

Factors Affecting Student Learning Experience During Online Learning

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Abstract

A study was conducted to examine the factors influencing online learning among 60 Bachelor of Science in Information Technology students. Utilizing a researcher-developed questionnaire, the primary objective was to identify appropriate interventions to enhance the students' online learning experience. Key findings showed: (a) **positive linear relationship** was observed between the **helpfulness of the teacher** during online classes and students **perceived effectiveness** of online learning; (b) **positive linear correlation** exists between the **number of hours spent on online learning** and students **perceived learning effectiveness**; (c) an **inverse relationship** was found between the **number of household responsibilities** and students' overall perception of online learning; (d) a **statistically significant difference** in the perceived effectiveness of online learning **between male and female students**; (e) a **positive correlation** was identified between students' **access to devices** (e.g., smartphones, laptops) and their **perceived effectiveness** of online learning; and (f) a **linear relationship** between the **availability of institutional learning management platforms** and students' perception of online learning effectiveness. Additional findings also showed: (a) 70% preferred small group work (with five members) **to help them work more efficiently on specific tasks**; (b) 87% reported that collaborating with classmates makes online learning more enjoyable; (c) 63% preferred to ask questions directly to the professor during or after lectures for clarification; (d) 82% identified that the most needed teacher support is the ability to ask for clarifications on difficult topics; (e) **57%** of students expressed a preference for in-person classroom lectures; and (f) 55% indicated that in-person activities are more effective in motivating them to engage in the learning process.

The result of the study provides insights faculty, administrators, and parents/guardians to enhance student learning experience.

Keywords: online, teaching, learning, student learning experience

1. INTRODUCTION

THE COVID-19 pandemic, drastically altered the educational landscape by necessitating a rapid shift to online learning. In the United States, for instance, over 97% of public colleges transitioned to offering online courses [1].

While online learning played a critical role in minimizing the spread of the virus, its effectiveness as a substitute for face-to-face instruction remains under scrutiny. Challenges such as limited real-time interaction with instructors, delayed feedback, and reduced opportunities for social engagement have been identified as key concerns in higher education delivery [2], while one of the most persistent criticisms of online learning is the lack of connectedness and limited opportunities for collaboration [3].

To ensure meaningful and engaging online learning experiences, it is essential to design instructional strategies around the concept of “presence” in online education [4]. Understanding factors that affect student experiences can help institutions and educators enhance communication, build connection, and foster effective interaction in virtual environments [5]. This study examined students’ perceptions in the effectiveness of online learning in order to gain insights into how to enhance student learning and the roles of instructors in improving online engagement and interaction.

2. Research Gap

While numerous studies have explored various dimensions of online learning—such as accessibility, student satisfaction, and technological readiness—there remains a lack of comprehensive, context-specific understanding of the multifaceted factors that influence online learning effectiveness, particularly in developing countries and diverse educational settings such as the Philippines.

The post-pandemic shift to blended and hybrid learning environments has introduced new variables (e.g., digital fatigue, equity in access, institutional support systems) that have not been fully addressed in earlier research, which primarily focused on emergency remote teaching.

Therefore, there is a need for more integrative, contextually grounded, and data-driven studies that:

- Explore the combined impact of instructional, technological, social, and personal factors on online learning outcomes.
- Inform policy and intervention strategies that can improve student success, retention, and equity in online education.

3. Statement of Purpose

Thus, this study seeks to investigate:

Purpose 1: The key factors that influence the effectiveness of online learning among BS Information Technology students, and how do these factors affect their learning outcomes and overall experience.

Purpose 2: Effective interventions that can enhance online learning experiences, promote equity, and improve academic performance?

4. Methodology

The study used quantitative research methods.

Purposive random sampling was used in the selection of students. The respondents were Bachelor of Science in Information Technology students. These students were able to experience both face-to-face and online learning.

Inferential statistics such as the Analysis of Variance (ANOVA), and Linear Regression Descriptive were used to analyze the relationships between the independent and dependent variables.

5. Results and Discussion

Figures 1 to 5 show the linear regression graph questions of the factors affecting student learning experience during online classes.

