

## **STUDENTS' PREFERENCES FOR ONLINE OR PRINTED TEACHING-LEARNING MATERIALS IN THE E-LEARNING**

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### **ABSTRACT**

This research has been the first stage of a comprehensive research into e-learning habits at Szent István University, Gödöllő, Hungary. In the first part of the research, a case study was used to find out and map the individual needs and difficulties of a foreign student in the e-learning course. In the second part of the research, all graduating correspondence students in the Management and Leadership MSc and Supply Chain Management MA programmes filled in a questionnaire. Eight research questions and two hypotheses were formulated. The answers received to the first two questions indicate that students significantly use computing tools and the Internet to study. They use electronic devices, of which laptops and smart phones are used most of the time to search on the Internet. Consequently, the first hypothesis that foreign students use internet a lot in their academic studies was confirmed. Despite this finding, the answers to questions from 3 to 8 indicate that students use e-learning only to reach the teaching and learning e-content, they continue to prefer traditional ways of learning and resources such as printed materials. Students prefer printed and printer-friendly versions of downloadable electronic materials. The last part of the research found that the slides used by lecturers should be readable, simple, clear, uncluttered and colourful with pictures, and should not contain a lot of information. Our second hypothesis that foreign students learn on the internet interface, was refuted. In the future, the research will be replicated with and extended to other university students at SZIU and younger generations. This article does not discuss the cognitive reasons behind the findings.

**KEYWORDS:** education management system (EMS), electronic vs. printed e-learning materials, layout of slides, case study, questionnaire

## **1. INTRODUCTION**

### **1.1. The advantages of e-learning**

E-learning has been gaining ground and popularity both among university teachers and students. A lot of organizations and educational institutions use e-learning and e-learning methodology because it can provide effective and cheaper educational tools compared to traditional classroom teaching and traditional printed textbook materials, and also because the coronavirus pandemic has forced schools to shut down temporarily and start online teaching. At the beginning, it may seem that it is more expensive and time-consuming to develop e-learning materials with multimedia applications using interactive, online methods, than traditional printed classroom materials. E-learning also requires some technical support, such as servers, computers and a computer room equipped with an interactive smart board and dedicated to this specific educational purpose. However, later on, the costs are lower especially if other than the costs of classroom facilities are considered. Once e-learning materials are completed, teacher's time is saved, as is the time dedicated to the correction of homework assignments and tests: homework assignments in the e-learning systems can be corrected faster, and tests can be updated and reused as many times as the teacher wishes. The e-learning materials can be updated faster and cheaper, as

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compared to traditional printed coursebooks. E-learning materials must be compiled once, and upon being saved they can be used for a long time, provided modifications and updates are made to them. Whereas if traditional printed coursebooks become out of date, the only thing we can do is to get rid of them. E-learning materials are cheap for the students as well because teachers provide them with the teaching and learning materials for free. Due to e-learning softwares, teachers can give immediate feedback to students. Apart from fast feedback, e-learning offers effective, interactive instructional methods, such as collaboration with peers in breakout rooms, activities for self-paced study, personalized learning and testing based on learners' needs and abilities, the use of simulations, gamification, videos and authentic media materials. Further, all learners receive the same quality of instruction, bias or prejudice are avoided.

E-learning materials are convenient because of their permanent availability and accessibility, retrievability, attractive display, forwarding capabilities and adaptability. E-learning materials can be reached from all places, from home, homework assignments can be made even on the train, bus or underground. Moreover, e-learning and teaching may reach a wide target audience, those who have difficulty attending traditional classes because they are located in geographically far away places, or have limited free time, mainly in the late hours, because of work and family commitments, or are restricted in their mobility because of health, illness, culture, religion, politics, location. These factors do not allow them to attend courses on specific dates with a fixed timetable in a specific location. E-learning has become an indispensable teaching tool in the corona virus pandemic of today. The coronavirus pandemic has accelerated the spreading of e-learning and forced thousands of teachers to start to use e-learning applications, e-methods and e-materials.

## **2. THEORETICAL BACKGROUND**

### **2.1. Definition of e-learning system**

Coursebooks and supplementary tasks, exercises, tests and even videos stored on CDs are considered the first e-materials, however, today CDs have become obsolete. In most advanced e-learning courses, the student (the user) can study with the intelligent education software independently. Recently, students have been able to communicate freely on multiple platforms, which are used for e-services similar to Web 2.0 (e-learning video 2.0: chat, video, etc.). The process is supervised by the computer, the instructor is accessible via the Internet.

It is difficult to produce a single definition of e-learning, which includes all that have been said above and is accepted by most of the scientific community. Sangrà et al. [1] have collected 15 different definitions of e-learning, which were grouped by their focus as follows: 1. Technology-Driven Definitions, 2. Delivery-System-Oriented Definitions, 3. Communication-Oriented Definitions, 4. Educational-Paradigm-Oriented Definitions.

