonstratively, the results of the in-depth interview also indicate that the interviewees who viewed and navigated the low interactive documentary are also more involved with the narrative than those who viewed and navigated the high interactive documentary. It can be concluded, based on the above, that the more interactive tools the documentary has, the less the users tend to engage with the narrative, and the less interactive tools the documentary has, the more the users tend to engage with the narrative.

On the other hand, an analysis of the interviewees' statements confirm that the interviewees who viewed and navigated the high interactive documentary have a higher level of perceived interactivity than those who viewed and navigated the low interactive documentary. The results of the qualitative study also agree with the results of the quantitative study in which they both confirm that the high level of interactivity are associated with positive perceptions. Therefore, it can be concluded that the criterion of interactivity can be considered to be an independent criterion from the narrative in the sense that individuals can have positive

perceptions of interactivity, but this is not necessarily a key factor in judging interactive or linear narrative experiences.

Other important indications from the qualitative study revolve around whether interactivity or linearity can improve our perceptions of reality. Although this question was not directly addressed to the interviewees, dimensions such as attentional focus and narrative presence, can give clear signs about the relationship of interactivity and linearity with reality. By analyzing the interviewees' statements, it can be concluded that linearity in a documentary is able to make the interviewees more focused and present in a given narrative than interactivity in a documentary. Thus, presented reality in the linear documentary is more capable of creating identification with the depicted places, events and people. Many of the interviewees' repeated statements included such identification with the presented reality: "The documentary was apparently able to take me from my world"; "It captured all my senses"; "The documentary was able to steal me from all my thoughts" "Unconsciously, I would prefer to live in the world that the documentary created away from the outside world".

These statements can be an indication of the fact that the presented reality is more capable of creating a connection with reality than reality itself sometimes. On the other hand, some statements, in both interactive documentaries, can tell the opposite such as: "I could not emotionally find myself overwhelmed with the documentary"; "it is a new experience that needs some skills"; "Although I like this type of documentary, my awareness was present"; "Suddenly I became emotional, and suddenly I also went back to think about the mouse ... once I was in the story world, and once again I was in the room". These statements may indicate that the presented reality was apparently intersected with conscious actions and thought processes reflected in decision-making about the offered interactivity.

It can be concluded, therefore, that linearity in a documentary can improve our perception of reality or at least our identification and communication with it. On the other hand, interactivity in a documentary can improve our ability to deal with reality. In other words, linearity seems to be more related to our emotional perceptions and causality. This, in turn, suggests that linear narratives will retain its place as long as our cognitive laws continue to operate based on the concept of cause and effect. On the contrary, interactivity in a documentary

is more related to conscious actions and decision-making processes. Thus, the presented reality through an interactive documentary is a reality that needs to be re-disassembled, assembled, and then re-created.

These indications do not mean at all that interactivity cannot improve our perception of reality. Conversely, interactivity rearranges it and rebuilds it with our fingerprints. In a general sense, interactivity in documentaries requires time and effort to link and re-create reality. It is important here that we are talking about interactivity in the context of the documentary rather than in other contexts, where interactivity is an effective tool and more capable of dealing with processes. However, the presented reality in a linear documentary is a ready reality, which invests our perception of it in order to confirm its presence with color and sound.

However, such a question about the ability of interactive documentary to improve our perception of reality can become a controversial issue that depends on how the interactivity is represented in a given narrative. On the other hand, this question can be a constant investigation in the studies that work on interactive documentary.

Limitations and Recommendations for Future Research

This study is considered to be new in the field of interactive documentary. It has endeavored to introduce a new approach to study the relationship between the user and interactive documentary, and to compare the interactive documentary with linear documentary by examining users' perceptions of both types of documentaries. In the absence of experimental studies, it was difficult to only rely on the field of interactive documentary and apply relevant measurements. Therefore, the study used wider interactive fields to interpret and analyze the relationship between the user and the interactive documentary.

This procedure has come as a result of the study conviction that the interactive documentary in its interactive part can follow and use approaches from the other fields of interactivity. Therefore, measurements from these fields can be adapted and applied to the interactive documentary. Nevertheless, the particularity of interactive documentary in its documentary part cannot be denied. It is possible that we may have a clear vision of interactivity in terms of its main dimensions and its practical applications; yet, it is still a complicated

concept. In other words, interactivity is a relational concept that does not only stand for interactive tools, but it covers other overlapping components. In this study, interactivity cannot be separated from the documentary story. Interactivity comes here to express the documentary and to be a facilitative tool for achieving its intended goals.

Therefore, one of the limitations in this study is that it has used scales from other fields of interactivity, where their abilities to represent the field of interactive documentary can be controversial. However, it can be argued that many studies in the interactivity domain borrow and adapt interactivity scales from each other or from other fields. This is standard procedure in many fields of study, taking into account the problems of accurate representation of these measures on the applied studies or domains. Nevertheless, the study did not ignore this limitation while studying the relationship between the user and interactive documentary. On the contrary, it measured the relationship between the user and the documentary story itself. In other words, the study dealt with interactive documentary in two parts: interactivity and documentary. It studied both aspects and the influential relationship between them, which may therefore explain the particularity and importance of this research. Thus, future studies could design special and accurate measurements derived from the interactive documentary field, which can be based on two dimensions: interactivity and documentary.

On the other hand, the study applied interactivity and narrative scales among others, and showed general findings about users' perceptions of different levels of interactivity and narrative with examining the correlations with other variables. Although this is standard procedure in experimental studies, it is presumably better for more comparison to measure each dimension of perceived interactivity or narrative engagement, and compare it with other dimensions and variables. For instance, the results indicate that the high level of actual interactivity significantly influenced users' perceived interactivity; and that the respondents were more likely to get involved with the linear narrative. However, the results did not indicate or define which dimension of interactivity or narrative was more or less influential than the other. Although the majority of the studies tend to use scales or subscales to give general findings, it can be more accurate to measure each dimension and compare it with other connected dimensions. For example, responsiveness as a dimension of perceived interactivity scale may be a more effective dimension than user control dimension, or narrative presence dimension of narrative engagement

scale may be less effective than attentional focus dimension, etc. Once again, this study did not ignore this limitation since it added a qualitative study to fully understand all these dimensions in the contexts of interactivity and narrative. Consequently, future studies should consider measuring each dimension of interactivity/narrative separately, and seek to compare each dimension with others, so that the effect size of each dimension can be identified.

However, although the study used a wide field for studying interactive documentary and interactivity, it missed some other fields and literature that could have improve its approach. Fields such as video games, and literature on interactivity and interactive documentary in other languages such as French and Spanish, could have enriched this study.

Moreover, another limitation could be the way in which the designed documentaries were manipulated in this study. This limitation can be divided into three categories: linearity; documentary story and study population; and interactive documentary classifications. Regarding linearity, the study has created two interactive documentaries from an existing linear documentary. Although the study sought to approximate the design of the three documentaries with the existing interactive documentaries, and with the studies of interactivity and of interactive documentary, this does not negate the fact that the documentary story was originally from the linear world. The purpose of this procedure was meant to control other variables by presenting one story in the three documentaries. It was difficult to control other variables if the study had three different documentary stories. Nonetheless, the procedure of using the same product and manipulating the levels of interactivity is followed in many experimental studies in the fields of interactivity (e.g., Coyle & Thorson, 2001; Sundar et al., 2003; Wu, 2005). Subsequently, future studies can design documentaries that are more compatible with the interactive world.

Regarding the documentary story and the study population, the association of the documentary story with the study population could be another limitation. In other terms, the selected documentary story in this study is considered to be familiar with the study population. This axis can be considered useful in terms of controlling the story variables in order to individually measure interactivity, but it may also be considered the opposite, since the amount of response to the study could have been based on the documentary story rather than the

interactive tools. For example, the results of the study indicate that the group who viewed the linear documentary was more involved in narrative/story than other groups. This can be explained in two directions: first, linearity still has its powerful influence over individuals more than interactivity; second, the story itself and its connectedness to the study population had more influence than the interactive tools. Future studies could concentrate on making accurate comparisons between narrative and interactive tools, so that it is possible to determine more precisely which factor is most influential than the other (narrative or interactive tools) and how they affect each other.

Regarding the classifications of interactive documentary, the study has designed three documentaries: linear documentary, low interactive documentary, and high interactive documentary. The classifications of interactive documentary in the literature review can be summarized in four categories: conversational documentary, hypertext documentary, participatory documentary, and experiential documentary (Gaudenzi, 2013). In parallel, the low interactive documentary can represent the hypertext documentary, and the high interactive documentary can represent the participatory documentary. Therefore, the representation of interactive documentary categories may not be accurate in this study. Nevertheless, by reviewing the literature review, it was difficult to precisely obtain an accurate representation of the interactive documentary categories since the interactive documentary is a sophisticated and developing genre, and its categories are noticeably overlapping. In addition, it was difficult to represent interactive documentary categories with a single documentary story since each single story may require a certain form of interactivity. Therefore, future studies should not be only based on the measurement of a high level or a low level of interactivity, but instead, they should focus more on designing documentaries that are compatible with interactive documentary classifications.

Furthermore, another limitation is related to the procedure of applying partial variables to one group of the participants. One of the study objectives was to compare the linear documentary with the interactive documentary in terms of narrative engagement and perceived involvement to determine the future of linear documentary in the age of interactivity. Therefore, the respondents who viewed the linear documentary answered only two sets of dependent variables, while the respondents who viewed either the low interactive documentary or high interactive documentary answered other variables in addition to the narrative engagement and

perceived involvement variables. However, in the light of the study objectives, the procedure seemed to be necessary, where it was not possible to compare interactivity and linearity in terms of interactivity. Therefore, the study compared the three groups of participants in terms of documentary narrative, and perceived involvement. Consequently, it could be better for future studies to focus either on interactive documentary by comparing its categories with each other or on linear documentary and interactive documentary with constructing more comprehensive, comparable and accurate measures.

In this regard, the study also isolated users' actual interaction (the time factor) from the respondents who viewed the linear documentary, and did not use it to compare the three groups, but instead, it applied it only to the groups who viewed and navigated the interactive documentaries. The procedure could be considered a problematic issue, where it was difficult to compare linearity and interactivity based on this factor. Nevertheless, this can be justified that users' activities while watching or navigating an interactive documentary are essentially different from users' activities while watching a linear documentary. Users' activities in linear documentary center on watching, whereas, users' actions in interactive documentary extend to include mental and physical activities such as clicking, browsing, navigating, sharing, etc. Therefore, using the time factor to compare linear documentaries and interactive documentaries may not be precise since users' activities in linearity and interactivity are basically different and heterogeneous. Future studies can therefore use other factors of users' actual interaction that can be comparable to interactive documentary and linear documentary.

In addition, the time factor was the only factor used to compare between the groups who viewed and navigated the two interactive documentaries, although there were other potential factors. Interactive tools were manipulated in both interactive documentaries websites: high interactive documentary website had more interactive tools, while the low interactive documentary had less interactive tools and a lack of other tools. Therefore, all designed interactive tools cannot be compared to each other in the light of its presence in the high interactive documentary and its absence in the low interactive documentary.

Lastly, one of the limitations in this study could be the inconsistency between short-term experiment and the design of interactive tools. Many interactive tools were slightly used by

respondents such as “Upload Your Film/Story”, “Download”, “Share Individual Videos”, and “Edit/ Add to our Story”. This may not be an indicator of their unwillingness to use them. Many interactive tools need time to be understood and processed. For instance, it is difficult to use “share your story with us” feature during the short time of the experiment. In other words, some interactive features may need a longer period of time to be used, where users need first to get familiar with the documentary website in order to activate such interactive tools. Future studies can concentrate on long-term experiments to measure users’ interaction with the documentary, where the use of interactive tools can be clearly readable and interpretable.

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Appendix A

Participant Survey

Informed Consent

We are conducting a study of students' perceptions of documentary film. We would like to ask you to participate in the study by filling out a survey, in which we ask you about your background, such as your age, sex, and education.

We are also asking questions about your experience with online interactive media. Your participation is voluntary, and there is no penalty for not participating. Not filling out the survey will not affect you. You can stop at any time you want, and you can skip any questions you do not wish to answer. If you do not wish to complete the survey once you have started, feel free to cancel your participation, or we will do that later once all surveys have been collected.

This survey should take about 15-20 minutes. We want this to be an anonymous survey, so please do not put any identifying information on it. No one but those directly involved in coding or analyzing the survey will see the responses. If you have any questions about the study, please feel free to ask me now or after the survey. Thank you for your time and effort.

Writing the computer serial number in order to divide the participants in three groups

(Please mark the serial number of your computer)

HID1	
LID2	
LR3	

Measuring the time spent on the Internet per day:

N1. Please indicate the time you typically spent per day on the Internet?	
Less than 1 hour	
1-2 hours	

3-4 hours	
5-6 hours	
More than 7 hours	

Measuring usual activity on the Internet

N1. Consider the following activities on the Internet. (Indicate which activity you typically do the most? (Please mark all that apply))	
1- Watching video, films	
2- writing (blog, articles, comments)	
3- Chatting or vocal communicating with others	
4- Playing games.	
5- Reading articles, comments research, books.	

Measuring the medium used by participants.

Consider the following mediums. Indicate which medium you typically use? (Please mark all that apply).	
1) TV	10) Tablets
2) Radio	11) Internet
3) Movie Theaters	12) Social Media
4) Print: Newspapers/ Magazines	13) Broadcast TV News Websites
5) VCR Player	14) ; Internet Radio
6) DVD Player	15) Internet Print (Newspapers/Magazines)
7) Play Station/Video Game Console	
8) Computer/ Laptop	
9) Smart Phones	

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N12. I felt sorry for some of the characters in the documentary.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

Measuring perceived interactivity

N1. I was in control of my navigation through the documentary website.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N2. I had some control over the content that I wanted to see in the documentary website.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N3. I had total control over the pace of my visit to the documentary website.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N4. I could communicate with the documentary team directly for further questions about the documentary or other documentary productions.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N5. The documentary website had the ability to respond to my specific requests quickly and efficiently.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N6. I could communicate in real-time with other viewers who shared my interest in the documentary.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N7. I just had a personal conversation with a social, knowledgeable and warm representative from the documentary team.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N8. The documentary website was like talking back to me while I clicked through it.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

N9. The information in the documentary website was personally relevant and interesting to me.

Strongly disagree			Undecided			Strongly agree
1	2	3	4	5	6	7

Note. “Perceived interactivity” items were only for those participants who navigated either the high interactive documentary or the low interactive documentary.

Measuring perceived involvement

This kind of documentary is:

N1:

Important			Undecided			Unimportant*
1	2	3	4	5	6	7

N2:

Boring			Undecided			Interesting
1	2	3	4	5	6	7

N3:

Relevant			Undecided			Irrelevant*
1	2	3	4	5	6	7

N4:

Exciting			Undecided			Unexciting*
1	2	3	4	5	6	7

N5:

Means nothing			Undecided			Means a lot to me
1	2	3	4	5	6	7

N6:

Appealing			Undecided			Unappealing*
1	2	3	4	5	6	7

N7:

Fascinating			Undecided			Mundane*
1	2	3	4	5	6	7

N8:

Worthless			Undecided			Valuable
------------------	--	--	------------------	--	--	-----------------

67) I am a college:

- 1) _____ Freshman.
- 2) _____ Sophomore.
- 3) _____ Junior.
- 4) _____ Senior.
- 5) _____ Graduate School.

Fields of Study:

- 1)_____ Radio and TV.
- 2)_____ Journalism.
- 3)_____ Advertising and Public relationship.
- 4)_____ Master.
- 5) _____ Others.

Appendix B

Original Scales

A- Busselle's and Bilandzic's (2009) original scale of narrative engagement:

Narrative understanding dimension

N1. At points, I had a hard time making sense of what was going on in the program.

N2. My understanding of the characters is unclear.

N3. I had a hard time recognizing the thread of the story.

Attentional focus dimension

N4. I found my mind wandering while the program was on.

N5. While the program was on I found myself thinking about other things.

N6. I had a hard time keeping my mind on the program.

Narrative presence dimension

N7. During the program, my body was in the room, but my mind was inside the world created by the story.

N8. The program created a new world, and then that world suddenly disappeared when the program ended.

N9. At times during the program, the story world was closer to me than the real world.

Emotional engagement

N10. The story affected me emotionally.

N11. During the program, when a main character succeeded, I felt happy, and when they suffered in some way, I felt sad.

N12. I felt sorry for some of the characters in the program.

B-Wu's (2006) original scale of perceived Interactivity

Perceived control dimension

N1. I was in control of my navigation through the web site.

N2. I had some control over the content that I wanted to see in the web site.

N3. I had total control over the pace of my visit to the site.

Perceived responsiveness dimension

N4. I could communicate with the company directly for further questions about the company or its products.

N5. The site had the ability to respond to my specific requests quickly and efficiently.

N6. I could communicate in real-time with other customers who shared my interest in the product.

Perceived personalization dimension

N7. I just had a personal conversation with a social, knowledgeable and warm representative from the company.

N8. The web site was like talking back to me while I clicked through it.

N9. The information in the web site was personally relevant and interesting to me.

C- Zaichkowsky's (1994) original scale of involvement:

To me (object to be judged) is:

N1.Important/Unimportant;

N2.Boring/Interesting.

N3. Relevant/Irrelevant.

N4. Exciting/Unexciting.

N5.Means nothing/Means a lot to me.

N6.Appealing/Unappealing.

N7. Fascinating/Mundane.

N8.Worthless/Valuable.

N9.Involving/Uninvolving.

N10. Not needed/Needed.

D- Chen's and Wells' (1999) original scale of attitude toward the site

N1. This website makes it easy for me to build a relationship with this company.

N2.I would like to visit this website again in the future.

N3. I am satisfied with the service provided by this website.

N4. I feel comfortable in surfing this website.

N5. I feel surfing this website is a good way to spend my time.

N6. Compared with other documentary websites, I would rate this one as one of the worst or on of the best.

Appendix C

Photos of the Experiment



Appendix D

The Scenario of the Linear Documentary

Alharah Alfoqah documentary revolves around the story of the local residents after they were displaced from their old village “*Alharah Alfoqah*”, located in the north of Jordan, to another place called ‘*Aleskan*’ (the new residence). The documentary story narrates the local people’s accounts of their village in four seasons: winter, spring, summer, departure, and the changes in their lives after they were departed. Nine interviews were filmed with locals who have witnessed these changes. The documentary story was based on seasons since the locals’ lives and relationships were entirely dependent on agriculture. The documentary was completed over four years, and many scenes were reenacted in different seasons and locations.

