Do E-books overpower printed books: Student's eye view

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ABSTRACT

E-books are gradually gaining an important role in the academics as we are witnessing a shift towards digitalization. The aim of the study was to identify the preference for reading e-books or printed books among the students. A cross sectional survey was conducted among 500 students of age between 18-28 during the COVID-19 pandemic period. A questionnaire was formatted on google forms and circulated through various social media. The data collected was analysed statistically. The mean age of the students was 23+2.47 years, out of which 338(67.6%) were females and 157(32.4%) were males. Among the students 364(72.8%) suggested e-books were environmentally friendly and contribute to control the issue of global warming to a greater extent. Adding e books in academic libraries was supported by 386(77.2%) students. The ease of adding images to e-books have instilled an interest among students to opt for including e-books in their academic libraries device they preferred mostly for reading e-books were mobile phones 261 (52.2%).The shortcoming of mobile usage for reading includes distraction by the notifications which were agreed by 424(84.8%) students in our study. 66.8% preferred printed books majorly because of eyestrain, battery issues and radiation exposure. In this generation, Students prefer new technology but preserve the old customs. So e-book will become popular but will never replaces printed books.

***Keywords**: Eyestrain, Distraction, Digital Books, Illustration, Mobile Phone*

1. INTRODUCTION

In this epoch, we can appreciate the replacement of printed resources with electronic resources. Technology has been victorious in changing the way things have been done previously. Some of the leading developments are e-mail, e-shopping, e-banking, and e-learning [1]. Michael Hart was the one who created the first e-book in 1971. The term e-book was first coined by Van Dam in the 1960s.E-books are gradually gaining an important role in the academics as we are witnessing a shift towards digitalisation. With completely different definitions inside the multiple sources, the e-book definition relevant to the study is electronic format or additional written books or a content utterly created in electronic atmosphere which might be displayed, accessed, revealed on a non-public laptop, or on any modern electronic device. E-books are going to essentially embody a book reader hardware and made text options package (marking the text, note taking, bookmarks etc.) to permit for constant functions performed throughout ancient reading [2]. E-books are typically scanned with varied devices and tools such as Kobo eBook Reader, Oblio, kindle, ReederLITE, reedPAD2, eInk additionally as desktops, pill computers, iPhones and iPads, mobile phones, and navigation devices [3]. With the development of smartphones and palmtop the students wish to read anywhere and everywhere. The main advantage of e-books to majority of the readers is the ability to download and read combined with ease of access. Few music players also scan e-books which can be used by students for audio narration to familiarize with new words and enhance their vocabulary. Technological proliferation can facilitate a rise in quantity of e-book usage.[4]. The emergence of ebooks allows update along with other aspects like simple use, interaction and accessibility.

Students will have to make a choice on which platform they prefer to read based on multiple options that must be carefully thought out while making the decision. E-book reading comes with lot of benefits for users compared to reading printed books. For example less paper usage, e-books take up less space and are simple to hold, looking out and note-taking is far e7asier, the font size are typically modified as desired, getting is far quicker and easier, preservation and protection is straight forward. This study was conducted to analyse factors that contribute to e-book adoption. By yielding a far better understanding of reader choice and preference for e-books and print books, the results of this study will help libraries and knowledge institutions make important

decisions on collection acquisition and management. The aim is to determine how portability, readability and cost affect user choices when deciding between an e-book and printed book. The results also will help libraries, institutions, publishers, data system developers, and knowledge providers generally to adapt to a different generation of readers.

2. MATERIALS AND METHODS

This study was designed to assess the preference of ebooks versus printed books. A cross sectional study was conducted among students from age group 18-28 years in India. It was conducted in South India from June 2020 to August 2020 during the COVID-19 lockdown period. The target population were the school and college students who used e-books for tutorial purpose or hobbies. This questionnaire comprised of 25 questions in English which included demographic details, socio-economic status and questions collecting information on printed book reading habits, e-book reading habits (methods of obtaining, aim of usage etc.) and technological knowledge (e-book related tools, file format) etc. Questions were designed to know whether the selections made by the students were influenced by the electronic devices they owned. The questionnaire was then converted into online filling format using Google forms and shared through Whatsapp, Instagram, Telegram and Facebook. The questionnaire had a combination of selected response to the question and close ended questions (yes/no). It took about 8-10 minutes to complete the survey. In the introduction, students were informed briefly on the aim of the study and assured that data obtained would only be used for the stated purpose of the study. Form limiter was used to limit multiple responses from same participant and to limit the data collection up to 500 responses. The collected responses were analysed using SPSS software.

