An analysis of the impact of the knowledge management technique of e-learning on developing the students' learning process from ASE Bucharest

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Abstract. *The paper focuses on providing an academic context that will help to understand better the concepts of knowledge management and e-learning on a university background. The study investigates the use of e-learning tools within the student learning process on 200 respondents (students) from the Bucharest University of Economic Studies. It was based on a survey analyzing in a comparative manner the features and benefits of e-learning versus traditional learning and the outcomes revealed that e-learning should be used in a more frequent and efficient manner as it presents much interest to the students and it can contribute to their research abilities, not only to their final grades for different disciplines.*

Keywords: knowledge management, e-learning, student learning process, student learning outcomes

Introduction

Knowledge management represents a wide concept, used in different organizational contexts having as aim to bring a valuable improvement to that organization's goals. This paper focuses on applying a knowledge management technique - e-learning - within an educational institution, the Bucharest University of Economic Studies. The focus is to investigate what are the ways in which both students and professors can make use in the most efficient manner of the available e-learning tools and also in what measure are these tools present in the learning and teaching process at the Bucharest University of Economic Studies or how can the university develop the necessary resources in order to encourage the proper and constant usage of these tools.

Therefore, the paper focuses on these two essential research questions:

- How can knowledge management contribute to improving the student learning process through its technique of e-learning within the Bucharest University of Economic Studies?
- Is e-learning a proper and preferable tool (by students) to be used in favor of facilitating the implications of knowledge management in the educational context of the university mentioned above?

Literature review

The concept of knowledge management refers, in a general manner, to a series of practices which are used within an organization with the role of conceiving, capturing, interchanging and putting in practice what the members of that organization possess as knowledge (Donate and Sanchez de Pablo, 2015). Improved performance, competitive advantage, and increased innovation are some of the usually identified outcomes of putting in practice the knowledge management techniques (Lau and Tsui, 2009).

The understanding of knowledge management is beneficial for any organization. One of its multiple advantages is that, through its appliance, it is able to effectively address both the technology and the information culture within an institution and, in the same time it looks for developing them. Both the technology and the information culture are unique to the hierarchical setting of the school, college or university (Judrups, 2015). For this type of organization the process of learning is very important as it includes processes such as gaining the capacities and experiences, processes that are beyond the scholastic appraisal of students. Being restricted by an area that constantly requires development and upgrades internally and externally in what concerns the student learning outcomes, educational systems are trying to find a path through which they can become even more powerful in gathering, dispersing and distributing knowledge and identify a way which will allow them to change that knowledge into successful and effective decision making and action (Arkorful and Abaidoo, 2015).

Providing quality learning materials and continuously helping at improving evaluations of students are one of the strongest reasons for which the knowledge management technique of e-learning is used for. A previous study conducted by Yilmaz showed that there are structural relationships between knowledge sharing behaviors, academic self-efficacy and sense of community for university students using e-learning (Yilmaz, 2016). Even though it is easy to state that e-learning should take the place of the traditional learning, as it shows more advantages that is not completely accurate. A short description of the advantages and disadvantages of each type of learning is provided within table 1.

Table 1. E-learning versus traditional learning

Types of learning	Advantages	Disadvantages
E-learning	Time and location flexibility Cost-effective for learners Global and unlimited access to shared information Self-paced	Lack of immediate feedback in asynchronous e-learning Increased preparation time for instructor Non-comfortable. Anxiety frustration and confusion to some people
Traditional learning	Immediate feedback Familiar to both students and instructors Cultivation of a social community Motivating students	Instructor-centered Time and location constraints More expensive to deliver

Source: Hubackova, S. Pedagogical Foundation of Elearning. *Procedia-Social and Behavioral Sciences*, 131, 24-28

It becomes clear that e-learning represents a valuable addition to the existing teaching and learning process and that students and teachers can take advantage of the existing assortment of e-learning devices, which are available for them to use in their day-to-day educational activities (Lam et al., 2014).

Methodology

The main focus of the study is to understand how the knowledge management technique of e-learning can be used in higher education in order to improve the student learning process in Romania, more specifically within the Bucharest University of Economic Studies. In favor of understanding and finding ways through which knowledge management can be

better implemented and used, the survey approach was chosen as the most suitable method with the questionnaire as the most appropriate data collection instrument. The main interest was in finding out students' opinions regarding the existing teaching methods, their preferences and their position towards e-learning.

The survey was delivered to students from the Bucharest University of Economic studies, via online Facebook groups and there were 50 respondents, studying at all 10 faculties of the university. The respondents were 60.8% females and 39.2% male. Speaking of the level of studies, the respondents were 51% with Master's Degree, 49% with Bachelor's Degree. The questionnaire was based mainly on 19 close questions. The questions were designed to reveal the student's opinions regarding the appliance of knowledge management in the current courses/ seminars, the methods of delivery of the courses/ seminars, the perceived limitations of both delivery methods – face-to-face and online. A range of questions were created to discover what is the students' usage of some e-learning tools – such as search engines, social media apps, email apps, etc.

