



# GRAPHIC ARTS TECHNOLOGY STUDENTS' ATTITUDE TOWARDS VARIOUS MEDIA OF E-BOOKS IN SLOVENIA

## *Odnos študentov grafične tehnologije do različnih oblik e-knjig v Sloveniji*

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### Abstract

**Purpose:** The aim of this paper is to present the results of a survey on the usage of e-books and enhanced e-books among students in Slovenia. The main research objective was to determine factors influencing students' perception of e-books and enhanced e-books.

**Methodology/approach:** Quantitative methods were used to explore the e-book usage among students. The units of analysis were Slovenian students of graphic arts technology ( $N = 230$ , 18 % men, 82 % women) at the Faculty of Natural Sciences and Engineering aged between 18 and 30. The research was conducted during the first semester of the 2014/2015 academic year. ANOVA and t-tests were used to determine statistically significant differences.

**Results:** The analysis showed that printed books were preferred for learning, even by e-book users. E-book users are more familiar with enhanced e-books and have higher intentions to use them in the future. Practicality of e-books positively influences the frequency of e-book usage, while problems with focus and concentration when reading on the screen affect it negatively.

**Research restrictions:** The research explores students' attitude to e-books in general. No particular field of e-books is emphasized.

**The originality:** This research is one of the first to study the e-books usage in relation to students' attitude towards enhanced e-books.

**Contribution:** This paper gives an insight on the receptiveness of students to e-books and enhanced e-books and can serve as the basis for future researches.

**Keywords:** *e-book, enhanced e-book, enhanced content, user studies, Slovenia*



## Izvleček

**Namen:** Namen članka je predstaviti rezultate raziskave o uporabi elektronskih in interaktivnih knjig med slovenskimi študenti. Cilj raziskave je bil določiti dejavnike, ki vplivajo na študentovo dožemanje e-knjig in interaktivnih e-knjig.

**Metodologija/pristop:** Za raziskovanje odnosa študentov do e-knjig in interaktivnih e-knjig so bile uporabljene kvantitativne metode. Za ta namen je bil izdelan vprašalnik s šestimi vprašanji z več izbirami zaprtega tipa in dvema vprašanji, kjer so študenti trditve ocenjevali na podlagi 5-stopenjske Likertove lestvice (1 = popolnoma ne drži, 5 = popolnoma drži). Raziskovalna skupina so bili slovenski študenti grafičnih tehnologij ( $N = 230$ , 18 % moških ter 82 % žensk starih med 18 in 30 let) Naravoslovnotehniške fakultete. Anketa je bila izvedena v prvem semestru študijskega leta 2014/2015. Za določanje statistično pomembnih razlik med študenti so bili uporabljeni t-testi in ANOVA.

**Rezultati:** Analiza je pokazala, da študentje menijo, da so tiskane knjige primernejše za učenje; tudi uporabniki e-knjig. Uporabniki e-knjig v večji meri poznajo in nameravajo uporabiti interaktivne e-knjige. Na pogostost uporabe elektronskih knjig pozitivno vpliva praktičnost e-knjig, negativno pa težave s koncentracijo pri branju z zaslona.

**Omejitve raziskave:** Rezultati raziskave niso omejeni na posamezno področje e-knjig.

**Izvirnost/uporabnost raziskave:** Članek predstavlja eno prvih raziskav, ki preučuje uporabo e-knjig v povezavi z odnosom do interaktivnih e-knjig.

**Prispevek:** Članek prinaša pregled načina uporabe e-knjig in interaktivnih e-knjig ter ugotavlja naklonjenost študentov njihovi uporabi. Članek lahko služi kot osnova za nadaljnje raziskave.

