Remediation of Novels in the Digital Era: Beyond the "book metaphor"

Subrata Dey, University of Adelaide, subrata.dey@adelaide.edu.au

Abstract

The interaction design for fiction e-books has been historically guided by the use of a book "metaphor" and therefore the digital version of the novels have been made to resemble traditional books as closely as possible along with certain multimedia functionalities. However, studies show that this process of remediation from tangible printed books to e-books has to a significant extent reduced the immediacy of the storytelling interface as compared to the printed version and added to the hypermediacy in the reading experience. It has also been theorised and observed from market trends that the human society in the digital age would prefer to consume stories more through oral and visual means than through linear texts. This paper would therefore argue that the remediation of the printed novels in the digital age has been an incomplete agenda and there is a need to look beyond the "book metaphor" that has dominated the interface design of the digital storytelling. A potential path of taking the remediation to its logical conclusion is by incorporating the affordances of oral storytelling that maintains the unique form of mental immersion necessary for the reader of a novel.

Introduction

Human storytelling "took an interesting deviation along the path to modern storytelling" when in the middle of the fifteenth century Johannes Gutenberg ushered in the culture of printed books that continues even today(Hurlburt&Voas 2011, p.5). Printed books in its early phase borrowed its content heavily from the stories existing in the oral tradition. Panchatantra from India, the Arabian nights, the Decameron, Homer's Odyssey and Iliad, Chaucer"s Tales of Canterbury are examples of such remediation. Novels as a form of storytelling was a product unique to this phase of printing technology and was "not simply oral storytelling in print form" (Weldon 2012, p.57). Novels ended the era of "reinforced communality…of earlier oral and literary forms"(Skains 2010, p.96) and brought in a "new kind of individuated storytelling and story consumption separating the reader from the writer in a way previously unseen"(Welden 2012, p.57). This phenomenon of the content being remediated and taking on a new form in response to the requirements and attributes of the new medium has been talked about by Marshall Mcluhan and expressed through his famous aphorism "The medium is the message"(1964, p.23). This phenomenon of remediation happened once again when the unrivalled monopoly of printed books on paper for the last 500 years ended with the digital technology and the era of internet changing the way human beings read and communicate. In response to the new technology, novels got remediated into the digital formats like electronic books that came into being around two decades ago. The new form of the printed novel in its e-book format with the different versions of e-book readers reflected a definite technological change. However, they were "nothing comparable to the transformational changes of the internet or other landmark products" (Herther cited in MacWilliam,

1

2012, p. 14) like iPad, iPod, desktop publishing or digital music. From the initial failure with the adoption of e-book readers like Kindle (introductory versions) to the relatively successful acceptance of their later avatars in Kindle DX, Nook or Sony e-book readers or iPad e-book applications, e-book designs have undergone a wide range of experimentations with functionalities in order to evolve into a feasible option for a regular reader. However, they have yet not gained ready acceptance or have not become an accepted norm for reading novels in spite of the earlier predictions for the demise of the printed novel.

This is also supported from the trade figures. According to the sales data published by the Association of American Publishers, e-book sales growth has dropped from the explosive 252 percent in the first quarter of 2010 to 28 percent in 2012 and then to 5 percent in the corresponding period of 2013 (Irwin 2013). According to a four-year study conducted by the Book Industry Study Group and powered by Nielsen Research, for the period of 2012-13, "the share of all new e-books sold — both in units and dollars — has been flat at about 30% and just under 15%, respectively" (Greenfield 2013). The relative dissatisfaction with the initial forms of e-books and enhanced e-books have been traced by many researchers to the reason that they are "caught between two worlds they are unable to adequately function in either" (Weldon 2012, p.64). This has therefore raised overarching research questions about reading in the digital age and about the future of fiction novel in particular (Butler 2009; Weldon 2012).

