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Research Article

Self-efficacy and student satisfaction in the context of blended learning courses

Altmetric

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ABSTRACT

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ABSTRACT**Introduction****Literature review****Research hypotheses****Methodology****Results****Conclusions**

Higher education institutions are increasingly looking for the adoption of new ways to improve education quality, enhance student engagement, and manage knowledge resources. Technological developments have a significant impact on education, and technology-mediated learning is steadily progressing, with blended learning being implemented in education institutions. This article focuses on student satisfaction resulting from the introduction of a blended course, which was implemented in a 'Management' course, in university premises. In particular, we investigate Learning Management System (LMS) factors that affect its self-efficacy and the impact it has on student satisfaction. The results show that LMS self-efficacy positively impacts students' satisfaction with their education. Moreover, we identify the content of the system, system accessibility, and system components related to the enhancement of critical thinking, to be important determinants of LMS self-efficacy.

Q KEYWORDS: Blended learning

Learning Management System self-efficacy

student satisfaction higher education

Introduction

With technological advancements higher education is actively looking to find effective models for providing students with more opportunities and a higher quality of learning.

As students focus on extracurricular activities as knowledge resources, they have less time for academic purposes (Pinto & Ramalheira, 2017). Thus, blended learning has emerged as a solution that has the potential to enhance their learning experience and engagement (Broadbent, 2017; Chen et al., 2010; Lin, 2018), that improves access to information (Chaiyama, 2014; Holley & Oliver, 2010; Okaz, 2015), and offers a flexible solution to learning, (Jun & Ling, 2011; Owston et al., 2013b; Rahman et al., 2015), while meeting the institutional requirements of higher education.

Student engagement and active participation in their respective courses are an issue in education. Extracurricular activities take time, with the result that student engagement in learning activities may become more scarce, and students may relapse into a vicious circle of low morale regarding their academic capacity, which includes low motivation, low

self-efficacy, and low engagement, eventually turning into low academic achievement and low levels of satisfaction (Wang & Degol, 2014). New information and communication technologies offering new ways of producing, distributing, and attaining university education in compliance with traditional methods of learning and teaching can improve the situation (Victoria López-Pérez et al., 2011). Learning Management Systems (LMS) are being used to contribute to these improvements, as information systems that facilitate blended learning with both synchronous and asynchronous elements. Another concept that is central to LMS use is student-self-efficacy. Eom and Estelami (2012) has defined self-efficacy as an individual's belief in his or her ability to perform a certain task yielding perceivably desired levels of performance appropriate to the skills, he/she has. Self-efficacy determines how people engage with one-another, how they motivate themselves, and ultimately how they behave (Bandura, 2012, 2004, 1986; Ozer & Bandura, 1990; Schunk & Pajares, 2001; B. Zimmerman, 1995). However, in the context of blended learning, self-efficacy is understood as students' abilities to enact skills that enable them to successfully use and benefit from computers and other information technologies (Compeau et al.,). Compeau and

Higgins (1995) have provided an early definition for self-efficacy in blended learning environments, interpreting it as an individual's perceived usefulness in using computers in the accomplishment of a task. This definition is more suitable to the context of our study.

In the context of Albanian higher education, blended learning would represent a significant improvement over traditional learning methods, which have often produced low efficiency rates (Chen & Jones, 2007; Rovai & Jordan, 2004; Thorne, 2003), potentially discouraging students during their learning process (Chen & Jones, 2007; Gil & García, 2012). However, universities appear to be more resistant towards the adoption of new methods and generally tend to be conservative in technology adaption (Garrison & Kanuka, 2004; Garrison & Vaughan, 2008). With regard to introducing blended methods, in our case the goal was to introduce a low-cost and effective method to improve students' satisfaction, experience, and engagement in the learning process, hence the purpose of this paper to study the impact of blended learning on student satisfaction by examining the effect of self-efficacy on student satisfaction. The study aims to examine this relationship by identifying LMS-related factors that stimulate self-efficacy in students. The

effect of improved self-efficacy is multidimensional, as it can improve motivation, academic performance, student behaviour and approach, persistence in their goals, etc.