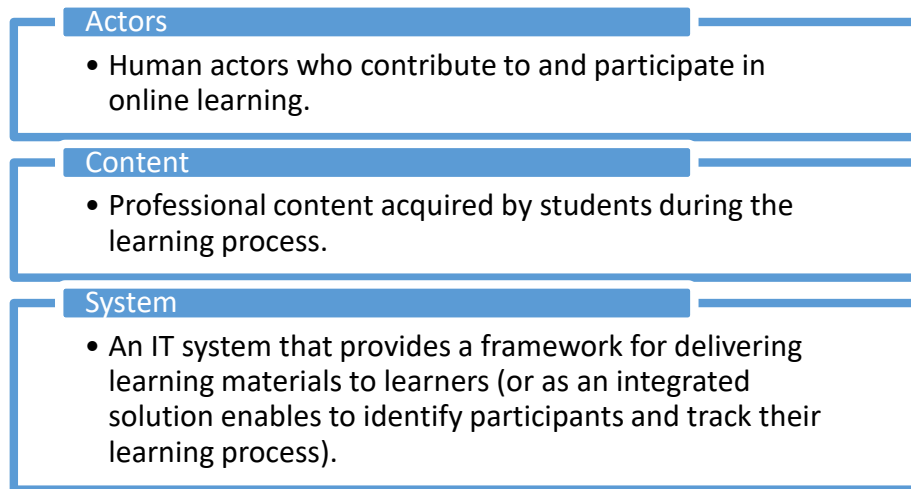
One of the best-known definitions was provided by Horton [2], who says that e-learning is the use of electronic technologies to create learning experiences. Some definitions add a specified focus to the term, like Course Management System (CMS), Learning Management System (LMS), Virtual Learning Environment (VLE), Knowledge Management System (KMS), or Massive Open Online Course (MOOC).

Yousef et al. [3] defined the significance of MOOC and its impact on the learning and education processes as follows: "Massive open online courses (MOOCs) have drastically changed the way we learn as well as how we teach. The main aim of MOOCs is to provide new opportunities to a massive number of learners to attend free online courses from anywhere all over the world." The most significant characteristic of MOOC is that it can be reached from anywhere all over the world, because the aim of MOOC is to overcome real geographic distance, not just the distance between home and classroom but also between countries and any other parts of the world.

However, for our research purposes a more specific and detailed definition is needed, therefore we have created our own definition: e-learning is training, knowledge transfer, a study process supported by digital devices and assets (storage, retrieval, display, forwarding and content feedback, study aids). It is an open format and a training framework accessible from a private or public network that enables effective organization of the user's (young or adult) training process and appropriate communication between students and teacher, as well as teacher's feedback on the students' performance irrespective of their location and time.

## 2.2. The elements of e-learning systems

Three key elements of e-learning are presented in Figure 1.



*Figure 1. The elements of e-learning  
Source: Poór et al., [4]*

Human actors can be the following: 1. Administrators: their task is to operate and maintain the e-learning infrastructure. 2. Educational administrators: their task is to continuously monitor the educational activity, student enrolment, compilation of training plans, new training needs. 3. Curriculum developers: their task is to maintain and transform learning materials into electronic education materials. 4. Teachers: their task is to mentor, motivate students, answer their professional questions, evaluate their work, handle student issues, compile and update the teaching material. 5. Students: they obtain knowledge, develop abilities and skills by e-learning.

The different types of e-learning systems and curricula are shown in Figure 2, while the categorization of system solutions is presented in Figure 3.

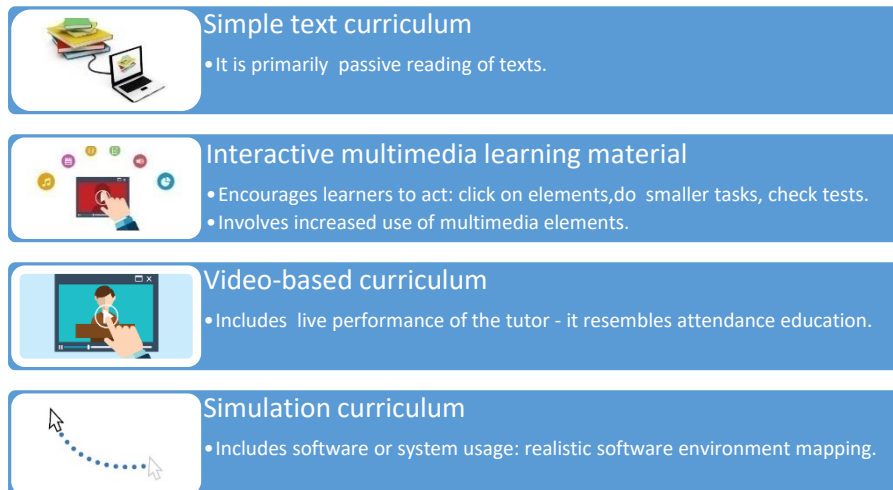


Figure 2. The different types of e-learning systems

Source: Poór et al., [4]

