

Evaluating The Perceived Effectiveness of Microsoft Teams on Teaching and Learning in Higher Education

Archie S. Gonzaga, Edelyn Rose R. Dawat

agonzaga_220000002528@uic.edu.ph / edawat_230000000381@uic.edu.ph

Graduate School Department, University of the Immaculate Conception, Davao City, Philippines

Abstract

This study aimed to evaluate the perceived effectiveness of Microsoft Teams as a learning management system (LMS) in higher education. The research focused on students' perceptions of the usefulness and ease of use of Microsoft Teams and its efficacy in terms of essential functions, assessments, features, and general usage. The study also explored whether there were significant differences in perception based on gender and year level. The research utilized a quantitative and descriptive research design, with a survey questionnaire as the research instrument. The study was conducted in the Tertiary Education Unit of the Philippine Women's College of Davao, involving 124 undergraduate students. The data was gathered through a survey administered using Google Forms. The results showed that the respondents strongly agreed on the effectiveness of Microsoft Teams, finding its essential functions and assessment features helpful and easy to use. There was no significant difference in perception across different year levels. The study recommends educational institutions adopt Microsoft Teams, provide guidance and training to students, ensure reliable internet connectivity, and conduct further research on its long-term impact. Overall, this research provides valuable insights into the perceived effectiveness of Microsoft Teams in enhancing teaching and learning in higher education.

Keywords: MS Teams; Learning Management System; Higher Education; Teaching and Learning; Philippines

1. Background of the study

Numerous issues and challenges have been brought on by the coronavirus, also known as covid-19. specifically in terms of education and learning. The means to maintain your health and safety still exist. The government and those in positions of authority have taken action to guarantee that learning continues. (Kuki, 2021)

Learning is the result of the numerous communication methods that teachers and students have explored.

A management system, or learning management system, is a tool for managing and organizing information. It can be used for a variety of things, including managing projects, keeping track of activities, and organizing information, making processes simpler and more effective. The term Learning Management System (LMS) refers to a type of software that allows teachers and students to manage their learning (Al, 2017).

The learning management system (LMS) is the most important and practical instrument for distant education nowadays, providing huge assistance to both teachers and students.

According to Smith et al.'s 2007 study, a large number of institutions, including schools and universities, use learning management systems. In order to aid the students in learning and succeeding in the course, the teachers then obtained it and began using it in a variety of ways.

In 2008, researchers from McGill and other institutions examined the idea of management. Moodle is one of the most popular Learning Management Systems (LMS). An LMS is a program used by educational institutions to plan and manage online courses. It supports communication and teamwork among teachers, aids in the creation and delivery of educational materials, and tracks student achievement. The open-source learning management system Moodle can be modified to meet the unique demands of each school or university. It is well-liked for its user-friendly interface and the variety of functions it offers to enhance learning. Microsoft developed a platform for cooperation and communication called Teams, as announced in 2018.

Google Classroom is the most well-liked learning management system (LMS). An LMS is a piece of software that aids in the management and organization of online discussions, assignments, and learning resources for both professors and students. Google Classroom, as a specific LMS, provides an easy and effective way for teachers to exchange resources and communicate with students. It also enables students to engage with their classmates on group projects and submit their assignments electronically. In general, Google Classroom is a useful tool for colleges and universities to enhance the quality of online learning.

Microsoft created the program known as Microsoft Teams. According to Microsoft (2018), MS Teams is designed for organizing and storing information online. It brings together various apps, meetings, discussions, and files into a single learning management system (LMS). Furthermore, MS Teams is now being used more effectively. Teachers play a crucial role in grading and overseeing students' activities and assignments as part of the teaching and learning process. Additionally, the arrangement of the classroom and the interactions between the teacher and pupils are important factors (Alameri et al., 2020).

Despite the numerous barriers standing in the way, efforts were made, and people persisted in their endeavors despite several obstacles. The survey had looked into what students thought and felt about using MS Teams. However, in the rural areas of the Philippines, this survey has not yet been conducted on State University students and other Higher Education Institutions.