To investigate the impact of blended learning on student satisfaction we polled students from the Faculty of Economy, University of Tirana. 375 Bachelor students, from a pool of 600, between 18–21 years old, who study Business Administration and Economic Informatics, in years I and III of their studies.

Literature review

Blended learning and the LMS

Higher education institutions are adopting blended learning at an increasing rate (Chung et al.,). Garrison and Vaughan (2008) suggest a number of reasons for the growing interest in this method, emphasising the need to engage students and enhance learning experiences. Further, there are more institutional challenges that can be tackled by adopting a blended learning approach such as growth, cost of education, and flexibility (Porter et al., 2014). Stein and Graham (2014) summarise some of the main benefits blended learning has the potential to provide: (i) increased

access and convenience; (ii) improved learning due to improved instructional design; (iii) decreased costs due to reduction of classroom and travel time and expenses. Technology usage, as a defining part of blended learning, is associated with various benefits for education. According to Spiliotopoulos (2011), technology has the potential to increase student-to-faculty and student-to-student interaction, by providing flexibility, and helping overcome limitations of location, time, delivery method, and the communication styles offered in many face-to-face courses, which can further increase suitability of the course (Poon, 2013).

The core technology used in blended learning courses is the Learning Management System (LMS), an information system that facilitates e-learning by supporting teaching and learning activities, as well as the management and interaction associated with them (Klobas & McGill, 2010). As Stein and Graham (2014) have emphasised, in order for a blended course to focus students' attention on learning, teachers must provide them with a structure, interactions, and activities. One of the most important characteristics of an LMS is to provide an environment for learning and teaching without the restrictions of time or distance (Chung et al.,). LMS-s create a new

learning environment with more learning opportunities, less dependence on teachers and a wide range of relations, they encourage student responsibility, reinforce efforts, and provide recognition (Gil & García, 2012).

Teaching and interacting between instructors and students can be performed at the same time (synchronously), or at different times (asynchronously), creating an interactive environment (Wu et al., 2010). In addition, some authors argue that technology and LMS usage alone are not enough to create a blended learning environment, there are additional factors relevant in the matter such as teachers' and students' personal characteristics (Coccoli et al., 2014; Kember et al., 2010).

Hughes (2007) argued that combining blended learning with continuous help and encouragement for low-performing learners improves academic performance and results in less teaching time. Fincher (2010) suggests blended learning for better student retention as a major challenge in higher education.

Woltering et al. (2009) suggest that blended learning increases students' motivation and attains higher subjective learning gains compared to traditional classes. Other studies also support this finding (Kusurkar et al., 2011; Liu et al., 2016; Owston et al., 2013b; Victoria

López-Pérez et al., 2011).

Victoria López-Pérez et al. (2011) found that applying blended learning had a positive effect on reducing dropout rates and in decreasing exam failure rates. In a meta-analysis on the effectiveness of blended learning, Means et al. (2013) found that students in online learning environments performed modestly better than those receiving face-to-face instruction. Moreover, students in a traditional setting are more satisfied with the clarity of instructions than those following blended learning approaches, however, students in blended classes show stronger improvement in analytical skills (Chen & Jones, 2007). In addition, there are differences between effective and ineffective uses of blended learning methodologies that affect it as a practice (Alammary et al., 2014; Kaleta et al.,).

Alammary et al. (2014), classifies blended learning approaches into three categories: low-impact, medium-impact, and high-impact blends. This accounts for changes to an existing teaching programme, as well as student learning experience enhancements as a whole (Garrison & Kanuka, 2004; Garrison, 2007).