Photos of Documentary characters



Abo Kamal Omari

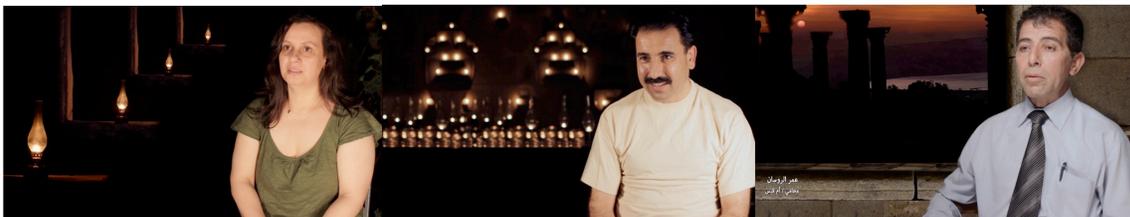
(Farmer, Umm Qais)

Umm Saleh

(Housewife, Umm Qais)

Saleh Alseettah

(House Builder, Umm Qais)



Andaleep Alhusban

(MA Social Anthropology, Umm Qais)

Mahmoud Hassn

(Schoolteacher, Umm Qais)

Ommar Rosan

(Lawyer, Umm Qais)



Mosa Alna'washi

Ibraheem Alrosan

Essa Malkawey

(Writer and Public speaker, Umm Qais)

(Museum Manger, Umm Qais)

(Farmer, Umm Qais)

The documentary starts with short statements of the documentary characters explaining the general idea of the documentary as following:

Saleh Alseettah: “*Alharah Alfoqah* is considered to be the base of the town”.

Essa Malkawey: “When I prepared myself for the interview, I wanted to get help from my mom. I told her: “Mom, tell me some stories that happened in *Alharah Alfoqah*”. She said: “Don’t ask me anything about *Alharah Alfoqah* at all, I swear, son, since that day we left *Alharah Alfoqah*, we died ... life stopped”.

Umm Saleh: “In the past, however, people were simple”.

Abo Kamal Omari: “My feelings ... are all full of deep sorrow. I often ask: Why did that happen in this way...? My life has completely changed: Where are those cows I used to milk?! Where my bees have gone? Where are the chickens that I had? Where am I now? I used to be close ... very close to my field ... that is my grove standing alone in front of me”.

Ibraheem Alrosan: “Up until now, ninety percent of my dreams’ actions occur in *Alharah Alfoqah*”.

Andaleep Husband: “*Alharah Alfogah* is probably very similar to me, for I was born here and for I lived here. But the strange thing is that I feel like I do not know her”.

Omar Rosan: “If man’s character is supposed to be formed in the early years of his life, then we had ours formed in *Alharah Alfoqah*”.

Mahmoud Hasan: “Being the last year living in these houses; sitting with their owners and friends. Then, at midnight, you would walk to your house through these dark roads, and then one year later, you would come back and find no one in these houses. It is the death, it is the real condolence”.

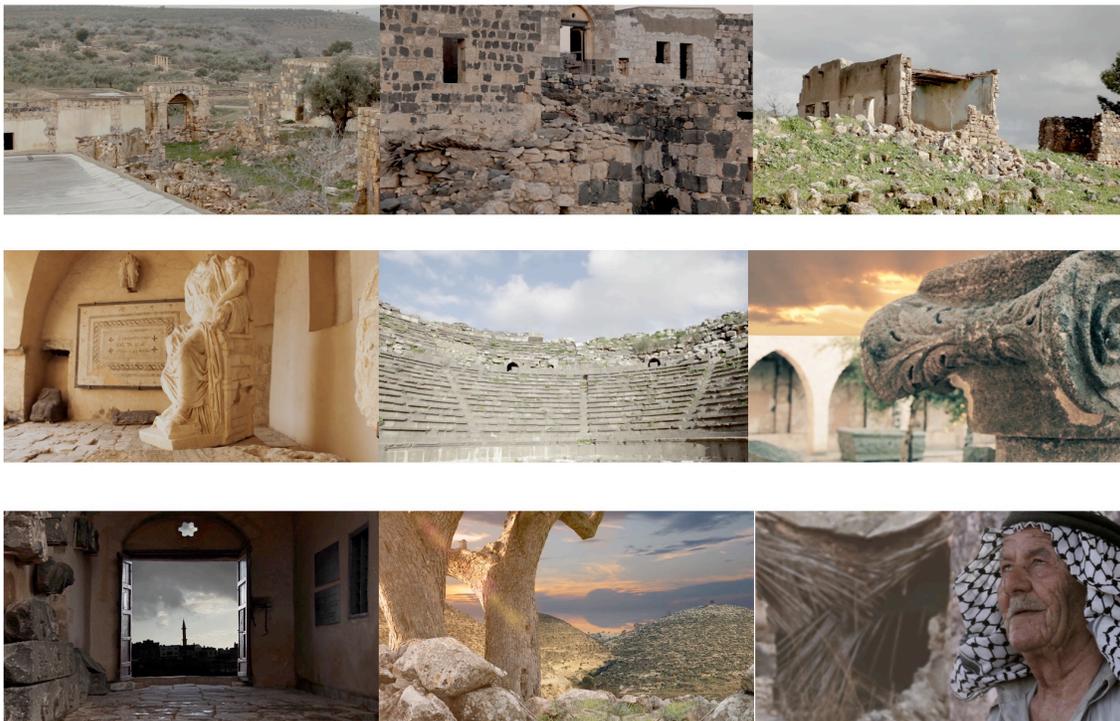
Mosa Alna'washi: “They say: It was called Gadara in the past and it is Umm Qais today. I

love no one but your soil, your Olive and Sidr trees. I love no one but you... Ah! If only we would return back and see you as you were”.

After these statements, the documentary is cut into quick shots with music and natural effects, lasting about one minute. This one-minute presents the village dramatically and local people’s activities within the four seasons. The documentary, then, fades into the documentary title and then into a historical introduction about *Alharah Alfoqah* with a variety of shots, natural sound effects and music. The narrator says:

“It was called Gadara in the ancient Greek, Roman and Byzantine ages. Later on, it became (Imm Qais/Umm Qais), and then *Alharah Alfoqah* during the Ottoman period. *Alharah Alfoqah*, as its inhabitants liked to call it, was considered to be the core of the village in the middle of the nineteenth century. It grew to become the modern city of Umm Qais located in the north of Jordan. *Alharah Alfoqah* did not know that one day it would be left to become a city with no doors; where winds whistling in its windows. Its destiny was relied on its land’s geography. Therefore, agriculture was responsible for creating the seasons of the village’s existence and absence”.

General Photos of the Village



The documentary then moves directly to the interviewees to narrate what *Alharah Alfoqah* means to them. This section continues for two minutes in which each interview is mixed with cutaway shots and natural sound effects:

Omar Rosan: “When a child grows up in *Alharah Alfoqah*, the first lesson and the life’s alphabet is that he believes in diversity and the other. *Alharah Alfoqah*’s child feels connected with his deep-rootedness; and that is rarely felt by others”.

Andaleep Husband: “As much as my relation ages with *Alharah Alfoqah*, new concepts and meanings rejuvenate my relationship with it. However, the most important thing I probably feel is that I would love to keep praying to the geography of *Alharah Alfoqah*, because she really has taught me femininity”.

Essa Malkawey: “In *Alharah Alfoqah*, we were as one house ... one house ... we never got a part at all. Our games and holidays were always together. Now, each one of us has become lonesome, busy with his work, and has his own separated house”.

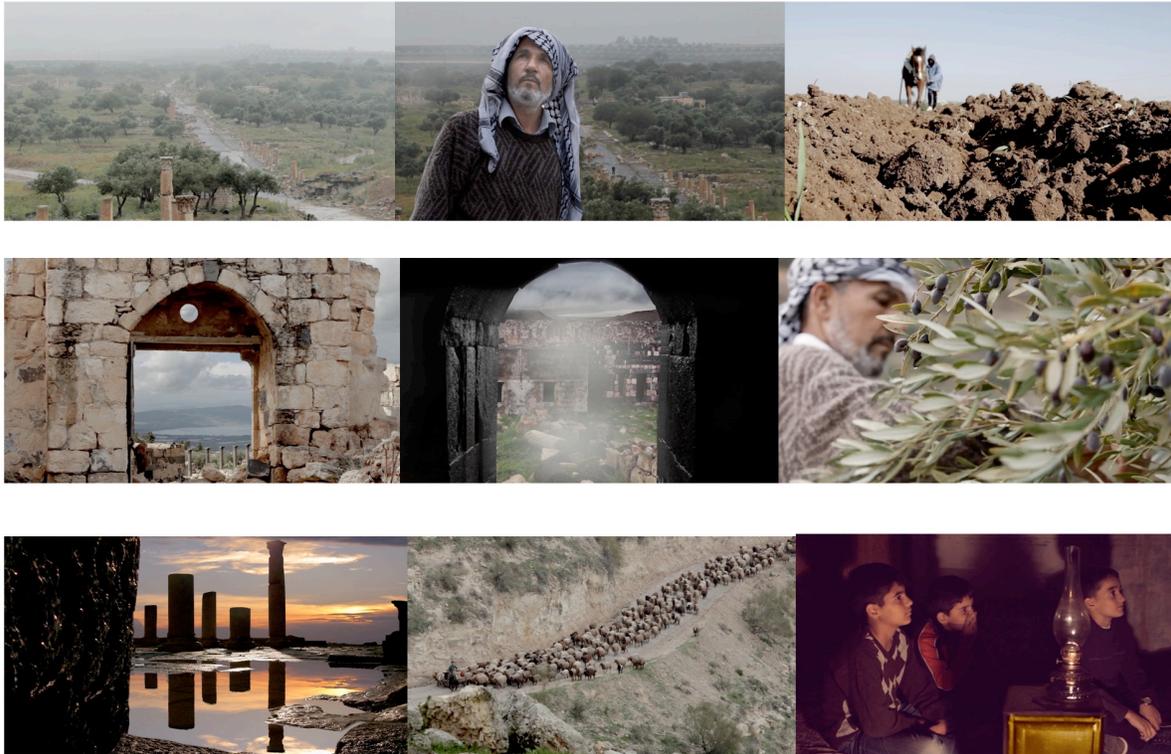
Umm Saleh: “When you sit at the old school, or at the antiquities, or wherever, and you look to the west, you feel relieved”.

Ibraheem Alrosan: “When I walk along the roads of *Alharah Alfoqah*, I recall the past, where I used to play. This road in front of the museum was where I used to play football, and an interesting game called ‘*The Ball and Seven Stones*’ I remember my friends whom we were once together, but not any more. I remember this place, which was full of people’s sounds and peasants’ movements when they used to come back from the field riding their donkeys with green vegetables and harvest”.

Umm Saleh: “When we were in *Alharah Alfoqah*, we used to see people walking together, laughing and playing. Now, when we go to *Alharah Alfoqah*, we become sad, remembering that here we were, here we lived, here we went and came back”.

Abo Kamal Omari: “I feel sad, when I visit the house that I had built, lived in and given birth to my children. Now, it is just ruins, and I am in another area. It is true that we have better facilities in the area that we moved to, but we still have nostalgia and yearnings for this area that we once lived”.

General Photos of Winter in the Village



The sound of the narrator enters after this part to present winter. The narrator's introduction continues for one minute and 34 seconds where a set of shots and natural sound effects correspond to the narration:

“Winter has formed a mythical season in which *Alharah Alfoqah* constantly recalls it with its roofs, walls, roads and alleys. Winter has pledged an ageless meeting between the sky and the earth as the Greek and the Roman myths recount. The peasants' destiny has been linked to what the clouds of Gadara promised them. Accordingly, they till their fields and sow the wheat as their Gadarene ancestors used to do. They welcome the season with picking up the olives after being washed by the first rain. When the rain intensifies, the peasants relax a little in a cave; they make fire and warm their bodies with tea fermenting little by little on the coals. The entire village bathes in the rain, and reveals its charms and hidden mysteries. Raindrops fall down on the columns, and flow on the ancient Roman road. *Alharah Alfoqah*'s gutters regain their winter melodies; her basaltic stones smile and the whole village gets gleeful with rain songs; plants shudder after a long wait, and prepare for life. The village's inhabitants also

prepare themselves to welcome their winter”.

After the narrator presented winter, some of the interviewees recount their memories of winter in four categories: winter preparations, winter games, winter memories, and winter philosophy. The interviewees’ footages smoothly intersect with cutaway shots and natural sound effects:

Saleh Alseettah: “The preparations for winter were always in autumn. For the peasant, the autumn was a time of relaxation. However, some preparations were necessary: people used to combine and mix the soil to mud the outer surfaces of their roofs and walls. This process was to stop rain leaking that could trouble their lives in winter. Each peasant used to bring packs of wood for winter every day. They also used to boil wheat to make bulgur; dry grapes to make raisins; and dry figs and tomatoes”.

Abo Kamal Omari: “The land was rough here.... We were barefooted. We did not even have any shoes.... No shoes were to be worn at that time. However, it was delightful. The winter was really a delightful season”.

Essa Malkawey: “In the old days of *Alharah Alfoqah*.... When the rain would fall down, we would all feel delighted, go out and play together. However, we used to break all our bones for we always used to jump off the rockets, ride and jump off donkeys. We used them as taxies. Therefore, no joint in our bodies stayed unbroken. There was an osteopathist -May God have mercy on him- His name was Ismail Alshana’h. We used to exceed his capacity of healing the infected bones. I used to be one of those who were splinted more than five times. Ah...! *Alharah Alfoqah*.... Perhaps living there was taught, but it was something extraordinary. If only we had continued breaking our bones, staying there, and never got separated from each other”.

Mosa Alna’washi: “I remember how we all used to sleep together in one room: my father’s Jacket was hung on the wall by a nail; my mother’s obsession of opening the hole at the top of the room to keep the air clean. I remember my mother’s brazier filled with coals; I remember in winter the roasted potatoes under the ashes; I remember my father’s sleeping with *Shemagh* [veiled] without the *Egal* [Bond]; I remember when my mother would watch us throughout the night protecting us from catching a cold. I still hear our teapot fermenting slowly;

I remember the Kerosene burner with its sound, bringing us warmth”.

Essa Malkawey: “We used to sit with old women when we were kids. They would constantly narrate to us old myths, genies, and the stories of ogres. These stories have remained in our minds. We grew up, became aware, and knew there are no such things as the ogress, but when we pass through *Alharah Alfoqah*, it is as if we still see the ogress. The old women had an impressive way of storytelling. They had a precise expression, their faces would constantly change when they were telling us these stories”.

Mahmoud Hasan: “In winter, everything calms down: the riot, the sound, the consumption, even the tourists are nowhere to be found. Therefore, it is such an opportunity to go and go far in *Alharah Alfoqah* in winter. If *Alharah Alfoqah* is all about seclusion and solitude! Then, what about winter? Winter is solitude, and with *Alharah Alfoqah*, it is a solitude added to another solitude. It is, therefore, a double solitude. One has to utilize winter in *Alharah Alfoqah*, and one has to utilize *Alharah Alfoqah* in winter”.

Mosa Alna’washi: “For me, winter is the sound of the gutter and the music of dripping. Winter reminds me of my father’s ‘*exclaiming God is great*’, when he would hear the sound of thunder”.

Andaleep Husban: “In our culture, winter is generally a woman’s friend, because it is prohibited in summertime to go out. Therefore, winter is an opportunity ... we automatically and naturally stay inside. At the same time, there is something about winter that we cannot resist. It probably came from the myth world, which is the relationship between the sky and the earth, represented by the male and female. *Alharah Alfoqah* is a fertile area. I mean it has plains that are surely waiting for these moments of rain. The earth is also waiting for these moments to catch the flow from the sky. Therefore, this environment, for sure, has reflected upon me, since in my philosophy, I consider myself to be a part of these cultural or mythic components in *Alharah Alfoqah*”.

General Photos of Spring in the Village



The documentary proceeds to spring season, where the narrator presents the season. The narrator's introduction lasts for one minute and two second. A set of shots and natural sounds corroborate with the narration:

“The rain stopped falling and the seeds have already fermented inside the ground, storing a potential life.... It is time to emerge.... It is spring, Gadara's spring, the return of Ishtar, Persephone, Inanna, Isis and Tyche from the underworld to give life to the land, and to spread out the color and sound. In *Alharah Alfoqah*, plants and flowers harmonize to form an artistic painting with homogeneous and heterogeneous colors, which decorate alleys, roads and plains. There, in the village, the old olive trees still carry a Roman memory, and the village's flowers like anemone still carry myths of the slain God Adonis ... a yellow dress in each way is embroidered with crown daisy flowers and decorated with silymarin blossom... Life bustles with life”.

After the narrator's introduction, some of the interviewees recount their memories with

spring in three categories: spring specialty in *Alharah Alfogah*, spring memories, and spring philosophy. The interviewees' footage and narration are mixed with cutaway footage and natural sound effects:

Mosa Alna'washi : "In spring, our dining tables were green. We were vegetarians as some Sikh and Hindu sects. I remember in spring my mother, Hamza's mother and Aiesha Al-Khalid or whom we call 'harvest collectors' and on their heads milk thistle, hibiscus, gundelia, arum and teucrium plants. They were beautiful in spring when they would come, and upon their heads those vegetarian plates that we loved very much".

Essa Malkawey: "*Alharah Alfogah*'s soil is generous and it never disappointed in all seasons. It always produced many kinds of crops. We were seasonal with our food: in spring, it was spring meals, for example. Women in the village would leave their children, their work and go to collect arum, gundelia and hibiscus plants".

Omar Rosan: "If you really want to know spring, you will only experience it in *Alharah Alfogah*. Spring is an amazingly giving season, where you can see it in every side of *Alharah Alfogah*, even on the roofs of the old houses. Do not be surprised when I tell you that when we were kids, we used to climb up on the roofs to pick chamomile blossoms. Everything in *Alharah Alfogah* was blooming even ancient Roman monuments in *Alharah Alfogah* have plants that still present as gundelia and silybum plants. Flowers that grow in *Alharah Alfogah* now have existed since ancient times. We still see evidence of their images drawn on the stones and ruins".

Saleh Alseettah: "People used to live alongside nature, unlike nowadays where chemicals are being sprinkled on the land. Everything was natural. People used to eat nettles, crown daisies, milk and nodding thistles, gundelia, 'Kardalla', sweet plants, celosia argents, as well as hawthorn fruits at the beginning of winter. They used to grille them and also ate oak fruits. Women also used to go and pick hibiscus, gundelia, and milk thistle, which they would cook and eat later".

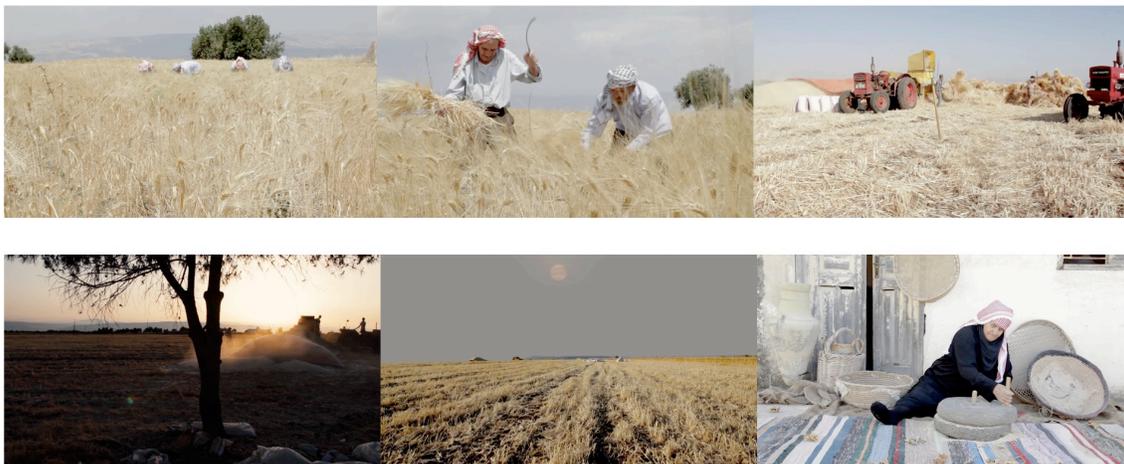
Ibraheem Alosan: I always say: who had lived in *Alharah Alfogah*, he would have a delicate sense towards things, he would have liked colors, and nature; he would have sensed, highly sensed things, flowers and nature".