*Ključne besede:* elektronske knjige, e-knjige, interaktivne e-knjige, multimedijske vsebine, študija uporabnika, Slovenija

## 1 Introduction

In recent years the e-book has become a subject of numerous discussions in the world scientific and professional literature. The literature shows that there are multiple definitions of e-book that complement each other with regard to the changes which it brings (Vassiliou & Rowley, 2008; IFLA, 2014; Klarin Zadravec, Buzina, & Seiter-Šverko, 2014; Zubac & Tominac, 2014). The term *e-book* includes an e-book available on a variety of media: e-readers or handle device, book available on-line, a book on CD, DVD-ROM. In their paper Zubac and Tominac come to the conclusion based on the analysis of e-book definitions: "... the e-book is a digital version of the traditional printed book. The content is read on personal computers, tablets, or with the help of hardware devices – e-book readers and smartphones." (Zubac & Tominac, 2014, p. 128). Vassiliou and Rowley (2008, p. 9) offer a more detailed definition:



- (1) An e-book is a digital object with textual and/or other content, which arises as a result of integrating the familiar concept of a book with features that can be provided in an electronic environment.
- (2) E-books typically have in-use features such as search and cross reference functions, hypertext links, bookmarks, annotations, highlights, multimedia objects and interactive tools.

In their eLending Background paper (2014, p. 1) IFLA defines an e-book as a text-based work that may be augmented by audio or other elements. It can be owned by individuals or libraries or licensed from publishers/vendors directly (IFLA, 2014, p. 1). Due to the before mentioned characteristics, e-books present a challenge for library workflows; especially commercial editions (Horvat & Živković, 2012, p. 181). Many authors have discussed the obstacles librarians have to face in relation to e-books:

- a) Several issues regarding e-book access and lending have been identified in different research: different models for acquiring and providing access to e-books exist (Moreno, 2014), licensing restrictions and lack of technical means represent the largest obstacles for librarians (Shen, 2014, p. 62), some libraries do not purchase short-term access to e-books and e-articles (Nance, 2014), interlibrary lending is usually not permitted (Moreno, 2014, p. 51), the property rights model for print books is hard to apply to e-books (Živković, Horvat, & Čučić, 2013, p. 173);
- b) The standard ISO 10160 is out-dated (MacKeigan, 2014, p. 106);
- c) The VAT rates vary between e-books among European countries (Böttger, 2013, p. 74);
- d) Students prefer to use free of charge information than the fee based information (Vrana, 2014, p. 147).

It is crucial for the library staff to promote e-books and offer guidance regarding the enhancement of e-books, as the research shows librarians play a very important role in promoting e-books within colleges (Mulholland & Bates, 2014).

E-books can be divided into groups by content: written content in digital form; e-books, enhanced e-books (e-books enhanced with interactive and multimedia capabilities) and apps; e-textbooks with apps and audio books (Klarin Zadavec, Buzina, & Seiter-Šverko, 2014, p. 3).

Although, some publishers are more inclined to, instead of the term e-book, use the term interactive storybooks, interactive e-books, books in app, etc. for referring to a medium of e-book containing some sort of enhancement (Aptara, 2013; codeMantra, 2013; Florjanič, 2015).



In Slovenia, the e-book market is not as developed as expected; interestingly e-books are more expensive than printed books due to higher VAT rates and copyrights (Gradič Oset, 2015). Biblos and E-Emka are the largest e-book distributors with their own platform, accompanied by Študentska založba with its own distribution system (UMco d. d., 2014). At the moment, Biblos offers around 1.680 e-book titles for buying and lending: modern novels (208), short stories and essays (209), poetry and playwrights (145) representing the majority of e-book titles, yet no academic literature for graphic arts is available (Bibloslib, 2014). E-Emka collection includes 540 e-books for buying; the majority of those being modern novels (120), romance novels (64) and young adult fiction (60); no e-books on graphic arts are currently available (EMKA.SI, 2015).

Table 1 shows the COBIB list of academic literature for graphic arts students in the form of e-books obtainable through Slovenian libraries; the majority of them are in English. A large section of aforementioned e-books is accessible online; although some of the titles listed as an option cannot be accessed as no library within COBISS holds a copy (COBISS/OPAC, 2015).