Within this context of churning in the world of digital fiction, this paper will establish the fact that e-books in their current avatar are merely a transitional format that needs to abandon its superficial reliance on the print book metaphor. The digital media should rather incorporate the affordances of the earlier mediums like oral storytelling and print in creating a new experience of storytelling that provides a mental immersion similar to the one provided by the printed novel. Therefore, the interface of such new media for novels does not necessarily have to borrow the physical form of the earlier media and can choose a tangible interface that is suitable to the context of the reader or the consumer. Theoretical postulates from medium theory, reader response theory, theory of conceptual metaphors, findings from earlier studies and technological possibilities have been used in the context of the argument.

Printed books to e-books

If we look through the large expanse of studies that have been done to understand the user needs and gratifications of readers from a conventional paper book versus an e-book, there are two broad themes of response that dominate the discourse: subjective emotional needs and gratifications from a printed book and the objective usability or functional comparisons of the two media.

When Vershbow (cited in Burritt 2006, p.4) finds the print books to be more versatile than their "compromised" counterparts: e-books, it is because the reader's emotional connection with a book can be discovered by the fact that they "like turning the pages", or share the books whenever they want, scribble notes, make dog-ear book marks and even go to the extent of remembering when one has "spilled tea on page 136". Roxburgh (cited in MacWilliam 2012, p.24) accepts the emotive factor when he says that "what we really love about books is the content, which is unique and perishable. But we emotionally attach to objects."

Consumer usability studies done for a research project at Johannes Gutenberg University (cited in MacWilliam 2011) compared the use of different types of texts on an e-book reader (Kindle), a tablet PC (an iPad) and on paper. The majority of participants found reading from paper was more comfortable than the e-ink reader but the study did note that "tablet PCs actually provide an advantage over e-ink readers that is not consciously perceivable: the information is processed more easily when a tablet PC is employed" (Gutenberg University cited in MacWilliam 2012, p.24). The study also concluded at a generic level that "there was no difference in reading from paper and from e-ink reader" (Gutenberg University cited in MacWilliam 2012, p.24). However, researchers like Kang et al (2009) say that reading from an electronic interface like Kindle or iPad is completely different from reading a printed book and such electronic interfaces have negative effects on reading efficiency and result in higher eye fatigue. Carreiro (2009) on the other hand is supportive of e-books and believe that they are advantageous in terms of creation, revision, dissemination, and use and access control.

The evaluation of the two media becomes more pointed when the distinction is made between reading fiction and non-fiction on an electronic interface. Academic or professional reading involves "a diverse mix of linear reading, skimming, annotating, interleaving, reading and writing, and switching between documents" (Chen, Guimbretiere&Sellen 2012, p.18:1) and such reading has been defined as "work related reading" (Adler et al cited in Chen, Guimbretiere&Sellen 2012, p.18:2), "active reading (Adler and Van Doren cited in Chen, Guimbretiere&Sellen 2012, p.18:2) or "responsive reading" (Pugh cited in Chen, Guimbretiere&Sellen 2012, p.18:2). In contrast to the reading process of non-fiction readers outlined above, the reader of fiction "steps off the connecting path of the linking texts on internet or new media functionalities" and "disappears into a kind of narrative mist of the story itself, silent and alone" (Mackey 2001, p.187). Going deeper into how these differences apply in the age of digital reading, Mackey"s (2001) study on three fiction series in the fantasy genre (one of which is the Harry Potter series) throws up many interesting questions of reading a fiction and differences that arise due to difference in the mode of the media. Mackey (2001, p.170) looks at how readers of fiction are influenced by the "cover page illustration", the different editions like "hardback, mass market paperback, and trade paperback" and also what the first page of the novel offers in singularity. People regard the reading of a printed book as an experience - leafing through the pages, annotating it by hand, or even smelling the paper - and thereby engages in direct interaction with the text (Burritt 2010, p.44), but reading an e-book necessitates the physical interaction of the reader with the technology vehicle and thus may lead to creation of distances between the reader and the text (Mangen 2008). Bolter and Grusin (2000) would perhaps categorise this phenomenon of technology mediation as an act of hyper-mediation. When one reads fiction e-books for pleasure, "the process is closer to the process of reading a traditional book", where users mainly move forward in a linear fashion, and some situations move back to see the earlier pages (Schcolni 2001, p.69). This is where we start seeing the reason behind the dominant application of the book "metaphor" in the interaction design of fiction e-books.

