

Academic Reading Format Preferences and Behaviours: An Exploratory Study amongst Undergraduate African University Students

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Abstract

To be academically successful a university student is required to read extensively on topics related to his or her field of study. The current proliferation and availability of electronic academic reading materials on various online platforms require academic staff to gain an understanding of their impact on the format preference and reading behaviour of students. Knowledge of emerging trends can guide academic staff to provide reading materials in the format best suited to the reading preferences of students. To establish the current format and reading behaviour trends a multiple case study design was employed targeting undergraduate students from the University of Zululand, South Africa and Delta State University, Nigeria. A questionnaire was used to collect data from a sample of 237 students. A combined return rate of 69.9% was achieved. The findings revealed a strong preference for reading textbooks in printed format. The preference for reading documents in electronic or print format was influenced by factors such as the length of the document, the purpose of reading the document, and whether the document is written in the student's native language or not. External factors such as access to electronic gadgets and data, and the cost thereof, as well as peer pressure also influenced preference for a specific format. The study recommends that regular surveys should be conducted in academic institutions to keep track of current and changing trends in the format preferences and resultant reading behaviour of the students to enable academics to adapt their prescribed reading materials to a format best suited to the students' preferences.

Keywords: academic reading behaviours; electronic format; print format; University of Zululand; South Africa; Delta State University; Nigeria



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Introduction

For a student to be academically successful, it is important that they can read their course work with a deep level of understanding. Studies by Eshet-Alkalai and Geri (2007) and Mangen, Walgermo, and Brønnick (2013) show a close relationship between the effectiveness of the brain to process and understand what is read and the format in which the information is read. It is therefore important for academic staff to establish how students prefer to read their course work materials as this might impact directly on students' academic performance. A recent study by Mizrachi et al. (2018) also established that certain reading behaviours directly related to the format used and the task at hand played a role in the learning engagement of students. To enable students to perform optimally in their academic endeavours, it is important to understand how the choice of a specific reading format influences the students' engagement with the required academic readings, their understanding and assimilation of what is being read, and what behaviours are displayed in the use of a specific format.

At any level, students are expected to engage with academic reading materials for various purposes, be it to broaden their knowledge about a topic discussed in class, for class preparation, to do assignments or research or to prepare for assessments such as tests. Mizrachi (2015) defines academic reading as "readings of any origin (monograph, textbook, course reader, journal article) required, needed, or used to fulfill coursework." These materials can be available in print or electronic format or in both formats. The choice of which format to use might depend on a variety of factors such as availability, cost, ease of use and so on, and most probably also on the purpose for which the information contained in these sources is required by the student. With the proliferation of technological devices to access digital information it might be assumed that the preference among students would overwhelmingly be to utilise these digital sources; however, it might not necessarily be the case as some factors, such as ease of reading, available broadband, access to Wi-Fi, and the cost of data bundles, could impact on their final choice.

This study forms part of a global study called the Academic Reading Format International Study (ARFIS) that is currently undertaken in various countries on all continents. The aim of the international study, and therefore also this study, is to investigate university students' behaviours and attitudes related to reading their academic texts on electronic screens and in print. As Africa has not yet been represented in this study, this article attempts to close this gap by seeking to understand academic reading preferences and the influence that certain behaviours and attitudes related to the choice of format has on the students' learning engagements. The study was conducted among the students in the Department of Library and Information Science, Delta State University (DELSU), Nigeria and those in the Department of Information Studies, University of Zululand (Unizulu), South Africa. It is envisaged that the findings will contribute to global knowledge in terms of the format preferences, attitudes and behaviours of African students. This information can be helpful to lecturers and library

staff who strive to provide academic reading materials to students in a format that will enhance their reading and understanding of the course materials prescribed to them, thus enhancing their whole learning experience. The findings from this study could also be incorporated into the curriculum during a review of Library and Information Science programmes.

The following objectives guided the study:

- To establish students' format preferences when engaging with their academic readings;
- To determine how academic learning engagements employed by a student impact on format preference (self-reported behaviours);
- To establish whether the language of reading influences format preference.

Contextual Setting

DELSU is one of the 91 public universities in Nigeria, situated in Abraka, Delta State (DELSU at 25, 2017). The Department of Library and Information Science, which forms part of the Faculty of Education, was one of the first departments established at its inception in 1992. The Department runs four programmes at both undergraduate and postgraduate levels (DELSU at 25, 2017).

Unizulu is one of the 26 public universities in South Africa, and is a rural university situated close to the port city of Richards Bay in KwaZulu-Natal province. The Department of Information Studies forms part of the Faculty of Arts and was established in 1976. The Department runs five programmes at both undergraduate and postgraduate levels (Department of Information Studies n.d.).

Theoretical Framework

The Technology Acceptance Model (TAM) developed a few decades ago by Davis in 1989 is still one of the most popular models used in the Library and Information Science (LIS) field to measure the acceptance and use of new innovations (Charness and Boot 2016), though it was expanded by Venkatesh and Davis in 2002 (TAM2) and again by Venkatesh and Bala in 2008—their model is better known as TAM3 (Lai 2017). The basic TAM model was, however, used for this study as it best addressed the issues of attitude towards and usefulness of specific reading formats in which information is presented to students.