**Table 1:** *List of available academic e-books in COBIB obtainable through Slovenian libraries*

Search input	Graphic design	Typography	Animations	Colour printing	Digital printing	3D	Web design
E-books	14	6	5	3	4	15	140

Since many universities in the world have been introducing e-books into the educational process and test a variety of business models in order to adapt teaching to the development of modern technology and the needs of contemporary readers and students (Woody, Daniel, & Baker, 2010; Wu & Chen, 2011; Cassidy, Martinez, & Shen, 2012; Elias, Phillips, & Luechtefeld, 2012; Oliveira, 2012; Cumaoğlu, Sacici, & Torun, 2013; Daniel & Woody, 2013; Muir & Hawes, 2013; Aharony, 2014; Jin, 2014), this paper deals with the level of e-book usage among younger generation in Slovenia. Various studies have already been conducted on the reading habits and preferences of students, in connection to e-books and devices, supporting the e-book reading. A significant part of these studies was dedicated to study reading behaviour of university students; mainly focusing on preferences and comparison of digital and paper material (Cumaoğlu, Sacici, & Torun, 2013), effects of e-book reading, perceptions of e-books (Cassidy, Martinez, & Shen, 2012), reading behaviour (Noorhidawati & Gibb, 2008) and the use of e-books in the classroom (Elias, Phillips, & Luechtefeld, 2012).

The aim of this research is to study students' usage of e-books in Slovenia and their preference for multimedia and interactive content in enhanced e-books by measuring



the intensity of their attitude towards various media of an e-book. The method chosen for this study based on the reviewed literature (Lamut & Macur, 2012) was a survey.

- H1 Students perceive printed books as more convenient for learning.
- H2 E-book users are more familiar with enhanced e-books<sup>1</sup> and have greater intentions to use them.
- H3 More frequent e-book users have more positive attitude to e-books.

## 1.1 Review of background

Students' decision to use e-books is influenced by several factors. Portability, environmental impact, availability and the ability to take notes and highlight within an electronic text are important to students from Columbia, USA and UK. The majority of these students also agree that the ability to search through the text is the most important feature of e-books (Cassidy, Martinez, & Shen, 2012; Elias, Phillips, & Luechtefeld, 2012; Muir & Hawes, 2013).

Research results also indicate USA students would be more likely to read an e-book if recommended by professors in USA (Cassidy, Martinez, & Shen, 2012). Korean students would more likely use e-books recommended by their peers (Jin, 2014).

Students are more likely to adopt e-books if they are convinced that such usage is beneficial and will improve their productivity. Students' computer-competence affects their perception of e-books; students who are more computer-competent perceive e-books as easy to use and have higher intentions to use e-books compared to less computer-competent students (Aharony, 2014). It can be said that the number of e-books available in specific fields largely determines the rate of e-book literacy (Cumaoglu, Sacici, & Torun, 2013).

Problems with e-books, according to students, lie in awkward navigation tools, unintuitive interfaces, insufficient context in search results and troubles with access (Muir & Hawes, 2013).

Wu & Chen (2011, p. 299) list several advantages of e-books: they are easy to search; convenient to access; easy to save, duplicate, and print; they can be accessed simultaneously by many users; they are environmentally friendly and convenient for bibliographic management.

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<sup>1</sup> In this case, e-books and enhanced e-books refer to two mediums with difference in content.



## 2 Methodology

The research was conducted during the first semester of the 2014/2015 academic year among students of graphic arts technology, Faculty of Natural Sciences and Engineering, Slovenia. The sample was represented by undergraduate and graduate students ( $N = 230$ , 18 % men, 72 % women), aged between 18 and 30 ( $M = 29.78$ ). The students were explained the purpose of the study and then asked to fill in a printed version of the questionnaire during one of their classes (cf. Appendix). Descriptive statistics were used for reporting purposes.

To obtain data, a combination of methods was used. For six questions participants chose between various options. For two questions students were asked to rate several statements on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). ANOVA and t-tests were made to determine differences between participants based on their e-book use. Statistical hypothesis were tested at 0.05 alpha error rate. Linear multiple regression was used to determine factors affecting the frequency of the e-book usage.

### 2.1 Research restrictions

The research focused on the general usage of e-books. For further research it would be interesting to focus on the usage and preferences of e-textbooks. The participation in survey was voluntary; the possibility of response bias error exists. The availability of e-book titles in Slovenia was not checked beforehand, although it likely affected students' decision to use e-books.