3. RESULTS

This study was conducted to evaluate the preference of e-books versus printed books among the students. A total of 500 samples were collected. The age of the students ranged from 18-28years (mean age-23$\pm$2.47 years) out of which 338(67.6%) were females and 157(32.4%) were males [figure-1]. Figure 2 shows that 343(68.6%) had the habit of reading fiction/ non-fiction books apart from textbooks.
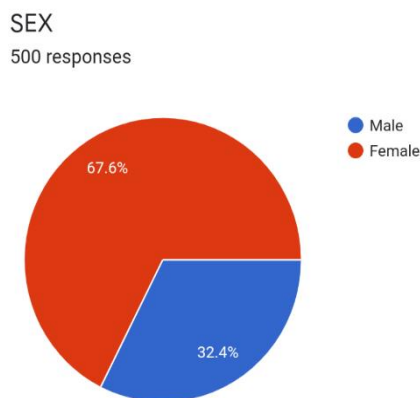

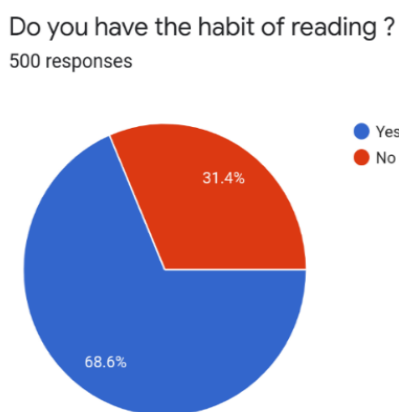**Fig. 1: Distribution of the students based on gender**

Fig. 2: Distribution of students who have the habit of reading fiction/ non-fiction books apart from textbooks

Table 1: Distribution of students according to demographic details

Questions	Options	Frequency	Percentage%
Education of the family head	Graduate	210	42.0
	High school certificate	83	16.6
	Illiterate	12	2.4
	Intermediate or diploma	89	17.8
	Middle school certificate	27	5.4
	Primary school certificate	3	.6
	Profession or honours	76	15.2
Total monthly income	<6,323	8	1.6
	>126,360	41	8.2
	18,953- 31,589	69	13.8

	31,591 - 47,262	106	21.2
	47,266 - 63,178	110	22.0
	6,327 - 18,949	55	11.0
	63,182 - 126,356	111	22.2
Do you have the habit of reading fiction/ non-fiction books apart from text books?	Yes	343	68.6
	No	157	31.4
Which device do you prefer for reading e books?	Mobile	261	52.2
	I-pad	78	15.6
	Books	3	0.6
	Laptop	148	29.6
	Palmtop	4	0.8
	Not prefer reading books	1	0.2
	None	5	1.0
Which app do you prefer for reading e- books?	Amazon kindle	202	40.4
	Google play books	209	41.8
	Kobo	10	2.0
	Google	5	1.0
	None	21	4.2
	Pdf	8	1.6
	Pratipili	8	1.6
	Random websites	11	2.2
	Storytel	6	1.2
	Telegram	8	1.6
	Wattpad	12	2.4

Table 2: Distribution of students according to their preference of e-books or printed books