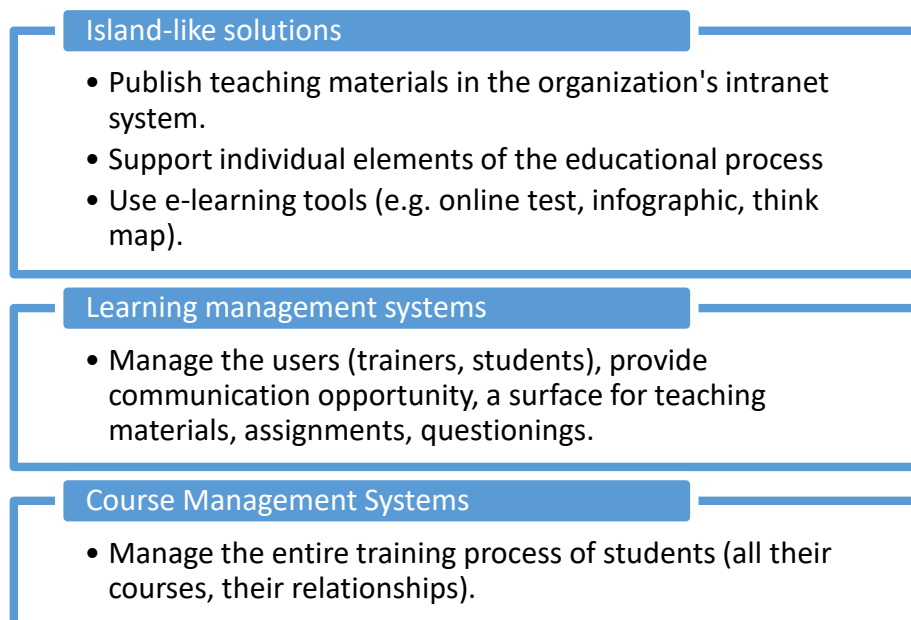


Figure 3. The system solutions

Source: Poór et al., [4]

### 2.3. Literature

The first question about e-methodology for university students should focus on students' preferences, motivation and willingness to actively use the system and its learning tools for studies. Apart from that, the educational goals and outcome should be considered, for example if the requirement to achieve the course is to give an oral presentation online or to submit an academic paper, the pedagogical and methodological e-tools should be chosen accordingly. All this means that using e-learning methodology is also pedagogical and cognitive challenges, together with an informatical one (Upadhyaya-Mallik [5], Wan et al [6]). E-learning must support a whole series of pedagogical requirements like support of cognitive processes (thinking), systemization of knowledge, creating professional skills, supporting collaborative processes and integrating acquired skills into daily practice (Esterhuyse et al [7]).

Consequently, the compilation of e-teaching material provided for students should consider all these factors, of which students's preferences for the e-learning materials (online or

printable, the layout of slides) are researched by this study. Despite the tsunami of e-books and e-materials, some studies have found that students simply prefer print to digital (Millar et al [8], Mizrachi [9], National Association of College Stores [10]). Other studies have found that students prefer key phrase outlines (line by line), pictures and graphs, color backgrounds on power point slides (Apperson et al [11]), because these features make the cognitive intake more efficient.

### **3. RESEARCH GOAL AND RESEARCH METHODOLOGY**

The goal of the research was to find out what difficulties foreign students face in the e-learning course (case study), what types of electronic devices foreign students use in their academic studies and how frequently they use the internet in their studies. We also asked them whether they prefer using the e-learning materials online or printed, and what features of the slide layout facilitate their learning process (questionnaire).

The research used qualitative and quantitative study: the former was a case study, the latter one a questionnaire.

#### **3.1. Methodology: Case Study Research**

The case study research design has become popular over the past few years to analyse specific situations in different scientific disciplines such as social science, psychology, anthropology, political, science and human resources management. Psychologists, anthropologists, social scientists and others have seen case study research design as a valid method of research for many years because it provides realistic and thus sometimes unexpected results and responses to research issues. Case studies are especially useful to test scientific theories and models and to explore trends in real world situations and all sorts of other contexts, because they are in-depth studies and empirical inquiries into particular situations.

Case studies should support, confirm or facilitate the launch of qualitative and quantitative research. The results of a case study tend to be more opinion based as opposed to quantitative statistical methods. Case studies ensure a holistic approach to the research question. In a case study design methodology, it is not an obligation to collect numerical data, instead we can map and judge trends and analyze data which are related to our research questions (Shuttleworth [1]).

Case studies can be conducted in a small study group or with an individual. In the design of a case study, it is important to focus on 'letting things happen as always' and 'letting the participant say whatever comes to their mind': the researcher can be an active participant (like a coach in the case study below) or a passive observer if we want to have a snapshot of real situations. However, we should make sure that the study is focused and concise. We chose the methodology of the case study because we wanted to get a sincere feedback and opinion about the e-learning course and the individual coaching sessions seemed to be a proper tool for that.

#### **3.2. Case study: a coaching conversation with a foreign student participating in an e-learning course**

This case study shows an individual coaching session with a foreign student at Szent István University, who does e-learning based courses. These courses were introduced into the curriculum at Szent István University almost ten years ago. Most of the students who participate in such courses are foreign students of different backgrounds, cultures and religions. For most of them, e-learning does not pose any difficulty, however, for some, private tutoring or coaching conversations are needed to help them cope with the challenges of the e-learning system. One of such students, whose name cannot be mentioned in here for confidentiality reasons, is from an Arab country. He is 19 years old, his knowledge of the English language is B1, and he almost

failed in the e-learning course. Therefore, the instructor decided to talk to the student in order to find out his e-learning material preferences and the root cause of the failure and the challenges he faces in the e-learning course daily.

It was also expected to help the instructor to focus more on the individual student's needs and expectations in terms of the e-learning materials and methodology. Because of the pressure of time and because immediate results were expected, individual coaching conversation seemed to be the most efficient methodology to explore.