Figure 1: Helpfulness of the Faculty and Perceived Effectiveness of Online Learning

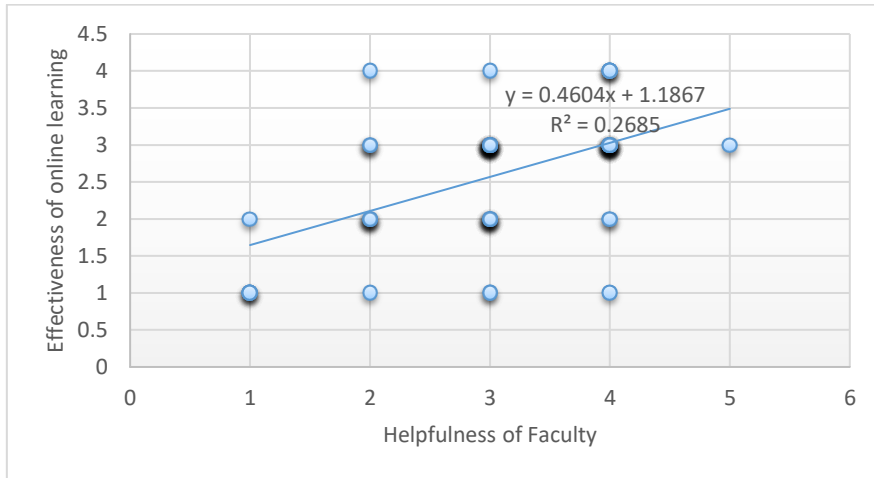


Figure 1 shows that there is a positive linear relationship between the students’ perception of the effectiveness of online learning and the helpfulness of the faculty.

Figure 2: Number of Hours and Perceived Effectiveness of Online Learning

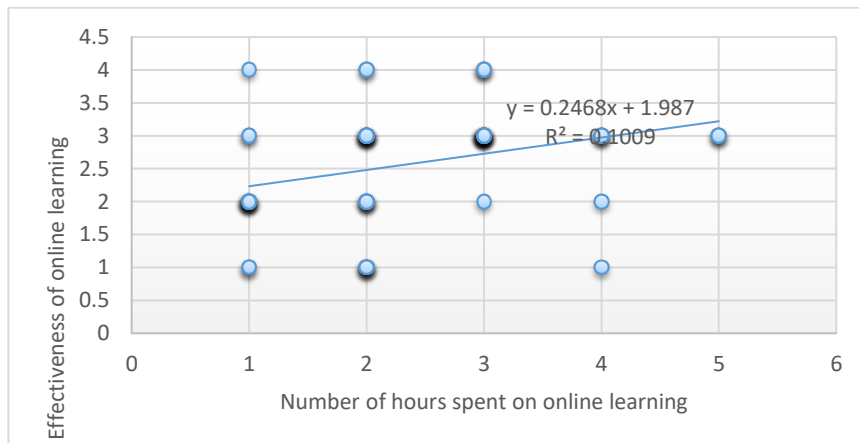


Figure 2 shows that there is a positive linear relationship between the students’ perception of the effectiveness of online learning and the number of hours spent on online learning.

Figure 3: Students’ Responsibilities at home and their overall perception over online learning.