Mahmoud Hasan: “I have started to observe the emergence of flowers and natural plants and link this phenomenon to the man’s philosophy of spring, where spring is the life that responds to winter. Winter is a preparation of spring, and spring is the fruits of latency and circulation that produced in winter. To me, I consider spring to be a question. This question is always looking for an answer, and the answer does not exist. Everyone contributes to this answer, but it stays incomplete, and the incompleteness of the answer is definitely the answer”.

Omar Rosan: “It was beautiful in spring to see the children and the teenager collect the flowers and store them in books, drying them to keep a memory of the season. Gifts also used to be exchanged between lovers and friends. There was a plant called mandrake with a good smell. Lovers used to give each other these mandrake fruits”.

Essa Malkawey: “Honestly, spring was special for me, because we used to play during with some of the neighbor girls along with boys, so one had some innocent childlike relations with some of the neighbor girls... It was extraordinary to play in *Alharah Alfoqah* during springtime, because it has some flowers that do not exist anywhere else. Today, when I remember the smell of a yellow flower, we call it ‘Esferra’ ... once I remember the smell, I remember that girl. She was one of the girls I used to play with. Her memory is still linked with this yellow flower... Yes... Today when I see or smell the yellow flower I remember the same girl that she is no longer here”.

General Photos of Summer in the Village





The documentary moves to summer season, where the voiceover comes into play. The narrator's introduction continues for 56 seconds, where a set of footage and natural sound effects are present with the narration.

“The seasons continue their journey to be crowned with summer. Over there, in the fields of western *Alharah Alfoqah*, Gadarene peasants continue their journey awaiting for the buried seeds, in which a year earlier, they harvested with them a season, thrashed and stored; and thereby repeating life cycle again by linking the string of death to life, and life to death. Summer was, as in old times, a season of harvest, and a season to recover the story of wheat and grain goddess ‘Demeter’, and her daughter ‘Persephone’. Perhaps it has always been the story of Gadara and her daughter *Alharah Alfoqah*”.

After this introduction, a number of the interviewees recount their memories with summer in *Alharah Alfoqah* in four categories: summer hard works, summer games, searching for water, and summer philosophy. Cutaway footages and natural sound effects are present with the narrated scenes:

Saleh Alseettah: “Summer was the toughest season in the peasant’s life... The toughest season, because it has the harvest: What they have planted it they have to collect it now, they have to bring it in. They had harvesters whom they called ‘Hassadeen’, and plowmen whom they called ‘*Almoraby*’. They used to work with the peasants from planting time to the end of harvest time, until they would bring the crops to the town. So everybody would harvest, transport the grain and thrash it. Each area was dedicated to certain people, and particular family. They would make heaps and thrash them using horses and transport them using donkeys, horses and camels. So each location had its own particularity. There were also the threshers whom they would work in conjunction with the harvesters in order to finish at the same time. Then, when the harvest got

ready, they would sift it and bring it to their houses”.

Umm Saleh: “All worse then each other, whether it is winter or summer, you have to do the work... In summer, during harvest days, we used to go everyday with the harvesters until the end of the season... Then, we would mud the houses and boil the wheat... So, work would take long time. All summer, people would bring firewood to store it for winter”.

Essa Malkawey: “Everybody was involved. Children... Their role did not have a limit. They would hold the sack for others to fill it. Women used to collect what would be left behind the harvest heap. All Adults were busy with the harvest itself and with its transporting”.

Ibraheem Alosan: “The children of *Alharah Alfoqah* had a share of its harvests, where the peasants would bless their crops by giving some of their grains. When the children would gather around a peasant, he would give them a donation, we call it ‘Braka’; it derives from ‘Wheat blessings’. So, he would give them a small amount of wheat, one or two kilos. They would take them to the shop and trade them for a lollipop, cookies, sweets or anything else”.

Omar Rosan: “Each season had its own game. You cannot play ‘Seven Stones’ in winter because the ball was made from cloth and could get dirty. When you hit your opponent, his clothes can get dirty. In summer, games were related to the season itself: Cars were made from wires and cans. The children would use them to transport the crops and straw. Children by this action would imitate the beginning of agricultural technology”.

Mosa Alna’washi: “For me, summer means the harvest. I can still smell the harvest scent, the wheat scent, and the hay scent. It is true that we had difficult days but it was a beautiful season. The wheat scent is still present in my nose”.

Mahmoud Hasan: “I consider summer a final stage and an entry into a new stage; a final investing in this life, starting with winter and spring, and ending eventually with summer. In summer, you can empty your entire load, the whole of what you have planted throughout the year”.

Mosa Alna’washi: “In summer, when there was no water, that when our anguish would begin. I still remember that scene when my mother used to carry a jerrycan of water on her head

from a long-distance creek. Sometimes, we would go with her, I would ride our donkey with two jerrycans of water. The carried water was only for one day. Imagine! We used it for drinking, cleaning, dishwashing, and for everything else... Then when we had no more water, we would go again to the same creek”.

Umm Saleh: “Whoever did not have water, he had to go to the creek. We used to bring it up using donkeys... This was for whoever wanted pure water. Water was muddy in houses, because cattle used to live with us. We used to sweep the dirt everyday, but for sure some dirt would remain. Well water used to get muddy, too. So we would go to the creek, natural springs and Saleh Al-laji’s well water. They had a clean well there, so we would go and fill up from it”.

Essa Malkawey: “Indeed, we did not have problems with water because we had Roman wells that we would always use... We really felt that we were an extension of the Roman civilization, even though we did not do the same great things that they did during their rule. But we drank from the same wells that they drank from... So, we used those wells... There were wells called ‘The Kofree wells’, which were very deep; nine, eleven, maybe thirteen meters. These wells used to hold a considerable amount of water, so we did not suffer. Moreover, it was girls’ job to fetch the water”.

Photos of Departure





The documentary plays to the last season ‘*departure*’, where the narrator presents the season. The narrator’s introduction lasts for 59 seconds. A set of shots and natural sounds are present with the narrated scenes:

“The inhabitants of *Alharah Alfoqah* were forced to give it up and leave it. The Gadarene, therefore, has nothing but his memories: the memories of stony fireplace, of lights of kerosene lamps, and of nature sounds. The Gadarene wakes up to see that he is exiled from his village that was built by his sweat. From afar, he wakes up on the trembled voices of the people, who used to pray at night; on the chirping birds in the morning, which had once echoed in every corner. But, it is now a deserted village, fallen walls. Time has weakened its buildings and the entire village is ruined or about to fall. The peasant starts to leave his folk dress; the birds have already moved away, and most of the lands have been sold”.

After this introduction, a number of the interviewees recount the story of departure from their village in three sections: departure emotions, departure resistance, and departure wishes. Cutaway footages and natural sound effects are played with the narrated scenes:

Mosa Alna’washi: “Departure means my father’s tears.... I still remember my father’s tears that fell when we were forcibly removed from our village and our house. I remember the image of my mother when she collected our entire belongings from our house, and placed them in her basket. I was surprised at those who were pleased to leave; those who had once spent their childhood, youth, and senility in that village. With all the pretty life they had, they were pleased to leave! Was this their connection to the place?.... We are connected to the place in which we were born and lived. We remember each corner. No doubt, when we leave it, it is with agony and bitterness”.

Omar Rosan: “The inhabitants of *Alharah Alfoqah* had faced a great disaster, and what is the disaster? It is the coercive displacement.... They were forcibly departed. The state committed

a social, cultural, and psychological massacre in a community that was stable, and had steady social principles formed throughout years”.

Mahmoud Hasan: “I felt at that time as if the entire place had been seen off ... in order to survive, to resist the coming death, I unconsciously carried a camera and went to some of the houses that were still standing and about to be departed. I began to photograph every thing: plants, cows, animals, even the donkey ... anything that had a bit of life, even the door or the window. I photographed them as if I crawled, panted behind the life that I lived in last year or earlier; as if we were in front of a place’s departure or as if we witnessed one of Gadara’s or *Alharah Alfoqah*’s migrations in history to another civilization. I try to look at these pictures time after time to restore more of that grief within myself, whereas no joy would be without sorrow”.

Saleh Alseettah: “Departure means dispersion.... I am disappointed because the people, who used to be here, whom I used to meet and communicate with, you wander now in the entire village, and you see nothing ... no citizen and no one”.

Ibraheem Alrosan: “I always say house is home, and we really became without home”.

Andaleep Husban: “It is very painful to see the place, that was full of life, changed suddenly to have empty walls, where the wind would whistle. However, I try to teach my self that after death there will always be a life; after departure, I am sure there will be a life... Life has gone from *Alharah Alfoqah*, but let’s at least keep the place’s rite!”.

Essa Malkawey: “When I walk in *Alharah Alfoqah*’s streets, I feel that we both call out to each other to return back as we were, but it is in vain... It is over”.

Ibraheem Alrosan: “What I wish is perhaps very difficult, but I wish I could go back to live there for the rest of my life, in our house, and die”.

Abo Kamal Omari: “If God had given me more time to live and the destiny had ... we would have returned as we were; we would have lived the traditional life, the real life, the life which had work and hope... But these are wishes, and.... It is over”.

The narrator ends the documentary with the following: “The last inhabitant left from *Alharah Alfoqah* in 1989, and a new chapter of oblivion stories had already begun”.

Appendix E

The Thesis Summary in French

Résumé

Au cours des dernières années, le domaine du documentaire interactif s'est progressivement développé en raison des changements survenus dans le monde de l'Internet et d'études académiques croissantes sur le sujet. Pourtant, on sait relativement peu de choses sur la relation entre l'utilisateur et le documentaire interactif. L'objet de cette étude est précisément de mesurer les attitudes et les interactions de l'utilisateur exposé à un documentaire interactif décliné en différentes versions, disposant chacune d'un degré d'interactivité plus ou moins développé. L'étude de l'attitude des usagers nous a conduit à approfondir les notions d'engagement narratif, d'interactivité perçue, d'engagement perçu et d'attitude à l'égard du site Web documentaire interactif. Un autre objectif de cette étude est d'examiner la relation entre interactions réelles et perceptions des usagers. L'étude a cherché à comparer l'interactivité et la linéarité en terme d'engagement narratif et d'engagement perçu.

Un travail de terrain a été conduit auprès de 360 étudiants jordaniens. L'échantillon a été divisé en trois groupes, chaque groupe visualisant un des 3 documentaires interactif et répondant au questionnaire relatif. L'étude a également utilisé deux logiciels pour tracer le comportement réel de l'utilisateur.

Les résultats de cette étude mettent à jour une relation significative entre d'une part le haut niveau d'interactivité réelle et d'autre part l'interactivité perçue et l'attitude à l'égard du site Web documentaire interactif. D'autre part, les résultats ont révélé une corrélation positive entre d'une part l'interactivité perçue et de l'autre l'engagement perçu et l'attitude à l'égard du site Web documentaire interactif. Cependant, l'étude n'a pas trouvé de corrélation entre l'interactivité perçue et l'engagement narratif.

De plus, les résultats ont montré que l'interaction réelle des participants est positivement corrélée à leurs perceptions. Enfin, les participants qui ont regardé le documentaire linéaire sont significativement plus engagés dans la narration documentaire que les autres groupes. Cette

étude présente enfin les résultats, les discute et envisage des perspectives futures.

Introduction

Au cours de la dernière décennie, le terme de '*documentaire interactif*' a été de plus en plus utilisé (e.g., Almeida & Alvelos, 2010; Dovey & Rose, 2013; Gifreu, 2014; Miles, 2008; Nash, 2014a; Vázquez-Herrero, Negreira-Rey, & Pereira-Fariña, 2017; Whitelaw, 2002). D'autre part, ce type de documentaire a fait l'objet d'une pratique croissante dans la production et la distribution. De nombreux documentaires interactifs bénéficient d'une visibilité mondiale : *Gaza/Sderot: Life in Spite of Everything* (2008); *Prison Valley* (2009); *6 Billion Others* (2003); *Highrise: The Thousandth Tower* (2011); *Out My Window* (2010); and *Bear 71* (2012).

Le terme de '*documentaire interactif*' est étroitement lié au concept d'interactivité (e.g., Galloway, McAlpine, & Harris, 2007; Gaudenzi, 2013, Nash, 2012). On distingue l'interactivité réelle de l'interactivité perçue. L'interactivité réelle est généralement étudiée en fonction des caractéristiques d'un médium (e.g., Ghose & Dou, 1998; Ha & James, 1998; Bucy, Lang, Potter, & Grabe, 1999). L'interactivité perçue correspond à la perception des usagers (e.g., Hwang & McMillan, 2002; Liu & Shrum, 2002; Wu, 1999, 2005, 2006; Yoo & Stout, 2001).

Malgré l'importance de la contribution des usagers aux documentaires interactifs (e.g., Aston & Gaudenzi, 2012; Gantier & Labor, 2015), ceux-ci semblent être absents des études expérimentales. S'il existe des études sur les usagers et l'interactivité dans d'autres domaines tels que l'économie, la publicité, le marketing, les jeux, l'éducation, l'informatique et les sciences de l'information (e.g., Hwang & McMillan, 2002; Jee & Lee, 2002; Wu, 1999, 2005), il n'en existe pratiquement aucune sur les perceptions des usagers dans le domaine du documentaire interactif. Ce travail doctoral vient combler ce manque.

Ce travail vise à examiner, dans le cadre du documentaire interactif, s'il existe une relation entre le niveau d'interactivité réel et l'interactivité perçue par les usagers et leur attitude à l'égard du site Web documentaire interactif. Le deuxième objectif de cette étude est d'examiner s'il existe une relation entre l'interaction réelle des usagers et leurs perceptions. Enfin, l'importance de cette étude réside dans sa tentative d'examiner la relation dialectique entre les documentaires linéaires et interactifs. Il vise à expliquer comment les usagers

s'engagent et comprennent la narration du documentaire dans trois documentaires présentant des degrés d'interactivités divers: un documentaire avec un haut niveau d'interactivité, un documentaire avec un faible niveau d'interactivité, et un documentaire linéaire.

Revue de littérature

La revue de la littérature s'appuie sur trois principaux concepts: l'interactivité, le documentaire interactif, et l'utilisateur et le documentaire interactif.

L'interactivité

Dans de nombreux domaines, l'interactivité est considérée comme une variable indépendante pour décrire les médias et leur capacité à produire des environnements interactifs (e.g., Bezjian- Avery, Calder, & Iacobucci, 1998; Coyle & Thorson, 2001): on parle alors d'interactivité réelle. Elle est aussi considérée comme une variable dépendante pour mesurer les attitudes du public à l'égard des médias ou de l'interactivité incluse (e.g., Day, 1998; Kioussis, 2002; Newhagen, Cordes, & Levy, 1995; Wu, 1999, 2006): on parle alors d'interactivité perçue.

L'interactivité réelle peut se définir comme "une caractéristique, une fonctionnalité, une propriété ou une capacité inhérente à un média, ou un système interactif qui permet ou facilite une interaction entre deux parties" (Wu, 2006, p. 88). En examinant les études sur l'interactivité réelle (e.g., Bezjian- Avery et al., 1998; Coyle & Thorson, 2001; Fiore & Jin, 2003; Sundar, Kalyanaraman, & Brown, 2003), il est possible de conclure que le point central de ces études est centré sur trois dimensions essentielles: la communication bilatérale ou la réactivité, l'interaction en temps réel, et le contrôle de l'utilisateur.

Dans la dimension de la communication bidirectionnelle (e.g., Beniger, 1987; Bretz, 1983; Chesebro, 1985; Duncan, 1989; Durlak, 1987; Garramone, Harris, & Anderson, 1986; Heeter, 1989; Kirsh, 1997; Pavlik, 1998; Zack, 1993), la plupart des études portaient sur la conceptualisation de l'interactivité réelle en fonction de la capacité d'un média ou d'un système à fournir une communication bidirectionnelle, dans laquelle l'expéditeur et le destinataire peuvent échanger leurs rôles. La dimension de la réactivité est souvent conceptualisée sur la base de la communication interpersonnelle (Bretz, 1983; Heeter, 1989, Williams, Rice, & Roger,

1988). À cet égard, DeFleur et Ball-Rokeach (1989) affirment que “l’interactivité désigne généralement les processus de communication qui revêtent certaines des caractéristiques de la communication interpersonnelle” (p. 341). La communication interpersonnelle est un modèle idéal pour les médias interactifs “parce que l’expéditeur et le destinataire utilisent tous leurs sens, la réponse est immédiate, la communication est généralement en circuit fermé et le contenu est principalement informel ou *improvisé*” (Durlak, 1987, p. 744). Néanmoins, il est difficile pour les médias numériques d’exploiter pleinement le potentiel de la communication interpersonnelle car ils ont tous deux une nature différente (Schudson, 1978).

Dans la dimension de l’interaction en temps réel, la plupart des études ont lié la dimension de la réactivité à la dimension du temps réel (e.g., Campbell & Wright, 2008; Coyle & Thorson, 2001; Novak, Hoffman, & Yung, 2000; Steuer, 1992); et parfois, la présence de l’interactivité dépend entièrement du temps réel: “Nous utiliserons le terme interactivité pour désigner des situations dans lesquelles une rétroaction en temps réel est collectée” (Straubhaar & La Rose, 2000, p. 12). McMillan et Hwang (2002) conçoivent la dimension du temps réel de deux manières: le temps de trouver et le temps de charger des contenus. Rice (1984) connecte le temps réel au contrôle de l’usager. Williams et al., (1988) rattachent les options, en tant qu’expression de contrôle, au temps réel. Steuer (1992) associe le temps réel à l’interactivité et définit l’interactivité comme “la mesure dans laquelle les usagers peuvent participer à la modification de la forme et du contenu d’un environnement médiatisé en temps réel” (p. 84). Le temps réel, dans un système médiatisé, fait référence à la vitesse d’absorption des actions des usagers. Steuer (1992) insiste sur l’importance de la dimension temps, car il est possible de rapprocher les expériences intermédiaires et les expériences de la vie quotidienne. Le temps passé par l’usager à naviguer un site Web peut refléter une mesure comportementale pouvant être utilisée pour évaluer l’interactivité (Hoffman & Novak, 1996; McMillan, Hwang., & Lee, 2003; Wu, 2006).