Davis based his model on two beliefs, that is, perceived usefulness (PU) and perceived ease of use (PEOU) (Lai 2017). Davis (1989, 320) defined perceived usefulness as “the degree to which a person believes that using a system would enhance his or her job performance” and perceived ease of use as “the degree to which a person believes that

using a specific system would be free from effort” (Davis 1989, 320). According to Alwahaishi and Snášel (2013), in his 1989 article Davis alluded to the fact that the relationship between perceived usefulness and a technology’s adoption was stronger than that between perceived ease of use and its adoption. This led the authors to suggest that the decision to use a technology is mainly based on its perceived usefulness. In the current study, the assumption was made that the reading patterns and use of a specific technology to access and read information would be mainly based on the perceived usefulness of that specific technology to provide the required information, and not necessarily on the ease of use thereof. The reason for this assumption is that the current cohort of students have been exposed to information technology their whole life and they should therefore not be overly concerned by its ease of use. However, they might base their decision on how useful a specific format might be on the purpose for which the information needs to be read and used.

Literature Review

Based on a recent study of 10, 293 students worldwide, Mizrachi et al. (2018) postulate that the current knowledge about the preferred reading formats and their suitability and impact on students, in terms of their usability, support of the learning process and comprehension, is still far from complete, even though some trends seem to emerge, such as a preference for academic materials in printed formats. The authors stress that it is important that both academics and higher education administrators familiarise themselves with the reading preferences among students for certain formats, and how these preferences interplay with their behavioural and learning processes.

In the academic world, students are expected to read their texts for understanding. Reading comprehension and the ability to synthesise information and formulate new concepts are basic skills of information literacy. Yet there is growing evidence that the presentation format, print or electronic, affects how efficiently the brain processes information (Eshet-Alkalai and Geri 2007; Mangen, Walgermo, and Brønnick 2013). A study by Mangen, Walgermo, and Brønnick (2013) among Norwegian school children found that students who read work in print scored considerably better in a comprehension test than those who read their work in an electronic format. However, another study by Chen et al. (2014) showed that the more familiar a student is with the use of a tablet for reading purposes, the better their comprehension and deep understanding of a text when compared to those who are not that familiar with the use of a tablet. They concluded that the level of familiarity with an electronic device influences reading comprehension and understanding. Reviewing recent studies on the relationship between reading comprehension and the use of printed or electronic media, Latinni et al. (2019) show several empirical studies found that when reading printed texts, better reading comprehension was displayed, while reading electronic texts more often led to misjudgments in the ability to comprehend text than was the case with printed text.

Mizrachi (2015) poses the question whether the availability of digital sources influences the academic reading habits of students. According to her, studies done in the first decade of the century indicated overwhelming support for printed materials among students. More recent studies seem to find that this trend generally still continues, but that the preference for a specific format now depends on several factors such as the purpose for reading the information, the cost and length of the document, and so on. A study by Boustany (2016) among French students established that they strongly agreed the printed format is best when they want to remember information, review their course readings and that print made them focus better when they were reading the materials. Most of the students indicated that they found these activities difficult if material was presented to them in an electronic format. They also indicated that they found it easier to highlight and annotate printed work (87.4%) than electronic documents (20.1%). Pálsdóttir and Einarsdóttir (2017), in a study among the students of the University of Iceland, recorded similar findings, but found that females preferred printed materials more than electronic ones, while males were neutral in their opinion as to which format they preferred. They also found that students valued the print format more than the electronic format. The length of the text was also found to play a role in the decision to read it in print or electronic format—the longer the text, especially if it was longer than seven pages, the more the preference was found to be in favour of the printed format. A study by Mizrachi et al. (2017) among students in 19 countries found an overall strong preference to read course work materials in a printed rather than electronic format. Some variations were detected among the countries, with the Bulgarian and Chinese students expressing a stronger preference to highlight their readings in electronic format as opposed to print format, while those in the United Kingdom and the United States found an electronic format more convenient, though not significantly more than those who preferred print. Chinese students were found to be the only student group to prefer e-textbooks while students in the United States were found to prefer reading materials longer than seven pages in an electronic format rather than print. Soroya and Ameen's (2020) study supported the prevalent preference for printed materials, though they established an increase in reading electronic materials more frequently, mainly due to the fact that many more materials are now available using open-access databases. They concurred, however, that the purpose for reading was the main determinant of format choice. In terms of gadgets used to access and read academic materials, the studies by Mizrachi et al. (2017) and Boustany (2016) found that laptops were the device mostly used to access and read electronic materials, followed by iPads.

Mizrachi's (2015) study among students at the University of California, Los Angeles (UCLA) found that several factors impact students' eventual choice of format. Cost was found to be a factor, as the least expensive method was preferred, while length was found to play a role with students, indicating they preferred to read a printed book, but did not mind reading a long article electronically. However, if it was cheaper to download a textbook than having to buy it, the electronic version was preferred. The complexity of the reading was also found to be a factor in their choice—the more complex the text, the more the printed medium was their preference. The students also

indicated that though electronic materials were more cost-effective, they were not very helpful in remembering content.