### **3.2.1. Results: the description of the case study of an individual foreign student doing an e-learning course at SZIU**

Since each coaching session is confidential, the name of the student is not mentioned in this article. The coach was one of the authors of this article. This case study gives an account of the coaching session held with this foreign student. The coach first introduced herself and asked the student to briefly introduce himself as well and speak a little bit about his background. Next, the coach told the student that she knew that the student had difficulties in the e-learning course, therefore, she would like to initiate a conversation with him to find out how the instructor could help him do the e-learning course efficiently and motivate him to get better grades. The coach said that the conclusions of this private conversation would be used by the instructor to help the student, no personal information would be disclosed, it would be treated confidentially. So the coach and the participant „signed a contract” in which they agreed to the confidentiality rules. Contracting is an important part of the individual coaching session partly because the focus of the session is clarified, and partly because the expectations from the participants are made clear in order to avoid disappointment. In this case it was extremely important, because the coaching conversation was initiated by the instructor of the course and the coach, so there was a possibility that the student would not be willing to contribute and tell his problems openly. Therefore, the coach said to the student that the session would be successful only if the student talked openly and told the truth about whatever came to his mind concerning e-learning materials, motivation, difficulties, the personality and teaching methods of the instructors, etc. Each idea was put on a piece of paper by the coach, without adding any personal remarks to them. The purpose of the individual brainstorming was to find out what were the real and true issues that caused difficulties in completing the e-learning course successfully. In a case study coaching session, the coach needs to be flexible and adaptable to the needs of the individual and the flow of the conversation: if a new issue arises and the individual wants to talk about the new issue, the coach should adapt to the new situation, follow the flow without intervention.

The coach continued by asking the student to specify his expectations from the e-learning course: *Please, specify your expectations from the e-learning course. What would make you feel satisfied at the end of the e-learning course?* The student said that he was enthusiastic at the beginning of the e-learning course because his parents lived in Vienna, a city close to Budapest, and he went to visit them each weekend. Thanks to the e-learning system, he thought he would be able to do his homework assignments from Vienna at the weekend. At first, the methodology of e-learning seemed to be convenient because he didn't have to carry heavy coursebooks with him on the train. However, it soon turned out that his IT-skills were not so good, his parents and his younger brothers could not help him with the use of the e-learning software, so finally he gave up experimentation and travelled back to the university without completing his homework assignments. At some point, he wished he had had some printed coursebooks. He had the slides of the classroom presentations with him, but the slides were cluttered with too much information, just a few pictures and illustrations. He felt he would prefer slides with less information and more pictures and illustrations. Also, to use the slides

for learning was difficult for him because his professional language skills were not good enough.

Now it was up to the coach to help and support the student to find the solutions to the raised issue. The coach thus asked *what kind of e-learning materials he would prefer*. He said that the printed version of the e-learning materials would be helpful, in which he could take his notes and write the Arab versions of the English professional terms.

The coach then asked him to tell her his „vision” about an ideal e-learning course, and invited him for a game. The coach asked him to imagine that overnight a fairy creates an ideal e-learning course which suits his requirements and expectations in all respects, and invited him to describe his next class in the e-learning course answering the following questions: *What would be different the next day? What would the e-learning course look like? How would you feel? How would your family feel? How would your instructor feel?* He said that he would like to get the e-learning materials before the class, not just the slides but the background reading materials as well, and at the beginning he would print them out, both the background materials and the slides, and take them with him to Vienna for the weekend. He would prefer slides less cluttered, with less information, but more illustrations, pictures, graphs. He would feel more self-confident if the instructor could be reached by e-mail as well and he could help him when he was stuck in the e-learning system. He would feel more confident and motivated to do his homework assignments, and his parents, especially his father, would be very satisfied with him, since his father pays a lot of money to finance his son's studies. The instructor would also be satisfied with him, which was very important for him.

All his ideas were again collected on a piece of paper, and passed over to the student. Next, the coach asked the student to do some scaling game and asked. *On a scale from one to ten, where would you put your success in the e-learning course? What needs to happen for you to move forward on the scale and reach ten? If you wish, you can use the notes I have just given to you.* The student said that he was at eight on the scale at the moment, and he would move forward to nine on the scale or even ten if he had the opportunity to have some of the e-learning materials printed, however, as soon as he would feel confident with the e-learning system he would not need the printed versions of the coursebook and the slides.

Finally, the coach went on asking: *Under these ideal learning and teaching conditions, how would you be able to do all the homework assignments and prepare for the classes? What would be your strategies?* The student said that he would ask the help of the instructor in email or through the e-learning system when he was stuck, and he would definitely read the slides provided for them before classes.

Since the time went by fast, the coach concluded the conversation asking the student to set up an „action plan”: *When will you try your new strategies? Which strategies will you try tomorrow?* He said that the following weekend he would take some of the printed learning materials with him, and the next day he would talk to the instructor to ask his email address so that he could ask for help.

The success of the coaching session was shown by the student's feedback and answers to the last questions of the coach: *Have the results of the coaching session met your prior expectations? How happy are you with the results of the coaching session? How do you feel now?* All his answers were positive, he enjoyed the session and promised to try his new strategies. He was smiling and seemed satisfied at the end of the session. The next day, the coach called the instructor and gave him feedback.