## 3 Results

### 3.1 General characteristics of e-book use

**Table 2:** *Frequency of the e-book use*

How often do you use e-books?	Students ( $N = 230$ )
Daily	2.6 %
Few times per week	7.0 %
Few times per month	13.5 %
Few times per year	33.9 %
Don't use them	43 %



For the question, “*How often do you use e-books?*” (cf Table 2) participants often said they don’t use them (43 %), followed by those who used e-books a few times per year (33.9 %), per month (13.5 %), per week (7.0 %) and daily (2.6 %).

According to the participants, computers were the favoured medium for e-book reading (cf Table 3; 70.2%), followed by smart phones (45.8%), tablets (22.9%) and e-readers (9.2%).

**Table 3:** Preferred medium for e-book reading

Which device do you use for reading e-books	E-book users (N = 131, multiple answers possible)
Computer	70.2 %
Smart phone	45.8 %
Tablets	22.9 %
E-reader	9.2 %

In average, the Internet was the preferred answer to “*Where do you get access to e-books?*” (cf Table 4; 99.2 %), while libraries and bookshops were rarely picked (3.8 %; 0.8 %) by respondents.

**Table 4:** Students access to e-books (multiple answers possible)

Where do you get access to e-books?	E-book users (N = 131, multiple answers possible)
Internet	99.2 %
Libraries	3.8 %
Bookshops	0.8 %

All answers to “*What do you use e-books for?*” (cf Table 5) were similarly supported: leisure reading (61.8 %), referring (59.5 %), information searching (49.6 %), studying and additional learning (39.7 %).

**Table 5:** The purpose of e-book usage

What do you use e-books for?	E-book users (N = 131, multiple answers possible)
Leisure reading	61.8 %
Referring	59.5 %
Information searching	49.6 %
Studying and additional learning	39.7 %



As shown in Figure 1, e-book non-users listed the preference for printed books (30.9 %) as the main reason for e-book non-usage, followed by the lack of interest (8.3 %) and the lack of the proper equipment for reading e-books (7.4 %). Only 0.4 % believed e-books are too expensive.

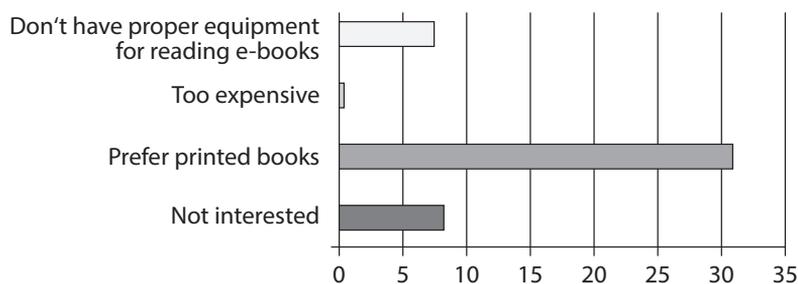


Figure 1: Reasons for e-book non-usage

To get an oversight on students' view on printed books, e-books and enhanced books, students were asked to rate statements on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). In the part related to the comparison of e-books and printed books, only e-books users were asked to participate ( $N = 131$ ). According to research findings, students preferred printed books to e-books ( $M = 4.24$ ,  $SD = 1.001$ ) and tended to agree that printed books are more suitable for learning than e-books ( $M = 4.28$ ,  $SD = 1.010$ ). The majority of participants agreed reading from the screen is difficult (*I find it harder to read on the screen than paper*:  $M = 4.07$ ,  $SD = 1.118$ ) and problematic for focus and concentration (*I find it harder to focus when reading on the screen*:  $M = 3.84$ ,  $SD = 1.239$ ), while they disagreed with "I remember more when reading on screen" ( $M = 2.16$ ,  $SD = 1.036$ ). Generally, the students agreed that "E-books are more practical than printed books" ( $M = 3.09$ ,  $SD = 1.140$ ).