Globally, in institutions of higher education, students are instructed either in their native language or in a language other than their own, which requires them to read academic materials that are not necessarily in their native language. It is therefore important to know how students can best be accommodated in making their reading of these materials more understandable and easy. A study by Mizrachi et al. (2018) concluded that among the 19 countries that participated in their study, the majority of the respondents preferred to read in print when reading in their native language. The authors, however, indicated that this preference might be as a result of the general preference for reading print. Within the African context, reading academic materials in a native language, be it in print or an electronic format, is not a very common occurrence and could be ascribed to the dearth of academic reading materials in African languages (Julius and Pienaar 2016).

Methodology

The study adopted a multiple case study design and used a questionnaire as an instrument. As the study aimed to establish behavioural patterns, the questionnaire consisted of 24 statements that required the respondents to self-report on their format preferences and reading behaviour by ticking a preferred option, and at the same time they could elaborate on the reason for their selected answer. The closed-ended statements probing reading behaviour patterns and preferences used a Likert scale requiring the respondents to rate their response on a five-point scale ranging from “strongly disagree” to “strongly agree”. By providing the respondents with the option to also explain why they agreed or disagreed with a statement, the researchers could gain rich answers giving insight into expressed behavioural patterns and what influenced them.

The study was conducted at Delta State University, Nigeria and the University of Zululand, South Africa, in the Departments of Library and Information Science and Information Studies respectively. At the time of the study, during late 2017 and mid 2018, the populations used at these two environment were the Bachelor of Library and Information Studies (BLIS) students (500) at DELSU, and the students (117) pursuing the Bachelor in Information Studies (BIS) at Unizulu. At DELSU, 120 students were sampled to participate using the convenience sampling method, while all 117 students at Unizulu were included in the study. Convenience sampling was used at DELSU because permission to do the research was given at a stage when not all the students were on campus in order to apply simple random sampling, as initially planned, and as the researchers’ return to South Africa was imminent by that time, it was decided to use those students conveniently available. The results of the study can therefore not be generalised to the population at large. The questionnaires were handed out to the BLIS students conveniently available and retrieved at an arranged time from them. At Delsu

80 (67%) were received back, though after examining these questionnaires only 54 (45%) were found to be useful. At Unizulu, research assistants were used to distribute the questionnaires during lectures attended only by the BIS students, and then collected after class. This resulted in the return of 100 (85%) usable questionnaires, which is mainly attributed to the fact that the research assistants were on hand to clarify any issues that arose.

The quantitative data was analysed using an Excel spreadsheet, while the qualitative responses were recorded for each question. The quantitative data is presented by way of tables and graphs, while qualitative data illustrating some of the responses is also presented.

Results and Discussion

The results are presented and discussed as per the objectives of the study, though the demographics of the respondents will be presented first so as to contextualise the respondents. In presenting the data for the quantitative responses, the responses for each of the five Likert scale options were presented either in narrative or table form or a combination of the two. In the narrative discussion of the quantitative data the two options under either “agree” or “disagree” were combined.

Demographic Information

As presented in Table 1, in terms of the gender of the respondents, there was a markedly higher female than male representation in the sample populations. This is in line with findings in several studies that more females are currently enrolling at universities than males (Peter and Horn 2005), and also that female students tend to volunteer to participate in research studies more readily than males (Dickinson, Adelson, and Owen 2012)

Table 1: Demographic information of DELSU ($N=54$) and Unizulu ($N=100$) respondents

Variables	DELSU		Unizulu	
	F	%	F	%
Gender				
Male	24	44.4	47	47
Female	30	55.6	53	53
Age				
17–19	1	1.9	16	16
20–24	33	61.1	69	69
25–29	17	31.5	15	15
30–34	3	5.5	0	0

The results in Table 1 indicate that females (30 at DELSU [55.6%] and 53 at Unizulu [53%]) were the majority in both universities that participated in the study. As expected

from this group of respondents, the majority of the students fell within the age brackets of 17–29 years, with the age group between 20–24 years of age providing the most responses in both institutions with a frequency of 33 (61/1%) at DELSU and 69 (69%) at Unizulu; only DELSU had three (5.5%) respondents over the age of 30.

When asked whether they had any visual or other limitations that might influence their reading preferences, 47 (87%) and 85 (85%) at DELSU and Unizulu respectively indicated that they had no limitations hindering their preference for either print or electronic formats. Though only a relatively small number of responses, i.e., 7 (13%) at DELSU and 15 (15%) at Unizulu, indicated limitations, these should be heeded, as the current ethos of most universities is to provide equal opportunities to all their students (Eneya 2020). While visual impairments were mentioned as the major limitation, a few also mentioned cultural background, lack of exposure or access to electronic media, and the cost factor of using electronics. Issues specific to the institution concerned the lack of reliable power supply (DELSU), low bandwidth and space to access electronic sources (Unizulu).