The two main platforms for online instruction during the previous school year were Google Classroom and Google Meet in the 2020s and 2021s. These platforms served as the primary resources for online learning. In order to enhance student learning and engagement, teachers at our school have developed numerous innovative teaching ideas and techniques. These strategies have proven successful in promoting student engagement and comprehension, as well as strengthening the bond between teachers and students. As a result of these modifications, the overall quality of education at our school has significantly improved.

For some Higher Education Institutions, the primary learning management system (LMS) currently used by students is Microsoft Teams. However, the main resources for online learning during the previous school year were Google Classroom and Google Meet. To enhance student learning and engagement, teachers at our school have developed numerous innovative teaching ideas and techniques. These strategies have proven successful in encouraging students' engagement and comprehension, as well as strengthening the bond between teachers and students. As a result of these modifications, the overall quality of education at our school has significantly improved.

The goal of this study is to investigate and ascertain students' perceptions about the usefulness of MS Teams as a tool for online learning in Higher Education Institutions. Additionally, it aims to determine whether MS Teams is simple to use.

1.1. Statement of the Problem

This study is focused on assessing MS Teams in the Teaching-Learning-Studying of the Tertiary Education specifically, it aims to answer the following questions:

1. In terms of various areas, such as basic functions, assessments, features, and overall effectiveness, what are the different levels of efficacy exhibited by Microsoft Teams as a Learning Management System?
2. Do students' perceptions of the effectiveness of Microsoft Teams as an LMS significantly differ based on their sex?
3. Do students' perceptions of the effectiveness of Microsoft Teams as an LMS significantly differ across different year levels?

1.2. Review of Literature

Online Learning

Utilizing a technology, such as a computer or phone, to access learning resources and materials is known as online learning. The text claims that in 2004, a newer and better form of distant learning than the one from 2002 was introduced. Online education does not have to be completed completely at once. According to Moore, Dickson-Deane, and Galyen (2011). and/or concurrently. M. Ally (2008) provided an overview of the benefits of using the internet for various purposes. Both students and teachers value learning. Students can access learning resources on the internet at any time.

Wherever denotes any place or area. On the internet, students can locate fresh and current educational resources. However, teaching can take place wherever and whenever for instructors. Presently, providing the right information to pupils is simpler and requires less work.

More details which are about items that are required or necessary. Worldwide academic institutions, according to some writers, have found success with online learning in a variety of subject areas. This implies that it might not function effectively in locations where people are accustomed to meeting in person.

Comparing different learning styles to technologically advanced regions in 2020 undertook a study to look at how a new medicine affected animals. The medicine was proven to have beneficial benefits on the animals, enhancing their health and lowering disease symptoms, according to the researchers. The findings of this study imply that the medication may also be useful in treating human ailments.

Schools have modified their procedures to maintain education throughout the pandemic, switching to an online learning technique from the conventional form of learning when people gather in person. Both parties can benefit from this kind of learning environment, but there are also drawbacks.

Institutions have shifted from traditional face-to-face learning to online learning to ensure that education may continue in this epidemic period. Both benefits and drawbacks exist in this kind of learning environment. The teachers and the students. However, students and teachers must adapt in today's learning environment.

Microsoft Teams as a Learning Management

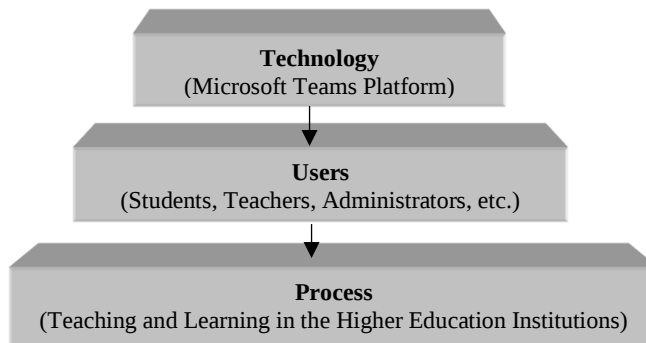
Microsoft 365 includes Microsoft Teams. It is a platform where individuals can interact with one another, collaborate as a team, hold video conferences, and share papers, according to Finnigan (2020). All of these capabilities are provided by the Teams feature in Microsoft Teams. The Microsoft Teams platform is also available for offline and online use. 2019 (Poston and Associates). Anxiety and worry can be brought on by clutter in the house, according to research.