Question	Option	N	%
Have you purchased any e book or a printed book during the lockdown period?	E-book	58	11.6
	Printed book	170	34.0
	Both of the above	56	11.2
	Neither of the above	216	43.2
Do you think adding e-books in your academic libraries increases your interest to study?	Yes	386	77.2
	No	114	22.8
Do you think animations and digital illustrations make e-books more attractive?	Yes	439	87.8
	No	61	12.2
Do you think changing font styles is an advantage in e-book?	Yes	414	82.8
	No	86	17.2
Do you have sufficient knowledge about hardware and software issues related to e-book?	Yes	223	44.6
	No	277	55.4
Do you face any difficulties in highlighting/ underlining important points in e-books?	Yes	241	48.2
	No	259	51.8
Do you think e-books are environment friendly than printed books?	Yes	64	72.8
	No	136	27.2
Is theft protection an advantage of e-books while travelling?	Yes	364	72.8
	No	36	7.2
Do you think e-books prevent lost page anxiety?	Yes	385	7.0
	No	115	23.0
Will e-book increase the readership among students?	Yes	377	75.4
	No	123	4.6
Do you agree that shipping and handling charges is an advantage for e-books?	Yes	408	81.6
	No	92	18.4
Do you think printed books are cost effective than e-books?	Yes	339	67.8
	No	161	32.2
Do you think level of understanding is higher when you hold the book in your hand?	Yes	339	67.8
	No	161	32.2
Do you think memory retention is more with printed books?	Yes	124	24.8
	No	376	75.2
Do you think screen control while reading books demands precision?	Yes	101	20.2
	No	399	79.8
Do mobile notifications distract you while reading?	Yes	424	84.8
	No	76	15.2
Do you think printed books reduce eye strain compared to e-book?	Yes	422	84.4

		No	78	15.6
Do you agree that printed books are tradable while e-books are not?		Yes	390	78.0
		No	110	22.0
Do you feel an emotional connectivity of printed books more than e- books		Yes	399	79.8
		No	101	20.2
Do you think digital note taking process is more difficult?		Yes	380	76.0
		No	120	24.0
Do you feel like you have genuine ownership towards printed books?		Yes	384	76.8
		No	116	23.2
Does license restriction for an e-book a disadvantage?		Yes	385	77.0
		No	115	23.0
Do you think eye movement differs while reading e- book?		Yes	386	77.2
		No	114	22.8
Will e-book lending business work in future?		Yes	410	82.2
		No	90	18.0

Most of students 334(66.8%) responded that they preferred printed books and the remaining students 166(33.2%) preferred E-books.

For most of the student's parents were well educated 210(42.0%) and supported their children economically. Most of their parents were professionals 145(29%) and 96(19.2%) were associate professionals. The students preferred mobile phone for reading e-books 261(52.2%). Amazon kindle and Google play books were abundantly used.

When questioned about their interest in adding e-books in academic libraries 386 (77.2%) of participants showed their interest in adding e-books in their academic libraries and device they preferred mostly for reading e-books were mobile phones 261 (52.2%). Most of the students, 377 (75.4%) accepted that reading e-book will increase the readership among students. Among the students, 423(84.6%) agreed that mobile notifications caused distraction while reading. And most of the students 399(79.8%) agreed that they did have an emotional connectivity with printed books when compared to e-books.

When questioned about whether 'they preferred printed books or e-books' 334(66.8%) of them said that they mostly preferred printed books and 166(33.2%) of participants said they felt comfortable reading e-books.

4. DISCUSSION
This study aimed the preference of students regarding pros and cons between printed books and e-books. The findings revealed that a large part of students preferred to read printed books, even though students could access technology anytime and anywhere they wanted. The main reason they did not prefer e-books was that printed books reduced eye strain. The other reasons were that printed books were cost effective and that the level of understanding was higher. Note making and screen control in e-books has always demanded more precision and extra effort, e-books were prone to distract while reading with the pop-up notifications and messages so it might affect the productive reading of the candidate. Majority of students had opted for the fact that e-books were environment friendly and contribute to control the issue of global warming to a greater extent. The ease of adding images to e-books have instilled an interest among students to opt for including e-books in their academic libraries. Majority of the students felt that they had genuine ownership and emotional connectivity towards the printed books.

In a study conducted by Chuks Daniel Oriogo (2018) [5] in the University of Africa Toru Orua Nigeria, almost all the students responded that they read on a mobile device. In the present study, 261(52.2%) preferred reading on mobile. The shortcoming of mobile usage for reading includes distraction by the notifications which were agreed by 424(84.8%) students in our study.

In a contemporary study, Vakkari (2012) [6] observed a positive correlation between 'how the utilization of the internet corresponds to use of the public library in different areas of day to day life like studying.' According to our study adding e books in academic libraries was supported by 386(77.2%) students. The ease of adding images to e-books have instilled an interest among students to opt for including e-books in their academic libraries. Digitization of the books serves as a virtual library and replaced the utilisation of public libraries.