Dans la dimension du contrôle de l’usager, la majorité des études ont porté sur l’efficacité d’un système dans lequel l’usager peut influencer le contenu. Par exemple, Jensen (1999) définit l’interactivité comme “une mesure de la capacité potentielle des médias de laisser l’usager exercer une influence sur le contenu et/ou la forme de la communication médiée”(p. 201). De même, Lombard et Snyder-Dutch (2001) considèrent l’interactivité comme

“caractéristique d’un média dans lequel l’usager peut influencer la forme et/ou le contenu de la présentation ou de l’expérience médiatisée” (p. 10). De la même manière, Steuer (1992) identifie l’interactivité par la capacité d’un système à permettre à l’usager de modifier le contenu en temps réel; alors que Rogers (1995) associe le contrôle à la possibilité d’échanger des rôles. En particulier, le contrôle de l’usager peut être défini comme “le degré par lequel un individu peut choisir le moment, le contenu et la séquence d’un acte de communication” (Rogers & Allbritton, 1995, p. 180).

Par conséquent, la capacité de l’usager à contrôler et à interagir dépend du degré de choix disponibles (e.g., Bezjian-Avery et al., 1998; Liu & Shrum, 2002); le degré de modifiabilité (Goertz, 1995); et la facilité d’ajouter des informations (Heeter, 1989). Cependant, l’interactivité réelle est étudiée et analysée fonctionnellement sur la base de la présence d’outils interactifs dans un site Web ou un système (e.g., Ahren & Stromer-Galley, 2000; Ha & James, 1998; Massey & Levy, 1999; McMillan, 2000; Neuman, 2000; Schultz, 2000). Les études sur l’interactivité réelle tendaient à classer les médias en deux catégories: les médias hautement interactifs et les médias faiblement interactifs. Par exemple, Ha et James (1998) soulignent que “la mesure de l’interactivité d’un site Web commence par la présence de dispositifs interactifs pour chaque dimension de l’interactivité” (p. 465). Ghose et Dou (1998) déclarent: “Nous nous attendons à ce que l’attractivité des sites augmente avec l’augmentation du nombre de fonctions interactives” (p. 30). De même, Aoki (2000) suggère que le degré d’interactivité “peut être mesuré par le nombre d’outils présentés sur un site Web” (p. 5).

Par ailleurs, l’interactivité perçue peut être définie comme “un état psychologique vécu par un visiteur du site au cours du processus d’interaction” (Wu, 2005, p. 30). De manière générale, si les dimensions principales de l’interactivité réelle étaient la communication bidirectionnelle ou la réactivité en temps réel, le contrôle de l’usager, l’interactivité perçue est donc centrée sur la manière dont les individus conçoivent ces dimensions et dont leurs conceptions, par exemple, influencent leurs attitudes à l’égard du site Web, leur engagement, etc.

L’importance de l’interactivité perçue découle de son utilisation en tant qu’outil essentiel pour évaluer l’interactivité réelle. Par conséquent, pour comprendre les usagers, il faut analyser leurs perceptions des outils interactifs (Downes & McMillan, 2000; Morrison, 1998;

Rodgers & Thurson, 2000; Sohn & Lee, 2005). En ce sens, Schumann, Artis et Rivera (2001) soulignent qu' "en définitive, c'est le choix du consommateur que d'interagir. L'interactivité est donc une caractéristique du consommateur, et non une caractéristique du média. Le média sert simplement à faciliter l'interaction"(par. 11). Par conséquent, plusieurs études ont attaché plus d'importance à l'interactivité perçue qu'à l'interactivité réelle (e.g., McMillan & Hwang, 2002; Sohn & Lee, 2005; Wu, 1999).

Dans la communication bidirectionnelle perçue ou la réactivité perçue, l'échange de rôles et d'informations entre les deux membres du processus de communication est essentiel pour développer une relation interactive (McMillan & Hwang, 2002). La réactivité perçue est axée sur la communication et l'échange en temps réel avec un système, d'autres usagers, des applications et des produits. Des expériences de communication peuvent se produire d' usager a usager, d'usager à plusieurs usagers et d'usagers à systèmes. Ces expériences peuvent également indiquer le degré d'interactions impliquées (e.g., Hoffman & Novak, 1996; Rust & Oliver, 1994).

De plus, plusieurs études sur l'interactivité ont intégré le temps réel comme un facteur inévitable d'interactivité perçue (e.g., Lombard & Ditton, 1997; Wu, 2005; Zeltzer, 1992). La dimension temps est très importante dans les médias interactifs, car les usagers "peuvent travailler au moment qu'ils souhaitent et à leur rythme, choisir leurs voies de navigation et leurs systèmes de distribution préférés, et développer leurs propres modèles mentaux et schémas"(Latchem, Williamson, & Henderson-Lancett, 1993, p. 23). En outre, lier la communication interactive au temps réel rend ces médias plus attractifs (e.g., Finn, 1998; McMillan, 2000), et semblables aux expériences de la vie quotidienne (Steuer, 1992). Cependant, Finn (1998) suggère que les expériences interactives ne devraient pas toujours être rapides ni en temps réel. Par ailleurs, Kioussis (2002) insiste sur la nécessité de distinguer les critères objectifs de la vitesse en tant que terme technique et les perceptions de la vitesse par les individus car ils sont tous deux des concepts variables dans le temps.

La dimension du contrôle perçu est identifiée comme un concept de participation (McMillan, 2000). Ainsi, de nombreux théoriciens de l'interactivité ont placé le contrôle perçu au centre de l'interactivité (e.g., McMillan, 2000; McMillan & Hwang, 2002; Wu, 1999, 2006).

Le contrôle perçu est considéré comme le sentiment des usagers d'avoir le contrôle sur le site, le contenu et la vitesse (Wu, 2006).

En plus des dimensions précédentes, Wu (2005) ajoute la personnalisation en tant que une dimension importante de l'interactivité perçue. Wu (2006) définit pratiquement la personnalisation comme: "Personnalisation perçue du site (a) comme s'il s'agissait d'une personne, (b) comme s'il voulait connaître le visiteur du site, et (c) comme s'il comprenait le visiteur du site"(p. 91). En général, la personnalisation a été étudiée dans différents domaines tels que le commerce électronique, l'informatique, les sciences de l'information et les sciences sociales. Par exemple, dans le domaine des sciences de l'information, Kim (2002) identifie la personnalisation comme "fournissant à un groupe d'individus des informations pertinentes qui sont récupérées, transformées et /ou déduites de sources d'informations"(p. 30).

Cependant, l'impact de l'interactivité ne concerne pas nécessairement la quantité considérable de fonctionnalités interactives. Les usagers n'ont parfois pas tendance à utiliser les fonctions et les configurations interactives (Williams, 1996). De même, plusieurs travaux considèrent que le niveau élevé d'interactivité peut ne pas avoir d'impact sur les usagers (e.g., Ariely, 1989; Bezjian- Avery et al., 1998; Liu & Shrum, 2002; Sundar et al., 2003). Avoir des systèmes avec une grande interactivité ne garantit pas une interaction continue, l'interaction ou le contrôle pouvant être interrompus à n'importe quel stade de l'expérience des usagers (Wu, 2006).

Le documentaire interactif

Le documentaire interactif peut être daté de plus de trois décennies (Davenport, 1997; Duijn & Koenitz, 2017). Mitchell Whitelaw (2002) a été le premier à utiliser le terme de '*documentaire interactif*' pour décrire les documentaires qui ouvrent leur structure narrative. Néanmoins, il existe quelques accords entre les praticiens et les universitaires sur le terme, le contenu et l'approche appropriés de ce genre. L'approche académique du traitement de ce genre consiste généralement à positionner le documentaire interactif entre le documentaire et l'interactivité, en insistant sur la présence nécessaire de l'utilisateur et l'absence progressive de l'auteur.

Le terme '*documentaire interactif*' est controversé, les deux termes '*documentaire*' et '*interactivité*' correspondant à une longue histoire de débats entre les théoriciens et les praticiens. Le terme '*documentaire*' a été associé à la réalité en tant qu'approche utilisée pour différencier le documentaire (en tant que genre) et le film de fiction (e.g., Nichols, 2010). Cependant, les plateformes numériques ont changé la culture classique du documentaire, de la représentation de la réalité, offerte par Bill Nichols (Nichols, 1991), à la culture de la participation (Jenkins, 2006).

Les documentaires interactifs utilisent des structures multimédias et de base de données, où ils peuvent être mis à jour en temps réel avec la possibilité d'extension et de continuité (Fisher, 2016; Soulez, 2014; Williams, Kegel, Ursu, Pals, & Leurdijk, 2007). Du point de vue de l'hypertexte, le documentaire interactif est construit sur la logique de l'écriture non séquentielle (Nelson, 1981). Dans ce cas, la narration est remplacée par la participation et l'échange, qui sont au cœur de l'Internet (e.g., Leadbeater, 2009; O'Reilly, 2005; Shirky, 2008).

Gifreu (2011) considère que les documentaires interactifs sont basés sur la navigation et l'interaction avec l'utilisation d'hypertextes. Galloway et al., (2007) définissent le documentaire interactif comme "tout documentaire qui utilise l'interactivité comme élément essentiel de son mécanisme de diffusion" (p. 330). Aston et Gaudenzi (2012) soulignent que "l'interactivité dans les documentaires interactifs va souvent au-delà du "mécanisme de diffusion au processus de production incorporé" (p. 126). Almeida et Alvelos (2010) adoptent la définition de Galloway et al. (2007) et placent le documentaire interactif entre le film et l'interaction, en mettant l'accent sur l'animation de l'interface utilisateur.

En outre, Nash (2012) considère l'interactivité, dans le documentaire interactif, comme "la capacité de l'utilisateur d'exercer un contrôle sur le contenu" (p. 199). Cependant, plusieurs théoriciens ont conceptualisé le documentaire interactif comme un développement du documentaire traditionnel (e.g., Berenguer, 2004; Goodnow, 2004; Miller, 2004).

La principale différence entre le documentaire classique et le documentaire interactif réside en une communication différente, la communication bidirectionnelle permettant aux usagers d'être des véritables contributeurs sur le contenu Internet (O'Flynn, 2012)..

La narration au sein d'un documentaire linéaire est souvent chronologique et est

construite sur des relations de cause à effet (Dovey, 2002; Le Grice, 2001; Manovich, 2002). Les spectateurs sont considérés comme des observateurs, des témoins, ou comme des critiques passionnés, des juges émotionnels de ce qu'ils voient (Marles, 2012; Rieser & Zapp, 2002). La narration du documentaire interactif ne suit pas un ordre chronologique, mais plutôt une structure de base de données (Gifreu, 2011; Manovich, 2002; Le Grice, 2001; Odorico, 2015; Whitelaw, 2001). Par conséquent, Manovich (2002) soutient que “en tant que forme culturelle, la base de données représente le monde en tant que liste d'éléments et refuse de commander cette liste” (p. 225). De même, Hudson (2008) insiste sur le fait que les documentaires de base de données “dissocient les hypothèses relatives au documentaire, les modes fixes (exposé, observationnel, personnel) les modes ouverts (collaboratif, réflexif, interactif)” (p. 2). Les usagers, en sélectionnant le contenu d'une base de données, sont considérés comme des constructeurs de sens, avec un sens instable, modifiable et extensible (Hudson, 2008; Hosseini & Wakkary, 2004; Marles, 2012; Meadows, 2002). Dans ce contexte, Manovich (2001) considère que “les web-documentaires sont des bases de données, des collections structurées d'objets pouvant être accessibles et organisés de différentes manières” (p. 194).

En outre, Andersen (1990) déclare: “une œuvre interactive est une œuvre dans laquelle le lecteur peut modifier physiquement le discours de manière interprétable et produit un sens dans le discours lui-même” (p. 89). Le documentaire interactif en tant que récit numérique oblige les usagers à effectuer des activités physiques telles que la navigation, le clic, et l'engagement avec la réalité virtuelle (e.g., Aston & Gaudenzi, 2012; Galloway et al., 2007; Goodnow, 2004; Koenitz, Ferri, Haahr, Sezen, & Sezen, 2015; Nash, 2012). Les usagers sont invités à participer, physiquement et cognitivement, à choisir et à naviguer dans le contenu documentaire sans suivre une direction temporelle (Brown, Del Favero, Shaw, & Weibel, 2003). En naviguant et en sélectionnant une base de données, ils construisent réellement leurs histoires (O'Flynn, 2012), ou, de façon précise, “construisent un sens à partir de voix contradictoires” (Belsey, 2002, p. 129). Par conséquent, les rôles participatifs donnés transmettent aux usagers le rôle d'auteur (O'Flynn, 2012). Ils peuvent représenter la réalité (Odorico, 2015), ou la reconstruire à chaque fois qu'ils accidentent au récit (O'Flynn, 2012).

Le contrôle et le rôle d'auteur sont considérés comme la différence fondamentale entre le documentaire classique et le documentaire interactif (Choi, 2009; Gifreu, 2011). Dans le

documentaire classique, l'auteur a le plein contrôle du discours documentaire (Favero, 2013; Odorico, 2015). En revanche, les usagers, dans le documentaire interactif, peuvent avoir un contrôle sur le discours documentaire, ce qui pourrait par conséquent menacer le rôle des auteurs classiques, et donc leur capacité à construire un sens (Fisher, 2016; Gifreu, 2010; Galloway et al., 2007, Nash, 2014b). Le documentaire interactif, dans le cadre de l'interactivité, entre en conflit avec le concept du contrôle de l'auteur, dont l'une des caractéristiques principales est l'échange (e.g., Haeckel, 1998; Zack, 1993). La relation entre les auteurs et les usagers devient une relation de collaboration (Nash, 2014b).

Whitelaw (2002) s'interroge sur la capacité d'une histoire à être racontée dans un récit ouvert. Les films interactifs en ligne, fictions et documentaires, pourraient être incapables de créer de véritables émotions avec les usagers, car ils sont construits sur des fragmentations et n'ont pas d'intrigue dramatique forte (O'Flynn, 2012). À cet égard, Hales (2002) dit : "la technologie ne conduit pas à un changement de mentalité, mais simplement à un moyen de faire les choses plus efficacement et plus économiquement" (p. 105). De même, Le Grice remarque que "la technologie permet la non-linéarité, les concepts restent linéaires" (Le Grice cité dans Marles, 2012, p. 80).

Par ailleurs, plusieurs classifications de documentaires interactifs sont basées sur la capacité des usagers à influencer le contenu du documentaire. On distingue alors quatre catégories de documentaires interactifs: le documentaire hypertexte, le documentaire participatif, le documentaire conversationnel, et le documentaire immersif (Aston & Gaudenzi, 2012; Gaudenzi, 2013). Dans le documentaire hypertexte, les usagers explorent la base de données multimédia du documentaire sans pouvoir en modifier le contenu. Différents termes ont été utilisés pour décrire ce type de documentaire, tels que: le documentaire narratif ou documentaire catégorique (Nash, 2012); le documentaire activement adaptatif (Galloway et al., 2007); les usagers en tant qu'observateurs (Choi, 2010); le documentaire spatial (Murray, 1998, 2017). Des exemples de ce type de documentaire peuvent être les suivants: *6 Billion Others* (2003), *Lewis and Clark Historic Trail* (2003), *Last Tourist in Cairo* (2006), *Gaza/Sderot* (2008), *Waterlife* (2009), *Out My Window* (2010), *Forgotten Flags* (2007); *Becoming Human* (2008); et, *Brèves de Trottoirs* (2010) (Gaudenzi, 2013; Nash, 2012).

Dans le documentaire participatif, les usagers peuvent agir comme de vrais auteurs et peuvent contribuer, modifier et changer le contenu du documentaire. Ils peuvent également participer à la production en ligne, telle que l'édition et le tournage, et partager les résultats avec d'autres. Différents termes ont été utilisés pour décrire ce type, tels que: documentaire collaboratif (Nash, 2012); documentaire expansif (Galloway et al., 2007); les usagers en tant qu'auteurs ou les usagers en tant que contributeurs (Choi, 2010); le documentaire encyclopédique (Murray, 1998, 2017). Des documentaires en ligne tels que *18 days in Egypt* (2011), *Mapping Main Street* (2009), *Goa Hippy Tribe* (2011), et *Global Lives Project* (2009) peuvent être des exemples de cette catégorie (Gaudenzi, 2013; Nash, 2012).

Dans le documentaire conversationnel, les usagers interagissent avec le système de la même manière que l'on converse avec l'ordinateur. Documentaire tel que *Americas Army* (2002); *JFK Reloaded* (2004); et *Gone Gitmo* (2007) constituent des exemples de cette catégorie (Gaudenzi, 2013). Enfin, dans le documentaire immersif (Galloway et al., 2007; Gaudenzi, 2012), les usagers expérimentent physiquement la réalité virtuelle. *Greenwich Emotion Map* (2005) and *Rider Spoke* (2007) sont quelques exemples de ce type (Gaudenzi, 2013).

Bien qu'il n'y a pas d'accord substantiel sur la définition du genre documentaire interactif, on peut en conclure que la plupart des définitions et classifications données du documentaire s'accordent autour de l'interactivité et de l'usage qui peut en être fait pour produire un contenu interactif. Les concepts utilisés pour définir l'interactivité, tels que le contrôle, l'échange, la participation, la contribution et le contenu influencé, sont remarquablement réutilisés dans le domaine du documentaire interactif.

L'utilisateur et le documentaire interactif: vers la recherche expérimentale

La présence d'un documentaire sur l'Internet et l'utilisation de fonctions interactives ont généralement positionné ce nouveau genre dans le champ des médias interactifs et des études de l'interactivité. Cette nouvelle forme impose de nouvelles classifications, dont la plupart peuvent suivre les classifications des médias interactifs eux-mêmes (voir Dankert & Wille, 2001; Galloway et al., 2007; Gaudenzi, 2013; Nash, 2012).

L'interactivité nécessite la présence d'utilisateurs actifs, où ils peuvent être en relation

interactive avec le documentaire et son auteur, et où ils peuvent influencer son contenu. À cet égard, de nombreux chercheurs affirment que l'interactivité n'est qu'un potentiel (e.g., Jensen, 1999; Rafaeli, 1988). Pourtant, les usagers sont pratiquement absents de la scène du documentaire interactif. On peut supposer que l'interactivité est conçue pour engager les usagers dans un système/un documentaire, mais nous ne savons toujours pas comment ces usagers la comprennent, en particulier dans le domaine du documentaire interactif.

Le documentaire interactif en tant qu'interactivité réelle est perçu comme la capacité d'un documentaire à permettre une communication bidirectionnelle dans laquelle les usagers peuvent influencer son contenu en temps réel. Par conséquent, le niveau d'interactivité d'un documentaire dépend essentiellement du nombre de fonctions interactives intégrées, dans lesquelles les usagers peuvent influencer son contenu, ainsi que des perceptions des usagers de ces fonctions. Par suite, il est possible, dans cette perspective, de mesurer quantitativement les perceptions des usagers, de comprendre et de développer les expériences du documentaire interactif. Toutefois, comprendre l'engagement des usagers avec un produit spécifique ne se limite pas à leurs perceptions de l'interactivité; d'autres facteurs peuvent également interférer avec les expériences des usagers tels que l'attitude à l'égard du site Web documentaire interactif, l'engagement perçu, l'engagement narratif, et les interactions réelles des usagers.

