Research Article

E-LEARNING USER SATISFACTION:
A Survey for the Higher Education Institution`s Web Domain Using a User Experience Questionnaire

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ARTICLE INFO	ABSTRACT
Received: 24 Dec 2024 Revised: 12 Feb 2025 Accepted: 26 Feb 2025	This study explores user satisfaction with the e-learning platform at the University of Science and Technology of Southern Philippines (USTP) using the User Experience Questionnaire (UEQ). With the rise of online education, particularly during the COVID-19 pandemic, assessing the effectiveness and usability of e-learning platforms has become crucial for improving student engagement and learning outcomes. A survey was conducted among students from various academic programs to evaluate key user experience factors such as attractiveness, efficiency, perspicuity, dependability, stimulation, and novelty. Findings indicate that while the e-learning platform was generally rated as neutral across most dimensions, aspects related to novelty and innovation received relatively higher satisfaction scores. However, areas such as system efficiency, clarity, and dependability require further enhancements to optimize the overall user experience. Based on the results, this study recommends improving the platform's usability and functionality to enhance student learning experiences. **Keywords:** E-learning, User Experience, Higher Education, Online Learning, Student Satisfaction, Learning Management System (LMS), Usability Evaluation, User Experience Questionnaire (UEQ).

This study explores user satisfaction with the e-learning platform at the University of Science and Technology of Southern Philippines (USTP) using the User Experience Questionnaire (UEQ). With the rise of online education, particularly during the COVID-19 pandemic, assessing the effectiveness and usability of e-learning platforms has become crucial for improving student engagement and learning outcomes. A survey was conducted among students from various academic programs to evaluate key user experience factors such as attractiveness, efficiency, perspicuity, dependability, stimulation, and novelty. Findings indicate that while the e-learning platform was generally rated as neutral across most dimensions, aspects related to novelty and innovation received relatively higher satisfaction scores. However, areas such as system efficiency, clarity, and dependability require further enhancements to optimize the overall user experience. Based on the results, this study recommends improving the platform's usability and functionality to enhance student learning experiences.

Keywords: E-learning, User Experience, Higher Education, Online Learning, Student Satisfaction, Learning Management System (LMS), Usability Evaluation, User Experience Questionnaire (UEQ).

INTRODUCTION

It is believed that education is the key to success; hence learning should not be stopped. To that end, the University of Science and Technology of Southern Philippines is finding ways on how to continue on giving quality education to the students. Despite the pandemic issue experienced today owing to the Covid-19 virus, new flexible techniques are being implemented for the University to ensure the continuance of education.

E-learning is the most recent way to carry out distance education by distributing learning material and processes over the Internet. With this, technology has been considered a key to boosting student academic performance and allowing public schools and colleges to be more flexible. In order to improve teaching and learning, technological integration is becoming more common in the classroom. Because of the rapid development of technology integration, a better pattern to identifying new teaching and learning strategy. CHED Memorandum Order No. 4 series 2020 on creation of e-learning portal under general guidelines, which are applicable to all public and private HEIs in the nation for the Academic Year 2020−2021 only, contain information on how flexible learning and teaching options, approaches, strategies, systems, pedagogies, and modalities should be implemented in the higher education environment. It includes incoming first-year students for the specified academic year as well as all currently enrolled students at the HEIs.

University of Science and Technology of Southern Philippines ensures that the education or learning process of the students will continue despite

the pandemic. E-learning portal, or USTeP, is the learning management system of the university.

BOR Res.'s Flexible Learning Program (FLP). As a reaction to the present public health and safety issue and as part of the University's strategic objective to continuously innovate in terms of curriculum delivery, No. 17, s.2020 approves the introduction of the USTP Flexible Learning Program (FLP). USTEP or University of Science and Technology e-Learning Platform is the official Learning Management System (LMS) of the University of Science and Technology of Southern Philippines (USTP). It is based on Moodle version 2020 3.8.2 and can be accessed through ustep.ustp.edu.ph.

LITERATURE REVIEW

Open online courses refer to teaching and learning materials that are available on the internet for educational purposes. They also include communication between teachers and students. These courses have become increasingly popular due to the widespread use of information and communication technologies in education. This has been highlighted in studies by Kasch, Van Rosmalen, and Kalz (2017), Grechushkina (2018), and Paulsen (2002).

According to the study by Alshehri et al. (2009), the most crucial factor is the quality of the information, followed by how easy it is to use the e-learning system. The study also found that the learnability of the system and its visual design were ranked third and fourth in terms of how important they were to the usability rating of an e-learning system. In the end, instructional evaluation and system interactivity were the least important design factors that affected the usability test of the e-learning system. The study's real-world results give designers and

reviewers new ideas for how to make the e-learning system more straightforward to use, and more people will sign up for it.

In the study by Kabtane et al. (2019), two MOOCs that were similar in how they taught were suggested as a way to test how well the suggested answer would work. The only thing that makes the second MOOC different is that it has virtual exercises that students can use to understand better and connect with the material. It was found that people who took the second MOOC understood it better and were happier, and fewer people dropped out than in the first.