One Juanis study from 2020 found that students are more likely to be interested in online learning if they are already familiar with the online learning tool they are using. The ability to connect with one another can be enhanced by using Microsoft Teams, which is beneficial in 2019 saw the completion of a study by Poston, Apostel, and Richardson that focused on a specific subject.

According to studies, utilizing the app is often positively perceived by pupils. According to Gayathri (2020), Microsoft Teams is a practical online learning tool that lots of people enjoy using for both online and blended learning. But because Microsoft Teams requires a strong internet connection, there are drawbacks to using it.

Simply Gayathri (2020) and Purba (2021) mentioned that it is a little pricey. Microsoft Teams has both advantages and disadvantages, according to studies. My present research will be helped by the conclusions from earlier studies. What college and university students think about using Microsoft Teams for their online classrooms is the subject of this study.

1.3. Theoretical Framework



The theoretical framework for this study is based on the Technology-Use-Performance (TUP) Model. The TUP Model provides a lens to examine the perceived effectiveness of Microsoft Teams in teaching and learning within the context of higher education.

The TUP Model has been widely used in research related to technology integration in education. It posits that the effectiveness of a technology, such as Microsoft Teams, is influenced by its use and, in turn, affects performance outcomes. The model considers three interconnected components: technology, use, and performance outcomes.

The technology component focuses on Microsoft Teams as a collaborative platform widely used in educational settings. It examines the features and capabilities of Microsoft Teams, including its chat, video conferencing, document sharing, and assignment management functionalities. The usability and accessibility of the platform are also assessed, considering factors such as ease of navigation and compatibility with different devices and operating systems.

The use component delves into the usage patterns and pedagogical approaches employed with Microsoft Teams. It explores the frequency and duration of Microsoft Teams usage among instructors and students and the specific activities and interactions facilitated through the platform. It also investigates how instructors integrate Microsoft Teams into lesson planning, curriculum design, and interactive teaching methods to promote engagement and collaboration in the digital learning environment.

The performance component assesses the perceived effectiveness and learning outcomes resulting from using Microsoft Teams. It gathers perceptions from instructors and students regarding the platform's impact

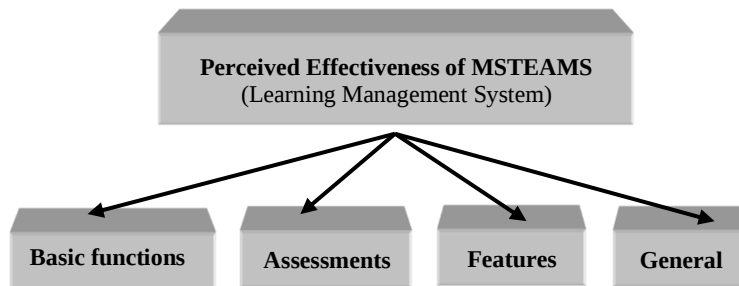
on various aspects, such as engagement, communication, collaboration, and the overall learning experience. It also evaluates the influence of Microsoft Teams on student learning outcomes, including academic achievement, critical thinking skills, knowledge acquisition, and collaborative abilities.

The TUP Model has been utilized in previous studies examining the effectiveness of technology in education. Gayathri (2020) and Purba (2021) applied the TUP Model to evaluate the effectiveness of different learning management systems, providing insights into the relationship between technology use and performance outcomes.

By adopting the TUP Model as a theoretical framework, this study aims to contribute to the existing body of knowledge on the perceived effectiveness of Microsoft Teams in higher education. It provides a structured approach to understanding the interplay between technology, use, and performance outcomes. It offers valuable insights for educators, institutions, and policymakers seeking to optimize the integration of Microsoft Teams for enhanced teaching and learning experiences.

1.4. Conceptual Framework

Figure 1 shows the schematic diagram of the study showing the interplay of how the Perceived Effectiveness of MS Teams in Learning Management System moderated from its Basic Functions, Assessments, Features and in General use.