#### **4. The questionnaire**

##### **4.1. Research questions in the survey**

The survey as part of the quantitative research attempted to answer the following questions:

1. *Question #1: [14] How important is the Internet for you when you study?*

2. *Question #2: [17] How often do you use the following tools (laptop, smartphone, e-book reader, tablet, personal computer) to study?*
3. *Question #3: [20] How effectively can you learn from the following types and forms of learning materials?*
4. *Question #4: [23] Approximately what percentage of downloadable material do you print out?*
5. *Question #5: [24] How important do you think it is to have printer-friendly versions of downloadable materials?*
6. *Question #6: [25a] If a downloadable course material is available before a lecture, then a.) do you print it out in advance and bring it to the lecture?*
7. *Question #7: [25b] If a downloadable course material is available before a lecture, then b.) do you download it to some mobile device and bring it to the lecture?*
8. *Question #8: [26] How important are the following features of slides for you?*

#### 4.2. Hypotheses

H1: The Internet is used by students to a great extent during their studies, i.e. the Internet is indispensable for students to learn. (Q1, Q2)

H2: Students typically learn on the e-learning interface. (Q3, Q4, Q5, Q6, Q7, Q8)

#### 4.3. Materials and Methods

The survey was conducted among foreign students of Szent Istvan University (SZIU). All students participated in one of the economic training programmes at SZIU: Management and Leadership (MA) correspondence training programme, Management and Leadership (MA) full time training programme, Supply Chain Management (MA) correspondence training programme. They were graduating students in their last year, who had experience in the e-learning systems at SZIU.

Table 1.

#### The proportion of respondents and total population.

Source: authors' own research

Training time	All [person]	Respondents [person]	Proportion [%]
Correspondence	165	120	72,7
Full time	32	27	84,4
Total	197	147	74,6

According to Table 1, the questionnaire was filled in by 74.6% of the graduating students, who are considered as the population of the research. It can be stated that the results are considered relevant, realistic and reliable.



Pedagogical Sections

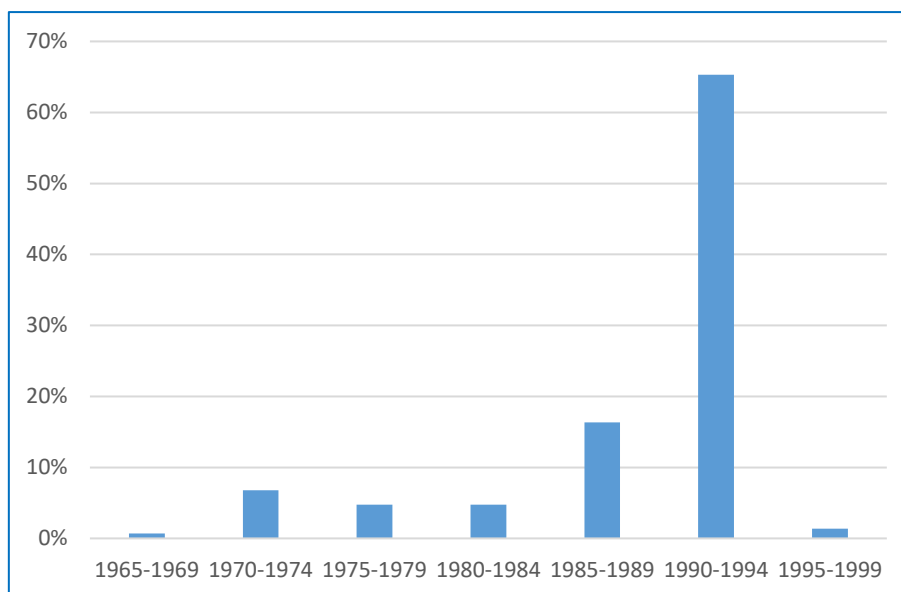


Figure 4. Age distribution function

Source: authors' own research

No sensitive or personal information was collected during data collection, so the identification of students by their Neptun code (student ID number) did not cause any personal data protection problems. Most of the respondents were between the ages of 24 and 28 years, the typical ages of university students (Figure 4).

## 5.RESULTS

This research was part of a more extensive research in which students answered a total of 39 questions. The full questionnaire is not being cited here, the answers only to the most relevant 8 questions (see above) are analysed and reported. The square brackets indicate the number of the question in the original questionnaire.

### 5.1.The use of the Internet

*Question #1: [14] How important is the Internet for you when you study?*

The data in Table 2 show that 91% of students (rows C+D) use the Internet to a large extent for learning. This has a strong correlation with Hypothesis 1. Based on the findings, it can be stated that students rely heavily on the Internet in their studies, so the first hypothesis that “The Internet is used to a decisive extent by students during their studies, i.e. the Internet is indispensable for students to learn” was confirmed.

Table 3.

### The frequency of the use of IT tools to study

Source: authors' own research

	person	percentage
A) not at all important	0	0 %
B) rarely, but I use the internet for learning	13	9 %
C) I often use the internet to learn	90	61 %
D) I cannot learn without internet	44	30 %
E) other	0	0 %

Table 2. The importance of the Internet for learning

Source: authors' own research

Pedagogical Sections

Question #2: [17] How often do you use the following tools to study?

	A) never	B) rarely	C) sometime	D) often	E) usually	F) always	E+F columns
personal computer	58%	11%	4%	5%	13%	10%	22%
laptop	3%	2%	1%	9%	33%	52%	85%
tablet	67%	5%	7%	11%	7%	4%	11%
smart phone	10%	13%	7%	31%	27%	13%	39%
e-book reader	86%	3%	3%	6%	1%	0%	1%

Table 3 shows that students use laptops most often (85%). The use of smart phones is also significant (39%), probably because the Internet can immediately be accessed by both devices from all places. Interestingly, they use e-book readers the less.

