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Digital Literature: Its Relevance and Prospects

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Abstract:

The literature exclusively created for digital devices like computers and mobile phones is acclaimed as Digital Literature. It became popular in last two decades, though video-games, devised in later part of 1970s, are considered the forerunners of Digital Literature. The first video game 'Colossal Cave Adventure' was created by a Programmer Will Crowther. It picturizes a story in which the character takes decision to explore the caves. In the same way, the other game Zork also had interactive fiction. It narrates a story, formed with hypertext links. In the same way, story, novella, poetry, comic series and cartoons, created with hyper-text, coding, graphics and generators provide poets or writers a plethora to express their art in a new manner. This upcoming literature is very interesting, innovative and influential yet it puts many challenges before the creators and users. Hence, the paper explores the challenges popping up on its way, how it will adopt and accommodate to print literature.

Keywords: Digital Literature, Images, Infographics, Hypertext, Coding, Generators.

Introduction

Information Technology has transformed the global scenario and has impacted every walk of human life. All fields like Trade and Commerce, Education, Architecture, Defence, Industrial, Scientific and Professional are swelling and expanding with the help of information technology. How literature that reflects the society, can remain untouched? After 1990, a significant advancement has been seen in print literature. It was posted online and Digital literature created through computation and software. Its reading and watching gives wonderful pleasure. Words move, turn here and there, up and down illustrate the meaning through graphics and images with sonorous musical sounds and voices on the screen of lap tops and mobile phones. It added a significant step in the journey of literature. It is amazing and became

possible with the advancement of information technology and invention of World Wide Web or Internet in 1990.

Electronic/Digital literature is completely different from print literature as well as print literature posted online with static pictures and recorded audios. Digital literature exists in a certain digital space for which it is developed, generated or coded. It is created, read and viewed electronically; it is not meant for printing. In digital literature, the writer experiences, expedites, illustrates the genres on electronic devices. "It is a new medium that acts as an intersection between the ever-growing digital world and the classic art of writing and story-telling." (Wikipedia) It is created with the help of hypertext links, coding, generators, images, graphics and animation. So, it is different from digitised literature. Digital literature is non-linear in style and very interactive in its form. In 1952, Christopher Starchy wrote a poem 'Love Letter' which was generated through algorithm. It is known as the first piece of electronic literature. Later on, in 1976, the first video game 'Colossal Cave Adventure' was developed by Will Crowther and the other text video game 'Zork' was developed by Tim Anderson, Marc Blank, Bruce Daniels and Dave Lebling in 1977 for the PDP 10 mainframe computer. They were text-based adventure games based on stories and became very popular. These video games paved the way for digital poetry, stories, novellas, comics, cartoons, animated children-literature and films.

Literature Review

Defining Electronic Literature, N. Katherine Hayles states that it is created digitally however Print literature available on computers in digital form is not considered digital or electronic literature because it is not generated through codes and programs. "The Electronic Literature Organisation has come up with another definition that encompasses printed works "refers to works with an important literary aspect that takes advantage of the capabilities and contexts provided by the stand-alone or networked computer". Its creation is dependent on computing technology: for example, Brian Kim Stefan's computer-generated poem *Stops and Rebels*" (Hayles) "Digital poetry is a form of digital literature that utilises electronic devices such as computers and mobiles to present the writer's work in new and creative ways. This form of poetry utilises techniques common to digital literature, such as the use of hypertext, coding, and generators. These are fantastic for art and give the poet new ways to express their art to be digested and experienced." (Wikipedia)

Digital story telling techniques comprise digital narratives like web-based stories, interactive stories and video games etc. It is also used for advertisements and promotion of commodities of commercial and non-profit enterprises. They are produced at workshops and Story Centre. The films, short films and advertisements have photographs, videos, still images and a musical sound track. Before that, a writer creates content or story. It is very interesting that the people, less familiar with technology, skilfully work on the moving images and sound, online or with a regular video editor software and create short stories easily. Nevertheless, the creation of stories requires a broad and deep knowledge of technology and its tools. Only then they can appear very aesthetic, artistic and interactive.