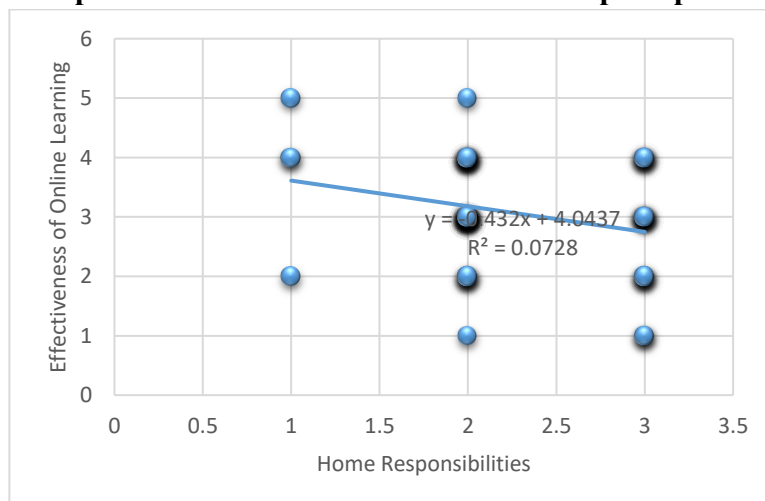


Figure 3 shows that there is inverse relationship between the students’ perception of the effectiveness of online learning and the student’s responsibilities at home where students with more home responsibilities rate online learning as less effective.

Figure 4: Students’ Device Access and Perceived Effectiveness of Online Learning

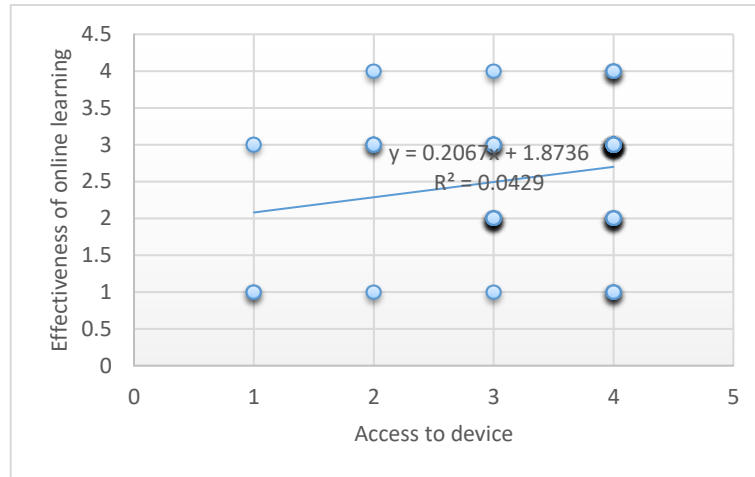


Figure 4 shows that there is a positive relationship between the students’ perception of the effectiveness of online learning and the students’ access to device.

Figure 5: Availability of LMS and Perceived Effectiveness of the Online Learning

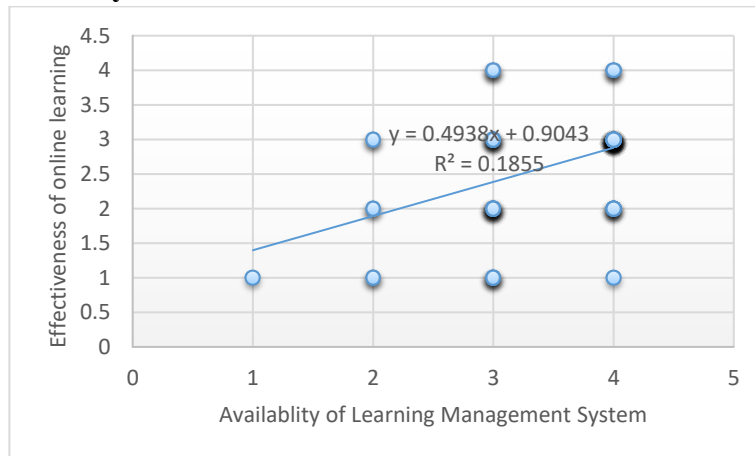


Figure 5 shows that there is a positive linear relationship between the students’ perception of the effectiveness of online learning and the availability of learning management systems.

Additional results of the study are presented in Tables 1-10 below.

Table 1: Devices Used during Online Learning

Devices	Count	Percentage	Rank
Smartphone	51	85%	1
Laptop	34	57%	2
Desktop	7	12%	3
Tablet	1	2%	4

Table 1 shows that 85% of the respondents use Smartphones during online learning; 57% uses Laptop;

12% uses Desktop and 2% use Tablet. These data provide the necessary information for faculty and administrators to ensure that online platforms designed are mobile-friendly.

