

Exploring Students' Autonomous Learning Behaviours Toward E-Learning to Higher Education Performance

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ABSTRACT

There has been a recent increase in the adoption of e-learning platforms as a means of teaching in the digital age. Although many studies highlight the advantages of e-learning, there is still an urgent concern to explain why some students are unhappy with the time they spend online learning and not much is known about how students feel about it. The aim of this research is to explore how the behavior and attitudes of educators and students related to e-learning after the covid19 era. This research uses mix method with samples taken randomly from 80 faculty teacher training students. The research instrument is in the form of separate observations and surveys about their perspectives. Statistical studies show that undergraduate students have attitudes that strongly support the potential of e-learning as a pedagogical aid to support their independence in learning. The use of e-learning is felt to be able to increase independence in learning and spur students to interact with technology as a practical learning tool. Undergraduate students' perceptions of the effectiveness of e-learning can be supported by several factors, such as clear instructions, creative and innovative teachers, adequate infrastructure, and independent learning. The results of this study provide recommendations for improving teaching materials and learning models designed for blended classrooms

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1. INTRODUCTION

One of the most interesting uses of computers and the Internet is e-learning, the latest iteration of distance learning in which teachers and students are physically or temporarily separated (Selvanathan et al., 2020). In line with this notion, Tunjera (2023) define e-learning as "the use of electronic media and technology to make previously inaccessible knowledge and information readily and widely available to learners anywhere in the world." By removing geographic and temporal barriers with the help of asynchronous and synchronous learning tools, this teaching method can meet the current and projected demands of higher education (Dorji et al., 2023). The presence of e-learning makes learning carried out online without requiring physical space and can be accessed from anywhere

with the help of an internet network. This is a new breakthrough for universities to increase access to learning.

There has been a recent spike in the incorporation of digital resources, particularly the Internet, into the classroom. In today's information age, many people choose to continue their education through electronic learning (e-learning). As a result, there is a lot of focus on e-learning initiatives and experiments today. On the other hand, E-learning is just one teaching and education method. According to Sofi-Karim et al. (2023) definition, e-learning includes not only traditional classroom instruction but also web-based learning (online learning). According to another definition, Blessy Paul & Kurian (2023), e-learning includes the dissemination of knowledge through any electronic media, not just the World Wide Web. As can be seen, the definition of e-learning considers the difficulties presented by various students and teachers. E-learning uses the Internet and other digital tools to create new and interactive forms of education.

Indeed, e-learning systems have grown in popularity in higher education over the last 20 years due to advances in the Internet and IT (Eli-Chukwu et al., 2023). Research on the elements that influence students' perspectives on e-learning has grown in tandem with its popularity (Dadhich et al., 2021). The Technology Acceptance Model (TAM) for studying learner intentions towards e-learning environments (Rafique et al., 2023) has been proposed as one method for understanding the factors influencing students' perspectives on online education based on research conducted in a number of task settings. In addition, several studies Ajibade et al. (2023) reveal that students' ability to self-regulate is an important component in determining how they feel about e-learning. Few studies in the e-learning field, however, evaluate the perspectives of educators and students regarding the effect of e-learning on developing their autonomy in learning.

In the realm of higher education, online courses and programs are nothing new. In the early 18th century, it was developed as a correspondence course so students could graduate without physically attending campus. Since then, it has grown and grown in popularity, especially thanks to the rapid growth of technology and digitization. Blended learning, a blend of classroom instruction and online resources, has emerged as another option for students who need to take classes remotely (Nuuyoma et al., 2023). Due to universities' widespread use of distance learning in response to the current COVID-19 pandemic, its quality needs to be investigated. Precautions against COVID-19 must be implemented in all countries with immediate effect. During epidemics, social distancing norms made it necessary to investigate how people engage with one another while studying online. Distance learning programs were implemented by universities in reaction to this seismic shift, leveraging online resources, including social media (Muthmainnah et al., 2023); blogs (Al Yakin et al., 2023), and learning management systems (LMS) (Ghai & Tandon, 2023). Distance education has been used by open universities for some time. As stated by Jovanka et al. (2023), open universities have evolved over the decades. In the first era, education was delivered by correspondence; in the second, through radio and television broadcasts; the third, by teleconference; and today, via the Internet and websites.