Probing deep, Espen Aarseth's defines ergodic literature in "Cyber text: Perspectives on Ergodic Literature", and states that hyper-text fiction and interactive fiction can be considered ergodic literature. Writing has always been regarded a spatial activity, it is reasonable to assume that ergodic textuality is treated as linear writing – for instance, the wall inscriptions of the temples in ancient Egypt were often connected two dimensionally (on one wall) or three dimensionally (from wall to wall and room to room), and this lay out allowed a non linear arrangement of the religious text as per the symbolic architectural layout of the temple" (Aarseth) This Ergodic literature digitalised in films, short films, stories, advertisement etc, become an emphatic means of entertainment, and information to the audience.

Objectives

Digital Literature is very innovative, interactive and interesting genre of literature however, it raises numerous questions before scholars about its creation and creator. The pleasure felt by William Wordsworth to see the Daffodils through eyes, heart, mind and spirit can be felt or not through audio and visual techniques, is a big question, however, 'an inward eye' or 'virtual realization' which will take the reader-viewer from concrete to abstract and from sensation to pleasure, is a point to ponder. The present paper is confined to the relevance and prospects of the Digital Literature.

- To investigate and comprehend the meaning of Digital Literature.
- To analyse how Digital Literature is computed and generated.
- To explain the relevance and discuss the prospects of Digital Literature.

Methodology

The paper is exploratory in approach and it is based on the analysis of prior studies and experimentation done in digital literature. The available literature provides an ample scope to understand, analyse and interpret the perspectives in which Digital Literature is different from print and digitised online. Digital literature is non-linear and keeps the reader-viewer active. He is outside the genre yet becomes an integral and active part of the poetry, story and novella. In printed literature, the reader reads and interprets literature himself and comes to his conclusion. The reader becomes an independent entity. Hence to infer the relevance and to explore prospects of Digital literature, the qualitative method would be adopted.

Research Analysis: Digital Literature

In last decades, with the advancement of digital technology, more tools like animation, audio editing, video making apps, infographics and software within the sphere of literature are used to create poetry, story and films. So, the right word to be used for these poets and story-tellers should be ‘producer-creator’ because they use these tools and make digital literature more interesting and fun loving. Furthermore, the reader is not only the reader, he adopts many roles-- he becomes a ‘reader-viewer’ and active-partner. To enjoy the poetry or story, he has to use a cursor to tap, imagination to act and intellect to interpret. Animated films in 21st Century has brought a revolution through 2D, 3D Animation and motion graphics. It has its vistas of fun and pleasure. Moreover, we are advancing towards Artificial Intelligence which will bring forth miracles in near future. Now question arises this literature can substitute print literature. It is under critical glance. Meaning is explored through words and structures in texts, but here words are expressed through algorithms, codes and graphics etc.

Digital Poetry

Digital Poetry is created with the help of hypertext, coding, visual images and music etc. There are many types of digital poetry for example Hypertext, Kinetic, computer-generated animation, digital visual, code poetry, Interactive and experimental video poetry. It started with digitised poetry in which the poets write their poems with some visual images, floral designs or drawings. Neither they had movements nor they had sounds. Matti Kangaskoski writes about reading of Digital poetry, there are three levels -- interface, interact and interpretation. ‘Interface consists of the means of engaging with the poem. To Interact, particular

configuration of concrete and abstract (technical, basic, qualified) forms are required. Interpretation covers the means of understanding what is read and setting in a broader context.’ (Kangaskoski) Explaining these three levels further Matti divides the interface into the element of data (text, music and images), process (temporal control and text generation) and medium (as material and conceptual). Interpretation includes logic, performance and effort. Interpretation includes the effect produced by the poem and understanding of the meaning. Hence, this Digital poetry can be created in many ways.

A-Generative Poetry

Generative Poetry is created by algorithms and corpus to produce poetic lines. An algorithm is a method to solve a mathematical problem through computation. It is a list of instructions by which a specific action is performed while a corpus is a collection of linguistic data stored in a computer data base. So, Algorithm is step by step procedure which is followed to acquire certain result. It has its definiteness, finiteness and complexities of time and space. The poem ‘Love Letter’ based on the algorithm is known as the first poem of Digital literature. It was generated by Christopher Strachey in 1952. It has following steps—

- Take two words of salutations.
- Do the following five times.
 - I- Choose one of two sentence structure as a random value Rand.
 - II- Use adjectives, adverbs, noun and verbs.
- End with closing words.