Several authors (Alammary et al., 2014; Kaleta et al., ; McCarthy, 2010) have identified low-

impact approaches as those which simply add extra online activities to face-to-face courses. Low-impact blended learning approaches are associated with the risk of either 'swelling' existing courses and increasing student workload, or producing two or more 'separate' courses under the same course denomination (Newcombe, 2011; Garrison & Vaughan, 2008). Thus, Reeves (2003) and Garrison and Vaughan (2008) argue that a piece of added blended-learning activity, without a reduction in face-to-face learning, is perceived by most students as just another task added to the workload of an already content-heavy class or course.

Online technologies, self-efficacy and student satisfaction

Lo (2010) defines student satisfaction as a subjective perception of how well a learning environment supports their academic success. Kuo et al. (2014) suggest that student satisfaction with online learning is related to motivation, dropout rates, success, and commitment to a learning program. Thus, in order to identify areas for development and improvement of online or blended learning, student satisfaction must be evaluated.

Gunawardena et al. (2010) explored factors that predict learners' satisfaction and found

that online self-efficacy is a strong predictor of learner satisfaction. Liaw and Huang (2013), studying factors that influence self-regulation in e-learning, found that one of the factors that affects perceived satisfaction is perceived self-efficacy, together with an interactive learning environment and perceived anxiety, while perceived satisfaction and perceived self-efficacy can have a positive impact on the perceived usefulness of the course. Shen et al. (2013) investigated the relation between online self-efficacy and student satisfaction, by decomposing online self-efficacy into several factors. The results show that all factors of online self-efficacy have a positive impact on student satisfaction.

Bandura (1977),) as mentioned by B.J. Zimmerman (2000) defined self-efficacy as: *'Personal judgments of one's capabilities to organize and execute courses of action to attain designated goals, the author aimed to assess its level, generality, and strength across activities and contexts'*.

Learners' self-efficacy influences the learner approach, attitude and ability to acquire skills, choice of activities, and willingness to continue in a course of action (Liaw & Huang, 2013). Social cognitive theory suggests two critical cognitive factors: performance expectation and self-efficacy, that influence student

behaviour, which in turn have the potential to enhance accomplishment and help determine how much effort they will put into a task (Wu et al., 2010). Self-efficacy should be contextualised to academic rather than general self-efficacy, thus referring to 'students' confidence in their ability to carry out academic tasks' (Zajacova et al., 2005).

Students with higher self-efficacy tend to be more involved, work harder, spend much more effort completing their duties, pursue challenging goals, thus becoming industrious. Researchers suggest that self-efficacy may impact motivation and increase academic achievement (Hsieh et al., 2007). Beside the need to develop abilities and acquire the skills to perform course tasks, students need to develop a strong belief that they can complete these tasks successfully. So, it appears that the motivational component of perceived self-efficacy reflects a positive academic performance (Komarraju & Nadler, 2013).

Online learning is more student-centred and students assume more responsibilities and autonomy, especially in asynchronous learning environments (Kuo et al., 2014). The flexibility and demanding nature of online learning require students to develop more self-regulatory skills, determined by self-efficacy (Putwain et al., 2013). Online learning

also consists of a high level of interaction, which requires a more active and self-regulated involvement of students, who must access the course independently and form a strategy for their own learning processes (Puzziferro, 2008).

In the study of Liang and Tsai (2008), the results indicated that learners with high internet self-efficacy were more satisfied with an online learning environment that allowed them to use the internet, explore various resources of materials, and expand their knowledge. Vekiri and Chronaki (2008) found that learners with computer self-efficacy are more inclined to believe that online learning is important to them and, as the task and problems shift to a computer-based and mediated environment, their perceived level of self-efficacy increases. Additionally, they tend to study more by using online material and are better engaged in the learning process (Bates & Khasawneh, 2007).

Self-efficacy affects students' motivation to learn and engage and, if it is technology-related, the use of technology becomes a motivator. Self-efficacy can be improved during learning through feedback in the form of positive feedback from the experience of using the technology, and positive feedback from the enhancement of learning capacity

(perceived) (Vekiri & Chronaki, 2008).