To establish what electronic devices were used by the students to read academic-related electronic materials, the following responses as shown in Table 2 were received.

Table 2: E-resources used to read electronic academic materials

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Desktop computer	8	14.8	36	36
Laptop	28	51.9	88	88
iPad/Tablets	8	14.8	23	23
Dedicated e-reader	0	0	5	5
Mobile phone	4	14.8	56	56
E-resource with an audio application	2	3.7	4	4
I never read course materials electronically	0	0	4	0

The results in Table 2 indicate that the relatively high utilisation of laptops at Unizulu might be as a result of the majority of the students being beneficiaries of the National Student Financial Aid Scheme (NSFAS). This is part of the benefits that provide a book allowance fee to each student that they can use to acquire a laptop (NSFAS n.d.). Access to Wi-Fi hotspots in the library and on campus also contributed to the wide variety of gadgets used. The lower use of all the different e-resources in DELSU might be due to the cost of acquiring electronic equipment in the country and the exorbitant fees paid for data (Stears Business 2019). The lack of a reliable electricity supply could also be a factor.

Academic Format Preference

The first objective aimed at establishing the format preference of the respondents when reading for academic purposes. The statements probed reasons for preferring a specific format, and the preferred modes on which to read electronic materials.

I remember information from my course readings best when I read them printed

When the respondents were asked if they found that they remembered the course reading information better when reading it from printed pages, the majority responded positively, with DELSU and Unizulu recording 38 (70.3%) and 67 (67%) responses respectively, as indicated in Table 3.

Table 3: The role of print reading in improving memory of information read

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Strongly disagree	4	7.4	6	6
Disagree	9	16.7	13	13
Neither agree nor disagree	3	5.6	14	14
Agree	22	40.7	37	37
Strongly agree	16	29.9	30	30

Explaining how reading print helped them to remember information better, one respondent indicated that the “printed format of reading is much more clearer and understood better, when it comes to assimilation and recall.” The role of print in creating a visual memory was also expressed by a respondent who said “printed text sticks in my brain and sometimes I see the picture of those text in my head.”

It is more convenient to read my assigned readings electronically than to read them in print

This statement aimed at determining whether the convenience of reading an assigned reading in electronic format was a factor influencing their preference for this format. The data in Table 4 below indicates that the respondents at both institutions did not express a clear preference for this format, as only 25 (46.3%) DELSU and 38 (38%) Unizulu respondents either agreed or strongly agreed that it was more convenient to read materials electronically, while 28 (50%) of the DELSU respondents and 43 (43%) respondents at Unizulu indicated that it was not the most convenient method for academic reading.

Table 4: Convenience of electronic reading

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Strongly disagree	3	3.7	7	7
Disagree	25	46.3	36	36
Neither agree nor disagree	2	3.7	19	19
Agree	17	31.5	30	30
Strongly agree	8	14.8	8	8

Those respondents who elaborated on their reasons for finding the electronic format more convenient to read cited factors such as the ease of moving through the pages, the ability to check for spelling and grammar mistakes, and access to a lot of additional information as reasons for their preference to rather use electronic gadgets. Some of the respondents who indicated that electronic documents were less convenient than printed ones motivated their preference by indicating that “while reading my assigned reading in print, I would be able to underline some of the portions I want to go through again,” and that the availability of print resulted in them “being in a relaxed atmosphere and state of mind even if there is power failure.” Other reasons put forward for finding electronic reading inconvenient concerned issues such as network problems, unavailability of computers, software issues and lack of know-how to utilise the e-gadgets, fatigue caused by reading e-resources and eye strain. Swanson, Renes and Strange (2017) advocate that it would be to the benefit of students if they were taught by their educators how to adapt their technological skills for educational purposes. The authors also warned that educators should not make technology-related assumptions concerning their students but that they should adapt their method of instruction based on their students’ usage patterns and preferences so that they can achieve and excel despite their format preferences.

I prefer to have all my course materials in print format (e.g., books, course readers, handouts)

In response to this statement, the majority of the respondents at both institutions indicated a strong preference for printed materials, with the respective responses indicating that 33 (61.1%) at DELSU and 45 (45%) at Unizulu preferred all their course materials in print format. Interestingly, as indicated in Table 5, a relatively large number of respondents at Unizulu (55; 55%) were either neutral or responded negatively on this issue—probably since the department under study has a strong culture of providing most of their course materials to students via the Learner Management System, Moodle.

Table 5: Printed format preference for all course materials

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Strongly disagree	7	12.9	9	9
Disagree	11	20.4	19	19
Neither agree nor disagree	3	5.6	27	27
Agree	23	42.6	29	29
Strongly agree	10	18.5	16	16

Reasons put forward for the preference for print include the fact that they had ready access to printed materials at any time and that print provides them with ease of understanding and assimilation of the information. One respondent voiced the opinion that “modules are not the same, on some modules, e.g., languages like IsiZulu and English, it is better to have them in hard copy.” A respondent that indicated that he/she had a neutral stance towards the statement opined that “it is important to have both because sometimes electronic gadgets get lost or stolen.” Those preferring the use of electronic documents pointed out that this format is portable, the information can not be lost and information can be easily found in an electronic document. A respondent who preferred electronic documents voiced the following reason: “Print materials can confuse you sometimes and can be misplaced or pages torn out.”