Results and discussions

When it comes to the methods already used by professors versus the desired ones of the learning materials' delivery at the Bucharest University of Economic Studies, as seen in Figure 1, 76% of the respondents revealed that they would better prefer a combination of both face to face and online learning methods to be used in delivering the learning materials. However this is happening according to their perception only in 29%. The results show that most of the students agree that the most used delivery method is face-to-face classroom interaction, while they would rather prefer a combination of both face to face and online learning. These answers have a great impact, as they could change the manner in which the learning process is performed at the Bucharest University of Economic Studies in order to be close to what students need and in this way raising the level of interest that students show towards the educational process.

Figure 1. Actual versus desired situation of the use of learning techniques within ASE Bucharest

Source: Author's own research

The next questions of the survey aimed to assess the students' opinions regarding the limitations of both face-to-face classroom interaction and online learning. At these questions, there were multiple possible answers, with the possibility of choosing more than one answer. As stated in figure 2, the various limitations for the face-to-face classroom interaction and their percentages were the following: existing delivery methods are boring and not creative

(76%), lack of communication between lecturers and students (38%) lack of strategic ways of delivering course methods (36%), lack of being student centered (32 %), slow feedback from lecturers (18%) and other limitations (6%). The fact that most of the students found as a limitation of the face-to-face classroom interaction the point that the existing delivery methods are boring and not creative calls for a more dynamic and for an urgent change in what concerns them. E-learning would be a perfect tool for doing so, as it implies the usage of technology which is evolving from day to day and with which students are so familiar and for which they present much more interest. Also, e-learning provides a better medium for learning, a more interactive and creative one. The second limitation chosen by students is the one referring to the lack of communication between students and teachers which represents an issue, as being face-to-face should, on the contrary, encourage a better communication, not affected by other misunderstandings that could arise in online communication, due to the lack of mimics, tones and gestures.

Figure 2. Limitations of face-to-face classroom interaction within the learning process in ASE Bucharest

Source: Author's own research

Among the options of the limitations of online course delivery methods there were: students need to be active learners and are responsible for their own learning (72%), it requires more time to learn than on-campus classes (24%), frequent breakdown of technology (24%), delay in getting information (22%), the users must possess a minimum level of computer knowledge (14%) and other limitations (12%). One of the most voted limitation in what concerns the online delivery methods is – as per figure 3- the fact that students need to be active learners, which translates in the fact that students find it more difficult to learn on their own and they need support and motivation from their teachers.

Figure 3. Limitations of online learning within the learning process within ASE Bucharest

Source: Author's own research

Also, using a scale from 1 to 10 as a method of finding out how familiar are students with each of the e-learning tools in an educational context (search engines – Google, Yahoo, Bing etc., instant messaging – Messenger, WhatsApp etc., YouTube, Microsoft PowerPoint, Facebook, Email – Yahoo, Gmail, Outlook etc.), the highest score was won by the search engines, with 50% respondents scoring it at 10. The next one was YouTube, with a number of respondents of 45% scoring 10. On the third place there were the instant messaging apps and the email, with an equal percentage of respondents of 35. On the fourth place there was Facebook, with 27% of respondents, closely followed by Microsoft PowerPoint, with 17% of respondents scoring it at 10. These answers show us that search engines are the most preferred tools in what concerns learning contexts, while the others mostly distract them from learning.

Next, the purpose of using each and every e-learning tool in the educational context was revealed and the answers are enumerated in the next paragraphs. For example, 86% of the total number of respondents use search engines (Google, Yahoo, Bing, etc) for doing research, while 76% of them use it for finding solutions to problems. When it comes to the purposes of using instant messaging, 78% of the total number of respondents use instant messaging (Messenger, Whatsapp, etc) for chatting with lecturers and colleagues, 65% of them use it for sending and receiving files and 56% of them use it for discussing assignments. Referring to the purposes of students using YouTube, 84% of the respondents use YouTube to share videos with important and interesting information regarding their field of study and/or other fields and 16% of them use it for uploading videos in which you explain concepts related to their field of study. If we are speaking about the aims of students using PowerPoint, 82% of the total respondents use Microsoft PowerPoint with the purpose of creating presentations for the lectures, while 64% of them use it in order to view other people's presentations. When tackling the goals of using Facebook, 58% of the respondents use Facebook as a tool for uploading documents/ photos/ videos –while 92% use it to chat with lecturers and/or colleagues on university groups. If we are talking about the purposes of students using email, 92% of the respondents use email (Yahoo, Gmail, Outlook etc) to send or receive emails to and from students and/ or lecturers, while 32% of them use it for organizing events or tasks using the calendar

In the next part of the survey there were some affirmations which had the goal of discovering what the students find interesting at using e-learning tools, whether e-learning creates a better medium for students to perceive easier more difficult information, whether university has all necessary resources for this type of teaching delivery, whether and in what measure online learning provides a better learning experience. The first affirmation was “E-learning helps me access real-time data, knowledge, virtual simulations, web pages etc.” and its aim was to find out whether students believe that e-learning makes a better and faster tool for accessing information. Most of the respondents ranked this affirmation with “strongly agree”, which gives an insight regarding the students' opinion.