Meanwhile, there has been a rise in the number of people looking to use online courses to improve their education. Information technology integration loosens up classroom rules and gives students more chances to interact with one another, all of which leads to better learning (Muthmainnah et al., 2023). Venkateswaran (2023) claim that, compared to traditional classroom instruction, the effects of e-learning on students' academic performance, achievements, and satisfaction levels are more substantial. Because of its practical, adaptable, and cost-effective features, e-learning has attracted more attention in the academic system in recent years, and it has dramatically altered traditional learning and teaching methods in many developed and developing countries. In previous studies, Abd Algabar, et al. (2023), advanced technology has been shown to have a beneficial effect on e-learning uptake. According to Peng et al., (2023), an individual's conviction in the progress of technology can be fostered through their openness to new forms of information and knowledge. Concerns about the future are exacerbated when people reject technological solutions.

The increasing adoption of digital learning technologies continues to push education into uncharted areas. While teachers must rethink what it means to provide learning experiences, higher education institutions must match their educational technology solutions to the needs of students. Digital learning is far superior to the conventional classroom paradigm in many ways for both teachers and students. Anytime and anywhere, that is convenient for everyone can be used for teaching and learning. Digital learning, of course, has its own difficulties aside from its benefits Coşkun and Filiz (2023). Many students who do well in a traditional setting may struggle in an online environment, as many digital tools and technologies require students to learn and use them. New platforms for the digitalization of education can place stronger pressure on students during the educational process.

This research defines digital education and discusses its context in higher education. It also highlights the challenges, barriers, and opportunities of integrating digital education into higher education institutions. In addition, technological resources and techniques can be used to achieve digital higher education. All educators and decision-makers in tertiary institutions pay close attention to the need for digital transformation in tertiary institutions, especially after the Covid-19 pandemic. In this research paper, we try to investigate the main opportunities and challenges of adopting digital education. The authors believe in the important role of higher education in establishing and enhancing learning autonomy. The main contribution of this paper is to investigate the effects of e-learning on increasing learning autonomy and the challenges and opportunities of moving to digital education. The author believes that there are still challenges related to online learning autonomy in achieving the required maturity of digital transformation and digitalization.

Nevertheless, the question about student autonomy is one that never gets lost in the classroom. Student autonomy is a necessary condition for effective learning and performance regardless of the teaching strategy used (e.g., task-based, guided discovery, or project-based learning; the stage of educational development (e.g., Education 1.0 through Education 5.0); or delivery mechanisms (e.g., traditional classroom or online learning). A student's autonomy contributes greatly to receiving a high-quality education if he or she successfully navigates the educational space, manages the pace and timing of his or her learning, and is motivated and mature enough to achieve excellence while undertaking the activity. Student autonomy has been shown to have a positive effect on student performance in class. However, only a few studies have looked at how independent distance education students are in e-learning courses. The purpose of this study was to investigate how e-learning develop the undergraduate student's autonomy in learning. Looking at this context, this research seeks to answer the following questions: 1) whatever undergraduate students who have studied e-learning for some time can direct and monitor their own learning process?; and 2) whatever undergraduate students who study with e-learning better guide themselves towards autonomous learning?.

2. METHODS

This study used a mixed method research method with qualitative and quantitative approaches Feters et al. (2013), with the first involving a search for relevant literature and the second including questionnaires and unstructured interviews to strengthen the findings. The interview took place to investigate behavior and exchange information with students. Two hours are allotted for the various conversations, questions, and replies that make up the sharing session. First, a hypothesis is formulated and then a closed questionnaire is shared using the Google form to students at Majene Indonesia Open University, surveyed for this study.

There are 80 student respondents who have used online learning methods for at least two semesters. All of them enrolled in the action research course academic year 2022-2023. However, only 53 students filled out the surveys. Data was collected with online survey and the answering time for questionnaire was about 20-25 minutes. The sample consists of students from Open University (Universitas Terbuka) Majene Indonesia. Among participants, almost 81.3% declared their gender as female and about 18,8 percent declared as male. In addition, all the participants were undergraduate students and they were invited to quit participation in the study and they understand the question.

The questionnaire used in the study was based on a version of the Likert scale developed by Spratt et al., which is shared using Google Forms via smartphones, media players, tablets, etc. The research team adjusted the initial questionnaire to include e-learning-based learning activities that students can do during their classes using available technology. There are five possible answers, ranging from "1 = completely disagree" to "5 = totally agree", of which participants must choose one. SPSS v26.0.0 was used to analyse the data from the latest survey version and the questionnaire adopted by Akbari et al. (2023).