The storytelling format of a novel naturally lends itself to the reading practices followed traditionally with printed novels and therefore the "book metaphor" will possibly remain relevant as long as the format of storytelling retains the earlier format. The criticisms of the e-book and comparisons of the digital version

with the printed version of the novel have also therefore mostly revolved around the "book metaphor". The initial trend of the e-books in directly adopting the print novel format onto digital interface has been attributed by medium theorists as an integral part of the process of remediation where "the printers of incunabula works who, similarly lacking in new forms in which to cast their work, shaped them as closely as possible to manuscript form" (Welden 2012 p.64) till new form of storytelling found its own ground. There is thus a widely accepted realization that "we are at the inflection point where we bring our analog expectations to digital. …and "we don"t have a model for a digital reading experience" (Kostick 2011, p.137).In trying to critically analyse the way digital technology has attempted to mediate printed books through the use of the "book metaphor" and its implications, it is interesting to see the explanation provided within the framework of medium theory. McLuhan (1964) argues that "the content of a medium is another medium". This process is mostly observed when a new medium is introduced.

Without any precedent of using the medium, it has often been seen that the "new medium try to do the same old things, duplicate previous activities, using the new medium"(Strate 2012, p.9). McLuhan has used the metaphor of "rear-view mirror" (McLuhan & Fiore 1967) to explain this phenomenon in new media. However, this insight into the evolutionary process of this remediation can be understood more closely and taken to its logical conclusion by understanding the concept of metaphors and its role in the evolution of the interface design of digital products.

The use of metaphor and digital novels

The theory of conceptual metaphors gives us the understanding that metaphors are vehicles that help us to understand one conceptual domain in terms of another (Lakoff, 1993, p.206). Conceptual metaphors unlike what was thought about metaphors earlier, are not only a means of communication but also have impact on our thoughts, actions and a means to conceptualize the world around us (Reddy, 1979). Metaphors have been an integral part of interaction design for Graphical User Interfaces (GUI). Interaction design has been a process of figuring out the manner in which users will interact with electronic devices through graphical icons and visual indicators. Metaphors thus play an important role in deciding the path that remediation of an older media will follow in order for it to be accepted by the consumers of the media and usher in a new paradigm of reading.

The first step of the e-book interaction design starts with the definition of the problem in the form of a question. "Is the e-book intended to replicate the reading experience of the printed book" or should the interaction designers attempt to create a new form of reading that uses the strengths and functionalities available in the modern electronic media? (Miller 2006, p.120). Since the earliest phase of e-book research and interaction design, researchers and designers have chosen the former as the basis for their hypothesis and applied it both for fiction and non-fiction e-books. Landoni et al (2000, p.407) state that "Integrating the classical book structure (i.e. the familiar concept of a book) with features which can be provided within an electronic environment constitutes a generally accepted definition of an electronic book". Both iPad and Kindle apply the book "metaphor" but perhaps with different interpretations of the "metaphor". However, it should be noted that neither Kindle nor iPad treat fiction e-books as a separate entity while applying their individual interpretations of the book "metaphor".