Love Letter by Christopher Strachey

“Darling Sweet heart

You are my avid fellow feeling. My affection curiously clings to your passionate wish.

My liking yearns for your heart. You are my wistful sympathy: my tender liking.

Yours beautifully

M.U.C.” (Starchy)

B-Hypertext Poetry

Hypertext poetry uses hypertext markup language. It is in virtual form and it does not have a set order; it gives choice to the reader as it is generated through links. A reader taps on

the links and it moves on according to the choice of the reader. Basically, it uses the standard markup language for writing poems designed to be displayed on a web browser. It uses cascading style sheets (CCS) to describe the presentation in a scripting language like Java. The example of an earliest Hyper poem composed in 2006 written in hypertext is given below. It looks very interesting to see on the screen one line jumping after the another.

A Day
Ferdinand I Sanchez II
First kissed and touched
Then their kins awoke
Fall out of their flat
Everywhere they go anywhere they blow
Hands ticktock
Clacking on the floor
Doors start to lock
But some find some more
Present you unfelt
Loud but soft
And full however scant. (12 Thomson)

HTML constructs structured documents (images etc) through structured semantics for text. It can use audios and videos to describe the presentation. It is created in following

```
<HTML>  
< BODY>  
<TITLE> A Day <TITLE>  
< TITLE> < I > Ferdinand I Sanchez I <TITLE I>  
< BODY> <I> First kissed and touched < B I>  
< / HTML>  
< / BODY>
```

C-Code Poetry

Code Poetry is created through computer codes and animation simultaneously. The reading and animation communicate its meaning. It is written in computer codes and is read aloud. So, it serves two audience—men and computers. It is very exciting to hear as the poetic lines in computer codes are read aloud with visuals. Sometimes, it is misunderstood as video-poetry. In video poetry, the poem is scripted in background and one enjoys the visuals that complement each line. However, code poetry has its programming in code language. Through the hyperlink, one could see the psalm 23 from the Bible in code language created by Leslie Wu in 2013.

D-Kinetic Poetry

The term ‘kinetic’ has been derived from the Greek word ‘kinen’ meaning to move. “.....it is today mostly deployed, the composition of methods that output textual movement—such as transitions, time outs and intervals—incorporate temporality in the process of coding and display of writing.....Kinetic poetry is a form of poetry that relies on spatiotemporal transitions with expressive literary, visual and aural layers.” (Seica 173) It includes text and movements and creates visual images with the help of music and sounds. These poems are very interesting to watch. Concrete Poetry was born in Brazil and popularized in Europe. In 1968, May Ellen Solt’s anthology ‘Concrete Poetry: A World View’ was a collection of visual poems, some of them were composed by her also. These poems were more dynamic and paved the way for kinetic poetry. In 1964, in the First International Exhibition of Concrete and Kinetic poetry, some poems of Kinetic poetry were shown, among them were—John Sharkley’s OPENWARDROBE a film poem, Weaver’s Tempoem, Maria Cruxent’s text Melromane. Later on, it became famous as a fine synthesis of language and multimedia. ‘Word Crimes’ by Weird Al Yankovic and Jarret Heather is a remarkable example of kinetic typography with evocative visual images.

In 21st century Graphical User Interface and Internet transformed Digital Poetry were enriched by HTML links, animated GIF, DHTML applications. The latest Holo poetry introduces third and fourth dimensions in letter shapes. Brian Kim Stefan’s, *The Dream Life of Letters* (2000), David Jhave Johnston’s *Sooth* (2005), Paul Ryan’s *Slipping glimpse* (2007) and David Clark’s *88 Constellations For Wittgenstein* (2009) are the other examples of Digital Poetry. Brian Kim Stefan’s *The Dream Life of Letters* (2000) is based on text and kinetic two

dimensional space. It was written in response to Du Plessis's text, as the poet states himself in the prologue. Here the letters of the alphabet crash and tumble down and make words, form structure and take their meaning at the will of reader-viewer.