**5.2.Display vs. print out**

Questions #3, #4, #5, #6, #7 related to the way how students use the available e-learning materials.

Question #3: [20] How effectively can you learn from the following types and forms of learning materials?

Table 4 shows that printed materials are the most popular among students. They find downloadable materials which are to be read on screen surprisingly appropriate for studies. Hence, the printed version of downloadable digital materials is preferred more. Unfortunately for teaching material developers, the texts that can be viewed on the e-learning interface is not considered to be the most suitable material by students, however, multimedia materials seem to be a bit more popular.

Table 4.

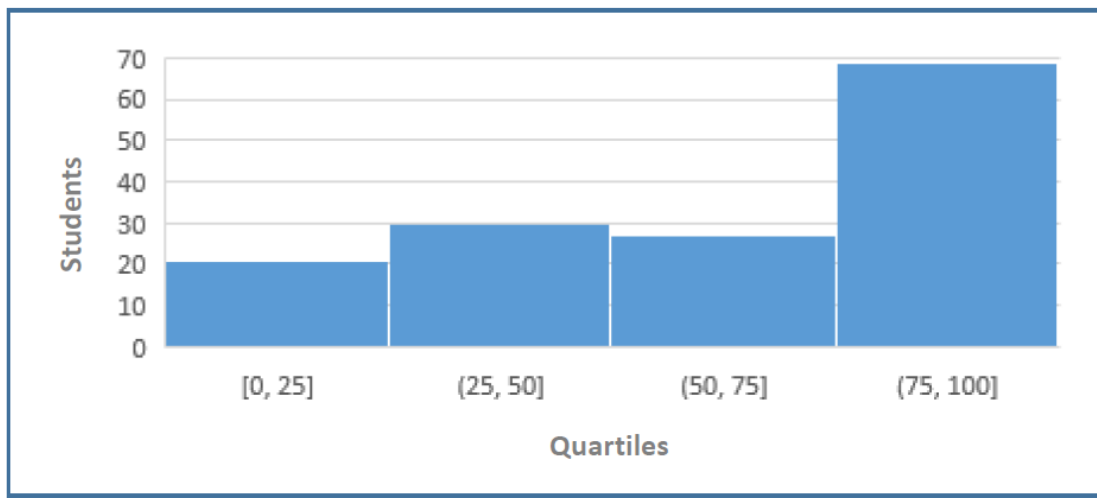
	not at all	a little bit	rather no	rather yes	greatly	fully
printed materials (book, note)	0	7	4	18	36	82
downloadable digital materials (book, note, presentation) on some device	1	10	30	38	46	22
downloadable digital materials (book, note, presentation) printed	0	1	8	15	45	78
texts available on the e-learning interface (typically not intended for download)	8	20	45	44	21	9

Pedagogical Sections

multimedia materials (image, video, animation) on the e- learning interface	5	21	29	54	24	14
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The efficiency of the different types and forms of learning materials in e-learning courses  
Source: authors' own research

*Question #4: [23] Approximately what percentage of downloadable material do you print out?*  
There were 90 students (almost 50%) out of 197 respondents who reported that they printed out at least 75% of the downloadable learning materials, especially when when they were preparing for tests, as shown in Figure 5.



*Figure 5. The number of students who printed out the downloadable material*  
Source: authors' own research

Pedagogical Sections

Question #5: [24] How important do you think it is to have printer-friendly versions of downloadable materials?

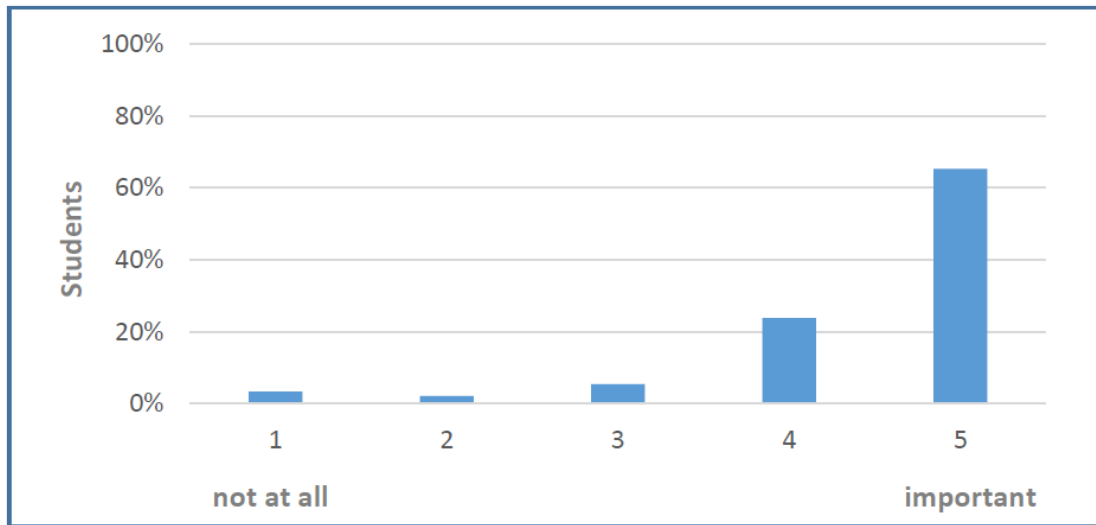


Figure 6.. The percentage of students who think that printer-friendly version of teaching materials is important

Source: authors' own research

Students consider it extremely important that the materials in e-learning should have a printer-friendly version: 65% of students said it was very important, as shown in Figure 6.