Maud Purcell, a psychotherapist stated that "writing stimulates the RAS (reticular activating system) part of brain, which filters and provides clarity concerning information being focused," by which we can conclude that note making in print books was easier and smarter way of learning. But in our study 380(76%) students stated digital note taking process were more difficult for them than that of taking notes in conventional books.

A study conducted among students of Univesidad Nacional Autonoma de Mexico (UNAM) [7] revealed most of the students preferred printed books because they could not read a document on computer screen for more than 1 hour. In our study 66.8% preferred printed books majorly because of eyestrain, battery issues and radiation exposure. To overcome this, kindle has developed which had an edge over other e-readers by reducing the eyestrain using a special technology known as "e-ink" which eliminates the emission of blue light that cause retina damage.

In a study by Frederickson et al [8] the participants stated license complications of single or multiple users and inter library loan of e-books was a disadvantage. According to our study, the respondents 385(77%) stated license restriction was a disadvantage. The probable reason could be the authority owned by the publisher to detach that particular e-book from the reader's device.

In a study by Irene Lopatovska [9] the participants expressed environmental sustainability and annotation capabilities were beneficial for readers who used it for academic purpose. The present study respondents 364(72.8%) suggested e-books were environmentally friendly as trees can be saved from being used up for manufacturing papers and eventually books and contribute to control the issue of global warming to a greater extent.

The present study displayed 277(55.4%) of students had faced hardware and software issues related to e-books, similarly in a study conducted by O'Hare and Smith 2012 [10], students stated they lacked compatible hardware and software needed for e-books. Hardware and software required to process E-books were expensive than printed books.

Siegenthaler et al. [11] compared reading process on e-books versus print books and spotted notable differences in eye fixation duration in which the subjects were given the option of setting font size according to their convenience, and this resulted in quite different page layouts. In our survey 414(82.8%) of people answered changing font style made e-books comfortable to read.

In a study by Irene Lopatovska[9] participants suggested a nostalgic attachment over printed books. According to current study, 399(79.8%) respondents agreed that they had an emotional connectivity with printed books because these books have been in use for more than decades. It gives them a feel of ownership, good memory retention, pleasure of smell and feel of a book (tactile sensation), appreciation of their book collections

Rainie et al. (2012) [12] reported the downfall in the preference of print books between 2011 to 2012. According to our study results they suggest that this decrease may be linked to lower demand because of portability and theft protection which is an advantage of e-book.

According to Cynthia L. Gregory survey [13], students responded that they have mixed feelings about usage of e-books in their online classes, they stated that E-books would be a good source to find things, but it will not be good if print were not there. According to our current study 334(66.8%) students preferred printed books though they stated e-books had more advantages than printed books.

In our study, 76% of the students opted that they faced difficulties while taking notes in e-books. This might be attributed to the precision that e-book handling demanded, and 79.7% students had agreed to this statement. About 77% of students felt that e-books prevented lost page anxiety because, in conventional print books, a page when lost while reading makes us anxious whereas in e-books one has search option and that particular page can be accessed immediately without much effort.

According to Rosso (2009) [14] advantages such as portability, compatibility, convenience and user-friendly features were the important factors in preferring e-books. Notwithstanding these advantages mentioned, in the present study, 390(78%) students stated that printed books were marketable because they had resale value, 339(67.8%) students responded printed books were cost effective whereas e-books were not. These results were somewhat puzzling as another finding of the research indicated that most of the students reported that e-book will not become the first option for them in the future.

The results also indicate some level of uncertainty among students on whether they preferred e-books or printed texts. This could be attributed to insufficiency of adequate exposure to advantageous features of e-books. Printed books have a powerful link with the actual reading experience. It was evident that a large part of students preferred to read printed books, even though students had the opportunity to access technology anytime and anywhere they wanted.

5. CONCLUSION
In contemporary cultures, digital picture books are becoming popular and easier to access. Despite the advantages of e-books traditional books have secured the influence among most of the students. In this modernistic world, mix and match always exists. We adopt new technologies but adapt to old methods. As printed books have been used more than decades, they are preferred whereas e-books are under evolution. Being able to view a computer-generated 3D model of the image provides augmented reality experience. Hyperlinks and hierarchical organization of the contents can improve learning performance and the possibilities offered by e Reader tools to change the font size and audio is a boon for visually impaired people. Finally, the storage capabilities of e-Readers and tablets add further benefit to the use of these technologies.

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