Furthermore, existing studies like Eltahir et al. (2019) revealed that the attitude of a majority of the respondents toward the usability of e-learning courses at Ajman University was, in general, at the agree level, which means that there is a positive agreement for using e-learning courses in the university. Most of the participants view the e-learning courses at AU as being easy to use, easy to learn and with a user-friendly interface. However, first-year students hesitate to express a firm opinion about the usability of e-learning courses. The students' perspective varied by gender (with women showing a more favorable opinion) and college type (with students in the Business Administration College showing a more positive opinion). Interviews with faculty members from all colleges further revealed that most staff members are satisfied with the Moodle system. The study concludes that there is a great need to conduct more training for freshman students on how to use Moodle and recommends it.

Previous study conducted by Eltahir et al. in 2019 showed that most participants had a positive view of the e-learning courses offered by Ajman University. This indicates that the utilization of e-learning courses at the university is generally well-received. The majority of participants found the e-learning courses to be user-friendly and easy to use and learn. However, first-year students needed to be more open to expressing their opinions about the usefulness of e-learning courses. The students' perspectives were influenced by their gender (with female students having a more favorable view) and their college affiliation (with students enrolled in the Business Administration College showing a more favorable view). Moreover, interviews with faculty from all institutions revealed that the Moodle system was well-received by most staff. The study concluded that providing additional Moodle training for first-year students is crucial and strongly recommended its implementation.

The study by Estacio and Raga in 2017 aimed to determine if the action records generated by Moodle could be used to extract and visualize students' learning behavior. Additionally, the research sought to determine if there is a relationship between the level of student activity in online learning environments and their final grades. The study suggests that data mining algorithms, such as vector space models, can combine and quantify students' action logs into a single numeric value that can be used to create visualizations of students' activity levels. However, the research reveals a significant variation in the correlation between the variables mentioned above. The practical implications of this study indicate that instructors can use the findings to keep track of the course's progress and identify underperforming students promptly, allowing them to modify their teaching strategies.

Hillier (2018) discusses an idea for an offline e-learning platform that would allow educators to connect with digitally disconnected students, enabling them to participate in the technology-rich world of the 21st century. Distant and isolated learners need help with actively participating in modern e-learning resources. The study takes a systems approach to create a solution that would fit into our world, considering the economics, infrastructure, and skills available in developing and remote regions. Digital learning courses are integrated into a portable e-

learning environment that operates independently of a stable network connection. Despite this, the environment maintains essential features such as interactivity, analytics, and the capability to synchronize data with an academic institution once a connection is established.

Ilias et al. (2020) have identified seven obstacles that hinder students' inclination to utilize online learning. These obstacles include technical complications, an unreliable Internet connection, inadequate data storage, and the administrator's evaluation. Furthermore, communication difficulties impede social interaction during online learning sessions. This research can help universities formulate strategies for the future implementation of online learning by adding to the existing body of knowledge on the subject. This could enhance students' inclination and motivation toward future implementation of online learning.

Despite a decline in campus-based enrollments, there has been a surge in distance education enrolments. According to recent reports, one in every three students in the US higher education sector is enrolled in at least one online distance education course. These reports track the evolution of

online and distance education in the United States, and they were published by Seaman, Allen, & Seaman in 2018 and Legon, Garrett, & Fredericksen in 2019 as cited in the study of Naidu (2019).

Salloum and Shaalan (2018) conducted a study on 280 students to investigate the usage of E- learning. They analyzed the responses provided by the students using the partial least square method to verify the research assumptions of the UTAUT model. The results strongly supported the model's ability to predict a student's intention to use E-learning. The study found that facilitating learning conditions, social influence, and performance expectancy were significant determinants of the behavioral intention to use an E- learning system.

However, the impact of effort expectations on students' intention toward the E- learning system was insignificant. Therefore, the study concluded that the two critical factors that contribute to the effectiveness of an E-learning system are favorable university policy and a favorable perception. Universities can create an environment that promotes innovation by integrating technology with traditional classroom instruction. E-learning resources can enhance the teaching and learning process. However, it is important to investigate the usage patterns of these resources and the factors that influence how instructors and students allocate their time to them. This is especially relevant given the rapid advancements in technology and the sophisticated functionalities of e-learning.

A modified Technology Acceptance Model (TAM) was used to examine the factors that influence the utilization of learning resources by instructors and students in universities in the United Arab Emirates (UAE). The study involved analyzing the responses of 520 students. The results suggest that neither peer influence nor technological proficiency have a significant impact on perceived efficacy and students' usage behavior. Instead, instructor contributions, course content, and design significantly influence student usage behavior. The study further contributes to the existing body of knowledge regarding the primary determinants that impact the utilization of learning resources by instructors and students within universities in the UAE (Shishakly, 2021).

The research conducted by Amer et al. (2022) aimed to evaluate the effectiveness of e-learning services offered at Sultan Qaboos University in Oman, as perceived by the students. The study utilized a 48- item survey covering six e-learning provision domains. A total of 1,858 male and female pupils were surveyed across all colleges through questionnaires. The findings showed that the quality of e-learning provision fell within the intermediate range across four domains. However, there were statistically significant disparities in favor of male pupils in the third domain, pertained to system effectiveness. The remaining domains or the cumulative score observed no statistically significant variations. The study's results may promote and improve the culture and quality of e- learning and facilitate its integration into the educational process.