The tendency of designers to use real world look alike metaphors for interaction design is common amongst designers across the spectrum of products though such tendencies have often resulted in failures and also been heavily critiqued by researchers. Our earlier discussions show that a similar tendency has been observed in case of the e-book interaction design. Such mnemonic approaches is opposed bluntly by Nelson Goodman when he says that "these mnemonic gimmicks are not very useful for presenting the ideas in the first place; second, their resemblance to any real objects in the world is so tenuous that it gets in the way more than it helps; and third ...the metaphor becomes a dead weight" (Nelson cited in Laurel 1990, p.236). This is exactly what we can see in the increasing number of functionalities being added to the e-book applications and e-book readers in order to resemble printed books. User interaction metaphors can be more efficient when users construct their own meanings from dissimilar elements, rather than being shown systematic and consistent mappings as taught in the traditional way (Blackwell 2001, p.499). Hsu (cited in Blackwell 2006, p.499) also shows that users with poor prior understanding of a domain may perform even worse when given an explanatory metaphor. It is also true that metaphors used in the world of interface design have a life beyond which their purpose cease to exist in very much the same way as normal metaphors are "worn by frequent use and have lost all sensuous vigour" (Nietzsche cited in Blackwell 2006, p.511).

In the concluding part of their report on "Visual Book experiment", Landoni and Gibb (2000, p.198) accept that "paper book metaphor can be profitably used as a starting point and not necessarily as the only direction in which we go." In the Room for Debate forum of New York Times (2009), on the topic "Does the brain like e-books", Professor Alan Liu advocates that "we need a whole new guiding metaphor" for online reading practices and technologies. Liu's research group also indicates that "Web 2.0 offers a different kind of metaphor, not a containing structure but a social experience. Reading environments should not be books or libraries. They should be like the historical coffeehouses, taverns and pubs". Reichenstein (2010), an interaction designer points out the inappropriateness of over-indulging on the book-metaphor in e-books while talking about use of metaphors in design. He states, "Leather buttons, stitches, torn paper edges, multi-screen multi-column pseudo-newspaper layouts… on the screen it is just kitsch. Kitsch, as in: it tries to be something that it is not — and miserably fails at the attempt: Paper doesn't wear down in the digital dimension." The image-schematic theory of metaphor as proposed by Lakoff and Johnson (cited in Blackwell 2006, p.519) also supports the above observation by stating that metaphor is not a systematic relation to the real world, because the real world is inadequate to express computational operations.

Drawing from the evolution of other technology products like personal computers and television, it has been seen that appropriate changes in the metaphor can "take a challenging or unwelcoming situation and make it less so" (Saffer 2005, p.22). The adoption of computers zoomed to astronomical heights after the "desktop" metaphor replaced the previous metaphor (computer is a programming environment).Other such successful changes were television as a stream to television as a commodity, or DSL as a service to DSL as a product (Saffer 2005). These and many other such cases show that metaphors need to be assessed over a period of time to realise the true potential of a technology product. This helps to build the argument that the use of the "book metaphor" needs to be reassessed

in the digital era where technological possibilities have made it possible for the readers to experience storytelling in the multi-modal format that was once prevalent in oral cultures.

The digital alternatives: beyond the e-books

Only a few studies in the initial years indicated the possibility that there may be a scope of looking at the alternatives for the traditional book "metaphor" in trying to remediate the printed book on digital interface. The research in the alternative direction has tried to look at how the ongoing changes in the medium has resulted "in a major change in the form of the content: storytelling" and also challenged "the norms surrounding the author reader dynamic and the role of the individual in reading and writing established by print" (Weldon 2012 p.57). A prime example is the introduction of Vook in 2008, an application which integrates written text with video content and social media. Though it was primarily found to be useful for the instructional texts, there has been an active interest in the fiction industry around the new proposition. There have also been interesting initiatives of storytelling in the form of hyper-text fiction, mobile narratives, digital storytelling (DST), audiobooks and radio stories. While mobile narratives and collaborative storytelling are still new initiatives that are in the experimental phase and lack any credible trade figures globally, hyper-text fiction has remained "a rather esoteric field of interest". This is even "after two decades of considerable theorising and creative activity" and the proponents "announcing hyper-text fiction as the ultimate manifestation of the future of literature" (Mangen 2008, p.408). Hyper-text fiction also has been found to be antagonistic to deep reading that is needed for fiction as it "discourages the absorbed and reflective mode"(Mail & Dobson 2001).