Table 2: Faculty Helpfulness

Faculty helpfulness	Frequency	Percentage
Extremely helpful	1	2%
Very helpful	20	33%
Moderately helpful	24	40%
Slightly helpful	10	17%
Not at all helpful	5	8%
Grand Total	60	100%

Table 2 shows that 2% find their teacher extremely helpful; 33% find their teacher very helpful; 40% of the respondents find their teacher moderately helpful; 17% find their teacher slightly helpful; 8% find their teacher not at all helpful.

Table 3: Engagement Methods

Engagement Methods	Frequency	Percentage	Rank
Individual assignment	37	62%	1
Small group (5 students) work	36	60%	2
Project-based learning	15	25%	3
Large group (10 students and more) work	6	10%	4

Table 3 shows that in terms of methods that engage students personally to learn online: 62% indicated individual assignment; 60% indicated small group (5 students) work; 25% indicated Project-based learning; and 10% indicated large group (10 students and more) work.

Table 4: Preferred Online Collaborations

Preferred Online Collaborations	Frequency	Percentage	Rank
Small group workgroup (5 students) work	42	70%	1
Two by two (2-member team)	34	57%	2
Large group (10 students and more) work	2	3%	3

Table 4 shows that in terms of online collaboration activities that enable students to work at ease on specific task: 70% indicated small group workgroup (5 students) work; 57% indicated two by two (2-member team); and 3% indicated large group (10 students and more) work.

Table 5: Enjoyable Online Collaborators

Enjoyable Collaborators	Frequency	Percentage	Rank
Other Students	52	87%	1
Teacher	20	33%	2
School Administrators (Program Head, Students Affairs, etc)	13	22%	3

Table 5 shows that in terms of collaborations that enable students to enjoy online learning: 87% indicated

Other Students; 33% indicated Teachers; and 22% indicated School Administrators.

Table 6: Preferred Methods for Clearing Doubts

Preferred method for clearing doubts	Frequency	Percentage	Rank
Ask the professor during/after an online lecture	38	63%	1
Go through online material providing an additional explanation.	25	42%	2
Ask my classmates during/after an online lecture	22	37%	3
Post the query in a discussion forum of your class and get help from your peers	8	13%	4

Table 6 shows that in terms of Students’ preferred method of clearing doubts during online learning: 63% indicated Ask the professor during/after an online lecture; 42% indicated Go through online material providing an additional explanation; 37% indicated Ask my classmates during/after an online learning; and 13% indicated Post the query in a discussion forum of class and get help from peers.

Table 7: Assistance Required

Assistance Required	Frequency	Percentage	Rank
Be able to ask my teacher for clarifications on topics I don’t understand	49	82%	1
I need my teacher’s re-assurance when I am doing tasks,	32	53%	2
I need timely feedback on the assessments and exams	23	38%	3
I need timely feedback on the assigned tasks	19	32%	4.5
Be able to ask my teacher for more examples	19	32%	4.5

Table 7 shows that in terms of assistance required from the teacher while studying online: 82% indicated Be able to ask my teacher for clarifications on topics I don’t understand; 53% indicated I need my teacher’s re-assurance when I am doing tasks; 38% indicated I need timely feedback on the assessments and exams; 32% indicated I need timely feedback on the assigned tasks and Be able to ask my teacher for more examples; and 2% indicated I don’t require any assistance from my teacher.

Table 8: Effective Online Methods

Effective Online Methods	Frequency	Percentage	Rank
In-person classroom lecture	34	57%	1
Power Point slides and real-time presentation over zoom, google meet, and other platforms	33	55%	2
recorded video delivered by my faculty	31	52%	3.5
Teacher on whiteboard/blackboard with real-time explanations over zoom, google meet, and other platforms	26	43%	5
Recorded Power Point slides with voice over	13	22%	6
recorded video delivered by reputed overseas Universities	9	15%	7
recorded video delivered by my classmates	8	13%	8

recorded video delivered by unknown experts	0	0%	9
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Table 8 shows that in terms of methods considered by students as more effective during online sessions: 57% indicated In-person classroom lecture; 55% indicated Power Point slides and real-time presentation over zoom, google meet, and other platforms; 52% indicated recorded video delivered by my faculty; 43% indicated Teacher on whiteboard/blackboard with real-time explanations over zoom, google meet, and other platforms; 22% indicated Recorded Power Point slides with voice over; 15% indicated recorded video delivered by reputed overseas Universities; 13% indicated video delivered by my classmates; and 0% indicated video delivered by unknown experts.