A study conducted by Abubakari et al. in 2022 aimed to model the engagement of international students studying online in Indonesia. To achieve this, they administered a questionnaire to 102 international students to determine the factors that impact their online learning engagement. The study utilized the Partial Least Squares -Structural Equation Modeling (PLS-SEM) method for data analysis. The findings suggest that personal innovativeness, university support, and motivation significantly influenced international students' engagement. However, the study found that instructor interactivity, student- material interaction, student-student interactions, or self-regulated learning did not substantially impact learner engagement. These results can provide higher education administrators with empirical data that can be used to develop support programs for international students while they are pursuing their studies in the host country. The study also discusses recommendations and the implications of these findings.

According to the research conducted by Domínguez and García in 2017, even university students who frequently use digital technology rarely use it for managing their learning. However, instant messaging and Internet information retrieval tools are widely used. Regarding self-regulation learning, social support strategies are the most commonly used by students, but the frequency and manner of use vary among them. Some student populations

employ self- regulation strategies while using technology for learning. Two distinct cohorts of pupils exhibiting different degrees of self-regulation have been identified.

METHODOLOGY

This chapter is about the collection stage of the study's research. Based on figure 1 starts with the distribution of a questionnaire to the students on the USTP Panaon campus. The users will test and evaluate the survey after using the portal for clearing ratings. After gathering the data, the researcher used the UEQ tool, a Google form that lets the researcher enter the data and generate findings automatically, providing guidelines for data interpretation.
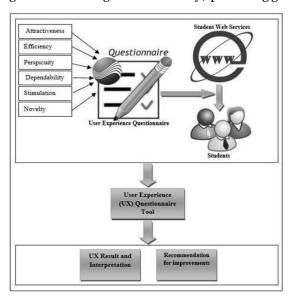

Figure 1. Research Framework of the Study

1.1   Questionnaire Development

Two components are being used in the questionnaire: First, we have User Profiling and User Experience Questionnaire (UEQ) for Web-Portal in E-Learning. The User Experience Questionnaire (UEQ) comprises all six scales and twenty-six items, which are: **Attractiveness, Efficiency, Perspicuity, Dependability, Stimulation,** and **Novelty** in this case, E-Learning which are all important factors. Table 1 lists the variables (which are scales) and research items that were taken from the User Experience Questionnaire (UEQ) as a whole.

Figure 2 shows standard UEQ.

Table 1. The following are the variables used in the study.

The variables or Scales	Definition	Items
Attractiveness	The attractiveness is how the system attracts students. Regarding the use of E-Learning Platform.	1. annoying - enjoyable 2. good - bad 3. unlikable - pleasing 4. unpleasant - pleasant 5. attractive - unattractive 6. friendly – unfriendly
Efficiency	It will measure the effectiveness of user experience when using the E-Learning Platform.	1. fast - slow 2. inefficient - efficient 3. impractical - practical 4. organized - cluttered
Perspicuity	It is a guideline used to learn and understand the uses of the website.	1. not understandable - understandable 2. easy to learn - difficult to learn 3. complicated – easy

			4. clear - confusing
Dependability	It is a user experience scale that measures the expectations of the users on the system.		1. unpredictable - predictable 2. obstructive - supportive 3. secure - not secure 4. meets expectations - does not meet expectations
Stimulation	It measures the valuable level of the system. If it is interesting or not to use as a school E- Learning Platform.		1. valuable - inferior 2. boring - exciting 3. not interesting – interesting 4. motivating - demotivating
Novelty	The E-Learning Portal depends on the creativity and conservation of the system.		1. creative - dull 2. inventive - conventional 3. usual - leading edge 4. conservative - innovative

These variables collectively contribute to the overall user experience of an E-Learning Platform. A successful platform should be not only efficient and dependable but also attractive, perspicuous, stimulating, and novel to ensure positive user engagement and effective learning outcomes.
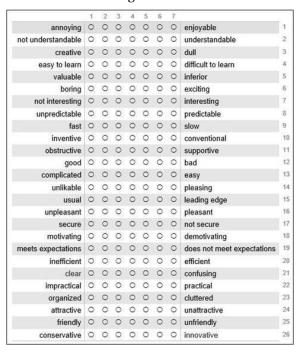

Figure 2. The standard User Experience Questionnaire (UEQ)

1.2   Sample Selection

The profile of the respondents is shown in Table 2. The researchers selected 214 students from the University of Science and Technology of Southern Philippines (USTP) Panaon Campus, who are officially enrolled students. The respondents are already using the E-Learning Platform (ELP) in their Flexible Learning Program. The researchers chose a representative sample of 500 students, from which they collected data from approximately 218 students.

Using Sample Size Calculator formula is calculated as

Confidence Level 95% Margin of Error 5% Population Proportion 50%

Population Size – 500 Students

1.3   Data Collection, Validity, and Reliability

Before the students participated in the survey the researchers provided a brief orientation on answering the standard questionnaire (UEQ) where the items are being placed in pairs of terms with the opposite meanings. The students were provided access to an online survey using Google forms that asks them to fill out their profiles and score their overall satisfaction with the web services.

Table 2. Participants of the study

Respondents	Description	Frequency
Bachelor of Science in Information Technology (BSIT)	These are students enrolled in Information Technology Program.	67
Bachelor of Technology and Livelihood Education (BTLE)	Students taking their degree with the major of Home Economics and Industrial Arts.	135
Bachelor of Science in Marine Biology (BSMB)	These are the students taking Marine-related courses.	12

1.4   Data Analysis

The following are the findings and the analysis of the results gathered in the study. The six means of User Experience Questionnaire for E- Learning Portal (USTeP) for USTP Panaon Students were recorded as 3.01 mean average for Attractiveness Scale which is interpreted as neutral, 3.02 mean average for Perspicuity Scale which is interpreted as neutral, 3.15 is the mean average for Efficiency Scale which is interpreted as neutral, 3.10 is the mean average for Dependability Scale which is interpreted as neutral, 3.14 is the mean average for Stimulation Scale which is interpreted as neutral, moreover 3.52 is the mean average for Novelty Scale which is interpreted as neutral. Computing the overall mean, recorded 3.15 which means neutral. Furthermore, this evidence depicts that the E- Learning Portal (USTeP) for USTP Panaon students feedback needs improvement.