Table 1. Students Classification score for autonomous learning behaviors questionnaire

Classification	Score
Very good	80-100
Good	79-80
Fairly	66-78
Low	48-65
Very low	30-47

The researcher first obtained permission from the appropriate university officials before distributing the e-learning survey. Of 80 open university undergraduate students were briefed in person and via video conferencing, Microsoft teams on research objectives and questionnaire format. Although taking this survey was voluntary, participants were made aware of how important their input on e-Learning is today.

To get a good response rate, the researcher asked students to complete the survey completely. Teachers are also asked not to swing their students' answers by emphasizing that there is no right solution. All that is required of them is their response according to their personal values. SPSS 26 is used to process the reconstructed data. Quantitative data collected through survey distribution is processed to autonomous learning behaviour toward e-Learning variables. Questionnaire questions detail the dimensions used to measure variables. The questionnaire follows a five-point type scale.

3. FINDINGS AND DISCUSSION

From the point of view of student autonomous learning behaviour described in Table 2 based on the results of the average score of their questionnaire is in the very good category with an average value of 83.84.

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
<i>Autonomous learning</i>	53	74.00	95.00	83.8491	6.22154
Valid N (listwise)	53				

Their learning autonomy increases with this e-learning. They are self-motivated and self-directed while studying according to the instructions in the e-learning. From the results of this data, it is known that undergraduate students have a good understanding of the demands of distance learning by utilizing e-learning and of course their conceptions of pedagogical principles, their conceptions of space and time (both online and offline), their familiarity and comfort. with different educational technologies, their workload, and their mental health, as well as the rapid development of technology itself.

Table 3. Autonomous learning behavior Frequency

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	74.00	5	9.4	9.4
	75.00	5	9.4	18.9
	76.00	1	1.9	20.8
	79.00	1	1.9	22.6
	80.00	1	1.9	24.5
	81.00	6	11.3	35.8
	82.00	7	13.2	49.1
	83.00	1	1.9	50.9
	85.00	5	9.4	60.4
	86.00	1	1.9	62.3
	87.00	1	1.9	64.2
	88.00	3	5.7	69.8
	90.00	7	13.2	83.0
	91.00	2	3.8	86.8
	92.00	6	11.3	98.1
	95.00	1	1.9	100.0
Total	53	100.0	100.0	

Data on the results of the frequency of questionnaire scores that have been analysed show that the average student learning autonomy is classified as good with a value range of 74.00-95.00 in table 3.

Table 4. Means and Standar deviation for the individual items (N=53)

	N	Minim um	Maximu m	Mean	Std. Deviation
Peers of e learning are very important	53	4.00	5.00	4.6038	.49379
I felt close to some peers in e-learning	53	4.00	5.00	4.6038	.49379
I feel communicate frequently with some peers e-learning	53	4.00	5.00	4.6038	.49379
My abilities match the challenges in e-learning	53	4.00	5.00	4.2830	.45478
I use e-learning innovatively to improve my performance	53	4.00	5.00	4.6792	.47123
I use e-learning innovatively to manage my activities	53	4.00	5.00	4.6604	.47811
I intend use e-learning regularly	53	4.00	5.00	4.8491	.36142
I will use e-learning in learning	53	3.00	5.00	4.3396	.61842
I consider e-learning to do interact with my friend and lecturer	53	1.00	2.00	1.1698	.37906
e-learning easy to use	53	3.00	5.00	4.0377	.47887

e-learning motivate me to direct my self	53	4.00	5.00	4.4340	.50036
I recognize my difficulties and challenges in learning action research	53	3.00	5.00	3.7736	.82372
The form of online education itself	53	3.00	5.00	4.3019	.72284
e-learning desire for self-study	53	3.00	5.00	4.1509	.86372
e-learning improve my literacy	53	3.00	5.00	4.1509	.86372
I prepare my self before entering the online class	53	3.00	5.00	4.1509	.86372
I felt confidence through e-learning	53	3.00	5.00	4.0000	.55470
e-learning provide me to select what I want to learn	53	3.00	5.00	4.1509	.66205
By e-learning I felt my self assess increase	53	4.00	5.00	4.4528	.50253
I enjoy the activities in e-learning	53	4.00	5.00	4.4528	.50253
Valid N (listwise)	53				

The results of the data shown in Table 4 which were obtained from 20 questionnaire questions distributed using the Google form, revealed that the highest score obtained was 4.84 and the lowest score was 3.77. As seen in Table 4, the average items are measured on a scale of 1-5 and the findings from the questionnaire are student learning autonomy in learning with the e-learning system can increase undergraduate student learning autonomy. After the data from the questionnaires findings, researchers held semi-structured interviews session to support the data regarding e-learning and their autonomous learning.