Research hypotheses

The focus of the study is on LMS-related factors that impact self-efficacy, and with it, student satisfaction. Self-efficacy is defined as students' confidence in their capabilities when using a virtual learning platform, which in our case refers to the LMS. Liaw and Huang (2013) indicate that learners' self-efficacy has the potential to influence learner attitudes, abilities and skills, choice of action, drive, and determination to perform tasks. In the particular case of an LMS, it means there are certain LMS-related factors that can affect self-efficacy. We base our hypothesised model on the virtual learning environment model developed by Piccoli et al. (2001), but we do not consider it to a full extent. The authors study the effectiveness of LMS-s based on their performance, self-efficacy, and student satisfaction, linking these variables to what they have termed 'human dimension', which refers to individual student and instructor characteristics, and 'design dimension' which refers to the factors that determine the quality of an LMS. The design of the LMS we have used for the purpose of this study accounts for the instructive methodology, technological

user-friendliness, degree of user control, content quality, and interaction. The analysis only takes into consideration the relation between LMS self-efficacy and student satisfaction.

Bates and Khasawneh (2007) suggest that there are four factors that influence self-efficacy in the context of blended learning: (1) previous success with online technologies, (2) previous training, (3) continuous feedback, and (4) online learning technology anxiety. Continuous success with the usage of an LMS is a strong factor that influences students' self-efficacy, as it incorporates the confidence a student gains from previous successes with positive feedback from the method they are using. Self-efficacy depends on the difficulty of a particular task, or the perceived difficulty of a task (B.J. Zimmerman, 2000), thus if LMS-related tasks are perceived as easy to execute, levels of self-efficacy are expected to be higher. LMS-s, synchronous and asynchronous forums, wikis etc., can be an important source of critical thinking enhancement (Spiliotopoulos, 2011). Enhanced critical thinking is one of the main factors that determine self-efficacy in online technologies, and we will test whether this claim holds true for the specific case of an LMS.

The following hypotheses are proposed as by

the conceptual model in [Figure 1](#):

H1: Platform content will have a positive influence on the perceived self-efficacy of the student.

H2: Platform accessibility will have a positive influence on the perceived self-efficacy of the student.

H3: Critical thinking will have a positive influence on the perceived self-efficacy of the student.

Figure 1. Conceptual model.

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Literature suggests self-efficacy as a predictor of course satisfaction. Studies suggest the same results, as various forms of self-efficacy seem to influence student satisfaction (Bates & Khasawneh, [2007](#); Gunawardena et al., [2010](#); Liaw et al., [2008](#); Liaw & Huang, [2013](#)). There is considerable evidence on the impact of self-efficacy on student satisfaction, however motivational instruments that form this relationship have not been properly examined. Thus, we focus on examining the

relationship between LMS self-efficacy and student satisfaction, generating the following hypothesis:

H4: LMS perceived self-efficacy will have a positive influence on course satisfaction.

Methodology

The study took place at the University of Tirana. The blended learning method designed had balanced distribution of course content load between traditional face-to-face learning and recently introduced LMS-mediated learning. We chose this approach because of the study's exploratory nature and because our purpose was not to include prior student digital literacy as a variable affecting the blend.

The platform provides several courses from various topics, including innovation, management, human resource, and entrepreneurship. It was a challenge to find appropriate lecturers who could properly conduct a class in a blended system, due to slow development of the field, and to design a student-oriented approach combining face-to-face lectures, online interactions and course material. The approach was implemented in the course of Business Management. As defined by Stone (2012), the course was

conducted in a flipped-like classroom, incorporating online modules, quizzes, reading, and other online activities, allowing students to engage and attend. Students used blended learning activities such as: presentations, quizzes, video materials, peer evaluation assessments, and group discussions. All these materials were provided by the lecturer of the subject combined with the information given to students face-to-face in the classroom.