Compared to these new forms of storytelling on digital interface, the form of audio books has showed considerable potential in spite of being simplistic in its original form. "A digital renaissance" of audio books in recent years has changed the boundaries of the audio book reader from being associated with "children or with users who were visually handicapped or dyslexic" to "younger listeners, split evenly between male and female"(Audiobook Market survey, 2006, p.1). Audio books have "ballooned into a $1.2 billion industry, up from $480 million in retail sales in 1997" and "unit sales of downloaded audio books grew by nearly 30% in 2011 compared with 2010", according to the survey conducted by the Audio Publishers Association (Wall Street Journal, 2013). The new age audiobooks have also started evolving through the help of digital technology and come up with "interactive audiobooks, in which the listener/player can intervene with the story at pre-defined and user-selected points using an auditory interface"(Have & Pedersen 2013, p.124).

Digital storytelling (DST) goes a step ahead of audiobooks in combining "the art of traditional storytelling with multimedia elements such as images, graphics, music, and audio in order to craft a personally voiced narrative" (Porter 2004). When compared to audiobooks, digital storytelling probably represents more authentically the reality of the digital era where along with the resurgence of the individual acoustic space as used by the oral storyteller of the Homeric times, media consumers are also "lurking voyeurs, watchers of all things, and our appetite for visual stimuli increases daily"(Butler 2009, p.5). The restoration of the traditional art of oral storytelling in the digital era can thus be observed to varying extents from the popularity of two media formats namely audiobooks and digital storytelling (DST). The

increasing popularity of audiobooks and radio stories has brought into debate the possibility that spoken words have the potential to restore literature to its oral roots" and "bring back the intimacy of the storyteller" (Rubery 2011, p.12). Drawing from these observed changes in the process of reading, it has been hypothesized that changes in the process of reading due to the change in the technology of the medium will "change the novel in ways as fundamental as those by which the novel itself changed oral storytelling" (Welden 2012, p.57).

Role of oral storytelling in the potential remediation of novels

In a way "that print world gave birth to the novel" (Ong 1982, p.145), the medium theory as posited by Mcluhan did predict a scenario where the silent individuated world of print reading would be replaced by a communal (tribal) consumption of stories through screens and loud speakers, very much like the way in which stories were propagated in oral cultures (Mcluhan 1964). While Mcluhan"s"vision was realised to some extent" by the emergence of the electronic media", the introduction of the digital media in early 21st century went beyond that and allowed audiences not only "to engage with what they read, heard or saw" in digital publications but also to "actually engage in the process itself" (Bruns 2011, p133), both individually and communally. This is very much in congruity with what happened in traditional oral storytelling. Traditional form of oral storytelling is thus proving to be a decisive factor in the remediation of storytelling formats on digital interface and as seen above is well supported by theoretical predictions about the future of reading in digital era. However, the "digital renaissance" of mediums like audiobooks "over the past few years" and the role that it has played in the revival of the traditional art of oral storytelling in the digital age has been "an overlooked aspect of the history of the mediatisation of the book"(Have &Pedersen 2013 p.124). Research in the area has "been sparse" and "unexplored" in spite of its growing popularity across diverse user groups (Have & Petersen 2013). It has been hitherto neglected due to its unfavourable status when compared to printed books and the debate over whether we can really "read with our ears" (Rubery 2011,p12). With the redefining of reading norms in the digital age where the acoustic and visual space have gained ascendency over the "active forms of behaviour including decipherment, interpretation and judgement" (Rubery 2011, p12) associated with reading printed text, mediums like audiobooks become a deciding factor in determining the shape of future fiction novels. This becomes more potent when the affordances of the audiobook get coupled with the visual stimuli of digital multimedia and interactivity as seen in digital storytelling. But both audiobooks and DST use limited aspects of the oral traditions of storytelling when seen in the context of offering alternatives to printed novels. While audiobooks use only the aural aspect of the oral tradition to narrate fiction, DST have remained limited as a form for communicating personalized stories.