I prefer to read all my course readings electronically

This statement, being the opposite of the previous statement (see above), was meant to establish how respondents felt about reading course materials only in electronic format. This statement drew a markedly more negative response to that of having to read all their readings in print format only, with 16 (29.6%) and 31 (31%) responses for DELSU and Unizulu respectively in agreement with the statement.

Table 6: Preference for reading all course readings in electronic format

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Strongly disagree	4	7.4	8	8
Disagree	27	50	45	45
Neither agree nor disagree	7	12.9	16	16
Agree	9	16.7	23	23
Strongly agree	7	12.9	8	8

Those respondents not favouring a mainly electronic academic reading environment raised issues such as the unfriendly nature of some electronic devices that require adequate knowledge and skills to navigate them, erratic power supply, eye fatigue, loss of focus when reading an e-document, no firm policy guiding the use of electronic reading, and the high cost of electronic gadgets as playing a role in their preference.

Respondents indicating a preference for both formats said that “both have always served one purpose or the other.” A respondent preferring all readings in electronic format stated the reason for her preference: “Reading my course electronically saves time and energy.” In this regard, Aharony and Bar-Ilan (2018) established that though the preference for print is still very much prevalent among students, two personal variables, relative advantage and comprehension, played a significant role in the eventual use of e-resources or not. Soroya and Ameen’s (2020) study, however, found that among the millennial students a strong move towards the use of e-documents could be detected.

If an assigned reading is seven pages or more, I prefer to read it in print (Statement a)

If an assigned reading has fewer than seven pages, I prefer to read it electronically (Statement b)

Studies by Chou (2011) and Foasberg (2014) showed that the length of an academic course reading could have an impact on format preference. To establish the preferences among students attending African universities these two opposing statements were provided, testing (a) if an assigned reading was more than seven pages, whether print would be preferred, and (b) if it contained fewer than seven pages whether the electronic format would be the preferred medium. Figures 1 and 2 below indicate the preferences.

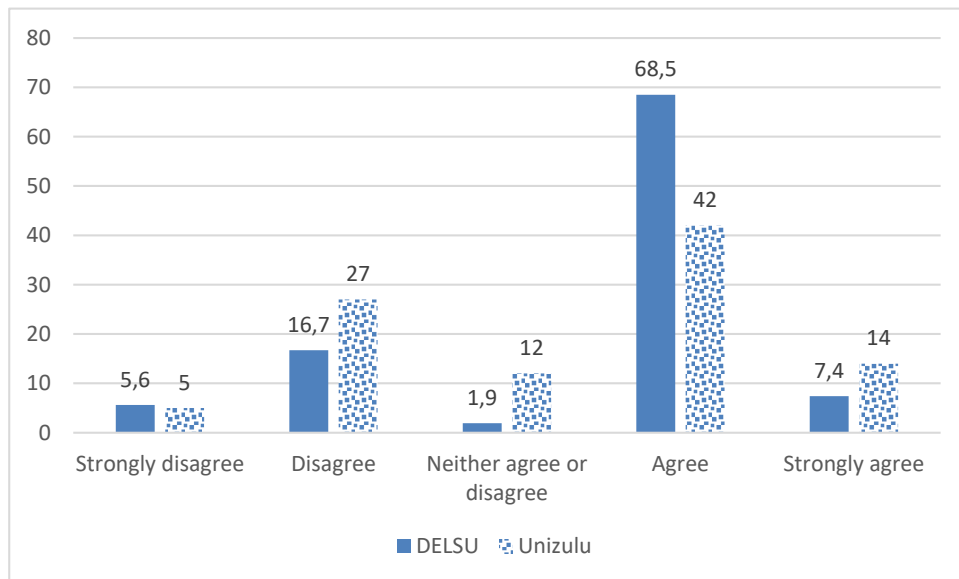


Figure 1: Preference for print materials if they are longer than seven pages

In accordance with studies by Allcott (2019) and Baron, Calixte, and Havewala (2017), the respondents at both institutions displayed a very strong preference for reading longer course readings in printed formats, as the responses of 41 (75.9%) DELSU respondents and just over half the Unizulu respondents (56; 56%) agreed with this statement. Probable explanations for the much higher percentage of respondents opting for reading

printed materials at DELSU might include external factors such as a lack of electricity or e-gadgets and the cost of data, as these are not such huge factors at Unizulu. According to Allcott (2019), students benefit in a number of ways by reading longer pieces of academic materials in print as it slows down the reader and allows for more sophisticated deep-reading processes to take place. In addition, it also allows for critical analysis of texts, the discernment of truth and it provides the ability to gauge inferences. In line with the findings of Foasberg (2014) and Allcott (2019), an additional factor influencing the preference for print when reading longer texts concerns eye strain as a number of the respondents mentioned it as a factor when reading long e-documents.