Plusieurs études, qui ont examiné la relation entre l'interactivité réelle et l'interactivité perçue, ont inclus l'attitude à l'égard du site Web (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Lee, 2005; McMillan et al., 2003; Schlosser, 2003; Wu, 1999, 2005; Yoo & Stout, 2001), et l'engagement perçu (e.g., McMillan, 2000; Sundar et al., 2003; Yoo & Stout, 2001). L'attitude peut se définir comme les "évaluations durables favorables ou défavorables, les sentiments émotionnels et les tendances d'action envers un objet ou une idée" (Kotler, Keller, Brady, Goodman & Hansen, 2009, p. 261). L'engagement perçu est identifié comme "la pertinence perçue par une personne de l'objet en fonction de ses besoins, valeurs et intérêts inhérents" (Zaichkowsky, 1985, p. 342). De l'autre côté, l'étude vise également à mesurer l'engagement narratif des usagers, car il adresse le documentaire en tant que narration linéaire et numérique. L'engagement narratif peut être compris en quatre dimensions: la compréhension de la narration, le focus attentionnel, la présence de la narration et l'engagement émotionnel (Busselle & Bilandzic, 2009).

Selon Busselle et Bilandzic (2009), la dimension de la compréhension de la narration concerne la façon dont les usagers comprennent et reconnaissent une histoire, ses personnages et son fil conducteur. La dimension du focus attentionnel est liée à la façon dont les usagers sont capables de se concentrer sur un récit (une histoire) sans être occupés par le monde extérieur (en dehors du récit), ou par toute distorsion pouvant résulter du récit lui-même ou du monde extérieur. La dimension de la présence de la narration fait référence au sentiment des spectateurs/des usagers d'être hors du monde réel en raison de leur présence dans une histoire donnée (Busselle & Bilandzic, 2009). La dimension de l'engagement émotionnel est "le processus par lequel les destinataires développent une connexion émotionnelle avec des personnages. Cette connexion inclut le fait de ressentir des émotions pour des personnages (la sympathie), de partager des émotions avec des personnages (l'empathie) et d'avoir une forme d'excitation"(Van Leeuwen, Van Den Putte, Renes, & Leeuwis, 2017, p. 196).

Enfin, l'interaction réelle des usagers dans cette étude fait référence au temps passé par les usagers sur le site Web et au nombre de pages vues. Selon Hoffman et Novak (1996), l'interactivité pourrait être mesurée par le temps passé par les usagers sur le site Web ainsi que par le nombre de pages vues. Le temps passé par les usagers sur le site Web peut refléter une mesure comportementale de l'engagement et aider les chercheurs à comprendre les comportements des usagers (McMillan et al., 2003). Wu (2006) considère également que le temps passé à visualiser le site Web ou la page est un facteur clé dans la construction d'un cadre conceptuel d'interactivité.

Par conséquent, une question clé qui ressort de l'analyse de la revue de littérature concerne la relation entre l'interactivité réelle, l'interactivité perçue et l'attitude à l'égard du site Web dans le cadre d'un documentaire interactif. Plusieurs études ont révélé une relation significative entre le haut niveau d'interactivité réelle et l'interactivité perçue (e.g., Sundar et al., 2003, Wu, 2005); et entre le haut niveau d'interactivité réelle et l'attitude à l'égard du site Web (e.g., Haseman, Nuipolatoglu, & Ramamurthy, 2002; Macias, 2003; Raney, Arpan, Pashupati, & Brill, 2003; Sunder et al., 2003). Ainsi, les deux premières hypothèses examinent la relation entre le niveau d'interactivité réelle, l'interactivité perçue et l'attitude à l'égard du site Web documentaire interactif:

H1a: Plus le niveau d'interactivité dans un documentaire est élevé, plus l'interactivité perçue est positive.

H1b: Plus le niveau d'interactivité dans un documentaire est élevé, plus l'attitude à l'égard du site Web documentaire interactif est positive.

D'autre part, plusieurs études sur la littérature de l'interactivité ont examiné la relation entre l'interactivité perçue et l'engagement perçu et ont montré une corrélation positive entre les deux variables (e.g., McMillan, 2000; Sundar et al., 2003; Yoo & Stout, 2001). En outre, plusieurs études ont examiné la relation entre l'interactivité perçue et l'attitude à l'égard du site Web et ont trouvé une corrélation significative (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Lee, 2005; McMillan et al., 2003; Schlosser, 2003; Wu, 1999, 2005; Yoo & Stout, 2001). Néanmoins, une question importante, qui découle de l'analyse de la littérature, est de savoir si l'interactivité perçue a une relation positive avec l'engagement narratif. Ainsi, pouvons-nous poser un nouvel ensemble d'hypothèses:

H2a: L'interactivité perçue d'un documentaire interactif est positivement liée à l'engagement narratif.

H2b: L'interactivité perçue d'un documentaire interactif est positivement liée à l'engagement perçu.

H2c: L'interactivité perçue d'un documentaire interactif est positivement liée à l'attitude à l'égard du site du documentaire interactif.

Cependant, les principales questions soulevées par la revue de la littérature portent sur l'examen de la relation existant entre le niveau d'interactivité réel et le niveau d'interaction réel des usagers (le temps passé sur le site web documentaire interactif), ainsi que la corrélation entre l'interaction réelle des usagers et leurs perceptions. En outre, afin de mieux comprendre l'interactivité, l'étude utilise les pages vues réelles des usagers pour comparer les deux sites Web documentaires interactifs en termes de pages vues, durée moyenne sur la page, page vue unique et profondeur de page. De plus, il est important d'examiner le degré de volonté des usagers d'utiliser les fonctions interactives disponibles sur le documentaire hautement interactif. Ainsi, l'étude pose les questions suivantes:

RQ1a: Le niveau d'interactivité réel influence-t-il significativement les interactions réelles des usagers ?

RQ1b: Existe-t-il une corrélation entre les interactions réelles des usagers et leurs perceptions ?

RQ1c: Quelles sont les différences entre le documentaire hautement interactif et le documentaire faiblement interactif en termes de pages vues réellement par les usagers ?

RQ1d: Quelles sont les fonctionnalités interactives les plus fréquemment utilisées dans le documentaire hautement interactif ?

Enfin, une autre question essentielle qui ressort de l'étude de la littérature est de savoir si le niveau de narration interactive (haut contre faible) a une influence significativement plus grande sur les usagers que la narration linéaire; et si les usagers sont plus impliqués dans les documentaires interactifs que les documentaires linéaires. Par conséquent, la deuxième question compare l'interactivité à la linéarité en termes de la narration et d'engagement perçu:

QR2: Existe-t-il des différences significatives entre l'interactivité réelle et la linéarité en termes d'engagement narratif et d'engagement perçu ?

Méthode

Cette section est divisée en trois parties: conception expérimentale, échantillon et procédures, et mesures.

Conception expérimentale

Le niveau d'interactivité réelle (faible contre élevé) et la linéarité ont été représentés dans trois documentaires: un documentaire linéaire, un documentaire faiblement interactif et un documentaire hautement interactif. Les trois documentaires ont été conçus à l'aide du logiciel 'Klynt' parmi d'autres tels qu'Adobe Premier et Photoshop. Ces trois documentaires ont été produits à partir d'un documentaire original intitulé '*Alharah Alfoqah : une histoire de saisons et du départ*' réalisé par le chercheur. Ce documentaire a été filmé pendant quatre ans sur un vieux village du nord de la Jordanie appelé Um Qais, anciennement appelé '*Alharah Alfogah*'. Ce documentaire raconte l'histoire des gens qui vivaient autrefois dans ce vieux village en quatre saisons : hiver, printemps, été et départ.

La version finale de l'histoire est la même dans les trois documentaires montés. Néanmoins, l'histoire elle-même a différé d'un documentaire à l'autre en fonction des techniques de montage et des fonctions interactives incluses. La langue, l'histoire et le lieu du documentaire étaient familiers aux participants de cette étude.

Nous avons produit trois documentaires de 30 minutes chacun. La technique de montage a pris en compte le temps que chaque participant pouvait passer à regarder le documentaire, ainsi que le temps d'administration des questionnaires.

Le montage du documentaire linéaire a visé à préserver le flux de l'histoire. Le documentaire linéaire a été utilisé pour construire, dans un second temps, les deux autres documentaires interactifs. Dans les deux documentaires interactifs, l'histoire a été divisée en cinq chapitres, où chaque chapitre a été conçu pour représenter une histoire intégrée pouvant être séparée et reliée sans affecter le flux du documentaire. Ces chapitres étaient: introduction, hiver, printemps, été et départ. Ces chapitres ont ensuite été divisés en unités plus petites (courtes vidéos, 1 à 2 minutes) (voir annexe1). Chaque petite unité a formé également une histoire

intégrée qui se déversait dans son chapitre. En conséquence, une période de 30 minutes était importante et essentielle pour maintenir la linéarité du documentaire linéaire et pour produire les deux documentaires interactifs.

Basée sur la revue de la littérature du documentaire interactif, la conception du documentaire faiblement interactif dans cette étude peut correspondre aux classifications des documentaires hypertextes, dans laquelle les usagers sont considérés comme des explorateurs de la base de données multimédia du documentaire sans pouvoir en modifier le contenu (Aston & Gaudenzi, 2012; Choi, 2010; Galloway et al., 2007; Gaudenzi, 2013; Murray, 1998, 2017; Nash, 2012). D'autre part, la conception du documentaire hautement interactif peut correspondre aux classifications des documentaires participatifs, dans laquelle les usagers peuvent contribuer au contenu et impliquer la production en ligne tels que l'édition et le tournage; ils peuvent agir comme de vrais auteurs avec un documentaire (Aston & Gaudenzi, 2012; Choi, 2010; Galloway et al., 2007; Gaudenzi, 2013; Murray, 1998, 2017; Nash, 2012).

De plus, en examinant la revue de la littérature sur l'interactivité réelle, il est clair que les études étaient intéressées par la division des médias en médias hautement interactifs ou en médias faiblement interactifs. Les médias hautement interactifs font référence aux médias qui présentent une forte présence d'outils interactifs caractérisés par une communication bidirectionnelle, une réponse en temps réel et le contrôle de l'utilisateur. Les médias faiblement interactifs font référence aux médias qui ont peu d'outils interactifs ou pas d'outils interactifs. Par conséquent, la conception du documentaire hautement interactif correspond aux médias qui ont une forte présence d'outils interactifs assurant l'activation de la communication bidirectionnelle avec le documentaire lui-même et ses auteurs; le contrôle de l'utilisateur en tant qu'expression de la capacité d'influencer le contenu documentaire; et la personnalisation en tant qu'expression de la capacité documentaire à s'adapter aux entrées des usagers. En comparaison, la conception du documentaire faiblement interactif correspond aux médias qui ont une faible présence d'outils interactifs.

Les caractéristiques interactives des deux documentaires interactifs ont été classées comme suit: les fonctions similaires dans les deux documentaires interactifs; les fonctions manipulées dans les deux documentaires interactifs; et les fonctions spéciales du documentaire

hautement interactif. Cependant, bien que les vidéos utilisées dans les deux documentaires interactifs soient les mêmes, les liens, l'ordre des histoires, les accès, les options, les fonctionnalités et les relations entre ces vidéos sont différents.

Les fonctions similaires des deux documentaires interactifs étaient diffusées en bas de chaque page Web malgré le transfert d'une vidéo ou d'une page à une autre. Les fonctionnalités principales de ce pied de page dans les deux documentaires interactifs étaient les suivantes : à propos, crédits, partager tout le projet, réglages du son et de l'écran, et moteur de recherche. Les fonctions manipulées dans les deux documentaires interactifs étaient les suivants : menu index, carte géographique, carte heuristique (guide de navigation); contact, titres et boutons interactifs.

Dans le documentaire faiblement interactif, toutes les vidéos dans l'index étaient dans un ordre chronologique. La carte géographique était uniquement liée à la page de renvoi. Les participants pouvaient voir la carte heuristique du projet, mais sans pouvoir la naviguer (voir annexe 2). La seule option pour communiquer avec l'équipe documentaire était par e-mail. Bien que les mêmes titres ont été utilisés dans les deux projets interactifs, les titres du documentaire faiblement interactifs étaient moins interactifs. Le nombre de boutons interactifs et les fonctions interactives incluses ont été réduits au minimum. Par conséquent, les participants de cette catégorie avaient des options limitées de choix et de navigation, et suivaient en partie le point de vue de l'auteur.

En revanche, dans le documentaire hautement interactif, toutes les vidéos dans l'index ont été énumérées au hasard. Toutes les vidéos du projet étaient liées à la carte géographique. Les participants ont pu voir la carte heuristique et naviguer dans toutes les vidéos liées (voir annexe 3). Les options de contact étaient les suivantes : appel via téléphone portable; appels ou discussions en ligne ou messages vocaux sur Skype, e-mail via Gmail, Facebook, Twitter et LinkedIn. Tous les titres étaient très interactifs et réactifs. Les participants avaient le plus grand nombre de boutons interactifs. Par conséquent, les participants de cette catégorie avaient toutes les options pour choisir ou naviguer, et ils étaient complètement indépendants du point de vue de l'auteur.

Enfin, les fonctions spéciales du documentaire hautement interactif étaient : "exporter votre film/histoire; modifier/ajouter à notre histoire; annotations vidéos; like/dislike; télécharger

des vidéos individuelles; partager des vidéos individuelles; commentaire; souscription; et, enfin, ma page sur laquelle les participants avaient de multiples options pour personnaliser le site Web documentaire interactif. Ces options étaient : mon compte documentaire, ma production de documentaire, ma bibliothèque documentaire, mon histoire documentaire et mes plans futurs de documentaires.

Après avoir produit ces trois documentaires, ils ont été visionnés et évalués par plusieurs personnes ordinaires et expertes en documentaire. La majorité des réponses étaient positives. Certaines suggestions des répondants ont été appliquées.

Échantillon et procédures

Les participants à cette étude étaient des étudiants de premier cycle et des cycles supérieurs du Mass Communication College de l'Université de Yarmouk en Jordanie. Un échantillon systématique de 360 participants a été engagé dans une expérience conçue et a été interrogé à la fin d'avril 2018 sur une période de trois jours. Les participants ont été divisés en trois groupes, où chaque groupe étant invité à visionner et à naviguer dans l'un des trois documentaires conçus. L'étude a utilisé un questionnaire et deux outils de trace des participants durant leur navigation. Le questionnaire a été utilisé pour examiner et comparer les perceptions des participants à l'égard des trois documentaires conçus. Les deux applications de suivi de trace (Google Analytics et Inspectlet) ont été principalement utilisées pour examiner et comparer les interactions réelles des usagers sur les deux documentaires interactifs.

Avant l'étude envisagée, le chercheur a mené une étude pilote avec 18 volontaires pour vérifier si les questionnaires et les trois documentaires conçus étaient représentatifs de l'objectif de cette étude. L'étude pilote a inclus plusieurs procédures : des procédures techniques, des procédures de questionnaire, des procédures logicielles et des procédures initiales de laboratoire. La plupart des suggestions ont été appliquées aux questionnaires et aux trois documentaires.

L'étude principale a été réalisée dans un laboratoire multimédia du Mass Communication College. Le laboratoire multimédia était également divisé en trois sections. Une fenêtre de journal et un numéro de code ont été créés pour chaque ordinateur du laboratoire. Chaque ordinateur de bureau dans le laboratoire multimédia avait un document PDF ouvert contenant plusieurs instructions. Ces instructions ont été divisées en deux phases. La première phase a visé à encourager les participants à écrire le numéro de code placé devant chaque ordinateur (HID =

documentaire hautement interactif; LID = documentaire faiblement intégratif ou LR = documentaire linéaire), à utiliser les casques disponibles et à prendre leurs temps pour visionner et naviguer dans le documentaire inclus dans leurs ordinateurs en cliquant sur le lien disponible. La deuxième phase a visé à encourager les participants à répondre au questionnaire en cliquant sur le lien inclus.

Les trois documentaires ont été répartis également sur les ordinateurs. Les participants ont été répartis aléatoirement sur les ordinateurs. Le numéro de code a ensuite été utilisé pour lier le type de documentaire aux questionnaires. Cette procédure a également permis de diviser les participants en trois catégories en fonction du documentaire qui leur a été attribué pour visionner ou naviguer. Tous les ordinateurs du laboratoire multimédia étaient similaires en termes de vitesse d'Internet, taille de l'écran, précision des couleurs et qualité du son. Chaque ordinateur était également équipé d'un casque approprié.

D'autre part, le temps de l'expérience était prévu pour durer une heure maximum. Les étudiants qui ont suivi des cours au collège ou à l'extérieur ont reçu une autorisation d'absence pour ne pas assister aux cours suivants. En conséquence, tous les étudiants du Mass Communication College ont eu suffisamment de temps pour participer à l'expérience et répondre aux questionnaires.

L'étude a conduit à solliciter un nombre égal de participants dans chaque catégorie. Le nombre final de l'échantillon de l'étude a été décidé après les séances des deux premiers jours sur la base du plus grand nombre de participants à l'un des trois documentaires. Avant d'entrer dans les laboratoires ou les sections, chaque participant a été invité à prendre au hasard un papier scellé contenant le code documentaire : LR, HID et LID. Les participants ne savaient pas ce que ces codes signifiaient. Selon le choix du papier scellé, les participants ont été dirigés vers une section sélectionnée dans le laboratoire multimédia. De plus, avant de participer à l'expérience, chaque participant a dû signer un consentement volontaire. D'autre part, les professeurs ont encouragé leurs étudiants et leur ont offert des crédits de cours supplémentaires.

À la fin du deuxième jour de l'expérience, le chercheur et son équipe ont analysé le nombre de participants et les réponses valables. Le plus grand nombre de participants était dans la catégorie du documentaire linéaire avec 129 participants, mais ceux qui ont rempli les questionnaires étaient 120 participants. Les séances du troisième jour ont été limitées aux HLD et LID (le documentaire hautement interactif et le documentaire faiblement interactif). Le

chercheur et son équipe ont continué à examiner les questionnaires valides et complétés après chaque session du deuxième jour jusqu'à ce que la participation a atteint le nombre requis. Les données obtenues de l'expérience, qu'elles proviennent de l'interaction réelle ou du questionnaire, ont été entrées directement dans le programme SPSS et analysées en fonction des hypothèses et des questions de la recherche.

Mesures

L'interaction réelle des usagers a été appliquée uniquement aux deux documentaires interactifs, car les activités des usagers sont essentiellement différentes dans le documentaire linéaire et dans les deux documentaires interactifs. L'interaction réelle des usagers dans le documentaire linéaire est basée sur la visualisation du documentaire, tandis que l'interaction réelle des usagers dans les deux documentaires interactifs va de la visualisation/navigation au documentaire à la modification du contenu du documentaire. L'interaction réelle des usagers a donc été divisée en trois catégories :

1. Le temps passé par les usagers sur le site Web du documentaire interactif : cette catégorie a été utilisée pour examiner s'il existait des différences significatives entre le temps passé par les usagers sur le documentaire faiblement interactif et le temps passé par les usagers sur le documentaire hautement interactif; deuxièmement, cette catégorie a été utilisée pour examiner la corrélation entre l'interaction réelle des usagers (le temps passé) et leurs perceptions, notamment : l'engagement narratif, l'interactivité perçue, l'engagement perçu et l'attitude à l'égard du site Web documentaire interactif.