Oral storytelling in its purest form is fundamentally multi-modal.It involves the physical presence of the storyteller with his or her voice, tone, gestures and the use of smell, touch and props. In contrast, reading fiction in the format of novels is a unique process where the reader "steps off the connecting path of the linking texts on internet or new media functionalities" and gets immersed "into a kind of narrative mist of the story itself, silent and alone"(Mackey 2001, p.168). Phenomenological immersion of the reader, the kind of immersion that we experience while reading a page-turning novel, is "largely the product of our own mental, cognitive abilities to create that fictive, virtual world from the symbolic

representations-the text, whether purely linguistic or multi-modal, digital or print-displayed by any technological platform" (Mangen 2008, p.412). Material supports like the book-print or digital or any other digital storytelling platform therefore have to be "ideally transparent" and yet tangible in a way that does not disturb the essential phenomenological immersion and reduce the technological immersion. The digital medium brings forth the unique opportunity to marry the multi-modal advantages of oral storytelling to the individualised immersive reading process for a printed novel.

Emerging technologies like augmented reality, three dimensional virtual reality, holographic images and olfactory assisted storytelling have opened new opportunities for creating multi-modal digital alternatives that can simulate or create the affordances of an oral storytelling performance. Interactive 3-dimensional simulation has been found to be more effective in achieving immersion of viewers than 2-dimensional images of the same object and avoids any bias with respect to the actual physical object (Berneburg 2007). Engagement with such realistic multimedia through haptic interaction also has been found to achieve higher levels of immersion and amusement in the study done on broadcast of realistic multimedia (Cha et al 2004). In a work done on the subjective experience of smell in relation to HCI, it has been seen that the addition of an olfactory dimension to the storytelling experience enhances the imagination of the real experience (Obrist, Tuch&Hornbaek 2014).

Conclusion

The initiatives to use these new media technologies and remediate the printed novel would reach its logical conclusion only when the affordances of the print medium and the oral medium gets integrated into the new interface design in a way that can "make the viewer stand in the same relationship to the content as she would if she were confronting the original medium"(Bolter &Grusin 2000). The gap in earlier attempts at designing digital storytelling interfaces has been in ignoring the exploration of the typical characteristics of a particular storytelling format like "the novel" and understanding the user's emotional and physical processes inherent in the earlier mediums of delivery like print and oral. The novels in the digital era will therefore not only need to reassess the continuing reliance on the "book metaphor" but also restore the optimal balance between hyper-mediation and immediacy in the act of digital storytelling.

References

Berneburg, A 2007,'Interactive 3-D Simulations in Measuring Consumer Preferences: Friend or Foe to Test Results?'Journal of Interactive Advertising, vol. 8, no.1, pp. 1-37.
Blackwell,A.F. 2001, 'Pictorial representation and metaphor in visual language design',Journal of Visual Language and Computing, vol. 12, no.3, pp. 223–252.

Blackwell, A 2006, 'The reification metaphor as a design tool' 13th. ACM Transactions on Computer-Human Interaction, vol. 13, no.4, pp.490-530.

Bolter, J, D &Grusin, R, 2000, Remediation: Understanding New Media,The MIT Press, London, England.

Rober, N, Huber, C, Hartmann, K, Feustel, M, &Masuch, M 2006, wg"Interactive audiobooks: combining narratives with game elements", in: Göbel, S., Malkewitz, R., Iurgel, I. (eds.) TIDSE 2006. LNCS, vol. 4326, pp. 358–369.

Burritt, K 2010, "E-books: revolutionizing book culture", MA dissertation, Georgetown University.

Carreiro, E. 2010, 'Electronic Books: How Digital Devices and Supplementary New Technologies are Changing the Face of the Publishing Industry', Pub Res Q, 26, pp 219-235.