Regarding the preference for reading course materials containing fewer than seven pages in electronic format (see Figure 2 below), a strong preference for electronic reading was expressed by the Unizulu respondents (62; 62%) while the DELSU respondents were less positive, with only 17 (31.5%) respondents indicating agreement with this statement. As shown by the responses from some of the DELSU respondents, this negative preference could be ascribed to external factors such as irregular electricity supply and the cost of e-gadgets and data, which in many cases were beyond the control or financial means of the respondents, rather than indicating a specific preference. Studies done by Baron, Calixte, and Havewala (2017) and Oroz (2016) concurred with the positive finding expressed by Unizulu respondents, indicating that the convenience of using electronic media when and where needed was the major factor influencing this preference. This notion is also supported by the TAM model as these respondents found the 24/7 accessibility of electronic texts extremely useful in their academic endeavours.

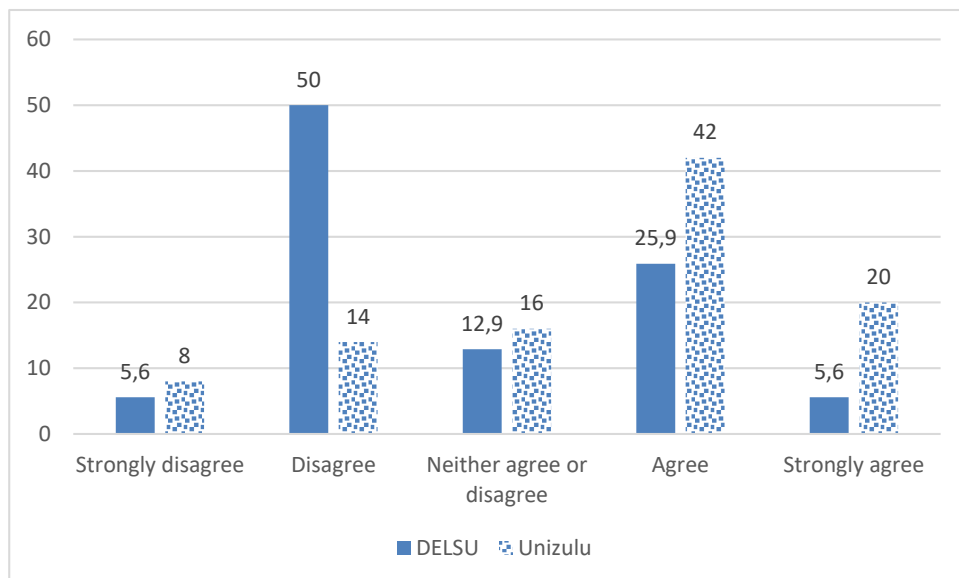


Figure 2: Electronic format preference if a document contains fewer than seven pages

I prefer electronic textbooks over print textbooks

In response to this statement there was a general consensus among all the respondents that electronic textbooks would not be their preferred option, with 38 (70.1%) DELSU respondents and 61 (61%) Unizulu respondents disagreeing with this statement. Table 6 indicates the preference for electronic textbooks, which was expressed by only 11 (22.3%) and 31 (31%) respondents from DELSU and Unizulu respectively. This trend was confirmed in a study by Mizrachi et al. (2018) which found that globally 78.44% of 10,293 students preferred to use the print medium for academic reading as opposed to 10.04% who stated a preference for electronic textbooks, while 11.52% did not express any specific preference.

Table 7: Electronic vs print textbook preference

Options	DELSU (N=54)		Unizulu (N =100)	
	F	%	F	%
Strongly disagree	7	12.9	16	16
Disagree	31	57.4	45	45
Neither agree nor disagree	4	7.4	8	8
Agree	9	16.7	23	23
Strongly agree	3	5.6	8	8

As reasons for their lack of preference for electronic textbooks respondents stated issues such as costs, lower levels of comprehension, and eye strain. One respondent indicated that “it is not easy to understand electronic textbooks when reading, unlike printed,” while another one said “electronic textbooks are too expensive to purchase and manage.” The study by Aharony and Bar-Ilan (2018) support the notion that higher levels of comprehension play a role in the preference for printed textbooks.

I can focus on the material better when I read it in print

Most of the respondents at DELSU (40; 74.1%) and Unizulu (73; 73%) agreed strongly with this statement, while seven (13%) at DELSU and 20 (20%) at Unizulu disagreed. Seven at DELSU (12.9%) and Unizulu (7%) respectively had no specific preference. This finding is in accordance with the findings of a similar study by Boustany (2016), who established that 88.10% of French students found it easier to focus on their reading materials when it was in print.

The Influence of Academic Learning Engagements on Format Preferences (Self-Reported Behaviours)

The second objective of the study required the respondents to self-report on how their methods of learning influenced their format preference. The types of learning engagements used when reading documents for academic purposes are unique to each student and are in most cases determined by the purpose for which the document is read. For many students the purpose for which a document is read as well as their learning engagement methods play a role in their preference for a specific format to complete the task. This section probed how their learning behaviour influenced their preference for a certain format to complete an academic task.