Extract 1 (21th May 2023)

"in my opinion learning with e-learning is very profitable for me, reduces transportation costs to campus and of course saves my time".

Extract 1 (21th May 2023)

"I agree that e-learning provides a technology-based learning experience, but the network at my location sometimes makes e-learning constrained in terms of my time and discipline in uploading assignments".

Extract 1 (21th May 2023)

"I feel that with e-learning I have to be more motivated to learn and improve my literacy skills well".

Extract 1 (21th May 2023)

"Learning with e-learning that we get and the existing module facilities certainly makes it easier for us to access the material. Even though sometimes the network doesn't support me, I like learning with e-learning".

Extract 1 (21th May 2023)

"I feel that the e-learning system with the tuweb (web tutoring) system that we are doing is very helpful and the material taught for two hours is very optimal, although sometimes the sound has problems due to an unstable network."

Extract 1 (21th May 2023)

"The e-learning platform for uploading assignments is the problem I'm experiencing. Sometimes our assignments don't upload successfully, but luckily the lecturer still provides an alternative to using Google

Drive. Apart from that, communication is also maintained well between us undergraduate students and the subject lecturers”.

Instead of only using technology as a medium and learning technology, the results of this study found that e-learning and its development help focus on how technology affects student performance and its efficacy in education. Communicating effectively with other undergraduate students and lecturers when using the e-learning system at the Open University is known to be a useful complement or alternative to traditional education transitions that will help students understand the many benefits of e-learning in this digital era.

In light of the paucity of studies examining the long-term effects of e-learning on students' ability to learn independently, the Open University has developed a new conceptual model, called the Tuweb or Tutor Web model, to investigate the interplay between students' relational and autotelic identities and the moderating role of relatedness. Our findings show that e-learning produces constructive, long-lasting, and original effects. They also kept in touch with teachers and students through the WhatsApp messaging service, the research showed.

Consistent with prior research by Yurdakul (2017), our findings show that a high degree of learning autonomy positively affects the maintenance of e-learning. Students are more likely to continue utilizing e-learning when they have a high relational identity because they are more motivated to engage with peers and teachers and because they have the flexibility to do so at any time and from any location.

Our findings corroborate the findings of Rawashdeh et al. (2021), who found that students who have already had positive experiences with e-learning are more likely to continue using it. We found that students liked using the e-learning system, tried to find novel ways to use it Table 4 to benefit their education, and used a number of different applications and tools to enhance their learning. However, we think otherwise. Students who have had prior e-learning experiences tend to adapt better to this setting and show greater engagement overall than their more traditional school-based counterparts. This result agrees with that of prior studies (Ituma, 2011). In keeping with earlier research findings Nikou and Maslov (2023), we also discover that if students are satisfied and enjoy using e-learning, they are more likely to continue using it.

One of the most important findings from this e-learning is that the interaction of lecturers and students with a user-friendly interface confluence for the e-learning platform increases the intrinsic motivation of users, which in turn will encourage more consistent and creative use. For this reason, educators can create welcoming spaces for students to experiment with e-learning by providing and introducing them to various e-learning resources and programs. This is very important considering that e-learning is an affordable learning option for students who live far from campus. Teachers can help their students have positive e-learning experiences by introducing concepts and emphasizing their value in class (Paechter et al., 2010). Workshops or training events can be arranged at the start of each semester to introduce and implement e-learning according to the university curriculum, thereby establishing a strong link between students and the e-learning system. Students are more likely to engage with e-learning when they have a say in shaping and improving their online classroom and when web administrators and designers work together to address any issues that arise. Although it is undeniable that the weaknesses of e-learning, such as failing to access or upload assignments, cause lecturers to continue to provide other alternatives by using the Google Drive application to avoid the e-learning platform being shut down.