At the end of the course a questionnaire was distributed to 375 students. The questionnaire collected data about the blended course, the utilisation of an LMS, their experience and perceptions, as well as some demographic information. Additionally, students were asked whether they had had prior exposure to internet-based learning and what the type of exposure had been. Interestingly, only 32 of the 375 participating students reported having used the internet for learning purposes through the utilisation of a virtual learning platform, corresponding roughly to only 8.5 % of the sample. It is therefore deducible that student LMS-specific literacy is extremely low, and prior exposure cannot explain most of the post-exposure changes measured in the sample.

The questionnaire was created based on the

work of Cigdem and Ozturk (2016), Kuo et al. (2014), and Liaw et al. (2008) and Liaw and Huang (2016, 2013) as this study was focused mainly on LMS-related characteristics.

A five-point Likert-type scale was used for assessing students' perceptions of their blended class experience. Five constructs from the questionnaire were selected for analysis. Course satisfaction is directly related to students' satisfaction with a course, to perceived improvements in their skills related to the subject, and to the use of information. Self-efficacy is related to self-efficacy with the LMS or LMS operationalisation, which refers to how they felt using the LMS during the course. Regarding the LMS, three main factors were selected in relation to self-efficacy: (1) platform accessibility, or how comfortable students were with using the online platform; (2) platform content, or the relevance and the online lessons available in the platform, and (3) critical thinking, or how much did the usage of the LMS enhance their perceived critical thinking.

We used Structural Equation Model (SEM) analysis to examine the structural relationship between latent variables. Correlational and regression relationships among latent variables, and between latent and observed variables, relate to the structural query. SEM

allows for one variable to serve as both a dependent and an independent variable, in the form of a simultaneous regression. A key advantage of SEM is that it allows the modelling of relationships among latent variables directly while the 'detrimental effects' of the measurement errors may be potentially corrected (Skrondal & Rabe-Hesketh, 2004).

This is a confirmatory rather than an exploratory technique, where the model is estimated, evaluated, and casually modified (Ullman & Bentler, 2012). In the SEM framework, confirmatory factor analysis (CFA) permits tests of the factor structure and the quality of the work measures (Bowen & Guo, 2011). SEM, in comparison to CFA, extends the possibility of relationships among the latent variables and encompasses two components: (i) a measurement model, and (ii) a structural model (Schreiber et al., 2006). The measurement model of SEM is the CFA, and depicts the pattern of observed variables for those latent constructs in the model, testing the reliability of the observed variables and examining the extent of the interrelationships and covariation. The structural model displays the interrelations among latent constructs and observable variables through the examination of effects among constructs.

Results

Through explanatory factor analysis, we defined the underlying structure among variables in the model. Tests for internal consistency were run to check the relation of questions in the survey with the hypothesised latent variable. After being controlled for incomplete answers and other irregularities, the sample size was reduced to 342, out of 375 collected questionnaires. Due to the sample size, factor loadings were considered. Communalities above 0.40 were regarded as significant for explanatory purposes and factors with loading of two or more factors were excluded from the constructs. After adjusting the constructs, factor loadings were significant for interpretation purposes (see [Table 1](#)). Although all the factors had loadings above 0.4, we considered the fact that some of the loadings remain low, not surpassing 0.5, to suggest not a very strong construct. Nonetheless, the cumulative percentage of the variance explained by the 5 factors is 60.60%, an adequate level for the sample size of the model.

Table 1. Construct validity and reliability.