In the part related to students' general preferences regarding enhanced content in enhanced e-books, e-book users and non-users alike ( $N = 230$ ) were required to rate statements on Likert scale (1 = strongly disagree, 5 = strongly agree). Overall, all participants ( $N = 230$ ) agreed with the statement "I have never heard of enhanced e-books" ( $M = 2.18$ ,  $SD = 1.530$ ) and disagreed with having already used an enhanced e-book ( $M = 1.80$ ,  $SD = 1.184$ ). No general preferences towards interactive content in enhanced e-books were shown, with one exception (*Good enhanced e-book has to have a lot of different media to present the content*:  $M = 3.79$ ,  $SD = 1.067$ ). In average, students are neutral regarding their intent to use enhanced e-books ( $M = 3.12$ ,  $SD = 1.129$ ). When asked in which field enhanced e-books might develop in the future, participants often chose education (65.7 %), followed by handbooks (36.2 %), entertainment (33 %), children literature (21.7 %) and guides (16.7 %). Fiction was rarely chosen (5.7 %).



### 3.2 E-book users and non-users

Statistically significant differences between e-book users and non-users were found in the familiarity with the enhanced e-books, their usage and intentions to use enhanced e-books in the future (cf Table 6). E-book users are more familiar with enhanced e-books ( $t(219.08) = 2.59, p < .01$ ). In average they have already used enhanced e-books ( $t(225.767) = 5.252, p < .001$ ) and also intend to use them in the future ( $t(228) = 5.46, p < .001$ ).

**Table 6:** Differences between e-book users and non-users

	<i>M</i>	Using e-books		Test for equality of Variances		T-test for Independent Samples		
		Users ( <i>N</i> = 131)	Non-users ( <i>N</i> = 99)	<i>F</i>	<i>P</i>	<i>t</i>	<i>df</i>	<i>p</i>
I have never heard of enhanced e-books	<i>M</i>	2.40	1.89	4.420	0.037	2.59	219.08	0.010
	<i>SD</i>	1.56	1.44					
I have already used an enhanced e-book	<i>M</i>	2.13	1.36	21.541	0.001	5.252	225.767	0.001
	<i>SD</i>	1.21	1.01					
I will use an enhanced e-book in the next 5 years	<i>M</i>	3.45	2.68	0.302	0.583	5.46	228	0.001
	<i>SD</i>	1.03	1.11					

*M* – mean, *SD* – standard deviation

### 3.3 The reading device

The participants were divided into groups based on the devices they used for e-book viewing (e-readers, *N* = 12; tablets, *N* = 30; PCs, *N* = 92; smartphones, *N* = 64; participants could choose multiple answers; cf Table 7). Their answers regarding the future development of enhanced e-books were observed. Regardless the group, education was the most common answer (83.3 %; 70.0 %; 72.8 %; 70.0 %), followed by handbooks (50.0 %; 43.3 %; 42.4 %; 50.0 %) and entertainment (41.7 %; 43.4 %; 28.9 %, 31.7 %). Fiction was the least frequently chosen option (16.7 %; 16.7 %; 6.5 %; 8.3 %).