Cha, J, Ryu, J, Kim, S, Eom, S, Ahn, B 2004, 'Haptic Interaction in Realistic Multimedia Broadcasting' In: Aizawa, K., Nakamura, Y., Satoh, S. (eds.) vol. 3333, pp. 482–490. Springer, Heidelberg

Chen, M, Guimbretiere, F &Sellen, A 2012, "Designing a multi-slate reading environment to support active reading activities", ACM Transactions on Computer-Human Interaction, vol. 19, no. 3, pp. 18:1-18:35.

Chong, PF, Lim, YP, & Ling, SW 2009, 'On the design preferences for e-books, IBTE Technical Review, vol.26, no. 3, pp.213-222.

Ghandehari, S 2013, "Definition of reader, as a relative concept, in reader-response theories". Procedia-Social and Behavioral Sciences, vol.70, pp. 1381-1388.

Hackos, J, T &Redish, J, C 1998, User and Task Analysis for Interface Design. Wiley, New York.

Harkin, P 2005, "The reception of reader-response theory". College Composition and Communication, vol. 56, no.3, pp.410-425.

Have, I, & Pedersen, B, S 2013, "Sonic mediatization of the book: affordances of the audiobook". MediaKultur: Journal of media and communication research, vol.54, pp.123-140.

Hourcade, J, P 2008, "Interaction Design and Children", Foundations and Trends in Human-Computer Interaction, vol.1, pp. 277-392.

Herther, N, K, 2012, "Ebooks Herald the Future of 21st Century Publishing", Searcher, March 2012, pp12-17.

Herther, NK (2008) "The E-book Reader is not the Future of E-books", Searcher, vol. 16, no.8,viewed 10 October 2013, <http://www.mendeley.com/catalog/e-book-reader-not-future-e-books/>.

Hsu,Y, C 2006, The effects of metaphors on novice and expert learners" performance and mental- model development. Interacting with Computers, vol. 18, no.4, pp. 770–792.

Hurlburt, GF, &Voas, J, 2011, Storytelling: From cave art to digital media, IT Professional, 13(5), pp.4 - 7.

Irwin, N 2013, "E-book sales are levelling off. Here"s why,"Wonkblog, weblog post, 8 August, viewed 10 December 2013, http://www.washingtonpost.com/blogs/wonkblog/wp/2013/08/08/e-book-sales-are-leveling-off-heres-why/.

Kang, Y., Wang, M., and Lin, R 2009, "Usability evaluation of e-books", Displays, vol. 30, pp 49-52
Kessler, T 2010, "Apple"s latest creation: it"s an iPad!", viewed 20 September 2013, <http://reviews.cnet.com/8301-13727_7-10442722-263.html>.

Kozloff, S 1992, "Narrative theory and televison", in A Robert C (ed.), Channels of Discourse: Reassembled, University of North Carolina Press, Chapel Hill.

Kozloff, S 1995, "Audio books in a visual culture", Journal of American Culture, vol.18, no.4, pp.83-95.

Lakoff, G 1993, "The contemporary theory of metaphor", in A Ortony (ed.) Metaphor and Thought, 2nd edn, Cambridge: Cambridge University Press.

Lakoff, G & Johnson, M 1980. Metaphors We Live By, Chicago,University of Chicago Press.

Landoni, M 1997, "The Visual Book system: A study of the use of visual rhetoric in the design of electronic books", PhD thesis, University of Strathclyde.

Landoni, M & Gibb, F 2000, "The role of visual rhetoric in the design and production of electronic books: The visual book", The Electronic Library, vol.18(3), pp.190-201.

Laurel, B. (ed) 1990, The Art of Human Computer Interface Design, Addison-Wesley, USA.

Mackey, M 2001, "The survival of engaged reading in the internet age: new media, old media, and the book". Children"s Literature in Education, vol.32, no.3, pp.167-189.

MacWilliam, AG 2012, "The Engaged Reader: A human centred evaluation of eBook user experience", MSc dissertation, Edinburgh Napier University.