2. Methodology

This chapter presents the research method. It focuses on the method used in this research which covers research design, research local, research respondents, instruments, data gathering procedure, statistical tools, and ethical considerations.

2.1. Research Design

Quantitative research methods focus on objective measurements and statistical, mathematical, or numerical analysis of data acquired through questionnaires and surveys and manipulate pre-existing statistical data using computational tools (Creswell, 2013). Likewise, quantitative research is concerned with collecting numerical data and generalizing it across groups of people or explaining a phenomenon. A quantitative research study aims to the independent variable and the dependent or outcome variable in a population. Quantitative research designs can be descriptive where subjects are typically measured only once, or experimental where subjects are measured before and after a treatment. Only associations between

variables are established in a descriptive study. Quantitative research is based on numbers, reasoning, and a neutral viewpoint. Quantitative research emphasizes numeric and static data and detailed, convergent reasoning over divergent thinking (Babbie, 2013).

In order to obtain information considering the existing situation, the researcher used a descriptive method with a quantitative approach. According to Krahwohl (2009), descriptive research is a purposeful gathering, analyzing, classifying, and tabulating of data about current conditions, practices, beliefs, processes, trends, and cause-effect relationships, and then applying statistical analysis methods to make adequate and accurate interpretations.

In this study the researchers administer a survey questionnaire to evaluate the perceived effectiveness of Microsoft teams on teaching and learning in higher education.

2.2. Research Locale

The study is conducted in the Tertiary Education Unit of the Philippine Women's College of Davao. The school was established in 1953 as a private educational institution. It is located on a seven-hectare plot of land in Matina, Davao City's Juna Subdivision. The school was founded with the goal of providing high-quality education to young women in Mindanao.

2.3. Research Instrument

The present study adapted a structured questionnaire by Gayathri, (2020). The adapted questionnaire consists a total of 18 items which divided into 4 parts: basic functions, assessment, features, and general. A Five-point Likert Scale was used in items 1-17 in which, 5= strongly agree, 4= agree, 3= moderately agree, 2 = disagree, and 1 = strongly disagree. While for item 18, to determine the effectiveness of Microsoft Teams compared to other online platforms in general, a 6-point Likert Scale was used, which 6 = excellent; 5 = good; 4 = average; 3 = below average; 2 = poor; and 1 = not used any tools before.

The researcher conducted a pilot testing to determine the reliability of the instrument. The instrument was randomly tested to 124 students of Philippine Women's College of Davao. Out of the respondents, 50.8% are female and 49.2% are male which are more or less equally distributed in terms of sex affiliation. Alpha Cronbach was used to analyze the reliability of the whole instrument and to its subscales. The reliability of the Basic Function subscale is ($\alpha = 0.813$), for the Assessment subscale is ($\alpha = 0.897$), for the Features and General subscale is ($\alpha = 0.798$). Lastly, the reliability for the whole instrument is ($\alpha = 0.919$) which means that the adapted instrument is reliable.

2.4. Research Respondents

A total of 124 undergraduates of PWC of Davao participated in the present study. Since the data was gathered after the graduation, hence participation of the students in the survey was relatively small. In terms of gender distribution, a slightly more females (50.8% or 63). Furthermore, 34.7% or 43 of the respondents are first year, 8.9% or 11 are second year, and both third year and fourth-year students are at 28.2% or 35.

2.5. Data Gathering Procedure

Given the scope and purpose of these study, data gathered through a survey. Data were collected from the tertiary education students of the Philippine Women's College of Davao for the school year 2022-2023. Data needed for this quantitative/descriptive research were gathered using the adopted tool and developed by Gayathri (2020). The researchers adapted an instrument to gather information on the participants' names, gender, and age. Necessary permission will be secured from the office of the dean of the tertiary education department of the school.

In administering the questionnaire, the researcher used the google forms. The student respondents were given enough time to answer the questions. Thereafter, the accomplishments questionnaire was collected and the responses were tallied, tabulated, analyzed, processed, and interpreted. Results or responses treated with the utmost confidentiality.