The results are based on the rating scale table below study. There are nine tables overall together with a brief discussion shown below.

Attractiveness rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Attractive
2	3.6 – 4.5	Moderately Attractive
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Attractive
5	1.0 – 1.5	Unattractive

Perspicuity rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Clear
2	3.6 – 4.5	Moderately Clear
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Clear
5	1.0 – 1.5	Unclear

Efficiency rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Efficient
2	3.6 – 4.5	Moderately Efficient
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Efficient
5	1.0 – 1.5	Inefficient

Dependability rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Reliable
2	3.6 – 4.5	Moderately Reliable
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Reliable
5	1.0 – 1.5	Unreliable

Stimulation rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Interesting
2	3.6 – 4.5	Moderately Interesting
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Interesting
5	1.0 – 1.5	Not Interesting

Novelty rating scale

Scale	Range	Interpretation
1	4.6 – 5.0	Very Creative
2	3.6 – 4.5	Moderately Creative
3	2.6 – 3.5	Neutral
4	1.6 – 2.5	Less Creative
5	1.0 – 1.5	Not Creative

Table 3. Age of the Participants

Respondents	Frequency
15-20 years old	79
21-25 years old	99
26-30 years old	23
31-35 years old	9
36 years old and above	4
Total	214

Table 3 states that 99 respondents are the highest ages belong to 21 − 25 years old and 4 respondents are the lowest belong to 36 years old above. According to the data there are 214 total respondents participating in the survey.

Table 4. Sex of the Participants

Respondents	Frequency
Male	59
Female	154
Prefers not to say	1
Total	14

Tabel 4 states that 154 respondents are female which is the majority while 59 respondents are male which is the lowest and 1 respondent prefer not to say.

RESULTS AND DISCUSSION

This chapter will cater to all the tables, findings, analysis, and interpretation of the data on the moderate mean score, indicating mixed perceptions, with ratings spread across the scale. Attractive ($\bar{x}$ = 4.07): Attractive has a high mean score, suggesting that respondents generally find it attractive, with most ratings in the 4 and 5 categories. Unattractive ($\bar{x}$ = 1.89): Unattractive has a low mean score, indicating a negative perception, with a significant portion of ratings in the 2 and 1 categories. Friendly ($\bar{x}$ = 4.24): Friendly has a high mean score, indicating that respondents perceive it positively, with most ratings in the 4 and 5 categories. Unfriendly ($\bar{x}$ = 1.89): Unfriendly has a low mean score, suggesting a negative perception, with a concentration of ratings in the 2 and 1 categories. In summary, the table provides a comprehensive view of respondents' perceptions of various items on the attractiveness scale. The mean scores offer a quick overview of the overall sentiment, while the individual ratings provide a detailed breakdown of how respondents evaluated each specific item.

Table 5. Attractiveness Scales

Attractiveness Scales

Items	5	4	3	2	1	$\bar{x}$
Enjoyable	80	90	36	5	3	4.11
Annoying	12	18	51	60	73	2.23
Good	94	90	24	1	5	4.24
Bad	5	7	39	66	97	1.86
Pleasing	53	62	76	14	9	3.63
Unlikeable	4	14	39	69	88	1.95
Pleasant	66	93	42	9	4	3.97
Unpleasant	6	16	45	72	75	2.09
Attractive	80	83	41	7	3	4.07
Unattractive	7	9	29	79	90	1.89
Friendly	103	73	31	2	5	4.24
Unfriendly	5	9	37	71	92	1.89

Table 6. Perspicuity Scales

Perspicuity Scales						
Items	5	4	3	2	1	$\bar{x}$
Understandable	97	76	32	75	94	5.27
Not understandable	5	7	32	3	6	0.75
Easy to learn	81	84	38	6	5	4.07
Difficult to learn	7	12	44	75	76	2.06
Easy	70	69	64	7	4	3.90
Complicated	10	17	54	74	59	2.27
Clear	80	77	43	9	5	3.50
Confusing	11	23	65	59	56	2.41

Table 5 shows the Attractiveness results of the E-Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Enjoyable($\bar{x}$