Table 9: Preferred Assessment Methods

Preferred Assessment Methods	Frequency	Percentage	Rank
Traditional—pen and paper—Multiple Choice Questions	41	68%	1
Traditional—pen and paper—short answers	29	48%	2
Online quiz—Multiple Choice Questions	28	47%	3
Coursework (term paper, case studies, projects)	19	32%	4

Table 9 shows that in terms of type of assessment considered as more effective to test students’ understanding: 68% indicated Traditional-pen and paper-multiple choice questions; 48% indicated Traditional-pen and paper-short answers; 47% indicated Online quiz-multiple choice questions; and 32% indicated Coursework (term paper, case studies, projects).

Table 10: Motivational Approaches

Motivational Approaches	Frequency	Percentage	Rank
In-person activities with other students	33	55%	1
Animations (i.e. animated gifs, animated presentations)	29	48%	2.5
PowerPoint presentations	29	48%	2.5
Whiteboard/Blackboard and marker/chalk	20	33%	4
Traditional pen and paper activities to solve	15	25%	5
Digital pen and slate	7	12%	6.5
Gamified activities online	7	12%	6.5
one on one with teacher in gmeet when it comes to assessments	1	2%	8

Table 10 shows that in terms of terms of approaches that motivate students to engage in the learning process: 55% indicated In-person activities with other students; 48% indicated Animations (i.e. animated gifs, animated presentations, and PowerPoint presentations); 33% indicated Whiteboard/Blackboard and marker/chalk; 25% indicated Traditional pen and paper activities to solve; 12% indicated Digital pen and slate, and Gamified activities online; and 2% indicated one-on-one with teacher in gmeet when it comes to assessments

6. Conclusion

The perceived effectiveness of online learning is largely shaped by students’ overall learning experiences,

which are closely linked to the elements of teaching and learning environment. To enhance these experiences, institutions and faculty must consider adapting both the learning environment and pedagogical strategies to better support student engagement and understanding. In addition, external factors—such as students' home environments and the availability of learning resources and facilities—also play a critical role in shaping online learning outcomes.

As online learning becomes a permanent component of the post-pandemic educational landscape, there is a growing need to design learning environments that support effective, technology-enhanced instruction. By doing so, institutions can improve not only student satisfaction and performance but also strengthen faculty effectiveness and institutional quality as a whole.

7. Recommendations

In view of the study's findings, the following recommendations are proposed to enhance the effectiveness of online learning and improve the overall student learning experience:

Institutional Support:

Higher education institutions should strengthen their support systems by enhancing access to **learning management platforms, providing necessary devices, and designing mobile-friendly instructional materials** to ensure greater accessibility and inclusivity in online learning.

Faculty Engagement:

Teachers can significantly improve student engagement by increasing their **online presence**, including responding promptly to queries, providing additional examples, and offering extended consultation hours. Furthermore, instructors are encouraged to design **collaborative learning activities** that foster peer interaction. The use of **customized teaching materials**, such as teacher-developed PowerPoint presentations, is recommended over referring students to generic online content from platforms like YouTube or TikTok, which may lack context and relevance.

Parental/Guardian Involvement:

Parents and guardians play a crucial role in supporting students' academic success by **managing and balancing household responsibilities**, allowing students to focus on their learning during designated study hours.

Comparative Research:

It is recommended to conduct **comparative studies on student performance in face-to-face versus online learning environments**, to provide empirical evidence on the actual effectiveness of online education.

Gender-Based Perception Analysis:

Further research should be undertaken to explore the **significant difference in online learning perceptions between male and female students**, particularly to understand why male students report a lower perception of its effectiveness.

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