The second affirmation was “I am able to interact better with my classmates using e-learning tools such as instant messaging, forums, social networks etc.” – this one was asked in order to observe if e-learning tools create a more efficient communication medium with colleagues and, again, most of the students strongly agreed.

Most of the students agreed as well with the following affirmation: “I am able to understand difficult concepts using e-learning tools through the use of multimedia elements

such as video, audio, graphics and animation”, which means that e-learning not only creates a way through which access to information is faster, but it also becomes a helpful tool for students to understand and process information of a higher difficulty. This happens because whenever students do not understand a difficult concept it becomes easier for them to look it up on search engines, YouTube or ask their teachers and colleagues online. 22 out of 50 respondents agreed that “E-learning supports collaboration with lecturers and colleagues using computer, chats, Skype etc”.

Figure 4. Respondents' answers to the questions of the survey – part 1

Source: Author's own research

Neutral opinions were given to the fact that “My university e-resources (school websites, platforms) support my e-learning”. This refers to the fact that the University's platforms and websites are not as much of a help for the implementation of e-learning as a teaching tool, therefore an improvement should be brought to this. 21 respondents strongly disagree with the fact that “I find using technology devices difficult for my learning”. This is a century of speed and of great usage of Internet therefore it is mostly encouraged that the online environment is used also in this field of activity – the educational one.

It has been agreed by the majority that “E-learning makes studying fun for me”. This doesn't imply that learning should be seen as something not serious, but it means that as long as there are methods through which the transfer of knowledge and information can be done in a more creative and entertaining way, this should be applied.

Another point with which the majority agreed is that “E-learning provides technical support in assessments, email, real time chats, instant messaging etc”. E-learning can become a faster way through which exchange of knowledge is done. For example, if there is something unclear regarding a concept, a student can faster ask someone (a lecturer or a colleague) via instant messaging/email or search via search engines or YouTube more explanations regarding that concept, rather than waiting for the next course/ seminar and finding out then more necessary information. The same goes for “I am able to access globally and share information with my colleagues and lecturers”, with which 23 out of 50 respondents strongly agreed.

21 respondents agreed with the fact that “My online experiences help me engage in my learning”, meaning that via the online medium students find the necessary support and motivation to learn more.

Another point of view for using e-learning tools is “I believe that using e-learning helps to increase my computer skills” – which brings a plus to this, as it helps gaining other skills, not only the skills gained through the acquiring of information. An affirmation that should raise a point of interest among the teachers and educational institution’s administrative staff is that “I think e-learning is better than traditional learning”, which has been agreed by 20 out of 50 respondents. The following three affirmations are somehow inter-related, all of them referring to the psychological matters of using e-learning tools – communication, socializing, asking for help and self-confidence – “I am able to develop my communication and online societal activities with the use of e-learning”, “When I can’t understand the material in the course, I ask my colleagues for help using an e-learning tool” and “I am able to explore ideas confidently with other people”. 23, 24 and 25 respondents, respectively, agreed with these two statements. The last statement “I am able to retrieve electronic feedback and electronic grades from my lecturers using university website” revealed a number of respondents of 20 that disagree with the fact that the university website is a useful tool for receiving grades and, especially feedback.

Therefore, with a scale containing options like: Strongly disagree, Disagree, Neutral, Agree, Strongly agree, the affirmation that was mostly chosen and strongly agreed by the students (number of respondents: 23), was “I am able to access globally and share information with my colleagues and lecturers”. On the second place, 21 students strongly agreed with “E-learning helps me access real time data, knowledge, virtual simulations, web pages etc.”. On the third place, the affirmation “I am able to interact better with my classmates using e-learning tools such as instant messaging, forums, social networks etc” was selected by 18 respondents.

The affirmation that students strongly disagreed with (number of respondents: 21) was “I find using technology devices difficult for my learning”. Students mostly agreed with the fact that “E-learning provides technical support in assessments, email, real time chats, instant messaging etc.”, with a number of respondents of 25, followed closely by “I am able to understand difficult concepts using e-learning tools through the use of multimedia elements such as video, audio, graphics and animation”, “E-learning makes studying fun for me, I believe that using e-learning helps to increase my computer skills” and “When I can’t understand the material in the course, I ask my colleagues for help using e-learning tools”, each one rated by 24 students. Figure 5 describes the students’ choices on the next four affirmations.