= 4.11): Enjoyable has a high mean score, suggesting that respondents generally find it enjoyable, as indicated by most ratings falling in the 4 and 5 categories. Annoying ($\bar{x}$ = 2.23): Annoying has a lower mean score, indicating that it is generally perceived as annoying, with a significant portion of respondents giving it ratings in the 2 and 1 categories. Good ($\bar{x}$ = 4.24): Good has a high mean score, showing that respondents view it positively, with most ratings in the 4 and 5 categories. Bad ($\bar{x}$ = 1.86): Bad has a low mean score, indicating a negative perception among respondents, with most ratings in the 2 and 1 categories. Pleasing ($\bar{x}$ = 3.63): Pleasing has a moderate mean score, suggesting that opinions are somewhat mixed, with ratings spread across the scale. Unlikeable ($\bar{x}$ = 1.95): Unlikeable has a relatively low mean score, indicating a negative perception among respondents, with a concentration of ratings in the 2 and 1 categories. Pleasant ($\bar{x}$ = 3.97): Pleasant has a moderate mean score, suggesting that opinions are somewhat positive, with ratings distributed across the scale. Unpleasant ($\bar{x}$ = 2.09): Unpleasant has a Table 6 shows the Perspicuity results of the E-Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Understandable ($\bar{x}$ = 5.27): This item has a very high

mean score, indicating that respondents find it highly understandable. Most ratings fall into the 4 and 5 categories, suggesting a strong consensus on its clarity. Not understandable ($\bar{x}$ = 0.75): The item "Not understandable" has a very low mean score, confirming that respondents generally perceive it as not understandable. Most ratings are in the 1 and 2 categories, emphasizing the lack of clarity. Easy to learn ($\bar{x}$ = 4.07): This item has a high mean score, indicating that respondents generally find it easy to learn. Ratings are concentrated in the 4 and 5 categories, suggesting positive perceptions of its learnability. Difficult to learn ($\bar{x}$ = 2.06): "Difficult to learn" has a lower mean score, indicating that respondents perceive it as challenging to learn. Ratings are distributed across the scale, with a significant portion in the 2 and 1 categories. Easy ($\bar{x}$ = 3.90): This item has a moderate mean score, suggesting that respondents find it moderately easy. Ratings are spread across the scale, indicating mixed perceptions of its ease. Complicated ($\bar{x}$ = 2.27): "Complicated" has a lower mean score, suggesting that respondents generally perceive it as somewhat complicated. The ratings are concentrated in the 3 and 2 categories. Clear ($\bar{x}$ = 3.50): This item has a moderate mean score, indicating mixed perceptions of its clarity. Ratings are spread across the scale, with a concentration in the 4 categories. Confusing ($\bar{x}$ = 2.41): "Confusing" has a lower mean score, suggesting that respondents find it somewhat confusing. Ratings are distributed across the scale, with a concentration in the 3 and 2 categories. In summary, the table provides insights into how respondents perceive the perspicuity of various items.

The mean scores offer a quick summary of overall sentiment, while the individual ratings provide a detailed breakdown of how respondents evaluated each specific item in terms of clarity and ease of understanding.

Table 7. Efficiency Scales

Efficiency Scales						
Items	5	4	3	2	1	$\bar{x}$
Fast	57	82	70	3	2	3.88
Slow	3	12	84	67	48	2.32
Efficient	64	82	60	5	3	3.92
Inefficient	6	11	66	73	58	1.85
Practical	81	75	54	0	4	4.07
Impractical	9	14	64	66	61	2.27
Organized	98	73	35	6	2	4.21
Cluttered	19	24	86	44	41	2.70

Table 7 shows the Efficiency results of the E- Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Fast ($\bar{x}$ = 3.88): This item has a relatively high mean score, indicating that respondents generally perceive it as fast. Most ratings fall into the 4 and 5 categories, suggesting a positive view of its efficiency. Slow ($\bar{x}$ = 2.32): "Slow" has a lower mean score, indicating that respondents generally perceive it as slow. Ratings are concentrated in the 3 and 2 categories, reflecting a negative perception of its efficiency. Efficient ($\bar{x}$ = 3.92): This item has a relatively high mean score, suggesting that respondents find it efficient. Ratings are concentrated in the 4 and 5 categories, indicating a positive view of its efficiency. Inefficient ($\bar{x}$ = 1.85): "Inefficient" has a lower mean score, suggesting that respondents perceive it as inefficient. Ratings are concentrated in the 3 and 2 categories, indicating a negative view of its efficiency. Practical ($\bar{x}$ = 4.07): This item has a high mean score, indicating that respondents generally find it practical. Ratings are concentrated in the 4 and 5 categories, reflecting a positive perception of its efficiency and usefulness. Impractical ($\bar{x}$ = 2.27): "Impractical" has a lower mean score, suggesting that respondents generally perceive it as impractical. Ratings are concentrated in the 3 and 2 categories, indicating a negative view of its efficiency and practicality. Organized ($\bar{x}$ = 4.21): This item has a high mean score, indicating that respondents find it organized. Most ratings fall into the 4 and 5 categories, suggesting a positive view of its efficiency and orderliness. Cluttered ($\bar{x}$ = 2.70): "Cluttered" has a lower mean score, suggesting that respondents generally perceive it as cluttered. Ratings are

concentrated in the 3 and 2 categories, reflecting a negative view of its efficiency and organization. In summary, the table provides insights into how respondents perceive the efficiency of various items. The mean scores offer a quick summary of the overall sentiment, while the individual ratings provide a detailed breakdown of how respondents evaluated each specific item in terms of speed, efficiency, practicality, and organization.