2. Pages vues réellement par les usagers : cette catégorie a été utilisée comme un instrument comparatif pour donner plus de détails et comparer les deux sites Web documentaires interactifs en termes de : pages vues, durée moyenne sur la page, page vue unique et profondeur de l'exploration. Selon Google Analytics (2018), les pages vues correspondent au nombre total de pages consultées. Les vues répétées d'une seule page sont comptées; la durée moyenne sur la page est simplement le temps moyen passé par tous les usagers sur une seule page; la page vue unique est le nombre de sessions au cours desquelles la page spécifiée a été affichée au moins une fois. La page vue unique est comptabilisée pour chaque combinaison d'URL de page et de titre de page; la profondeur de page crée un histogramme de valeurs comportant un nombre de pages allant de 1 à 20+, qui sont ensuite appliquées à toutes les sessions de visiteurs.

3. Tendance des usagers à utiliser les fonctions interactives disponibles: cette catégorie a été utilisée pour examiner l'utilisation des fonctions interactives dans le documentaire hautement interactif, car ces fonctions spéciales n'étant présentes ou manipulées que dans le documentaire hautement interactif. Cette mesure était basée sur le pourcentage d'accès et d'utilisation des outils suivants par les usagers : "Search engine; contact; like/dislike; commentaire; partager le projet; partager des vidéos individuelles; télécharger; exporter votre film/histoire; modifier/ajouter à notre histoire; carte heuristique; menu index; carte géographique; annotation vidéo; ma page; souscription". Le but de cette procédure était d'examiner le niveau d'intention des usagers d'utiliser ces fonctions interactives.

D'autre part, pour mesurer les perceptions des participants, l'étude a appliqué quatre variables dépendantes : l'engagement narratif, l'interactivité perçue, l'engagement perçu et l'attitude à l'égard du site Web. Des échelles de type Likert en sept points ont été utilisées pour toutes ces variables dépendantes, sauf indication contraire. Toutes ces échelles ont une grande fiabilité et ont été utilisées par plusieurs spécialistes. Pour mesurer l'engagement narratif, une échelle modifiée de Busselle et Bilandzic (2009) a été appliquée (voir annexe 4). L'échelle de Busselle et Bilandzic est une échelle multidimensionnelle construite sur quatre dimensions : la compréhension de la narration, le focus attentionnel, la présence de la narration et l'engagement émotionnel. L'échelle adoptée peut être appliquée aux médias indépendamment du contenu ou de la forme.

Une échelle révisée à neuf items (Wu, 2006) a été utilisée pour mesurer l'interactivité perçue. Cette échelle reflète la nature multidimensionnelle de l'interactivité perçue, telle que le contrôle perçu, la réactivité perçue et la personnalisation perçue (voir annexe 5). Pour mesurer l'engagement perçu du documentaire, l'étude a utilisé l'échelle de Zaichkowsky (1994) avec ces items: "important/sans importance; ennuyeux/intéressant; pertinent/non pertinent; excitant/peu excitant; ne signifie rien/signifie beaucoup pour moi; attrayant/peu attrayant; fascinant/mondain; sans valeur/précieux; impliquant/non impliqué; pas nécessaire/nécessaire".

Enfin, pour mesurer l'attitude à l'égard du site Web documentaire, l'étude a adopté l'échelle modifiée de Chen et Wells (1999) avec les items suivantes : "Ce site Web documentaire m'a facilité la construction d'une relation avec cette équipe documentaire"; j'aimerais à nouveau visiter le site Web du documentaire"; "Je suis satisfait du service fourni par ce site Web documentaire"; "Je me sens à l'aise pour naviguer sur ce site documentaire"; "Je pense que

naviguer sur ce site Web documentaire est un bon moyen de passer mon temps”; “Par rapport à d’autres sites Web, je classerais ce site Web documentaire parmi les meilleurs”.

Résultats

Un échantillon de participants a été constitué parmi les étudiants du Mass Communication College de l'Université de Yarmouk en Jordanie. Les participantes étaient pour 41.4 % d'entre eux des hommes et pour 58.6 % des femmes. L'âge moyen était 20-22 ans (63.3 %). Les étudiants de première année étaient les principaux participants (28.3 %), suivis par les étudiants de deuxième année (23.6 %). Un nombre significatif de participants étaient inscrits dans une formation "radio et télévision" (36.4 %), et dans une formation "relations publiques et publicité" (29.2 %).

Vérification de la manipulation et fiabilité de l'échelle

Après la collecte des données, un score total de chaque item des variables dépendantes a été créé. Pour examiner si la manipulation de la variable indépendante, le niveau d'interactivité, avait produit l'effet escompté, un test *t* d'échantillons indépendants a été réalisé pour vérifier si l'interactivité perçue du site Web documentaire variait de manière significative entre les deux groupes de participants: ceux qui ont été exposés au documentaire hautement interactif et à ceux qui ont été exposés au documentaire faiblement interactif. L'analyse a montré que l'interactivité perçue a significativement varié à travers les niveaux d'interactivité. La moyenne d'interactivité perçue a augmenté en augmentant le niveau d'interactivité (voir tableau 1).

Tableau 1

Interactivité perçue à travers les niveaux d'interactivité

	<i>N</i>	<i>M</i>	<i>SD</i>
Le documentaire hautement interactif	120	51.675	10.218
Le documentaire faiblement interactif	120	31.033	8.851

Par ailleurs, toutes les échelles utilisées dans cette étude en tant que variables dépendantes ont été testées pour la cohérence interne en utilisant la procédure de coefficient alpha de Cronbach (Cronbach, 1951). Le tableau 2 présente les statistiques descriptives et les résultats de cohérence interne (le coefficient alpha de Cronbach). Toutes les variables ont une cohérence interne relativement élevée allant de 0,82 à 0,94.

Tableau 2

Statistiques descriptives pour les échelles utilisées dans L'expérience

<i>Échelles</i>	No d'items	<i>M</i>	<i>SD</i>	Cronbach's Alpha
L'interactivité perçue	9	42.54	12.59	0.85
L'engagement narratif	12	68.10	16.57	0.94
l'engagement perçu	10	56.59	8.94	0.86
L'attitude à l'égard du site du documentaire interactif.	6	32.15	6.34	0.82

Remarque. Score maximum= 63 pour l'interactivité perçue; 84 pour l'engagement narratif; 70 pour l'engagement perçu; et 42 pour l'attitude à l'égard du site du documentaire interactif.

Tests d'hypothèses et analyse de questions de recherche

L'interactivité réelle.

Deux hypothèses émergentes de la revue de la littérature ont prédit une relation positive entre le niveau élevé d'interactivité réelle, l'interactivité perçue et l'attitude à l'égard du site Web documentaire interactif.

Pour examiner si le niveau d'interactivité réel a une influence significative sur les deux variables dépendantes, un test *t* d'échantillons indépendants a été réalisé. Les résultats ont indiqué que les moyennes ont significativement différencié (voir tableau 3). L'hypothèse d'homogénéité des variances a été testée et vérifiée par le test *F* de Levene, $F(238) = 1.64, p = .202$ pour l'interactivité perçue et $F(238) = 2.11, p = .147$ pour l'attitude à l'égard du site Web documentaire interactif. Le test de Levene n'est pas significatif pour les deux variables. Par conséquent, les variances sont supposées égales. Le test *t* d'échantillons indépendants était associé à un effet statistiquement significatif pour l'interactivité perçue $t(238) = 16.72, p = .001$ et pour l'attitude à l'égard du site Web documentaire interactif $t(238) = 6.23, p = .001$, (voir tableau 3). Ainsi, les participants qui ont visionné le documentaire hautement interactif ont été

associés à une moyenne statistiquement plus importante en matière d'interactivité perçue et d'attitude à l'égard du site Web documentaire interactif. Le d de Cohen a été estimé à 2.16 pour l'interactivité perçue et à 0.80 pour l'attitude à l'égard du site Web documentaire interactif, ce qui est un effet de grande taille basé sur la directive de Cohen (1992). Ainsi, les hypothèses 1a et 1b sont corroborés.

Tableau 3

Échantillons indépendants t-test comparant le niveau d'interactivité réel avec l'interactivité perçue et l'attitude à l'égard du documentaire interactif des deux groupes

Groupes	DHI		DFI		t	p	Cohen's d
	M	SD	M	SD			
L'interactivité perçue	51.67	10.21	31.03	8.85	16.72	.001	2.16
L'attitude à l'égard du site du documentaire	34.525	5.40	29.78	6.34	6.23	.001	0.80

Remarque. ^a Le p est significatif au niveau <0.05 . ^b $N = 120$ pour chaque groupe. ^c DHI = Documentaire hautement interactif; DFI = Documentaire faiblement interactif.

L'interactivité perçue.

L'analyse de la littérature a généré trois hypothèses qui ont prédit une association positive entre l'interactivité perçue et l'engagement narratif, l'engagement perçu et l'attitude à l'égard du site Web documentaire interactif.

Pour tester ces hypothèses, une série de régressions linéaires simples, utilisant l'interactivité perçue comme une variable indépendante, a été réalisée pour examiner s'il existe une influence significative de l'interactivité perçue sur les variables dépendantes. Les résultats des analyses de régression ont suggéré l'existence de relations significatives entre l'interactivité perçue et l'engagement perçu $\beta = .25$, $t = 5.56$, $p < .001$; et l'attitude à l'égard du site Web documentaire interactif $\beta = .350$, $t = 18.97$, $p < .001$. Cependant, les résultats des analyses de régression n'ont prédit aucune corrélation significative entre l'interactivité perçue et l'engagement narratif (voir tableau 4). L'interactivité perçue expliquant (11 %) de l'engagement

perçu $R^2 = .11$, $F(1, 2) = 31.00$, $p < .001$; et (60 %) d'attitude à l'égard du site Web documentaire interactif $R^2 = .60$, $F(1, 2) = 359.85$, $p < .001$. Cependant, l'attitude à l'égard du site Web documentaire interactif a montré une corrélation plus forte avec l'interactivité perçue que l'engagement perçu. Ainsi, l'hypothèse 2a n'est pas supportée et les deux hypothèses 2b et 2c sont corroborés.

Tableau 4

Résultats de régression en utilisant l'interactivité perçue comme un prédicteur

Variabes	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
L'engagement narratif	-.153	.121	-.082	-1.26	.206
L'engagement perçu	.255	.046	.339	5.56	.001
L'attitude à l'égard du site du documentaire	.350	.018	.776	18.97	.001

Les interactions réelles des usagers.

Plusieurs questions de recherche ont été élaborées à partir de la revue de littérature. La question de recherche **RQ1a** est : le niveau d'interactivité réel influence-t-il significativement les interactions réelles des usagers ? L'interaction réelle des usagers dans cette question a été mesurée en fonction du temps passé sur les deux sites Web documentaires interactifs.

Premièrement, pour vérifier s'il existe une différence entre les deux sites Web documentaires interactifs en termes d'interaction réelle des usagers, un test *t* d'échantillons indépendants a été réalisé pour déterminer s'il existe une influence significative du niveau d'interactivité réelle sur l'interaction réelle des usagers. Les résultats ont indiqué que les moyennes ont significativement différentes. La moyenne des interactions réelles des usagers augmente avec le niveau d'interactivité (voir tableau 5). L'hypothèse d'homogénéité des variances a été testée et vérifiée par le test *F* de Levene, $F(238) = 0.24$, $p = 0.621$. Le test de Levene n'est pas significatif. Par conséquent, des variances sont supposées égales. Le test *t* des

échantillons indépendants était associé à un effet statistiquement significatif, $t(238) = 3.22$, $p = .001$ (voir tableau 5). Ainsi, les participants qui ont visionné et navigué dans le documentaire hautement interactif ont passé un temps significativement plus important, par rapport au temps passé sur le site Web du documentaire. Le d de Cohen a été estimé à 0,416, ce qui est un effet assez moyen basé sur la directive de Cohen (1992).

Tableau 5

Échantillons indépendants t-test comparant le niveau d'interactivité réel avec l'interactions réelles réelle des participants des deux groupes

Groupes	DHI		DFI		t	p	Cohen's d
	M	SD	M	SD			
	1180.00	706.31	889.73	686.47	3.22	.001	0.41

Remarque. ^a Le p est significatif au niveau <0.05 . ^b $N = 120$ pour chaque groupe. ^c DHI = Documentaire hautement interactif; DFI = Documentaire faiblement interactif.

La question de recherche **RQ1b** est : existe-t-il une corrélation entre les interactions réelles des usagers et leurs perceptions ?

Une série de régressions linéaires simples a été réalisée pour déterminer si l'interaction réelle des usagers (temps passé sur le site Web documentaire) a significativement prédit les variables dépendantes. Les résultats des analyses ont suggéré qu'il existe des corrélations significatives entre l'interaction réelle des usagers et toutes les variables dépendantes : l'engagement narratif $\beta = .006$, $t = 2.51$, $p < .012$; l'interactivité perçue $\beta = .016$, $t = 22.06$, $p < .001$; l'engagement perçu $\beta = .005$, $t = 5.81$, $p < .001$; et l'attitude à l'égard du site Web documentaire interactif $\beta = .006$, $t = 2.51$, $p < .001$. L'interaction réelle des usagers a expliqué (02 %) d'engagement narratif $R^2 = .02$, $F(1, 2) = 6.34$, $p < .012$; (67 %) d'interactivité perçue, $R^2 = .67$, $F(1, 2) = 487.04$, $p < .001$; (12 %) d'engagement perçu, $R^2 = .12$, $F(1, 2) = 33.79$, $p < .001$; et (38 %) d'attitude à l'égard du site Web documentaire interactif, $R^2 = .38$, $F(1, 2) = 146.97$, $p < .001$. Cependant, l'interactivité perçue suivie par l'attitude à l'égard du site Web documentaire interactif a montré une corrélation plus forte avec l'interactivité réelle des usagers que d'autres variables dépendantes (voir tableau 6).

Tableau 6

Résultats de régression utilisant l'interaction réelle des usagers comme prédicteur

Variables	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
L'engagement narratif	.006	.002	.162	2.51	.021
L'interactivité perçue	.016	.001	.820	22.06	.001
L'engagement perçu	.005	.001	.353	5.81	.001
L'attitude à l'égard du site du documentaire	.006	.000	.618	12.12	.001

La question de recherche **RQ1c** est : quelles sont les différences entre le documentaire hautement interactif et le documentaire faiblement interactif en termes de pages vues réellement par les usagers ?

Les pages vues réellement par les usagers ont été classées en catégories comme pages vues, durée moyenne sur la page, page vue unique et profondeur de page. Les pages vues correspondent au nombre total de pages consultées. Les vues répétées d'une seule page sont comptées (c'est la mesure du nombre de fois que l'utilisateur clique sur la page ou les pages). La figure 1 montre un nombre différent de pages vues entre le documentaire hautement interactif et le documentaire faiblement interactif. Le nombre total de pages vues dans le documentaire hautement interactif était associé à un nombre numériquement supérieur ($N = 23$, $M = 109.17$, $SD = 125.28$) au nombre total de pages vues dans le documentaire faiblement interactif ($N = 23$, $M = 105.21$, $SD = 107.11$).

Pages Vues: Le Documentaire Hautement Interactif Contre Le Documentaire Faiblement Interactif

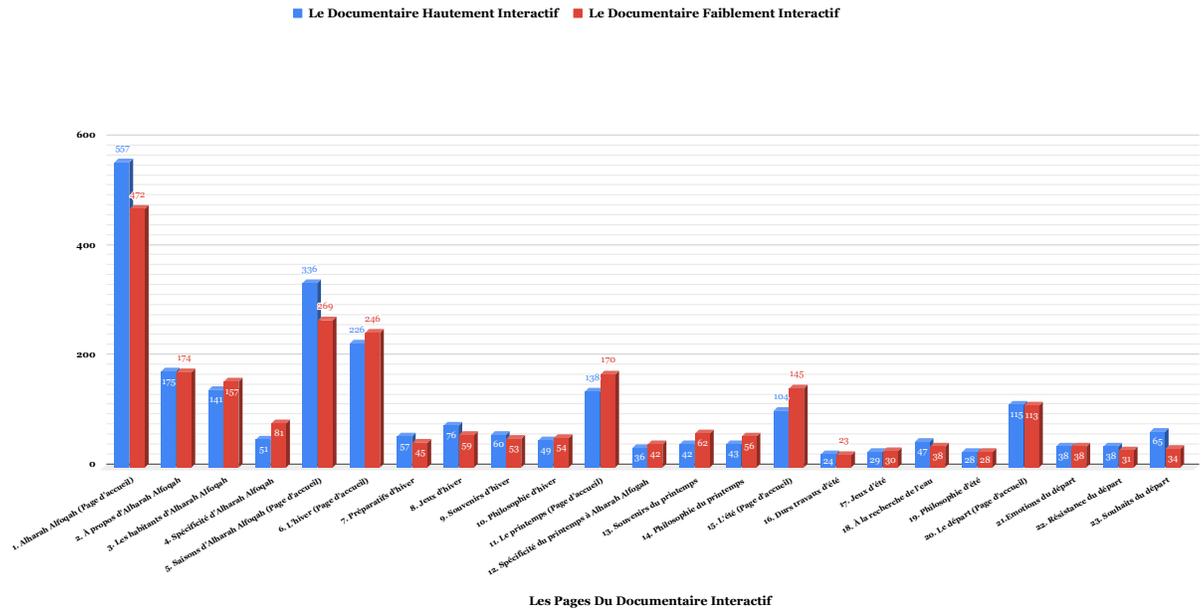


Figure 1. Pages vues par les participants

De plus, la durée moyenne sur la page est simplement le temps moyen passé par tous les usagers sur une seule page. La figure 2 montre la différence de la durée moyenne entre le documentaire hautement interactif et le documentaire faiblement interactif. La durée moyenne passée par les participants qui ont navigué dans le documentaire faiblement interactif a été associée à un nombre numériquement plus élevé ($N = 23$, $M = 0:01:12$, $SD = 0:00:33$) que la durée moyenne passé par les participants qui ont navigué dans le documentaire hautement interactif ($N = 23$, $M = 0:00:54$, $SD = 0:00:22$).