2.6. Statistical Tool

The following statistical tools were utilized in analyzing and interpreting the data gathered:

Percentage is a ratio whose second term is 100. This was used in determining the number of teachers and students who evaluated the Microsoft Teams as Learning Management of the Tertiary Education Unit.

Mean is the average of the given numbers and is calculated by dividing the sum of given numbers by the total number of numbers. This was used to determine the perceived effectiveness of the MSTeams as Learning Management.

The efficiency of Microsoft Teams (MSTeams) as a Learning Management System (LMS) is evaluated statistically using the *One-way ANOVA* (Analysis of Variance) technique. ANOVA examines whether there are significant changes in academic performance by comparing the learning results of several groups of students who have used MSTeams as their primary LMS. This report offers insightful information regarding MSTeams' effects on student learning, assisting educators in making judgments about how best to use it as a teaching tool.

Standard Deviation is a statistical method used for evaluating its effectiveness to determine how much MSTeams has an impact on learning outcomes by analyzing the standard deviation of various performance variables, such as student's engagement levels.

2.7. Ethical Considerations

This study demonstrated a strong commitment to ethical considerations in accordance of RA10173 or the Data Privacy Act of 2012. It obtained informed consent from participants, maintained privacy and confidentiality, addressed participant vulnerability, and followed principles of transparency and accountability. These measures were essential in protecting participants' rights, ensuring their well-being, and upholding the integrity of the research.

3. Results and Discussion

Responses on the Basic Functions, Assessment and Features subscales were coded and analyzed. Descriptive statistics, mean (M) and Standard Deviation (SD) were used. Table 1 presents the analysis of the data. Included in the table are the participants' responses in each item of the questionnaire (frequencies and equivalent percentages), mean (M), standard deviation (SD), and Interpretation (Interp.); 1.0 – 1.79 (Strongly Disagree [SD]), 1.80 – 2.59 (Disagree [D]), 2.60 – 3.39 (Moderately Agree [MA]), 3.40 – 4.19 (Agree [A]), and 4.20 – 5.00 – (Strongly Agree [SA]).

3.1 Perceived Effectiveness of Microsoft Teams based on its Basic Functions

Table I
Respondents' Perception on the use of Microsoft Teams: Basic Functions

#	SD	D	MA	A	SA	Mean	Interpretation
1	<i>Joining an existing Teams is simple and easy</i>						
	1 0.8%	0 0%	0 0%	50 40.3%	70 56.5%	4.55	Strongly Agree
2	<i>I am comfortable using Microsoft Teams</i>						
	1 0.8%	1 0.8%	5 4%	38 30.6%	79 63.7%	4.56	Strongly Agree
3	<i>Microsoft Teams works well even if the internet speed is low</i>						
	9 7.3%	12 9.7%	46 37.1%	33 26.6%	24 19.4%	3.41	Agree
4	<i>CHAT (Conversations) with FACUTY option is easy</i>						
	1 0.8%	4 3.2%	18 14.5%	48 38.7%	53 42.7%	4.19	Agree
5	<i>Voice Calling FACULTY and INDIVIDUAL registered member is simple and easy</i>						
	3 2.4%	2 1.6%	13 10.5%	59 47.6%	47 37.9%	4.17	Agree
6	<i>Using CHAT (Conversation) option for discussion during class is easy.</i>						
	2 1.6%	2 1.6%	10 8.1%	46 37.1%	64 51.6%	4.35	Agree
Overall						4.32	Strongly Agree

The data analysis presented in Table I indicates that the respondents expressed strong agreement regarding the effectiveness of MS Teams in terms of its Basic Functions (items 1-2) (M1 = 4.55, SD1 = 0.591, M2 = 4.56, SD2 = 0.69). Specifically, in item 1, 70 or 56.5% of the respondents strongly agreed that joining an existing Teams is simple and easy. This finding differs from a study conducted by Laquindanum (2022) at Western Mindanao University, Philippines, where 129 or 30.8% of the respondents were neutral towards the same statement.