Table 8. Dependability Scales

Dependability Scales						
Items	5	4	3	2	1	$\bar{x}$
Predictable	43	74	74	15	8	3.60
Unpredictable	11	20	62	73	48	2.40
Supportive	78	80	96	46	5	5.11
Obstructive	15	28	51	0	29	1.72
Secure	85	80	42	3	4	4.11
Not secure	8	7	41	84	74	2.02
Meet expectations	64	71	64	9	6	3.84
Doesn't meet expectations	7	11	49	72	75	2.07

Table 8 shows the Dependability results of the E-Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Predictable ($\bar{x}$

= 3.60): This item has a moderate mean score, indicating that respondents generally perceive it as predictable. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Unpredictable ($\bar{x}$ = 2.40): "Unpredictable" has a lower mean score, suggesting that respondents generally perceive it as unpredictable. Ratings are concentrated in the 3 and 2 categories, indicating a less favorable view of its dependability. Supportive ($\bar{x}$ = 5.11): This item has a very high mean score, indicating that respondents perceive it as highly supportive. Most

ratings fall into the 5 categories, suggesting a strong consensus on its dependability and supportiveness. Obstructive ($\bar{x}$ = 1.72): "Obstructive" has a low mean score, indicating that respondents perceive it as obstructive or hindering. Ratings are concentrated in the 2 and 1 categories, reflecting a negative view of its dependability. Secure ($\bar{x}$ = 4.11): This item has a high mean score, suggesting that respondents generally perceive it as secure. Ratings are concentrated in the 4 and 5 categories, indicating a positive view of its dependability and security. Not secure ($\bar{x}$ = 2.02): "Not secure" has a lower mean score, indicating that respondents generally perceive it as not secure. Ratings are concentrated in the 3 and 2 categories, reflecting a less favorable view of its dependability. Meet expectations ($\bar{x}$ = 3.84): This item has a moderate mean score, suggesting that respondents perceive it as generally meeting expectations. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Doesn't meet expectations ($\bar{x}$ = 2.07): "Doesn't meet expectations" has a lower mean score, indicating that respondents generally perceive it as not meeting expectations. Ratings are concentrated in the 3 and 2 categories, reflecting a less favorable view of its dependability in meeting expectations. In summary, the table provides insights into how respondents perceive the dependability of various items. The mean scores offer a quick summary of the overall sentiment, while the individual ratings provide a detailed breakdown of how respondents evaluated each specific item in terms of predictability, supportiveness, security, and meeting expectations.

Table 9. Stimulation Scales

Stimulation Scales						
Items	**5**	**4**	**3**	**2**	**1**	**x̄**
Valuable	86	84	40	0	4	4.15
Inferior	16	24	104	33	37	2.76
Exciting	68	72	63	8	3	3.90
Boring	5	13	45	78	73	2.06
Interesting	80	79	51	89	77	5.25
Not interesting	5	7	36	1	3	0.77
Motivating	91	63	53	5	2	4.10
Demotivating	11	18	42	69	74	2.17

specific item in terms of value, excitement, interest, and motivation.

Novelty Scales						
Items	**5**	**4**	**3**	**2**	**1**	**x̄**
Creative	83	82	44	4	1	4.13
Dull	6	9	73	69	57	2.24
Inventive	38	54	99	17	6	3.47
Conventional	45	85	72	9	3	3.74
Usual	35	69	83	24	3	3.50
Leading Edge	41	54	97	20	2	3.52
Innovative	70	76	58	10	0	3.96
Conservative	39	62	94	15	4	3.65

Table 10. Novelty Scales

Table 9 shows the Stimulation results of the E-Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Valuable ($\bar{x}$ = 4.15): This item has a high mean score, indicating that respondents generally perceive it as valuable. Most ratings fall into the 4 and 5 categories, suggesting a positive view of its stimulation value. Inferior ($\bar{x}$ = 2.76): "Inferior" has a lower mean score, indicating that respondents generally perceive it as inferior. Ratings are concentrated in the 3 and 2 categories, reflecting a less favorable view of its stimulation value. Exciting ($\bar{x}$ = 3.90): This item has a moderate mean score, suggesting that respondents find it moderately exciting. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Boring ($\bar{x}$ = 2.06): "Boring" has a low mean score, indicating that respondents generally perceive it as boring. Ratings are concentrated in the 2 and 1 categories, reflecting a negative view of its stimulation value. Interesting ($\bar{x}$ = 5.25): This item has a very high mean score, suggesting that respondents perceive it as highly interesting. Most ratings fall into the 5 categories, indicating a strong consensus on its stimulation value. Not interesting ($\bar{x}$ = 0.77): "Not interesting" has a very low mean score, indicating that respondents generally perceive it as not interesting. Ratings are concentrated in the 1 and 2 categories, reflecting a strong negative view of its stimulation value. Motivating ($\bar{x}$ = 4.10): This item has a high mean score, indicating that respondents find it motivating. Ratings are concentrated in the 4 and 5 categories, suggesting a positive view of its stimulation and motivational value. Demotivating ($\bar{x}$ = 2.17): "Demotivating" has a lower mean score, indicating that respondents generally perceive it as demotivating. Ratings are concentrated in the 3 and 2 categories, reflecting a less favorable view of its stimulation and motivational value. In summary, the table provides insights into how respondents perceive the stimulation value of various items. The mean scores offer a quick summary of the overall sentiment, while the individual ratings provide a detailed breakdown of how

respondents evaluated each Table 10 shows the Novelty results of the E- Learning Portal. The proponents evaluated the USTP Panaon students using this scale. Creative ($\bar{x}$ = 4.13): This item has a high mean score, indicating that respondents generally perceive it as creative. Most ratings fall into the 4 and 5 categories, suggesting a positive view of its novelty. Dull ($\bar{x}$ = 2.24): "Dull" has a lower mean score, indicating that respondents generally perceive it as dull. Ratings are concentrated in the 3 and 2 categories, reflecting a less favorable view of its novelty. Inventive ($\bar{x}$ = 3.47): This item has a moderate mean score, suggesting that respondents find it moderately inventive. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Conventional ($\bar{x}$ = 3.74): "Conventional" has a moderate mean score, indicating that respondents generally perceive it as conventional. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Usual ($\bar{x}$ = 3.50): This item has a moderate mean score, suggesting that respondents perceive it as usual. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Leading Edge