Question #6: [25a] If a downloadable course material is available before a lecture, then a.) do you print it out in advance and bring it to the lecture with me?

Question #7: [25b] If a downloadable course material is available before a lecture, then b.) do you download it to some mobile device and bring it to the lecture?

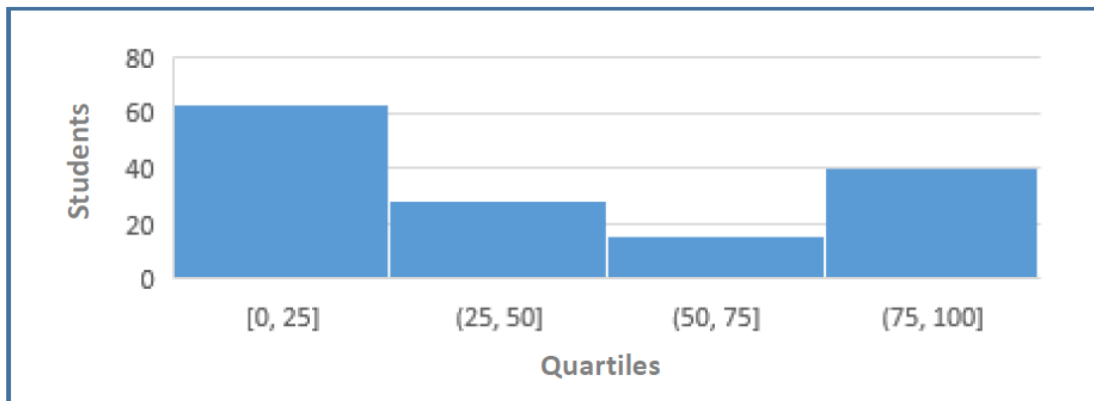


Figure 7. The number of students who print out downloadable course material before the lecture

Source: authors' own research

Pedagogical Sections

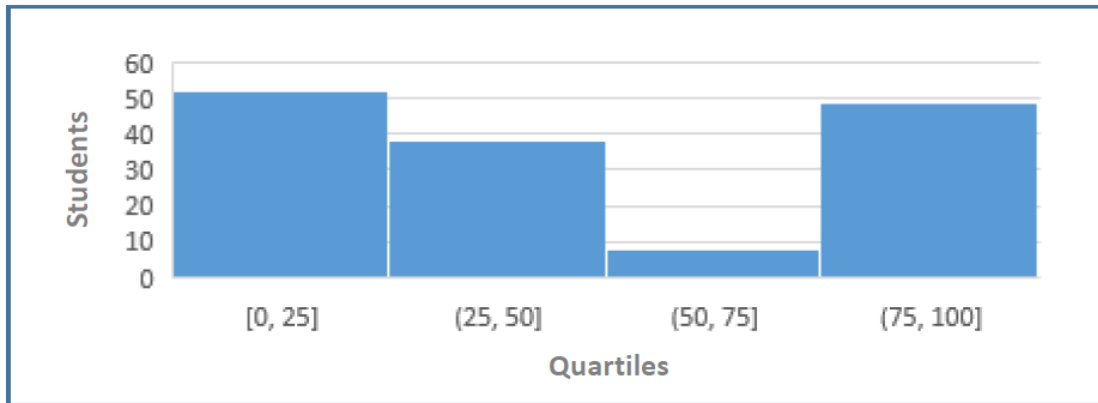


Figure 8. The number of students who download available course material and read it on mobile device during the lecture

Source: authors' own research

An interesting correlation is shown by Figures 7 and 8. In the lectures, students read the downloadable content on a mobile device rather than use printed versions. Only 70 students out of the 197 respondents who completed the questionnaire indicated that they would print out up to 25% of the materials before the lecture. This correlation is found in the 1st Quartile in Figure 8. Overall, it can be stated that printed materials are preferred by students, and thus it can be concluded that Hypothesis 2, that is “Students typically learn on the e-learning interface”, is rejected.

Question #8: [26] How important do you think the following features of slides are for you?

Visual appearance of the slides matters a lot, of which legibility and the suitability of slides for self-study (colourful, with pictures and illustrations, uncluttered, not too much information line by line) were the most important features for foreign students as Table 12 shows.

Table 12.

The importance of the features of slides as indicated by students

Source: authors' own research

	1	2	3	4	5
Slides should be colourful, full of pictures and illustrations	25	31	28	37	26
Slides should be detailed, with a lot of information in a slide	46	31	36	24	10
Slides should be uncluttered (not too much information, legible, line by line)	0	5	16	31	95

6. DISCUSSION

According to the results obtained in the private coaching session, the foreign student liked the e-learning course and the e-material, however, he had poor IT and language skills, therefore the printed versions of the e-learning materials would have been more helpful for him. Also, he would prefer slides with less information and more pictures.