Malama, C., Landoni, M. Wilson, R. (2005) "What readers want: A Study of E-fiction usability", D-Lib magazine, vol. 11, no.5, viewed 12th September 2013, <http://www.dlib.org/dlib/may05/wilson/05wilson.html

Malama, M, Landoni, M & Wilson, R 2005, "What readers want: a study of e-fiction usability", D-Lib Magazine, vol.11, no. 5, viewed 13th. September 2013, <http://www.dlib.org/dlib/may05/wilson/05wilson.html

Mangen, A 2008, Hypertext fiction reading: Haptics and immersion. Journal of Research in Reading, vol.31, no.4, pp. 404-419.

McLuhan, M 1962, The Gutenberg Galaxy, 1st edn, Routledge and Keegan paul Ltd, London.

McLuhan, M 1964, Understanding Media: the extensions of man, 2 edn, Signet Books, New York

Nell, V 1988, "The psychology of reading for pleasure: needs and gratifications", Reading Research Quarterly, vol.23, no.1, pp 6-50.

Nell, V 1988, Lost in a book: The psychology of reading for pleasure, Yale University Press, New Haven, CT.

Nelson,T, H 1990. The right way to think about software design, The Art of Human-Computer Interface Design. B. Laurel, ed. Addison Wesley, Reading, MA. 235–243.

Obrist, M, Tuch, A, N and Hornbæk, K. Opportunities for odor: experiences with smell and implications for technology, In Proc. CHI 2014, ACM Press (2014), 1-8.
Ong, WJ 1982, Orality and Literacy: The technologizing of the Word, 1st edn, Routledge, London.

Pogue, D 2010, "The Apple iPad - first impressions", NYTimes.com, 28 January, viewed 13th September 2013, http://www.nytimes.com/2010/01/28/technology/personaltech/28pogue-email.html.

Reddy, M, J 1979, "The conduit metaphor -- a case of frame conflict in our language about language" in A Ortony (ed.), Metaphor and thought, Cambridge, Cambridge University Press
Reichenstein, O 2010, "Designing for ipad: reality check", ia.net, weblog post, 12 April, viewed 25 August 2013, <http://ia.net/blog/designing-for-ipad-reality-check/>
Rimmon-Kenan, S, 2002, Narrative Fiction (2nd edn), Routledge, London.

Roxburgh, S, 2012, "The e-Future", The Horn Book Magazine, March/April 2012, pp 10-21.
Saffer, D 2005, "The role of metaphor in interaction design", MA dissertation, Carnegie Mellon University.

Saffer, D 2010, Designing for interactions: creating innovative applications and devices, 2ndedn, New Riders, California.

Schcolnik, M 2001, "A study of reading with dedicated e-readers", PhD thesis, Nova Southeastern University.

Sobol, J, 2008, "Contemporary Storytelling: Revived Tradition Art and Protean Social Agent", Storytelling, Self, Society: An Interdisciplinary Journal of Storytelling Studies 4(2), pp. 122–33.

Skains, RL 2010, "The Shifting Author-Reader Dynamic: Online Communities as a Bridge from Print to Digital Literature", Convergence: The International Journal of Research into New Media Technologies, vol. 16, no. 1, pp. 95–111.

Wilson, R. Landoni, M., Gibb, F 2002, "A user-centred approach to e-book design", The Electronic Library, vol. 20, no. 4, viewed 12th September 2013, <http://www.cis.strath.ac.uk/cis/research/publications/papers/strath_cis_publication_26.pdf>

Wolf, M &Barzillai, M 2009, "The importance of deep reading", Educational Leadership, vol.66, no.6, viewed 20September, <http://ase.tufts.edu/crlr/documents/2009EL-ImportanceDeepReading.pdf>

Weldon, J, R 2012, 'The effect of digitisation on the novel', The International Journal of the Book, vol.9, no.4, pp.57-67.