($\bar{x}$ = 3.52): This item has a moderate mean score, indicating that respondents find it moderately leading edge. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. Innovative ($\bar{x}$

= 3.96): This item has a high mean score, suggesting that respondents generally perceive it as innovative. The ratings are concentrated in the 4 and 5 categories, indicating a positive view of its novelty. Conservative ($\bar{x}$ = 3.65): "Conservative"has a moderate mean score, indicating that respondents generally perceive it as conservative. Ratings are spread across the scale, with a concentration in the 4 and 3 categories. In summary, the table provides insights into how respondents perceive the novelty of various items. The mean scores offer a quick summary of the overall sentiment, while the individual ratings provide a detailed breakdown of how respondents evaluated each specific item in terms of creativity, inventiveness, innovativeness, and conventionality.

Table 11. Six Means of UEQ Scales for E-Learning Portal

Scale / Variable	$\bar{x}$
Attractiveness	3.01
Perspicuity	3.02
Efficiency	3.15
Dependability	3.10
Stimulation	3.14
Novelty	3.52
Total Mean	**3.15**

Table 11 shows the six means of UEQ Scales for E-Learning Portal. provides mean scores for various scales related to the User Experience Questionnaire (UEQ) for an E-Learning Portal. The scales include Attractiveness, Perspicuity, Efficiency, Dependability, Stimulation, Novelty, and Total Mean. Let's discuss each of these scales: Attractiveness ($\bar{x}$ = 3.01): The mean score of 3.01 for Attractiveness suggests a moderate level of user perception regarding the visual appeal and overall desirability of the E- Learning Portal. Perspicuity ($\bar{x}$ = 3.02): With a mean score of 3.02 for Perspicuity, users find the E-Learning Portal to have a moderate level of clarity, ease of understanding, and transparency. Efficiency ($\bar{x}$ = 3.15): The Efficiency scale, with a mean score of 3.15, indicates that users perceive the E-Learning Portal to be moderately efficient in terms of navigation and task completion. Dependability ($\bar{x}$ = 3.10): Users, on average, find the E-Learning Portal to be reasonably dependable, as indicated by the mean score of 3.10 for Dependability. This suggests a moderate level of trust and reliability. Stimulation ($\bar{x}$ = 3.14): The mean score of 3.14 for Stimulation indicates a moderate level of user engagement and interest in the E-Learning Portal. Novelty ($\bar{x}$ = 3.52): The highest mean score is observed in the Novelty scale ($\bar{x}$ = 3.52), suggesting that users perceive the E-Learning Portal as relatively innovative and novel. This could indicate a positive response to new or unique features. Total Mean ($\bar{x}$ = 3.15): The overall Total Mean score for the E- Learning Portal is 3.15, reflecting a moderate overall user satisfaction with the platform across all the evaluated scales. In summary, these mean scores provide a snapshot of users' perceptions of the E- Learning Portal across different aspects of user experience. The moderate scores suggest that while there is room for improvement, users generally find the platform acceptable in terms of attractiveness, perspicuity, efficiency, dependability, stimulation, and novelty. The relatively higher score in the Novelty scale indicates a positive response to innovative features. It's important for designers and administrators of the E-Learning Portal to consider user feedback and make enhancements based on these evaluations.

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This chapter tackles the summary, conclusion, and recommendation of the E-Learning Portal (USTeP). The main purpose of this study is to find out the acceptance of user satisfaction on the E- Learning Portal.

Summary of the Findings

Most respondents (99) fall into the age group of 21-25 years old. The age distribution ranges from

15 to 36 years old, with 214 total respondents. Female respondents dominate the sample with 154, while male respondents are 59, and 1 respondent prefers not to disclose their gender. In Attractiveness Scales such as; Enjoyable: High mean score (4.11), suggesting that respondents generally find the E-Learning Portal enjoyable. Good: High mean score (4.24), indicating a positive perception among respondents. Unattractive: Low mean score (1.89), indicating a negative perception. Friendly: High mean score (4.24), suggesting a positive perception. Perspicuity Scales such us; Understandable: Very high mean score (5.27), indicating strong agreement on its clarity. Difficult to learn: Lower mean score (2.06), suggesting perceived difficulty in learning. Efficiency Scales such as; Fast: Relatively high mean score (3.88), indicating a positive perception of speed. Inefficient: Lower mean score (1.85), suggesting a negative view of efficiency. Dependability Scales such as; Supportive: Very high mean score (5.11), indicating a strong perception of supportiveness. Doesn't meet expectations: Lower mean score (2.07), suggesting a less favorable view in meeting expectations. Stimulation Scales such as; Valuable: High mean score (4.15), indicating a positive perception of its value. Not interesting: Very low mean score (0.77), suggesting a strong negative view. Novelty Scales such as; Innovative: High mean score (3.96), indicating a positive perception of innovation. Dull: Lower mean score (2.24), suggesting a less favorable view of dullness. Meanwhile in the Overall User Experience The overall mean score across all scales is 3.15, indicating a moderate level of user satisfaction with the E-Learning Portal. The highest mean score is observed in the Novelty scale (3.52), suggesting users perceive the platform as relatively innovative.