Figure 5. Respondents' answers to the questions of the survey – part 2

Source: Author's own research

The least agreed affirmations were "I am able to retrieve electronic feedback and electronic grades from my lecturers using university website" with 20 answers, "I find using technology devices difficult for my learning" with 10 respondents and on the third place was "My university e-resources (school websites, platforms) support my learning" with 9 respondents. In Figure 6 it can be observed what are the students' opinions regarding the next four statements.

Figure 6. Respondents' answers to the questions of the survey - part 3

Source: Author's own research

The respondents were neutral to the following affirmations: My university e-resources (school websites, platforms) support my learning (17 answers), I think e-learning is better than traditional learning (16 answers), I am able to explore ideas confidently with other people (15 answers), E-learning provides technical support in assessments, email, real time chats, instant messaging etc.. (14 answers) I am able to interact better with my classmates using e-learning tools such as instant messaging, forums, social networks etc., I am able to retrieve electronic feedback and electronic grades from my lecturers using university website and My online experiences help me engage in my learning (12 answers), I believe that using e-learning helps to increase my computer skills and E-learning makes studying fun for me (11 answers), I am able to develop my communication and online societal activities with the use of e-learning (10 answers), When I can't understand the material in the course, I ask my colleagues for help using e-learning tools (8 answers), E-learning supports collaboration with lecturers and colleagues using computer, chats, Skype, etc. (7 answers), E-learning helps me access real time data, knowledge, virtual simulations, web pages etc., I am able to understand difficult concepts using e-learning tools through the use of multimedia elements such as video, audio, graphics and animation and I find using technology devices difficult for my learning (6 answers), I am able to access globally and share information with my colleagues and lecturers (3 answers). Figure 7 represents a summary of what students chose for the last four affirmations.

Figure 7. Respondents' answers to the questions of the survey – part 4

Source: Author's own research

Conclusion

With the aim of understanding better how to interpret the data achieved via questionnaires, I had to firstly do a research on the theoretical meaning of the concept knowledge management and its implications – e-learning as a facilitator of improving it in the Bucharest University of Economic Studies, the student learning process in general and the student learning outcomes – meaning what will result after the proper usage of knowledge management practices. Multiple conclusions have arisen from this part, but one of the most relevant ones is the fact that the proper appliance of knowledge management practices within any types of organizations – but especially within educational ones – would bring a great improvement of the student learning process in general. Even though this would bring multiple and considerable benefits to the student learning process, teachers and educational institutions' administrators should be aware of the fact that it brings also a lot of challenges.

A second point of interest to be analyzed was represented by the e-learning tools. E-learning represents a facilitator in what concerns the introduction of knowledge management practices within an educational institution. The fact that the Internet has nowadays developed very much and it is being used by almost everyone with a lot of different purposes (personal, professional, etc.), represents a relevant starting point in introducing e-learning tools more and more in the educational context. The questionnaire was designed in order to strengthen this affirmation and for the answers to be taken as an important part of the process of improvement of the student learning processes.

Therefore, the conclusions that I drew from the study of the questionnaire's answers are multiple. First of all, the number of students who could from the beginning identify the meaning of the knowledge management concept was smaller than the ones who couldn't, thing that should raise a question mark regarding the spread of this important concept. However, after being given a simple explanation of what it implies, the numbers reversed. This means that students have the capacity of understanding the concept and understand its beneficial implications and could be used as a supporter for the improvement of knowledge management. The fact that they believe, on average that most of the time the knowledge management practices have been used during the lectures leads us to the conclusion that a step is done into implementing it more and more and all it has to be done is to constantly use

it during lectures and seminars. Speaking of the e-learning tools and their usage and frequency of usage, it appears that students find them very useful and a very important part of their everyday learning. The conclusions drawn from their answers are that not only do the e-learning tools represent a more interactive medium through which the learning process is made, but these tools also help them better communicate with each other, with teachers and give them confidence of exposing their ideas.

As a final conclusion, the answers of the research questions have been mostly given by the answers of the respondents of the questionnaire, combined with the theoretical parts studied in the first part of the paper. The e-learning tools (subject of the second research question) and the knowledge management practices that can be used to contribute to improving student learning process (subject of the first question) are inter-connected. Given the answers of the respondents, yes, e-learning is not only a proper, but definitely a preferable tool to be used in favor of facilitating the implications of knowledge management in the educational context and the way in which knowledge management can contribute to improving student learning process in the Bucharest University of Economic Studies is by helping students get more involved in the learning process in the first place and communicating more – all of these achieved with the help of e-learning.

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