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We further examine construct validity. The Cronbach alpha indicator is used to examine the internal consistency of each construct, or to estimate the solidity of the variables that define the latent variable. The adequate value of C. alpha is above 0.70, whereas a very good value is above 0.80. Increasing the value of alpha is partially dependent upon the number of items in the scale; it should be noted that this has diminishing returns (Gliem & Gliem, 2003). The C. alpha of 'Critical Thinking' is 0.72, thus being above the adequate level, however, it is the lowest C. alpha of the proposed constructs. The other constructs have a C. alpha of above 0.8, thus indicating high internal consistency of the items in the scale. 'Platform Accessibility' demonstrates a very high internal consistency, as C. alpha of the construct is above 0.9. Considering these, the reliability of the model is demonstrated to be high as the constructs display relatively high values of internal consistency.

Data analysis is further complemented by the examination of composite reliability (CR) and average variance extracted (AVE) from each of the latent constructs (Table 1). CR indicators of 0.70 or above are considered adequate for the model and those of 0.80 or above, display higher internal consistency. Of the constructs,

'Critical Thinking' displays a problematic value of 0.43, which is considerably lower than the adequate threshold. Other constructs display higher values of CR coefficient, all above 0.80, supporting the hypothesis that they display high internal consistency. AVE measures the average variance quantity that a latent construct can explain. The adequate level of AVE is considered above 0.50 (Shook et al., 2004). The 'Critical Thinking' construct displays a considerably lower value compared to other constructs for the AVE indicator too. Considering the CR and AVE values of this construct, the outcomes of this construct for the model should be limited when interpreted. Other constructs are shown to have a higher value of AVE, all above the 0.50 threshold, thus we conclude that constructs of this model explain most of the variance within it.

Continuing with the analysis, [Table 2](#) displays goodness-of-fit indices, assessing both the CFA and the structural model. We examined key indicators as suggested by Hair et al. (2013). Considering the CFA, the overall fit of the model indicates a good fit, as the chi-square is 142.967 with 97 degrees of freedom and the p-value related to it is 0.002, significant at a 5% level. Investigation absolute fit measures the value of the goodness-of-fit index (GFI) is 0.954, supporting the overall good fit. The

value of RMSEA is considered to be adequate at lower than 0.80 and particularly good at a level of below 0.05, which is the case for the RMSEA of the CFA model. SRMR is 0.044, quite below the cut-off of 0.05. Inspecting the incremental fit indices, all of the indices are above the adequate level of 0.90, and also NFI and CFI exceed the limit of 0.95 which indicate a particularly good fit. In this case, even the incremental fit indices provide support for the good model fit.

Table 2. The goodness – of – fit statistics for the CFA and structural model.



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Examining the structural model, we first notice that there are slight differences from the CFA model, in which case it indicated a good structure in accordance with the relationships. The overall model chi-square of the structural model is 155.984 with 102 degrees of freedom and the p-value associated with it is close to 0, or significant at the 5% level, thus providing an overall good fit of the structural model. The value of GFI is 0.95, exceeding the cut-off for a good fit, and the value of RMSEA is 0.39, below 0.50, providing additional support for the good

fit. The SRMR, even though slightly higher from the CFA model, is still below the 0.50 cut-off. Even the incremental fit indices all provide support for the good fit of the structural model. Considering both the CFA and the structural model, the overall fit is considerably good.

The main results are shown in [Table 3](#). From the four relationships hypothesised, all are significant at the 5% level, and all the effects can be interpreted as valid. In a general view, we can identify that the self-efficacy construct is positively affected by platform content, platform accessibility, and critical thinking, thus confirming the first three hypotheses. The sizes of the coefficients indicate that platform content, or the relevance and the online lessons available in the platform, have a larger impact on self-efficacy than the scale of the accessibility of the platform and the critical thinking component. The difference between the estimates is rather small for the critical thinking construct as the estimate of platform content is 0.015 greater than the estimate of critical thinking. The difference with platform accessibility is considerably higher, at 0.1. Considering the literature, we expected the difference between the estimates of platform content and accessibility to have a smaller differentiation, as we expect accessibility of

the platform to have a bigger impact in the development of self-efficacy in students.

Table 3. Estimated coefficients of the structural model.