I usually highlight and annotate my printed course reading

Based on the responses to this statement, it is clear that the respondents at the two institutions (DELSU 46 [85.2%] and Unizulu 56 [56%]) strongly agreed or agreed that they found highlighting and notation much easier using a print format. However, at Unizulu 27 (27%) respondents indicated that they had no clear preference for either of these two formats in terms of the ability to highlight or annotate, as opposed to only two (3.7%) at DELSU who expressed the same sentiment. With only six (11.1%) and 17 (17%) respondents from DELSU and Unizulu respectively indicating disagreement with this statement, it can be deduced that the use of a printed format for visual learning methods is still a strong preference among students. In accordance with the TAM model, the respondents indicated that they found printed formats useful to observe these visual markings when reading through the work, aiding them to retrieve or retain information such as important words or phrases and the work in general, and in providing assistance in reading “some important point/portion over and over again.”

I usually highlight and annotate (make own notes) my electronic readings

The responses to this statement indicated a large variance in the responses from the DELSU respondents and those from Unizulu, where the respondents from DELSU were more or less equally divided (46.3% disagreeing vs 48.1% agreeing) on whether or not they highlighted and annotated their electronic readings. Among those disagreeing a respondent indicated that “I am not used to the system of reading electronically,” while another one said “it depends on what I am reading and need to note, hence not all the time.” Those respondents who agreed with the statement mostly claimed that it made studying easier for them. The Unizulu responses on the other hand showed that a vast majority (70; 70%) made highlights and annotations on their electronic readings. This could partly be as a result of much easier access to computers and free Wi-Fi among these students. Reasons proffered for this learning behaviour included that it helps in studying and it also helped them to see if they understood what they were learning. Twenty five (25%) Unizulu respondents disagreed with the statement while five (5%) neither agreed nor disagreed.

I am more likely to review my course readings (after I've read them at least once) when they are in print

Most of the respondents at DELSU (42; 63%) and Unizulu (58; 58%) reported that they are more likely to review their course work if it is available in print format, mostly “for better clarification and correction.” Only nine (16.6%) DELSU respondents and 23 (23%) from Unizulu reported that they disagreed with the statement; three (5.6%) and 19 (19%) from DELSU and Unizulu respectively were undecided. As studying requires a lot of dedicated reading and re-reading, it is important that students use a format that supports this activity. A study by Stoop, Kreutzer and Kircz (2013) established that students who reviewed their course work in print took far longer to review it than students who had it available in an electronic format. Moreover, these students reported that they met no obstacles when they were studying, that they were able to read sizable sections at a time, and experienced far fewer distractions during the process of reading and studying than those reported by students using electronic gadgets to read and study.

I prefer to print out my course reading materials rather than read them electronically

In line with the already stated preference for reading textbooks in print, the responses to this statement indicated a strong preference to print out course reading materials (DELSU [37; 68.5%] and Unizulu [70; 70%]) rather than consult them online, with only a few respondents at DELSU (14; 26%) and Unizulu (22; 22%) stating they preferred to read their work in an electronic format. Very few (3 [5.6%] DELSU and 8 [8%] Unizulu respondents) expressed no specific preference.

Reasons put forward motivating their preference to print out materials included difficulty carrying around electronic gadgets while printed material can be transported anywhere and read wherever and whenever required, the fact that print cannot be deleted, better focus when reading printed materials and the fact that studying from printed materials prevents wasting of time playing games on their electronic gadgets. Samzughi's (2019) study conducted with Tanzanian students corroborated this finding, with 66.7% of the respondents indicating that they preferred to print out e-materials, citing among others the lack of reliable electricity and access to electronic gadgets and the permanency of the record in case the e-version is removed from the database. A study by Stoop, Kreutzer and Kircz (2013) found that students wanted to be able to interact with their study materials and if the e-text such as a PDF file could not be manipulated, they preferred to rather print it out. They also expected the electronic document to be innovative in both design and content before they felt comfortable using it.

I like to make digital copies of my printed course materials

When asked to report on whether they would prefer to make digital copies of printed course materials, strong agreement (DELSU [33; 61%] and Unizulu [66; 66%]) was expressed, while 17 (31.5%) respondents from DELSU and 24 (24%) from Unizulu

disagreed. Those with no specific preference totalled 14 (25.9%) and 19 (19%) from DELSU and Unizulu respectively.

The reasons given for the preference to make digital copies included keeping it available for reference or safety purposes, having a duplicate copy, the ability to share it with their friends and conveniently access it when necessary, and to have it available wherever they went. It would seem that safeguarding the information and having it conveniently available should the print version not be available were the motivations behind this behaviour. Although Samzughi's (2019) study found a high preference for printing out materials, those who preferred to read material in an e-format, in agreement with the findings of the current study, cited high printing costs, the ease of on-screen reading and downloading for safeguarding in external disks and easy availability of the e-materials as their main reasons for this preference.