Digital Story

Like poetry, Digital Stories and novellas are created with the help of multimedia features like text, hypertext, images, video, audio, infographics and illustrations. Digital tools and software like editing of videos, voice over narration, title screens etc make them user friendly. With the help of these tools, the writers create hypertext, web-based, interactive and animated stories. Like poetry, they also follow non-linear path and work on the choice of readers. In 1996, 'Afternoon' and 'Twelve Blue' first web hypertext stories were created by Michael Joyce with the help of frames and images maps. 'Gabriella Infinita' is another example of a Latin American piece of literature created by Jaime Alejandro Rodriguez. It is a hypertext novella developed with flash and videos. There are three parts of this novella- Ruins, Moving and Revelations. Gabriella is a pregnant girl, who comes to meet his boy-friend Federico and go on adventures. Deviant, The Possession of Christian Shaw by Donna Leishman is a graphic based historical story of Christian Law and her demonic possession. Later on, Ken Burns prepared a digital documentary 'The Civil War', it depicts the tragic event of American history.

Digital Films

Computer animation refers to moving images. Computer generated imagery has more visual effects because it is created through multimedia software and animated GIF. Dana Atchley gave the concept of "Short narrative films" at the workshop organised at the American Film Institute in 1993. It was promoted by Joe Lambart, consequently digital stories were produced. In India, the first animated film, 'Pandavas: The Five Warriors' was produced at Indian studio Pentamedia Graphics in 2000. It was directed by Usha Ganeshrajah; it received the National Film Award for Best Feature Film in 2000. 'Punyakoti: A Truthful Mother' made at Puppetica Media, directed by Ravi Shankar Venkateswaran is the first Sanskrit language film released in 2020. Academy Awarded film The Incredibles and Disney Animated Film The Lion King, and other films like Spider-Man: Into the Spider Verse, Beauty and the Beast and The Ice Age etc. kept the audience spell bound. Spider-Man Across the Spider-Verse written by Phil Lord, Christopher Miller and Dave Callahan is the latest computer animated film. Besides, there are numerous films in Hollywood and Bollywood which are known for Visual

Effects and creativity and innovations. The innovative techniques in animation, GFI and VFS charmed the world of cartoons, mimes and advertisements.

Research Analysis: Digital Literature and Its Relevance

Due to new technologies and innovative software, digital poems and stories have become more exciting, creative and catchy. Presently, digital literature has been used in the class-room, at Primary level because the young children feel attracted towards colours, movements and sounds. In Secondary and Higher Education also, printed literature in digitalised form makes the class room teaching interesting and easy to understand. However, introduction of Digital Literature and its innovation is yet to be introduced in India. It should be the part of the program of English Literature. Keeping this in mind, Digital Literature and Literature in Digital Electronic, Literature and Artificial Intelligence have been introduced as GIAN courses at Aligarh Muslim University Aligarh. The students are trained to use software like IMovie and Microsoft photos etc. to create games and literature.

Kim Anderson, a licensed clinical social worker treats her clients, suffering from domestic violence and abuses through digital stories. Her works and case studies are taught at the University of Southern California and Zur University etc. Thus, story-telling can be used as a therapy. This literature can be used to break the ice, analyse and synthesize the information and to give better understanding of the topic. "Government school students from Bengaluru district of Karnataka, India used digital story-telling to design narratives of their interactions with local institutions such as banks, primary health centres, libraries, shops, police-stations, post offices etc

Its Future Prospects

In India as well as in Europe, Epics were written ages before. 'Ramayana' by Rishi Valmiki, 'Mahabharata' by Rishi Ved Vyas, 'Odyssey' and 'Iliad' by great Greek poet Homer, 'Aeneid' by great Roman poet Virgil, 'Paradise Lost' and 'Paradise Regained' by John Milton are the magnum opus of their languages. They are not only religious and heroic works, but accumulation of ideas, mythology, culture, emotions, human values and experiences which will guide the posterity in coming eras. To interpret and analyse these epics, numerous critical theories have been propounded, uncountable lexical expressions, poetic devices, prosody, structures and intonation schemes are used. In realm of poetry, different forms like Odes,

Elegies, Dramatic Monologues, Haiku and Lyrics can be created in digital form. However, the generation and creation of epics seem doubtful. On the epics, digital films are produced yet the future of digital epics seem beyond thoughts. In fiction and non-fictional works, the beauty of words, styles, narrations and prose devices can not be substituted by animation, graphics, visual effects and other programmed software; they can co-exist.