The results of the quantitative survey were in line with the results of the private coaching session. The answers received to the first two questions indicate that students significantly use computing tools, especially smart phones and laptops, and the Internet to study. This is not surprising in itself, since the internet and these tools are present in all areas of life, especially in the time of the corona virus pandemic. Consequently, the first hypothesis was confirmed. The answers to questions from 3 to 8 determine that printed materials are popular among students, they prefer downloadable and printable digital materials. Texts without images and illustrations on the e-learning interface are not considered to be very popular among students, however, multimedia materials seem to be quite popular (Q3). Almost 90 (almost 50%) out of 197 respondents printed out at least 75% of the downloadable learning materials some time during the course, especially in their preparation for tests (Q4), therefore students (65%) consider it extremely important that e-learning materials should have a printer-friendly version (Q5). True, before lectures, students (40%) rarely print out the learning materials; in the lectures, they mostly read the downloadable content on their mobile devices. At the same time, visual appearance and layout of the slides used in the lectures matter a lot, their legibility, colourfulness, clarity, simplicity and the information structured line by line in the slides are the most important features for foreign students, which features make the slides suitable for self-study.

## 7. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

It has been concluded that the quality and type of e-learning materials are very important factors to motivate and help students to use the e-learning system and they contribute to the efficiency of the e-learning methodology and to achieve the pedagogical goals. Our research population use the electronic devices in their studies a lot, however, they prefer the traditional, downloadable, printed versions of the e-learning materials to online e-materials when they prepare for tests. It is also not surprising that the layout of the slides should be clear, line by, uncluttered, and colourful. At the same time, it should not be overlooked that the younger generations of primary and secondary schools, abroad and domestically, use almost exclusively electronic teaching and learning materials, and their expectations may differ from those of the older generations. Therefore, in the future the research will be replicated not only with and extended to other university students at SZIU, but younger generations as well in order to determine the best methodology to improve the efficiency of e-learning. Also, the cognitive background and explanation of the findings will be analysed in forthcoming research. Finally, the foreign student in the coaching session mentioned that he had poor IT skills, which is also an important finding of the research and needs further examination, because students are thought to have proper IT skills, but in fact, they fail to have the required IT competencies at universities.

## REFERENCES

- [1] Albert Sangrà, Dimitrios Vlachopoulos, Nati Cabrera (2012): Building an inclusive definition of e-learning: An approach to the conceptual framework, *The International Review of Research in Open and Distributed Learning*, Vol 13, No 2 (2012) DOI: <http://dx.doi.org/10.19173/irrodl.v13i2.1161> (in English).
- [2] William Horton (2011): *e-Learning by Design*, John Wiley & Sons (in English)
- [3] Ahmed Mohamed Fahmy Yousef, Mohamed Amine Chatti, Ulrik Schroeder Marold Wosnitza and Harald Jakobs (2014): MOOCs A Review of the State-of-the-Art, *CSEU 2014 - 6th International Conference on Computer Supported Education*, Barcelona, Spain (in English). <https://doi.org/10.1007/978-3-319-25768-6>

- [4] Poór József, Szalay Zsigmond Gábor, Pető István, Sasvári Péter, Mester Adrienn, Zsigri Ferenc (2017): E-LEARNING MAGYARORSZÁG – 2017, pp. 1-25., ISBN 978-963-269-645-4 (in English).
- [5] Upadhyaya, K.T. and Mallik, D. (2013): E-Learning as a Socio-Technical System: An Insight into Factors Influencing its Effectiveness. *Business Perspectives and Research*, July-December, pp. 1-12 <https://doi.org/10.1177/2278533720130101>
- [6] Wan, Z., Compeau, D. and Haggerty, N. (2012). The Effects of Self-Regulated Learning Processes on E-Learning Outcomes in Organizational Settings. *Journal of Management Information Systems*, 29, pp. 307–339 <https://doi.org/10.2753/mis0742-1222290109>
- [7] Esterhuyse, M., Scholtz, B. and Venter, D. (2016). Intention to Use and Satisfaction of e-Learning for Training in the Corporate Context. *Interdisciplinary Journal of Information, Knowledge, and Management*, 11, pp. 347-365 <https://doi.org/10.28945/3610>
- [8] Michelle Millar – Thomas Schrier (2015) Digital or Printed Textbooks: Which do Students Prefer and Why? *Journal of Teaching in Travel & Tourism* 15(2):1-20, April 2015, DOI: 10.1080/15313220.2015.1026474
- [9] Diane Mizrahi (2014) Online or Print: Which Do Students Prefer? *Communications in Computer and Information Science* 492, Volume: 2, DOI: 10.1007/978-3-319-14136-7\_76
- [10] National Association of College Stores (2010). Electronic book and e-reader device report. Accessed May 6th, 2020.  
Retrieved from:  
[http://www.nacs.org/LinkClick.aspx?fileticket=blmPMgdQ\\_LA%3d&tabid=2471&mid=3210](http://www.nacs.org/LinkClick.aspx?fileticket=blmPMgdQ_LA%3d&tabid=2471&mid=3210)
- [11] Jennifer M. Apperson, Eric L. Laws, James Scepansky (2008) An assessment of student preferences for PowerPoint presentation structure in undergraduate courses, January 2008, *Computers & Education* 50(1):148-153, DOI: 10.1016/j.compedu.2006.04.003
- [12] Martyn Shuttleworth (2008) Case Study Research Design,  
Retrieved from: <https://explorable.com/case-study-research-design>, as of May 6th, 2020.