For item 2, the majority of the respondents (79 or 63.7%) strongly agreed on the comfortability of using MS Teams. In contrast, item 3 revealed that 46 or 37.1% of the respondents agreed that MS Teams works well even with low internet speed, contradicting the findings of the studies by Gayathri (2020) and Arunraj (2021), where the majority of respondents disagreed with the statement. This difference could be attributed

to improved internet connectivity available to students today compared to when those previous studies were conducted.

Regarding items 4, 5, and 6, the results indicated agreement among the respondents regarding the use of MS Teams for discussions. They found the CHAT (conversations) with FACULTY option easy, voice calling faculty or individual registered members simple and easy, and using CHAT (conversation) option for discussion during class easy.

The variations and similarities in the results of the current study and those conducted by Laguindanum (2022), Gayathri (2020), and Arunraj (2021) can be attributed to differences in population size. Laguindanum's study included a sample size of $n = 419$, while Gayathri's study had only 25 respondents, and Arunraj's study had only 28 respondents. In comparison, the current study had a total sample size of $n = 124$ respondents.

Overall, the respondents strongly agreed on the effectiveness of Microsoft Teams in terms of its basic functions ($M = 4.32$, $SD = 0.517$).

3.2 Perceived Effectiveness of Microsoft Teams based on its Assessment

Table II
Respondents' Perception on the use of Microsoft Teams: Assessment Subscale

#	SD	D	MA	A	SA	Mean	Interpretation
7	Submitting Multiple Choice in Quiz is simple and easy						
	1 0.8%	0 0%	7 5.6%	45 36.3%	71 57.3%	4.49	Strongly Agree
8	Submitting short and long answer in Quiz is simple and easy						
	0 0%	1 0.8%	7 5.6%	47 37.9%	69 55.6%	4.48	Strongly Agree
9	Submitting ASSIGNMENT is simple and easy						
	0 0%	1 0.8%	6 4.8%	47 37.9%	70 56.5%	4.50	Strongly Agree
10	Uploading ASSIGNMENT is simple and easy						
	1 0.8%	1 0.8%	14 11.3%	39 31.5%	69 55.6%	4.40	Strongly Agree
11	Viewing GRADES in quiz and assessment is simple and easy						
	1 0.8%	2 1.6%	14 11.3%	48 38.7%	59 47.6%	4.31	Strongly Agree
Overall						4.44	Strongly Agree

Table II displays the perceived effectiveness of MS Teams in terms of Assessment. The results indicate that the respondents "strongly agree" that submitting multiple choice ($M7 = 4.49$, $SD7 = 0.681$), short and long answer in Quiz ($M8 = 4.48$, $SD8 = 0.644$), submitting ($M9 = 4.50$, $SD = 0.631$) and uploading Assignment ($M10 = 4.40$, $SD10 = 0.785$) and viewing Grades ($M11 = 4.31$, $SD11 = 0.798$) is simple and easy. These findings align with the results of studies conducted by Laguindanum's (2022), Arunraj's (2021), and Gayathri's (2020) where their respondents also expressed positive opinion regarding the assessment using MS Teams.

Overall, the respondents strongly agree that MS Teams is effective in aspect of assessment ($M = 4.44$, $SD = 0.598$).

3.3 Perceived Effectiveness of Microsoft Teams based on its Features

Table III
Respondents' Perception on the use of Microsoft Teams' Features

#	SD	D	MA	A	SA	Mean	Interpretation
12	Recorded class is found useful when we absent during the class						
	0 0%	0 0%	9 7.3%	36 29%	79 63.7%	4.56	Strongly Agree
13	CLASS NOTEBOOK is found useful						
	3 2.4%	8 6.5%	34 27.4%	41 33.1%	38 30.6%	3.83	Agree
14	Giving ATTENDANCE during the class is simple and easy						
	0 0%	1 0.8%	10 8.1%	48 38.7%	65 52.4%	4.43	Strongly Agree
15	Using Forms for giving a quick response during class is simple and easy						
	0 0%	0 0%	11 8.9%	47 37.9%	66 53.2%	4.44	Strongly Agree
16	Uploading *.doc, *.pdf, *.jpeg as an attachment or in the FILE is easy						
	2 1.6%	1 0.8%	5 4%	48 38.7%	68 54.8%	4.44	Strongly Agree
17	Additional apps which embedded in the Microsoft Teams will be useful						
	0 0%	3 2.4%	11 8.9%	59 47.6%	51 41.1%	4.27	Strongly Agree
Overall						4.33	Strongly Agree