The Influence of Language of Reading on Format Preference

The third objective of this study aimed to establish whether reading an academic document in one's native language or in a foreign language would influence the preference for a specific format. The respondents were therefore required to state whether the language of reading influenced their preference for a specific format, whether reading in their native language would prompt them to prefer an electronic version of the material, and whether the need to read materials in a foreign language would lead to a preference for the materials to be in print format. The last two questions were asked to test whether familiarity with a language and its grammar would lead to a preference for a specific format which could assist them in comprehending and assimilating the information better.

My preferred reading format, electronic or print, depends on the language of the reading material

From the data presented in Table 8, it seems as if the language in which reading material is presented does play a role in format preference, though this was found to be less true in the case of Unizulu, where 42 (42%) respondents agreed that it is a factor in their choice between reading material in print or in an electronic format, compared to 29 (53.7%) of the DELSU respondents who were in agreement with the statement.

Table 8: Language of reading as a factor in format preference

Options	DELSU (N=54)		Unizulu (N=100)	
	F	%	F	%
Strongly disagree	1	1.9	11	11
Disagree	18	33.3	18	18
Neither disagree nor agree	6	11.2	29	29
Agree	24	44.4	24	24
Strongly agree	5	9.3	18	18

The respondents indicated that the factors influencing their preferences included copying what their peers did, using a format with which they felt comfortable, ease of understanding the content they had to read, their ability to digest the information, the ability to make notes and the influence of environmental factors such as electricity availability. Some of the respondents who had no clear preference indicated the following: “If I can understand the language, print or electronic, I will read it,” while another one said that “If I can decode the language, I can study in any format.”

I prefer to read course readings that are in my native language electronically rather than in print

Responses to this statement showed a very small number of the respondents at DELSU (9; 16.7%) indicated that they would prefer to read materials that are in their native language electronically rather than in print, while at Unizulu the preference for using an electronic format for native language reading only had 29 (29%) positive responses. However, a relatively large group of respondents (25%) at Unizulu indicated that they did not have any specific format preference in terms of language of reading, which could be an indication that at least more than half of the respondents would read materials in their native language in an electronic format if it were readily available. Supporting the finding at Unizulu, a study by Syaputri and Trilestari (2017) among Indonesian students found that a higher number (56.1%) of the respondents preferred to read materials electronically in their native language as they were familiar with the language and therefore could easily read the information, with no need to look for the meaning of unfamiliar words. Based on the responses given by the DELSU students as to why they did not want to read the materials electronically, and in agreement with the findings of Mukama (2007), it became clear that the respondents found reading in their native language difficult as they were mostly taught at school in a language other than their native language, as indicated by one respondent: “the use of native language is always a problem to many ethnic groups.” One of the respondents added to this by stating “I have not found anything written in my language apart from English language.” The responses are illustrated in Table 9.

Table 9: Electronic format preference when reading in native language

Options	DELSU	%	Unizulu	%
Strongly disagree	8	14.8	8	8
Disagree	32	59.3	38	38
Neither agree nor disagree	5	9.3	25	25
Agree	6	11.1	17	17
Strongly agree	3	5.6	12	12

I prefer reading foreign language material in print rather than an electronic format

When asked whether they would prefer to read academic materials in a foreign language using print rather than electronic means, the majority of the respondents from DELSU (29; 53.7%) and Unizulu (59; 59%) indicated that they disagreed with this statement (see Table 10 below). This is in contrast with the finding of Syaputri and Trilestari (2017) that among Indonesian students there was a marginally higher preference for reading foreign information in print (51.8%) than electronically (48.2%), citing such reasons for this preference as including less eye strain and the ability to highlight unknown words in order to look up their meaning at a later stage. Mizrachi et al.'s (2018) study, however, established that the language in which information is presented did not play a major role in determining students' format preference.

Table 10: Preference for print format when reading a foreign language document

Options	DELSU	%	Unizulu	%
Strongly disagree	10	18.5	20	20
Disagree	19	35.2	39	39
Neither agree nor disagree	3	5.6	18	18
Agree	18	33.3	19	19
Strongly agree	4	7.4	4	4

With reference to the qualitative responses provided by the current study's respondents, it would seem as if the word "foreign" could have been interpreted as a language that they are not familiar with at all, thus excluding English which, as it has been their language of instruction for most of their school years, was not seen as a foreign language anymore. The following two statements sum up the responses: "I do not read anything other than English" and "I do not understand any foreign language."

Conclusion and Recommendation

The findings of this study seem to correlate to a large degree with those of other studies already done on this topic, though, as already established by these studies, variances can occur at each participating institution due to specific geographical, technological or

other conditions. The study also found that in accordance with the TAM model, the usefulness of the specific technology used, be it print or electronic, for the task at hand, to a large degree determined the preference for a specific format. It is therefore important that academic staff take note of these findings as well as the variances that can play a role in the preference for a specific format so that academic reading materials can be provided to their students in such a manner that their reading thereof will benefit them optimally and enhance their chances of academic success.

It is recommended that each academic institution and department or faculty undertake regular surveys to establish current and changing trends in the reading behaviour of their students. This would help support the academics to tailor the provision of prescribed academic reading materials based on the specific needs and preferences of their students.

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