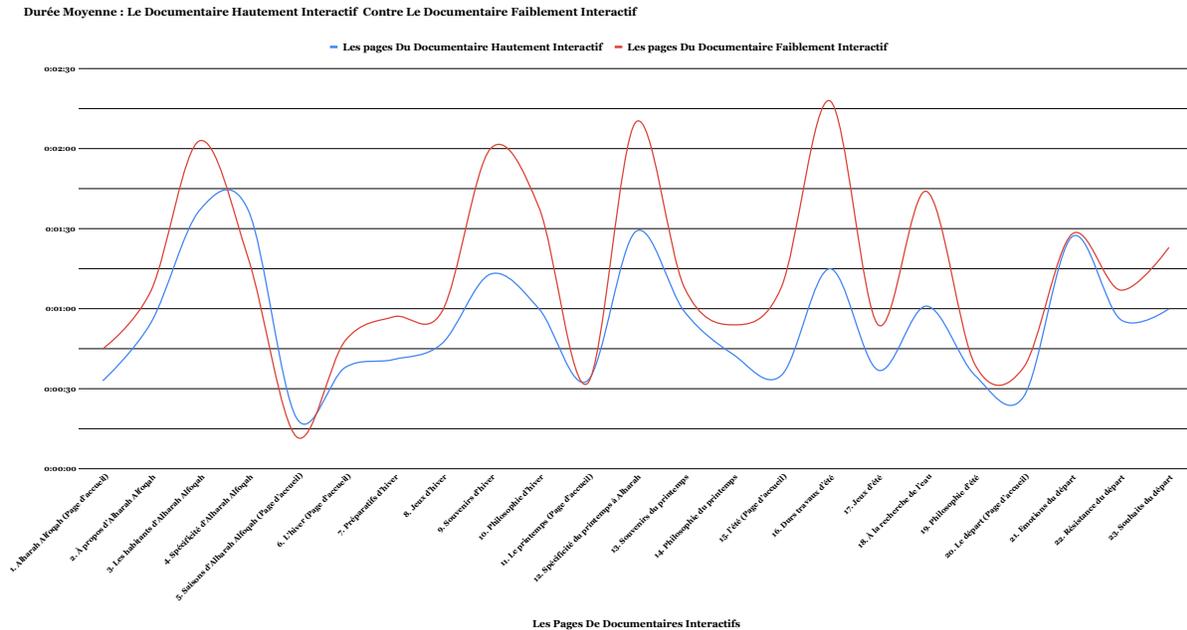


Figure 2. Durée moyenne sur les pages de documentaires interactifs

Les pages uniques vues correspondent au nombre de sessions au cours desquelles la page spécifiée a été affichée au moins une fois. Une page vue unique est comptée pour chaque combinaison d’URL de page et de titre de page. La figure 3 montre la différence entre les pages vues uniques entre le documentaire hautement interactif et le documentaire faiblement interactif. La moyenne des pages vues uniques du documentaire faiblement interactif était supérieure ($M = 51.56, SD = 28.83$) à la moyenne des pages vues uniques du documentaire hautement interactif ($M = 47.39, SD = 30.80$).

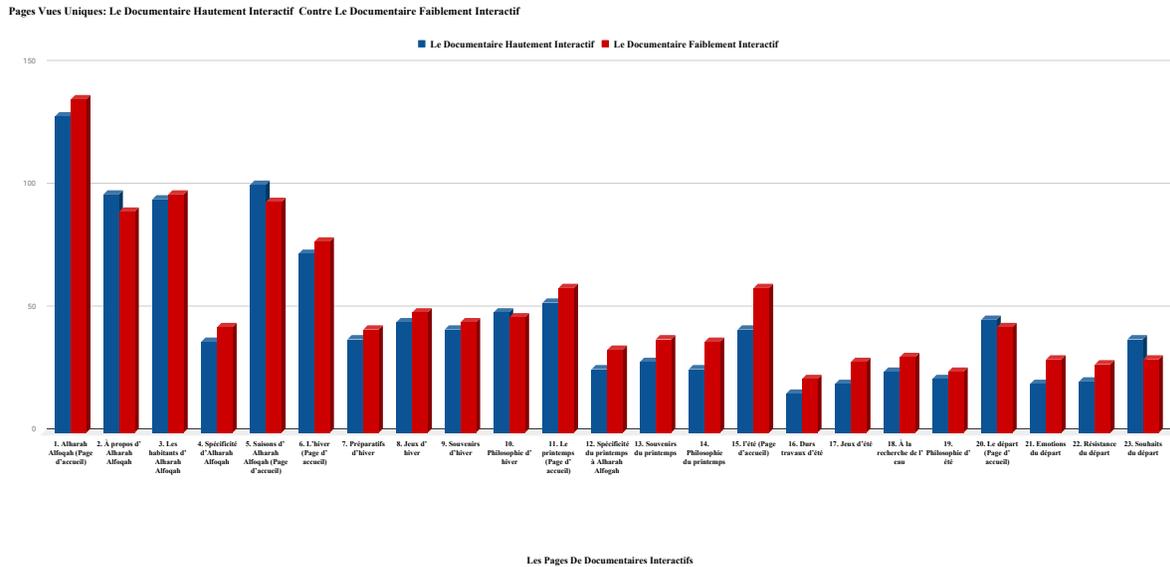


Figure 3. Vues pages uniques

Enfin, la profondeur de page a été définie comme le nombre moyen de pages, allant de 1 à 20 +, que les participants consultent au cours d'une seule session. Comme on peut le voir sur la figure 4, 9.2291 visites ont représenté des vues de 20+ pages en 53 sessions au documentaire hautement interactif, où 2095 visites ont représenté des vues de 20+ pages en 56 sessions au documentaire faiblement interactif. La profondeur moyenne de page (vues) du documentaire hautement interactif était supérieure ($M = 156.57$, $SD = 517.46$) à la profondeur moyenne de page du documentaire faiblement interactif ($M = 142.00$, $SD = 473.35$).

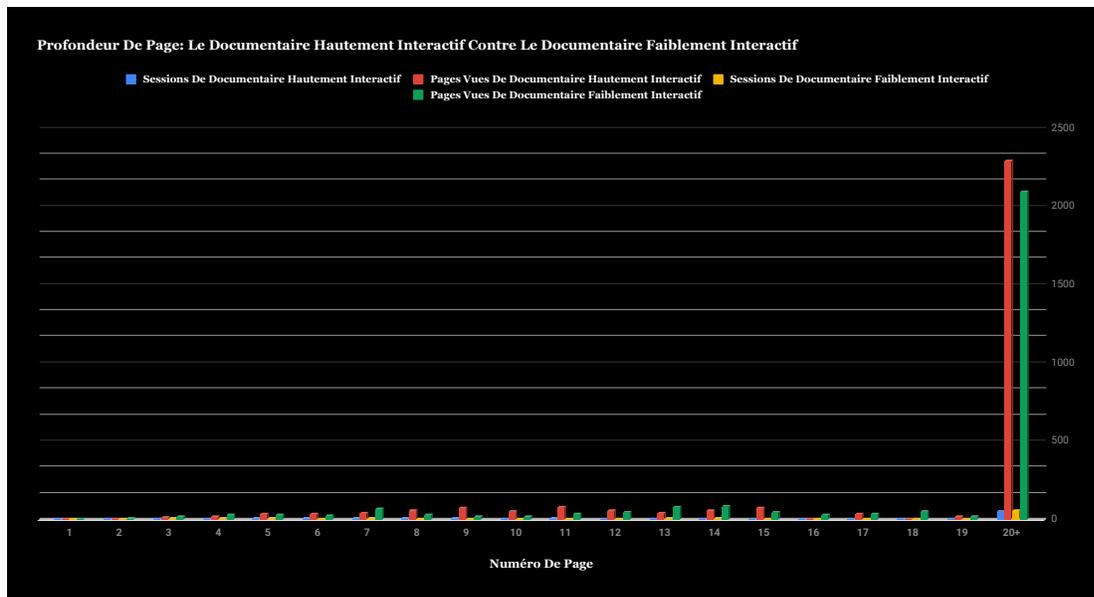


Figure 4. Profondeur de page vue

La question de recherche **RQ1d** est : quelles sont les fonctionnalités interactives les plus fréquemment utilisées dans le documentaire hautement interactif ?

Le but de cette question était d'examiner le degré de tendance des utilisateurs à utiliser les fonctions interactives disponibles dans le documentaire hautement interactif, puisque ces fonctionnalités spéciales n'étant présentes ou manipulées que dans le documentaire hautement interactif. Cette mesure était basée sur le pourcentage d'accès et d'utilisation des outils suivants par les usagers: "moteur de recherche"; contact; like/dislike; commentaire; partager le projet; partager des vidéos individuelles; télécharger; exporter votre film/histoire; modifié/ajouté à notre histoire; carte heuristique; menu index; carte géographique; annotations vidéos ; ma page; souscription".

Comme on peut le voir à la figure 10, des fonctionnalités telles que "Like/Dislike" (57.4 %), "Carte heuristique" (50.4 %), "Souscription" (45.2 %), et " Menu index" (37.1 %), ont été largement utilisées par les participants qui ont visionné et navigué dans le documentaire hautement interactif. Cependant, des fonctionnalités telles que "Exporter votre film/histoire" (3.5 %), "Télécharger" (7.0 %), et "Partager des vidéos individuelles" (8.7 %) ont été peu utilisées par les participants

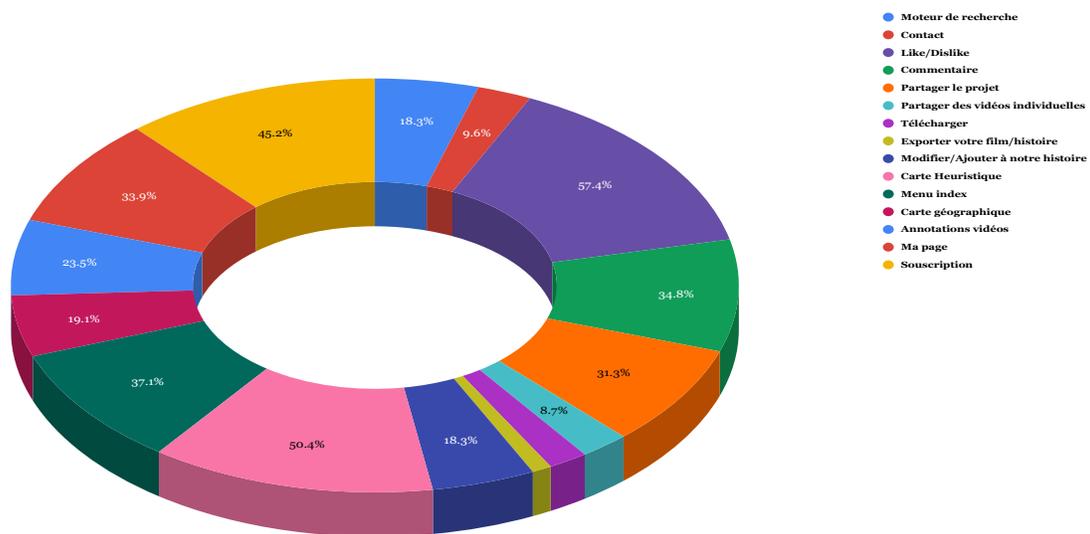


Figure 5. Utilisation des fonctions interactives dans le documentaire hautement interactif

Une question de recherche principale développée à partir de la revue de littérature était d'examiner la relation entre l'interactivité et la linéarité en termes d'engagement narratif et d'engagement perçu :

QR2 : Existe-t-il des différences significatives entre l'interactivité réelle et la linéarité en termes d'engagement narratif et d'engagement perçu ?

Les trois groupes de participants ont été assignés à visualiser, à naviguer dans les trois documentaires conçus (le documentaire linéaire, le documentaire faiblement interactif et le documentaire hautement interactif) et à évaluer leurs expériences selon deux échelles de variables dépendantes : l'échelle d'engagement narratif et l'échelle d'engagement perçu. Pour étudier la relation entre l'interactivité réelle et la linéarité en termes d'engagement narratif et d'engagement perçu, une ANOVA à un facteur a été réalisée pour tester si les trois documentaires conçus avaient ou non un effet significatif sur les variables dépendantes (l'engagement narratif et l'engagement perçu). Les statistiques descriptives associées au niveau de l'engagement narratif et de l'engagement perçu dans les trois groupes sont présentées dans le tableau 7. L'hypothèse de l'homogénéité des variances a été testée et vérifiée sur la base du test F de Levene, $F(2, 35) = 1.06, p = .34$ pour l'engagement narratif et $F(2, 35) = 2.00, p = .13$

pour l'engagement perçu. L'analyse indépendante entre groupes (ANOVA) a eu un effet statistiquement significatif pour l'engagement narratif $F(2, 35) = 7.07, p = .001, \eta^2 = .038$, et pour l'engagement perçu $F(2, 35) = 3.50, p = .03, \eta^2 = .019$. (voir tableau 7)

Pour évaluer plus profondément la nature des différences entre les trois moyennes, l'analyse de la variance (ANOVA) statistiquement significative a été suivie par le test de Tukey HSD, car des variances égales étaient tenables. En termes d'engagement narratif, les tests ont montré une différence par paires significative entre les scores moyens des participants qui ont visionné le documentaire linéaire avec les participants qui ont visionné les documentaires hautement interactifs ou le documentaire faiblement interactif $p < .05$. Toutefois, les participants qui ont visionné le documentaire hautement interactif ne diffèrent pas significativement du groupe qui a visionné le documentaire faiblement interactif $p > .05$. En termes d'engagement perçu, les tests ont révélé une différence par paires significative entre les scores moyens des participants qui ont visionné le documentaire faiblement interactif $p < .05$. Cependant, les participants qui ont visionné le documentaire linéaire ne diffèrent pas significativement des deux autres groupes $p > .05$. (voir tableau 7).

Tableau 7

ANOVA : L'engagement narratif et l'engagement perçu à travers les trois documentaires

Groups	1.DHI	2. DFI	3.DL	F (2,35)	p	η^2	Tukey HSD
	M	M	M				
	(SD)	(SD)	(SD)				
L'engagement narratif	52.57 (26.43)	57.22 (25.98)	65.47 (28.24)	7.07	.001	.038	3 < 2,1
L'engagement perçu	53.31 (8.77)	57.12 (11.85)	56.01 (13.28)	3.50	.03	.019	2 < 1

Remarque. ^a Le p est significatif au niveau <0.05 . ^b $N = 120$ pour chaque groupe. ^c DHI = Documentaire hautement interactif; DFI = Documentaire faiblement interactif; DL= documentaire linéaire.

Discussion

L'objectif de cette étude était de mesurer les attitudes des usagers et leur interaction réelle en fonction de différents niveaux d'interactivité (faible contre élevé) manipulés dans deux documentaires interactifs conçus. L'étude a également visé à comparer l'interactivité à la linéarité (représentée dans un troisième documentaire linéaire) en termes d'engagement narratif et d'engagement perçue. Les résultats suggèrent que plus le niveau d'interactivité réelle augmente dans un documentaire interactif, plus les usagers sont susceptibles d'avoir une interactivité perçue positive et une attitude à l'égard du site Web documentaire interactif. Ce résultat est cohérent avec plusieurs études antérieures qui ont mesuré la relation entre le niveau d'interactivité réel et les attitudes (e.g., Cho & Leckenby, 1997; Coyle & Thorson, 2001; Hwang & McMillan, 2002; Jee & Lee, 2002; McMillan, 2002; Yoo & Stout, 2000; Wu, 1999, 2005).

Le résultat précédent montre que l'interactivité réelle joue un rôle important dans la formation de perceptions positives à l'égard du documentaire interactif. Dans ce contexte, l'interactivité, en tant que caractéristiques d'un média, est évaluée en fonction du nombre ou de l'apparence de fonctions interactives (e.g., Ghose & Dou, 1998; Ha & James, 1998; Bucy et al., 1999). Plusieurs études sur l'interactivité réelle dans divers domaines ont mis l'accent sur l'importance de l'interactivité réelle (e.g., Coyle & Thorson 2001; Fiore & Jin 2003; Haseman et al., 2002; Raney et al., 2003; Sundar et al., 2003). Dans le contexte du documentaire interactif, plusieurs études ont implicitement mis l'accent sur l'importance de l'interactivité réelle en se concentrant sur les outils interactifs permettant aux usagers d'être en contrôle et dans un contexte de communication interactive (e.g., Almeida & Alvelos, 2010; Dovey & Rose, 2013; Galloway et al., 2007; Gaudenzi, 2013, Nash, 2012; Whitelaw, 2002). Par conséquent, le résultat précédent montre que l'interactivité peut être comprise de la même manière, quel que soit le domaine d'étude.

De plus, les résultats indiquent qu'il existe une corrélation positive entre l'interactivité perçue, l'engagement perçue et l'attitude à l'égard du site Web documentaire interactif. Cependant, l'étude ne révèle aucune corrélation entre l'interactivité perçue et l'engagement narratif. Dans de nombreux domaines d'études, il a été mesuré une corrélation entre interactivité perçue et engagement perçue (e.g., MacMillan, 2000; Sundar et al., 2003; Yoo & Stout, 2001); et

entre l'interactivité perçue et l'attitude à l'égard le site Web (e.g., Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; Schlosser, 2003; Wu, 1999, 2005, 2006; Yoo & Stout, 2001).

Le résultat précédent montre le rôle important de l'interactivité perçue dans l'évaluation d'expériences interactives, quels que soient leur forme, leur média et leur domaine d'études. Par conséquent, de nombreux chercheurs ont attaché de l'importance à l'interactivité perçue (e.g., Day, 1998; Kioussis, 1999; Newhagen et al., 1995; Wu, 1999, 2006). Néanmoins, aucune des études précédentes, dans la revue de littérature, n'a examiné la relation entre l'interactivité perçue et l'engagement narratif. Plusieurs études ont examiné la relation entre l'engagement narratif et d'autres variables telles que le plaisir (Bilandzic & Busselle, 2008; Green, Brock., & Kaufman, 2004), et l'adoption des attitudes et des croyances des personnages dans un récit (Green, 2004; Green & Brock, 2000; Wang & Calder, 2006). Dans le domaine documentaire interactif, l'interactivité ne peut être isolée d'autres facteurs tels que la narration, l'interaction réelle des usagers et les perceptions individuelles. Pourtant, il ressort des résultats que l'interactivité perçue et la narration sont dans une relation négative, ce qui démontre que les perceptions individuelles de l'interactivité sont différentes de leurs perceptions de la narration. Les relations entre les deux mesures semblent être dans des directions différentes, où l'interactivité perçue pouvant être utilisée pour évaluer et prédire les attitudes à l'égard d'un site Web documentaire interactif et l'engagement perçu plutôt pour évaluer des expériences narratives.

Toutefois, les résultats indiquent que les répondants qui ont visionné le documentaire hautement interactif sont susceptibles de passer plus de temps sur le site Web documentaire que ceux qui ont visionné le documentaire faiblement interactif. Les résultats montrent également qu'il existe une corrélation positive entre le facteur temps et toutes les variables dépendantes. Cependant, l'interactivité perçue suivie par rapport à l'attitude à l'égard du site Web documentaire interactif présente une corrélation plus forte avec l'interaction réelle des usagers que d'autres variables dépendantes. En outre, il convient de mentionner que l'engagement narratif montre l'association linéaire la plus faible parmi les autres variables avec l'interaction réelle des usagers.

Ce résultat peut expliquer le résultat précédent qui ne montre aucune corrélation entre l'interactivité perçue et l'engagement narratif. Il semble que le niveau d'interactivité ne puisse pas être considéré comme un critère d'évaluation des expériences narratives. L'interaction réelle des usagers est importante dans les études interactives, où elle pourrait donner des réponses réelles et efficaces sur la participation des usagers à des expériences interactives (Hoffman & Novak, 1996; McMillan et al., 2003; Wu, 2006). Dans ce contexte, la mesure du comportement en ligne des usagers est un usage courant aujourd'hui parmi la plupart des sites Web connus, où les données analysées peuvent être utilisées pour développer une relation constante et fructueuse entre les usagers et le système/produit. En d'autres termes, comprendre le comportement des usagers en ligne est un moyen efficace de développer des réponses et des services appropriés.