N = 124

Table III presents the descriptive analysis of the perceived effectiveness of MS Teams in terms of its Features. The overall results indicate that the respondents strongly agree ($M = 4.33$, $SD = 0.517$) that the Features of MS Teams are useful, simple and easy to use. Specifically, in item 12, the students strongly agree ($M_{12} = 4.56$, $SD_{12} = 0.628$) with the given statement which aligns with the findings of Laguidanum (2022), Gayathri (2020) and Arunraj (2021). In item 13, the students agreed on the given statement ($M_{13} = 3.83$, $SD_{13} = 1.018$), showing a difference from Laguidanum's findings. Result in item 14 reveals that the students strongly agree ($M_{14} = 4.43$, $SD_{14} = 0.677$) with the given statement and in item 15, the respondents strongly agree ($M_{15} = 4.44$, $SD_{15} = 0.654$) in the aforementioned statement, supporting the findings of Laguidanum, Gayathri and Arunraj. For item 16, the result shows that the students "strongly agree" ($M_{16} = 4.44$, $SD_{16} = 0.758$) to the given statement, aligning with the findings of the study of Gayathri and Arunraj. For item 17, the respondents also strongly agree ($M_{17} = 4.27$, $SD_{17} = 0.725$) on the aforementioned statement, which differs from Laguidanum's findings, where their respondents were neutral.

3.4 Perceived Effectiveness of Microsoft Teams in General

Responses on the Effectiveness of Microsoft Teams in General were coded and analysed. Descriptive statistics, mean (M) and Standard Deviation (SD) were used. Table 4 presents the analysis of the data. Included in the table are the participants' responses in each item of the questionnaire (frequencies and equivalent percentages), mean (M), standard deviation (SD), and Interpretation (Interp.); 1.0 – 1.79 (Poor [P]), 1.80 – 2.59 (Below Average [BA]), 2.60 – 3.39 (Average [A]), 3.40 – 4.19 (Good [G]), and 4.20 – 5.00 – (Excellent [E]).

Table IV
Respondents' Perception on the use of Microsoft Teams in General

#	P	BA	A	G	E	Mean	Interpretation
18	When compared to other platforms that you have used as Zoom, Google Meet, Google Classroom, Schoology, Go to meeting for online discussion, how will you rate Microsoft Teams						
	1 0.8%	2 1.6%	7 5.6%	45 36.6%	69 55.6%	4.44	Excellent

Table IV provides the descriptive analysis of how students perceive Microsoft Teams in General. The results indicate that the Microsoft Teams was rated as “Excellent” ($M=4.44$, $SD=0.747$) compared to other platforms or LMS. This finding differs Gayathri’s (2020) study, where respondents rated MS Teams as “good” and from Laguidanum (2022) as “average” but parallel to the result of the study of Arunraj (2021) where the respondents rate MS Teams as “Excellent” too. It is noteworthy that the students' perception of Microsoft Teams in this study was highly positive compared to other platforms or LMS.

To determine if there’s a significant difference on the Perceived Effectiveness of Microsoft Teams as LMS across gender (male and female), the data set was analysed using inferential and parametric statistics known as T-test for independent samples.

3.5 Perceived Effectiveness of Microsoft Teams in terms of Sex.

Table V
Perceived Effectiveness of Microsoft Teams as LMS across sex.

Variables		N	Mean	SD	Sig. (2-tailed)
Dependent	Independent				
Basic Functions	Male	61	4.19	0.771	0.999
	Female	63	4.20	0.510	
Assessment	Male	61	4.48	0.685	0.487
	Female	63	4.40	0.503	
Features	Male	61	4.35	0.543	0.693
	Female	63	4.31	0.511	
General	Male	61	4.43	0.805	0.801
	Female	63	4.46	0.692	
Overall	Male	61	4.34	0.598	0.724
	Female	63	4.31	0.430	

Based on the data presented in Table V, there is no significant difference on the perception on the effectiveness of Microsoft Teams as a LMS across sex. (sig. value = $0.724 > \alpha = 0.05$). Sex or Gender has no significant influence on the current study, nor changes on the responses across gender.