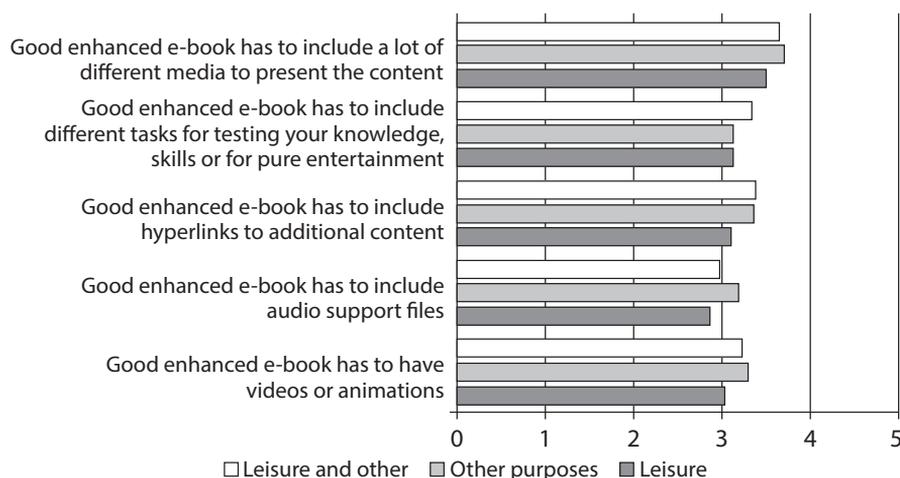


**Table 7:** Difference between users of various devices in relation to the future of enhanced e-books

Device	Education	Entertainment	Handbooks	Children literature	Fiction	Guides
E-reader (N = 12)	83.3	41.7	50.0	41.7	16.7	33.3
Tablet (N = 30)	70.0	43.3	43.3	30.0	16.7	26.7
Computer (N = 92)	72.8	28.9	42.4	21.7	6.5	19.6
Smart phone (N = 64)	70.0	31.7	50.0	21.7	8.3	26.7

### 3.4 The intentions to use e-books

In this part (cf Figure 2), students who were identified as e-books users ( $N = 131$ ) were divided into three groups based on why they use e-books for: leisure reading ( $N = 29$ ); reading for other purposes ( $N = 166$ ) and leisure plus other purposes ( $N = 97$ ). Participants could choose multiple answers. The preferences in the content of enhanced e-books were observed. The leisure group, in average, expressed a lower rate of agreement with statements regarding the importance of different interactive and multimedia content in enhanced e-books. All groups agreed the most with the statement “Good enhanced e-book has to include a lot of different media to present the content” (leisure:  $M = 3.52$ ,  $SD = 1.122$ ; reading for other purposes:  $M = 3.71$ ,  $SD = 1.112$ ; leisure plus other purposes:  $M = 3.66$ ,  $SD = 1.108$ ).



**Figure 2:** What elements are important to different groups



### 3.5 Differences between those who prefer printed books and those who prefer e-books

The t-tests were made to determine differences in attitude towards enhanced e-books between e-book users ( $N = 131$ ) who preferred printed books ( $N = 102$ ) and those who preferred e-books ( $N = 29$ ; cf Table 8). Participants, who preferred e-books expressed more intent to use enhanced e-books in the next five years than those who preferred printed books ( $t(129) = 1.052, p < .05$ ). No other statistically significant differences were found.

**Table 8:** *Difference in users preferring different reading medium*

		Preference		Test for equality of Variances		T-test for Independent Samples		
		E-books ( $N = 131$ )	Printed books ( $N = 99$ )	<i>F</i>	<i>P</i>	<i>t</i>	<i>df</i>	<i>p</i>
I have never heard of enhanced e-books	<i>M</i>	2.62	2.34	0,048	0.826	0.843	129	0.401
	<i>SD</i>	1.52	1.58					
I have already used an enhanced e-book	<i>M</i>	2.21	2.11	1.537	0.217	0.389	129	0.698
	<i>SD</i>	1.05	1.25					
I will use an enhanced e-book in the next 5 years	<i>M</i>	3.79	3.35	0.532	0.467	1.052	129	0.042
	<i>SD</i>	1.08	1.00					

*M* – mean, *SD* – standard deviation

### 3.6 The frequency of use of e-books

In the study the average differences between three groups of students using e-books were explored. Students ( $N = 131$ ) were grouped in accordance to how frequently they used e-books: a) daily or weekly ( $N = 31$ ), b) monthly ( $N = 37$ ), and c) yearly ( $N = 87$ ).

A group using e-books daily/weekly reported statistically significantly fewer problems in reading on the screen (*I find it harder to read on the screen than paper*,  $M = 3.32$ ,  $SD = 1.427$ ;  $F(2, 128) = 10.064, p < .001$ , *I find it harder to focus when reading on the screen*:  $F(2, 128) = 17.743, p < .001$ ). Groups using e-books monthly and yearly reported a significant preference for printed books to e-books ( $F(2, 128) = 7.346, p < .001$ ). The group using e-books yearly also reported significant preference for studying from



printed books rather than e-books (*Printed books are better for studying than e-books:  $F(2, 128) = 8.977, p < .001$* ). Statistically significant differences were found in students' intentions to use enhanced e-books in the next five years (*I will use enhanced e-books in the next 5 years:  $F(2, 128) = 4.133, p < .05$* ) and views regarding the practicality of e-books (*E-books are more practical than printed books:  $F(2, 128) = 6.872, p < .001$* ).