Par ailleurs, l'un des objectifs de l'étude était de mesurer la relation entre linéarité et interactivité en termes d'engagement narratif et d'engagement perçu. Les résultats suggèrent que les répondants qui ont visionné le documentaire linéaire sont plus impliqués dans la narration documentaire que les autres groupes. Dans le même temps, les résultats ne montrent pas que les répondants qui ont visionné le documentaire linéaire diffèrent des autres groupes en termes d'engagement perçu.

Ce résultat peut indiquer que le documentaire linéaire conserve toujours son importance et son entité à l'ère de l'interactivité. Dans la narration linéaire, les spectateurs semblent être plus concentrés sur l'histoire documentaire puisque rien d'autre ne peut les empêcher de s'immerger dans un récit donné. En comparaison, les usagers dans la narration interactive, en particulier la narration avec le haut niveau d'interactivité, semblent être distraits entre la narration et les outils interactifs. Par conséquent, les répondants, qui ont visionné et navigué dans le documentaire faiblement interactif, étaient significativement plus impliqués dans la narration que ceux qui ont visionné ou navigué dans le documentaire hautement interactif.

Un autre résultat peut justifier le résultat précédent, à savoir que les participants au documentaire faiblement interactif ont montré qu'ils ont passé plus de temps sur 'les pages' du documentaire interactif, bien que les participants au documentaire faiblement interactif ont montré qu'ils ont passé plus de temps sur 'le site Web' du documentaire dans son ensemble. Il est à noter que la comparaison entre les deux documentaires était basée sur les pages vues (les

deux ont les mêmes pages qui incluent du matériel audiovisuel et ne diffèrent que par les fonctions interactives dans les pages). Passer plus de temps sur les ‘pages’ du documentaire interactif pourrait signifier que les participants sont plus impliqués dans la narration documentaire qu’autre chose, tandis que passer plus de temps sur le ‘site Web’ du documentaire hautement interactif pourrait signifier que les participants étaient davantage impliqués dans autre chose que la narration documentaire, telle que les fonctions interactives. Les résultats suggèrent également que les participants au documentaire hautement interactif avaient un nombre de pages visionnées plus élevé (mesuré en fonction du nombre de clics de l’usager sur la page) par rapport aux participants du documentaire faiblement interactif. Le documentaire hautement interactif comportait plus de boutons et de titres cliquables/transitifs et interactifs dans chaque page que le documentaire faible interactif.

En fait, cette interprétation peut être cohérente avec plusieurs études sur le documentaire interactif. Par exemple, Whitelaw (2002) s’interroge sur la capacité d’une histoire à être racontée dans un récit ouvert. O’Flynn (2012) estime que la fiction interactive et le documentaire interactif pourraient être incapables de créer de véritables émotions avec les usagers, car ils ne sont pas fondés sur la cohérence.

En ce qui concerne l’engagement perçu, bien qu’il existe des différences significatives entre les trois groupes, le niveau de différence est moins marqué que le niveau de différence avec l’engagement narratif. Tous les groupes montrent un certain degré de convergence avec leurs évaluations positives de l’engagement perçu. Par conséquent, l’engagement perçu, en tant qu’expression de l’importance d’un produit/service dans la vie des individus, pourrait être compatible entre les trois groupes. En d’autres termes, les trois documentaires pourraient être importants dans la vie des participants même s’ils ne s’engagent pas de la même manière avec la narration donnée.

Limites et études futures

Cette étude est considérée comme nouvelle dans le domaine du documentaire interactif. Elle s’est efforcée d’introduire une nouvelle approche pour étudier la relation entre les usagers et le documentaire interactif et pour comparer le documentaire interactif avec le documentaire linéaire en examinant la perception des usagers des deux types de documentaires. En l’absence

d'études expérimentales, il était difficile de ne s'appuyer que sur le domaine du documentaire interactif et d'appliquer des mesures pertinentes. Par conséquent, l'étude a utilisé des champs d'interactivité plus larges pour interpréter et analyser les relations entre les usagers et le documentaire interactif.

Par conséquent, l'une des limites de cette étude est qu'elle a utilisé des échelles d'autres domaines d'interactivité, où leur capacité à représenter le domaine du documentaire interactif peut être controversée. Cependant, on peut arguer que de nombreuses études dans le domaine de l'interactivité empruntent et adaptent les échelles d'interactivité entre elles ou à d'autres domaines. Ainsi, les futures études pourraient concevoir des mesures spéciales et précises dérivées du domaine du documentaire interactif, qui peuvent être basées sur deux dimensions : l'interactivité et le documentaire.

De l'autre côté, l'étude a appliqué des échelles d'interactivité et de narration entre autres, et a montré des résultats généraux sur les perceptions des usagers de différents niveaux d'interactivité et de la narration, en examinant les corrélations avec d'autres variables. Bien qu'il s'agisse d'une procédure standard dans les études expérimentales, il est probablement préférable, pour davantage de comparaisons, de mesurer chaque dimension de l'interactivité perçue ou de l'engagement narratif et de la comparer à d'autres dimensions et variables. Par conséquent, les futures études devraient envisager de mesurer chaque dimension de l'interactivité/l'engagement narratif et chercher à comparer chaque dimension avec les autres, de manière à pouvoir identifier la taille de l'effet de chaque dimension.

Cependant, bien que l'étude ait utilisé un large champ pour étudier le documentaire interactif et l'interactivité, elle a manqué d'autres domaines et de la littérature qui auraient pu améliorer son approche. Des domaines, tels que les jeux vidéo et la littérature sur l'interactivité et le documentaire interactif dans d'autres langues telles que le français et l'espagnol, auraient pu enrichir cette étude.

De plus, une autre limite pourrait être la manière dont les documentaires conçus ont été manipulés dans cette étude. Bien que l'étude ait cherché à rapprocher la conception des trois documentaires avec les documentaires interactifs existants et avec les études d'interactivité et du documentaire interactif, cela n'empêche pas que l'histoire du documentaire a été à l'origine du

monde linéaire. Le but de cette procédure était de contrôler d'autres variables en présentant une histoire dans les trois documentaires. Il était difficile de contrôler d'autres variables si l'étude comportait trois histoires documentaires différentes. Néanmoins, la procédure d'utilisation du même produit et de manipulation des niveaux d'interactivité est suivie dans de nombreuses études expérimentales dans les domaines de l'interactivité. (e.g., Coyle & Thorson, 2001; Sundar et al., 2003; Wu, 2005). Par la suite, les études futures pourront concevoir des documentaires plus compatibles avec le monde interactif. Les études futures pourraient également se concentrer sur des comparaisons précises entre la narration et les outils narratifs, afin de pouvoir déterminer plus précisément quel facteur est plus influent que l'autre (la narration ou outils narratifs) et comment ils s'affectent.

En examinant la revue de la littérature, il était difficile d'obtenir une représentation précise des catégories de documentaires interactifs, car le documentaire interactif est un genre sophistiqué et en développement, et ses catégories se chevauchent sensiblement. En outre, il était difficile de représenter les catégories de documentaire interactif avec un seul récit documentaire, car chaque récit pouvait nécessiter une certaine forme d'interactivité. Par conséquent, les études futures ne devraient pas être basées uniquement sur la mesure d'un haut niveau ou un faible niveau d'interactivité, mais plutôt sur la conception de documentaires compatibles avec les classifications du documentaire interactif.

Enfin, l'une des limites de cette étude pourrait être l'incohérence entre l'expérience à court terme et la conception d'outils interactifs. Certains outils interactifs ont été légèrement utilisés par les répondants tels que: "exporter votre film / histoire", "télécharger", "Partager des vidéos individuelles" et "modifier/ajouter à notre histoire". Cela peut ne pas être un indicateur de leur manque d'enthousiasme à les utiliser. Certains outils interactifs ont besoin de temps pour être compris et traités. Par exemple, il est difficile d'utiliser la fonctionnalité "partagez votre histoire avec nous" pendant la courte période de l'expérience. En d'autres termes, certaines fonctionnalités interactives peuvent nécessiter une plus longue période pour être utilisés, au cours de laquelle les usagers doivent d'abord se familiariser avec le site Web documentaire afin d'activer ces outils interactifs. Les études futures peuvent se concentrer sur des expériences à long terme visant à mesurer l'interaction des usagers avec le documentaire, où l'utilisation d'outils interactifs peut être clairement lisible et interprétable.

Reconnaissance

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Annexe 1

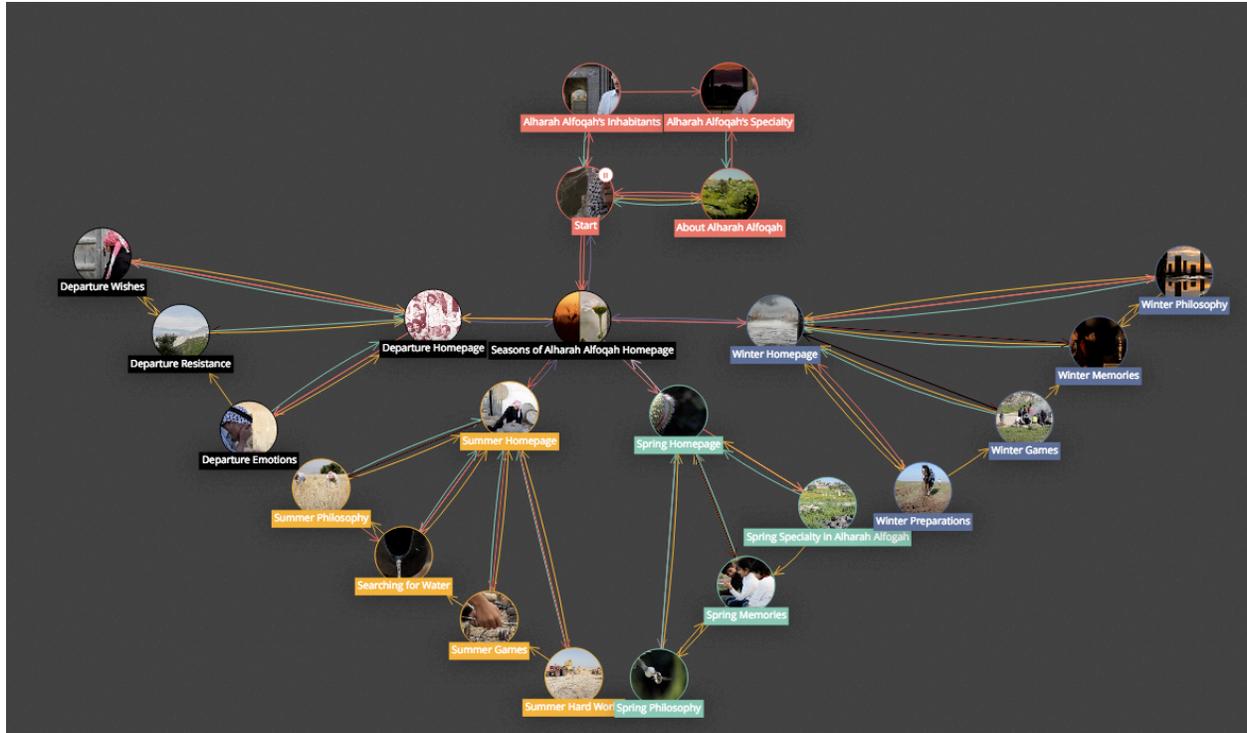
Les vidéos utilisées dans les deux projets de documentaire interactif

<i>N</i>	Titre	Temps (Min: Sec)
L'introduction		
1	<i>Alharah Alfoqah</i> (Page d'accueil)	01:09
2	À propos d' <i>Alharah Alfoqah</i>	00:50
3	Les habitants d' <i>Alharah Alfoqah</i>	01:46
4	<i>Spécificité d'Alharah Alfoqah</i>	01:57
5	Saisons d' <i>Alharah Alfoqah</i> (Page d'accueil)	02:00
L'hiver		
6	L'hiver (Page d'accueil)	01:34
7	Préparatifs d'hiver	00:41
8	Jeux d'hiver	01:03
9	Souvenirs d'hiver	01:44
10	Philosophie d'hiver	01:48
Le printemps		
11	Le printemps (Page d'accueil)	01:02
12	Spécificité du printemps à <i>Alharah Alfogah</i>	02:18
13	Souvenirs du printemps	01:38
14	Philosophie du printemps	01:02
L'été		
15	L'été (Page d'accueil)	00:56
16	Durs travaux d'été	02:05
17	Jeux d'été	00:38
18	À la recherche de l'eau	01:40
19	Philosophie d'été	00:40
Le départ		
20	Le départ (Page d'accueil)	00:59

21	Emotions du départ	00:52
22	Résistance du départ	01:08
23	Souhails du départ	01:31

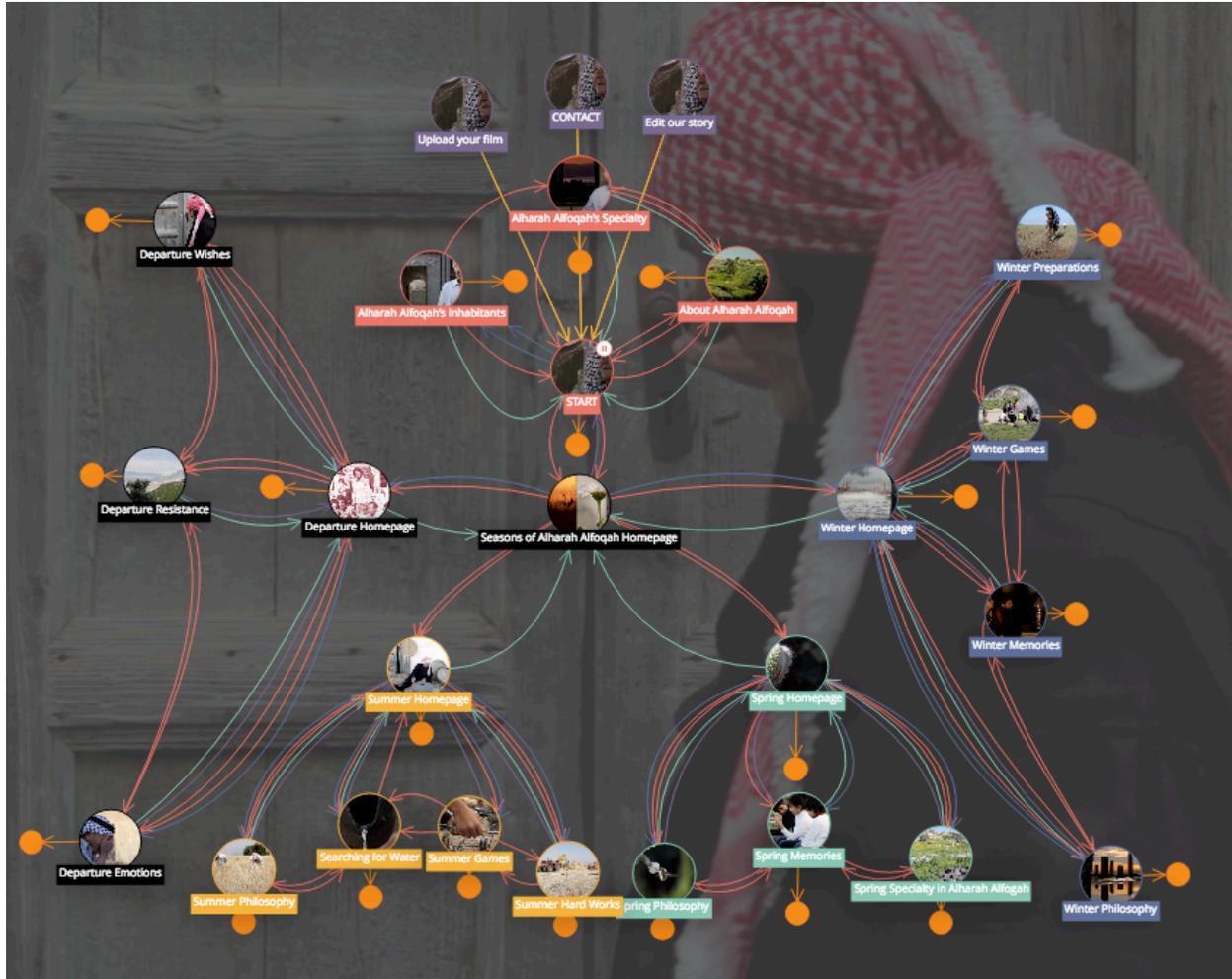
Annexe 2

La carte heuristique du documentaire faiblement interactif



Annexe 3

La carte heuristique du documentaire hautement interactif



Annexe 4

L'échelle modifiée de l'engagement narratif par Busselle et Bilandzic (2009)

Dimension de compréhension de narration

N1. À certains moments, j'ai eu du mal à comprendre ce qui se passait dans le documentaire.

N2. Ma compréhension des personnages n'est pas claire.

N3. J'ai eu du mal à reconnaître le fil conducteur de l'histoire.

Dimension de focus attentionnel

N4. J'ai trouvé que mon esprit vagabondait pendant que le documentaire était en cours.

N5. Alors que le documentaire était en cours, je me suis retrouvé à penser à autre chose.

N6. J'ai eu du mal à garder mon esprit sur le documentaire.

Dimension de présence de narration

N7. Pendant le visionnage du documentaire, mon corps était dans la pièce, mais mon esprit était dans le monde créé par l'histoire.

N8. Le documentaire a créé un nouveau monde, puis ce monde a soudainement disparu à la fin du documentaire.

N9. À certains moments de visionnage du documentaire, le monde de l'histoire était plus proche de moi que le monde réel.

Dimension d'engagement émotionnel

N10. L'histoire m'a affecté émotionnellement.

N11. Pendant le documentaire, quand un personnage principal a réussi, je me suis senti heureux et quand ils ont souffert, je me suis senti triste.

N12. Je me suis senti désolé pour certains des personnages du documentaire.

Remarque. Les items (1 à 6) étaient ont été inversement codés dans l'analyse finale.

Annexe 5

L'échelle modifiée de l'interactivité perçue par Wu (2006)

Dimension de contrôle perçue

N1. J'étais en contrôle de ma navigation sur le site Web du documentaire.

N2. J'avais un certain contrôle sur le contenu que je voulais voir sur le site Web du documentaire.

N3. Je contrôlais totalement le rythme de ma visite sur le site Web du documentaire.

Dimension de réactivité perçue

N4. Je pourrais communiquer directement avec l'équipe de documentaires pour d'autres questions sur le documentaire ou d'autres productions documentaires.

N5. Le site Web documentaire avait la capacité de répondre à mes demandes spécifiques rapidement et efficacement.

N6. Je pouvais communiquer en temps réel avec d'autres spectateurs qui ont partagé mon intérêt pour le documentaire.

Dimension de personnalisation perçue

N7. Je viens d'avoir une conversation personnelle avec un représentant social de l'équipe documentaire chaleureux et bien informé.

N8. Le site Web du documentaire était comme s'il me parlait pendant que je cliquais dessus.

N9. Les informations sur le site Web du documentaire étaient personnellement pertinentes et intéressantes pour moi.

Remarque. Les items de "l'interactivité perçue" ont été présentés uniquement aux participants qui ont navigué dans le documentaire hautement interactif ou dans le documentaire faiblement interactif.