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The fourth hypothesis considered the effect of LMS self-efficacy factors on course satisfaction. In the literature, we identified self-efficacy as a good predictor of course satisfaction. The results support this claim as self-efficacy significantly influences course satisfaction in the model. To further support this claim, the estimate of self-efficacy is at a relatively high value of 0.844, which shows a strong relationship between the two constructs. Even though SEM models cannot imply causal relations, the size and the significance of the coefficient imply that one of the ways to improve course satisfaction is to provide mechanisms that stimulate self-efficacy, by giving instruction on the online course usage and designing a user-friendly, creative and engaging online environment for students. In our case of blended learning, it suggests that course satisfaction can be improved by focusing on instruments that enhance LMS self-efficacy, or online self-

efficacy more in general.

Conclusions

In this study, we aim to primarily investigate the influence of platform self-efficacy on student satisfaction, in the context of a newly introduced blended learning course.

According to the results of the study, self-efficacy derived from the LMS is positively related to student satisfaction in a blended course. This relationship is shown to be strong and significant, thus implying that an improvement of LMS self-efficacy (or technological self-efficacy) has the potential to improve students' satisfaction with a blended learning course.

This can further suggest that self-efficacy is one of the factors that can determine the effectiveness of a blended learning course, as it has been shown that learner satisfaction is an important predictor of effectiveness (Eom & Estelami, 2012).

Moreover, we identified three LMS elements that can influence self-efficacy: platform accessibility, platform content, and factors related to the enhancement of critical thinking. Results show that online activities such as quizzes with open and closed

questions, assignments and case studies developed by instructors as additional learning activities for students have helped them to enhance their critical thinking.

All the three constructs show a positive relation with self-efficacy, thus suggesting that system (platform) quality is an important determinant of LMS self-efficacy. Stemming from the relationship between self-efficacy and student satisfaction, improvements in the platform will increase student satisfaction and course effectiveness as well. A practical implication resulting from the study is that blended learning, by improving student satisfaction, can increase student turnout, motivation, focus, and that due to increased effectiveness it has the potential to result in better outcomes.

There are several steps that should be taken for the design and creation of a user-friendly and effective LMS. First and foremost, based on our findings and literature sources consulted, overwhelming existing higher education courses with material that is delivered to students face-to-face in the classroom is not an effective manner of yielding desired results from blended learning, as it can lead to content overload, repetition, and the duplication of classes and assignments within the same course. Second,

to LMS designers, we recommend adding to the platform content that is driven by pedagogical needs rather than included for 'technology's sake'. Introducing a blended learning methodology and LMS-s to the classroom with the sole purpose of introducing digital technology to higher education institutions is not only ineffective but would further contribute to course load. Third, institutional support and defined levels of student digital literacy are required for the successful implementation of such an initiative. That being said, LMS-s are a new digital tool offered to Albanian students and it is difficult at the current stage to state whether LMS-specific self-efficacy is enhanced by the course itself or whether it had already been developed by the students independently. Nevertheless, assuming students weren't thoroughly trained prior to their utilisation of the LMS accessed by them, and that most had not reported having used an LMS prior to this experience, it would be convenient to presume their self-efficacy improved in part due to their LMS exposure.

Disclosure statement

No potential conflict of interest was reported by the author.

Additional information

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Rezart Prifti is a Lecturer at the University of Tirana, in the Faculty of Economy teaching 'Management Foundations' and 'Innovation and Commercialization'. He holds a PhD in Management with a particular focus on innovation and its determinants. Founder of the Albania-based NGO 'Center for Entrepreneurship & Innovation' and founder of the Learning Management System 'Metronom' (metronom.al), he has a special interest in innovation in education and considerable experience of working with projects related to education, especially in introducing blended learning to the Albanian education system. He is also the initiator of the annual start up incubators at the Faculty of Economy, attempting to seed an innovative culture among young people. He is the author and co-author of several research papers in innovation and management.

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