CONCLUSION

While the E-Learning Portal generally has a moderate level of user satisfaction, there are areas for improvement, such as addressing perceptions of inefficiency, meeting expectations, and enhancing user interest. The platform's strengths include strong perceived supportiveness, clarity, and innovation. Designers should focus on these strengths while addressing specific areas of concern to enhance the overall user experience.

Recommendations

1.   The proponents recommend that the E- Learning Portal improve their server capability to handle a massive user while using the portal to avoid system down/maintenance.

2.   The proponents recommend that the E- Learning portal use other strategies to enroll the student easier and faster on the system.

3.   The proponents recommend future developers to improve mobile application performance.

REFERENCES

[1]   Abubakari, M. S., Nurkhamid, N., & Priyanto, P. (2022). Factors Influencing Online Learning Engagement: International Students' Perspective and The Role of Institutional Support. *Turkish Online Journal of Distance Education-TOJDE*, *23*(3), 8.

[2]   Alshehri, A., Rutter, M., & Smith, S. (2019). Assessing the relative importance of an e-learning system's usability design characteristics based on students' preferences . European Journal of Educational Research,   8(3),   839-855. https://doi.org/10.12973/eu-jer.8.3.839

[3]   Amer, T., Al-Musawi, A. S., & Muhammad, A. A. (2022). Higher education Students' perceptions of E-Learning Quality. *Journal of Education and E- learning   Research*,   *9*(2),   71–78. https://doi.org/10.20448/jeelr.v9i2.3910

[4]   Domínguez, C. R. Y., & García, C. M. (2017). University students' self-regulated learning using digital technologies. *International Journal of Educational Technology in Higher Education*, *14*(1). https://doi.org/10.1186/s41239-017-0076-8

[5]   Eltahir, M.E., Al-Qatawneh, S., Al-Ramahi, N., & Alsalhi, N. (2019). The perspective of students and faculty members on the efficiency and usability of e- learning courses at Ajman University: A case study. Journal of Technology and Science Education, 9(3), 388-403. https://doi.org/10.3926/jotse.590

[6]   Estacio, R. R., & Raga, R. C. (2017). Analyzing students online learning behavior in blended courses using Moodle. *Asian Association of Open Universities Journal*, *12*(1), 52–68. https://doi.org/10.1108/aaouj-01-2017-0016.

[7]   Grechushkina, N. V. (2018). Online course: Definition and classification. Vysshee Obrazovanie v Rossii, 27(6),

125–134.

[8]   Hamada El Kabtane, Mohamed El Adnani, Mohamed Sadgal, Youssef Mourdi, (2018) "Augmented reality-
[9]   based approach for interactivity in MOOCs", International Journal of Web Information Systems,
      https://doi.org/10.1108/IJWIS-04-2018-0033

[10] Hillier, M. (2018). Bridging the digital divide with off- line e-learning. *Distance Education*, *39*(1), 110–121.
      https://doi.org/10.1080/01587919.2017.1418627

[11] Ilias, A., Baidi, N., Ghani, E. K., & Razali, F. M. (2020). Issues on the use of online Learning: An exploratory
      study among university students during the COVID-19 pandemic. *Universal Journal of Educational
      Research*, *8*(11), 5092–5105. https://doi.org/10.13189/ujer.2020.081109 *Education*,   *17*(11), em2025.
      https://doi.org/10.29333/ejmste/11234

[12] Kasch, J., Van Rosmalen, P., & Kalz, M. (2017). A framework towards educational scalability of open online
      courses. Journal of Universal Computer Science, 23(9), 845–867. Retrieved from https://is.gd/FzS3tY

[13] Legon, R., Gareett, R., & Fredericksen, E. E. (2019). CHLOE 3: Behind the numbers: The changing
      landscape of online and education (2019). Annapolis, MD: Quality Matters. Retrieved from https://
      www.qualitymatters.org/sites/default/files/research- docs-pdfs/CHLOE-3-Report-2019-Behindthe-
      Numbers.pdf

[14] Naidu, S. (2019). The changing narratives of open, flexible and online learning. *Distance Education*, *40*(2),
      149–152.https://doi.org/10.1080/01587919.2019.1612981

[15] Paulsen, M. F. (2002). Online education systems: Discussion and definition of terms. NKI Distance
      Education, 202, 1–8. Retrieved from https://is.gd/dm8EbB

[16] Salloum, S. A., & Shaalan, K. (2018). Factors affecting students' acceptance of E-Learning system in higher
      Education using UTAUT and structural equation modeling approaches. In *Advances in intelligent systems
      and computing* (pp. 469–480). https://doi.org/10.1007/978-3-319-99010-1_43

[17] Seaman, J. E., Allen, I. E., & Seaman, J. (2018). Grade increase: Tracking distance education in the United
      States. Oakland, CA: Babson Survey Research Group. Retrieved   from   http://onlinelearning
      survey.com/reports/gradeincrease.pdf

[18] Shishakly, R. (2021). A further understanding of the dominant factors affecting e-learning usage resources by
      students in universities in the UAE. *Eurasia Journal of Mathematics, Science and Technology*