According to this study, undergraduate students feel comfortable with distance learning. The content offered in the application to students in various learning activities is one of the ways in which e-learning and online instruction environments use interactive network systems to improve the quality of teaching, learning, and autonomous learning of undergraduate students, in line with research conducted by Lin (2007), for online learning and teaching to be successful, undergraduate students must be well-trained and technically comprehensive in order to effectively use and integrate

technological tools (DeLone & McLean, 2004). It is very important to evaluate the effectiveness of online learning systems by testing undergraduate students' readiness for them and monitoring their progress while they are using them (Marinda van Zyl et al., 2013). Today, many universities provide at least some of their classes through e-learning. Today's university students are well-equipped to thrive in today's fully online classrooms.

This work has theoretical value as it enhances our quantitative understanding of utilizing e-learning in an open university learning environment. This research adds to the existing literature on the topic of whether e-learning (digital libraries, online tutorials, labs, independent training sites, and ICE institutions) used by students at open universities in Indonesia has the potential to increase learning autonomy similar to that of an offline learning environment. Potentially helping researchers in the future is a survey report on the potential expansion of learning autonomy, which is one of the strengths of e-learning. In the context of higher education in Indonesia, this paper examines learning autonomy and behavioural interpretation abilities in utilizing e-learning. The findings of this study have real-world implications because they explain how e-learning is used in the classroom, thereby shaping students' attitudes and behaviors in the future. Learning autonomy will increase by using e-learning because it makes it easier for students to learn and understand material and assignments (Akmal et al., 2022; Enmufida et al., n.d.; Hendrik et al., 2021).

This research also shows that the user's intention to use e-learning will increase as a result. User attitudes, perceived benefits, subjective norms, perceived ease of use, and reported enjoyment must be enhanced through the concerted efforts of all parties involved. Increasing the popularity of e-learning is a great strategy to change minds. It is very important that e-learning is always effective, clear, efficient, and simple to enhance students' perceived benefits, ease of use, and facilitate conditions; group learning is also important for increasing peer influence; and connection and exchange of knowledge between students and between students and tutors will facilitate a good learning environment. Last but not least, encouraging users to use e-learning in the classroom requires support from universities in the form of infrastructure, tools, and personnel. According to Almaiah et al. (2020), the critical factors that affect the usage of e-learning systems and should universities take them into the future plans were: (1) technological factors, (2) e-learning system quality factors, (3) cultural aspects, (4) self-efficacy factors and (5) trust factors.

This study also has practical implications because autonomous experiences students gain from e-learning and their learning styles, needs, and practicalities of use can encourage them to stick with e-learning. By adjusting it, teachers can improve their students' academic achievement. Forums that allow internal and external debate should be used to increase students' use of e-learning systems. As this autonomous experience is enhanced, students' e-learning habits are inculcated, leading to consistent adoption and autonomous behaviours that is maximized. According to Alami et al. (2022) that the proposed measurement scale effectively assesses the factors impacting students' decision to continue using e-learning in the future. This study's results show that e-learning acceptance depends significantly on the students' satisfaction, perceived ease of use (PEU) and perceived usefulness (PU). In contrast, the facilitating conditions are not a valid measurement scale to determine students' attitudes toward e-learning.

4. CONCLUSION

The findings demonstrate that both the e-learning platform made available to undergraduates and the undergraduates themselves are well-equipped to handle online instruction. Some students lack the technical proficiency necessary to make full use of online educational resources; others simply prefer to receive their education the old-fashioned way, in person. However, e-learning classes are still valuable since they encourage students to keep studying without boundaries and to take charge of their own education. According to the study's findings, Students have a favorable impression of e-learning, which is shaped by their level of familiarity with and success with e-learning. Also, students say they are willing to learn via e-learning, and the majority of those who aren't say they would be interested in

learning via e-learning if it provided an overview of what would be covered in class and what could be covered online beforehand. The utilization of e-learning results in a 83.84 satisfaction rate amongst students supports their autonomous. To maximize the use of e-learning and make provisions to students as a teacher in the digital era, it is necessary to improve learning by combining e-learning with learning models, technologies skill and teaching materials according to the peculiarities of the content. The drawback of this research is that the sample is limited, namely only one tertiary institution, therefore, this research suggests researching e-learning and learning autonomy with samples from various tertiary institutions.

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