In print-digitised literature, the reader is outside of poetry or fictional world of the story. He is not an independent entity; he encounters plots, themes, incidents through text and interact or identify with characters as a reader; he keeps himself active emotionally, mentally and morally and infers his interpretation and meaning accordingly. In digital literature, the viewer-reader is not outside the text; he becomes an integral part of the poem or story. He becomes an independent entity; he adopts a role, moves according to his own will and explores meaning of generated poem, story or film etc In Print/ digitised Literature, the poet or author is a producer and the reader becomes interpreter who interprets the meaning of the text. However, in Digital literature, the reader- viewer becomes a consumer in technical language to infer the meaning.

About Digital Literature, another specific fact is that it cannot be ‘a spontaneous overflow of powerful feeling that takes its origin from emotions recollected in tranquillity.’ To create a poem or piece of fiction, the producer-poet should have adequate knowledge of Computer Science and Information Technology. He should be well-versed in computer languages, software- programs, coding and other audio-video graphics techniques. In fine, he should be techno-savvy, it bounds the poetic-creation in a chain though creation can not be kept in boundaries. Mahrishi Valmiki, Kabir Das, Tulsi Das, Soor Das, Homer and Virgil did not attend any university, they had knowledge and sublimity innate in their souls. It flourished out of their souls and illumined the world. The souls communicated to the souls through language. Here, in digital literature one more means has been added i.e., machine (COMPUTER) and one more type of pleasure is added i.e. technical pleasure.

About drama as a genre, it is a well-established truth that its enactment proves its excellence, instead of reading because it is a performing art. The digital techniques are very helpful to enhance its impact and in bringing the desired result. Hence it can be concluded that Print-Digitised Literature and Digital Literature are two different entities; they cannot replace each other, though, they are the counter parts of each other. Only the threat seen in future is that number of readers of print literature are decreasing day by day, the young generation relish

print-digitised or digitally created literature. They like to watch stories, web series and films digitalised. This digitalization is generating a new opportunity for the content writers, though they are deprived of Intellectual Property Right at this time; they remain behind the curtains so they are not recognised as poets and writers. In the end, if, we throw a glance on printed and digital literature, we come on following conclusions.

	Printed / Digitised on Computer literature	Digital Literature
1-	The poet / writer is outside of text.	Viewer- reader becomes the producer.
2-	Reading text is a passive skill.	Viewer- reader is active. Hence it becomes productive skill.
3-	The outcomes are fixed, sometimes, they are left on the imagination of the readers.	They are left to the imagination of the viewer-reader.
4-	Text is important.	Visual art, sound and software are more important.
5-	It is didactic and realistic.	The process through which language gets mixed with technology becomes more important with the message.
6-	It gives aesthetic, intellectual, emotive and spiritual pleasure.	It gives artistic and technical pleasure also.
7-	It is universal and touches the heart, mind and soul.	It appeals first mind then heart.

Table 1

It is inferred that the printed and digital literature have their significance, neither they can replace each other nor they can be substitute of each other.

Conclusion

Though, Digital literature is advanced and high-tech, it cannot replace print literature, as words delved in emotions, convey meaning more ardently and significantly without infographics. Epics can be digitalised through infographics and animation; however, the beauty of poetic diction, grand style, poetic devices and sublimity can only be enjoyed through print

literature. In fact, Digital literature is very helpful in class-room teaching from Primary to Higher Education level. It is beneficial for children as it is more fascinating due to animation and graphic-movements. Keeping this in mind, NEP 2020 has included Literature in Films and Multimedia into syllabus of English.

Lastly, one should not forget the upcoming offshoots of Digital Literature that is Blogs and Twitterature, and the famous films--The Lion King, Ratatouille, The Incredibles and Avtar1, Avtar2, Spider-Man Across the Spider-Verse etc. However, literature in true sense is more sublime, it is felt through blood, goes to heart then to mind and gives pleasure too soul.

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