To identify which elements and how strongly they affect the frequency of the e-book use, linear multiple model regression was calculated (cf Table 9). The model is statistically significant ( $F(15, 139) = 4.930, p < .001$ ) and explains 34.7 % of variability in the frequency of the e-book use. The results show the answers to – *I find it harder to focus when reading on the screen* – ( $\beta = -.164, p < .05$ ) and – *E-books are more practical* – ( $\beta = .270, p < .05$ ) have the largest impact on the frequency of the e-book use; both having an important role in student's decision regarding how often they will use e-books. The answer to “*Good enhanced e-book has to include videos or animations*” is implied as a trend factor ( $\beta = -.195, p = 0.59$ ), affecting the frequency of the e-book use.

**Table 9:** Factors affecting the frequency of e-book use

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	2.339	0.696		3.361	0.001
E-books are more practical than printed books	-0.139	0.064	-0.164	-2.157	0.033
I find it harder to focus when reading on the screen	0.205	0.073	0.270	2.815	0.006
Good enhanced e-book has to include videos or animations	-0.177	0.093	-0.195	-1.905	0.059

## 4 Discussion

In average, students of graphic arts technology in Slovenia were using e-books, although not for a day-by-day use (cf Table 2). Preference for printed books seems to negatively affect the e-book usage among e-book users and non-users alike. This is compatible with findings from other research (Hernon, Hopper, Leach, Saunders, & Zhang, 2006; Woody, Daniel, & Baker, 2010; Cassidy, Martinez, & Shen, 2012; Elias, Phillips, & Luechtefeld, 2012; Vrana, 2014). The preference for printed books was also listed as the main reason for e-book non-usage among the students participating in this research (cf Figure 1). Compatible results were obtained in Oliveira research (2012).



In average, the students used e-books for leisure reading (cf Table 5). In contrast, other reports show students mostly used e-books for research (Cumaoğlu, Sacici, & Torun, 2013; Wu & Chen, 2011). The deficient number of e-books on graphic arts available (cf Table 1) could have affected the nature of participants' e-book use presented in this research.

Results show participants most frequently used computers and smartphones for e-book reading (cf Table 3); similarly to findings from Cumaoğlu, Sacici & Torun (2013) study. The majority accessed e-books through the Internet; only rarely they were lent from libraries (cf Table 4). These results suggest problems with accessibility and lack of relevant e-books on Slovenian market as both E-Emka and Biblos do not offer e-books on graphic design (Bibloslib, 2014; EMKA.SI, 2015). Moreover, the range of academic graphic arts e-books in libraries is limited (cf Table 1), with some e-books listed in COBIB unavailable despite being on the list. It is unclear to what extent e-book lending is practiced in Slovenia or how familiar students are with this option.

The research revealed no preferences towards interactive content in enhanced e-books. This implies that other e-book functions matter more to students, similarly to the results from Cassidy, Martinez, & Shen study (2012). The purpose of e-book usage did not affect the preference regarding enhanced content. This implies that students are not overly concerned about the enhancement in e-books, attributing more value to other features of e-books instead.

The choice of preferred medium did slightly affect the belief regarding the future field of development for enhanced e-books (cf Table 7); although education was strongly predominant regardless. Other conclusions cannot be made, as the sample size of some groups e.g. e-book reader and tablet users is not representative for broader characterization.

The research confirmed **H1**: students generally perceived printed books as better for learning and reading compared to e-books, similarly to Oliveira's research (2012). It is possible that students' attitude towards e-books was based on personal assumptions rather than experience.

The **H2** was confirmed, as e-book users expressed a higher level of familiarity with enhanced e-books and intent to use them in the future (cf Table 6). This suggests that e-books users, who are more familiar with relative advantages of e-books and more competent in their use, are more accepting of this technology. Similar findings were reported in other studies (Aharony, 2014; Jin, 2014). Results also show that students who preferred e-books to printed books expressed a higher intent to use enhanced



e-books in the future. This suggests that the preference of the printed medium affects the intent to use enhanced e-books in the future, outlining the students preferring e-books as a likely target market for enhanced e-books.

**H3** was confirmed: participants using e-books more frequently perceived e-books more favourably and reported fewer troubles with reading on screen. This suggests that the frequency of the use affects the perception of the e-book use; the more the students use e-books, the more useful they perceive them. The studies by Aharony (2014) and Jin (2014) found compatible results.

## 5 Conclusion

At this point, various media of e-books are not widely spread among students of graphic arts technology in Slovenia, as the majority prefers printed books; even among e-book users. It is hard to determine whether this is a result of long-rooted beliefs or actual preferences.

On the other hand, students expect the development and growth of enhanced e-books, especially in the academic field; most of the students expressed the intention to use enhanced e-books in the following five years.

Data show e-book users are more accepting of enhanced e-books, with computers and smartphones being the most common choice of device for e-book reading. In contrast, a lot of e-reader and tablet users believe in the evolvement of enhanced e-books on all given fields of choice (education, entertainment, handbooks, children literature, fiction, guides). Most participants also agreed that a good enhanced e-book must contain different media for presenting the content, otherwise no special preferences regarding the content were found.

It can be concluded that the more often the students use e-books, the less problematic will they find reading from the screen, and as the screen technology will continue to improve, the impact of factors negatively affecting the frequency of the e-book use will be lessened, if not nullified.

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## Appendix

### SURVEY ON THE USAGE OF E-BOOKS

Gender: M F                      Age: \_\_\_\_                      Year: 1 2 3 4 5

Faculty and studying course: \_\_\_\_\_

1. How often do you use e-books?
  - a) Daily
  - b) Few times per week
  - c) Few times per month
  - d) Few times per year
  - e) Don't use (Please go to question 6.)
  
2. Which device do you use for reading e-books? (You can select multiple answers.)
  - a) E-reader
  - b) Tablet
  - c) Computer
  - d) Smart phone
  
3. Where do you get access to e-books? (You can select more than one answer.)
  - a) Library
  - b) Bookshop
  - c) Internet
  - d) Other: \_\_\_\_\_
  
4. What do you use e-books for? (You can select multiple answers.)
  - a) Reading for pleasure
  - b) Information searching
  - c) Literature for seminars, research, diploma, articles ...
  - d) Studying and additional education
  
5. Evaluate next statements by circling a number from 1 to 5, where 1 stands for "strongly disagree" and 5 for "strongly agree".

I prefer printed books to e-books	1	2	3	4	5
E-books are more practical than printed books	1	2	3	4	5
I find it harder to read on the screen than on paper	1	2	3	4	5
I find it harder to focus when reading on the screen	1	2	3	4	5
I remember more when studying from e-books compared to printed books	1	2	3	4	5
Printed books are better for studying than e-books	1	2	3	4	5



6. Why don't you like to use e-books?

- a) Not interested
- b) Prefer printed books
- c) Too expensive
- d) Don't have the proper equipment for reading e-books

7. Enhanced e-books are an advanced form of e-books and can contain various features such as videos, animations, audio files, moving pictures and illustrations etc. They function similar to applications but are usually easier to use. Evaluate next statements by circling a number from 1 to 5, where 1 stands for "strongly disagree" and 5 for "strongly agree".

I have never heard of enhanced e-books	1	2	3	4	5
I have already used an enhanced e-book	1	2	3	4	5
Good enhanced e-book includes videos or animations	1	2	3	4	5
Good enhanced e-book includes audio support files	1	2	3	4	5
Good enhanced e-book includes hyperlinks to additional content	1	2	3	4	5
Good enhanced e-book includes different tasks for testing your knowledge, skills or for pure entertainment	1	2	3	4	5
Good enhanced e-book includes a lot of different media to present the content (videos, pictures, audio files ...)	1	2	3	4	5
I like playing video games	1	2	3	4	5
I will use enhanced e-books in the next 5 years	1	2	3	4	5

8. The future of enhanced e-books is in:

- a) Education
- b) Entertainment (e.g. similar to video games)
- c) Handbooks (e.g. Cooking handbooks, DIY)
- d) Children literature
- e) Fiction
- f) Guides

Thank you for your participation.

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