To determine if there’s a significant difference on the Perceived Effectiveness of Microsoft Teams as LMS across year/level (1st, 2nd, 3rd, 4th year), the data set was analysed using ANOVA for independent samples.

3.6 Perceived Effectiveness of Microsoft Teams in terms of Year/Level

Table VI
Perceived Effectiveness of Microsoft Teams as LMS across year/level

Variables		N	Mean	SD	Sig. (2-tailed)
Dependent	Independent				
Basic Functions	First Year	43	4.29	0.498	0.648
	Second Year	11	4.21	0.723	
	Third Year	35	4.10	0.730	
	Fourth Year	35	4.18	0.715	
Assessment	First Year	43	4.53	0.405	0.099
	Second Year	11	4.65	0.601	
	Third Year	35	4.46	0.607	
	Fourth Year	35	4.24	0.743	
Features	First Year	43	4.36	0.449	0.625
	Second Year	11	4.50	0.573	
	Third Year	35	4.30	0.603	
	Fourth Year	35	4.27	0.524	
General	First Year	43	4.49	0.736	0.828
	Second Year	11	4.45	0.522	
	Third Year	35	4.34	0.802	
	Fourth Year	35	4.49	0.781	
Overall	First Year	43	4.39	0.398	0.510
	Second Year	11	4.44	0.571	
	Third Year	35	4.29	0.550	
	Fourth Year	35	4.24	0.596	

Based on the data presented in Table VI, there is no significant difference on the perception on the effectiveness of Microsoft Teams as a LMS across all year/levels. (sig. value = 0.510 > α = 0.05). Year or level has no significant influence on the current study, nor changes on the responses across year/level.

4. Findings, Conclusions and Recommendations

Findings

The study's findings indicate that the respondents strongly agreed on the effectiveness of Microsoft Teams in terms of its essential functions. The majority of respondents strongly agreed that joining an existing Teams is simple and easy, and they found the comfortability of using MS Teams to be high. However, there was some disagreement among respondents regarding the performance of MS Teams with low internet speed, with a significant portion agreeing that it works well even with low internet speed.

Regarding using MS Teams for discussions, the respondents agreed that the CHAT (conversations) with faculty option, voice calling faculty or individual registered members, and using the CHAT (conversation) option for discussion during class were all easy to use. These findings align with previous studies by

Laguindanum, Gayathri, and Arunraj.

The respondents also expressed positive opinions regarding the assessment features of MS Teams, including submitting assignments, taking quizzes, and viewing grades. They strongly agreed that these features were simple and easy to use. These findings are consistent with the results of previous studies.

There was no significant difference in the perception of the effectiveness of Microsoft Teams as a learning management system across different year levels. Year or level did not have a considerable influence on the responses.

Overall, the respondents strongly agreed that the features of MS Teams are helpful, simple, and easy to use. They also strongly agreed that viewing grades in quizzes and assessments was simple and easy. These findings align with previous studies.

Conclusions

Based on the study's findings, Microsoft Teams is perceived as an effective platform for online learning. The respondents strongly agreed on the effectiveness of MS Teams in terms of its essential functions, such as joining existing Teams, and the comfortability of using the platform. They also found the features of MS Teams, including discussions and assessment options, functional, simple, and easy to use. The perception of MS Teams' effectiveness was similar across year levels and sexes.

These findings are consistent with previous studies conducted by Laguindanum, Gayathri, and Arunraj, supporting the conclusion that MS Teams is an effective learning management system. However, there were some variations in opinions regarding the performance of MS Teams with low internet speed, with a significant portion of respondents agreeing that it works well even with low internet speed.

Overall, the results suggest that MS Teams is a reliable and user-friendly platform for online learning, providing essential functions for discussions, assessments, and overall course management. These findings inform educational institutions and instructors in effectively utilizing MS Teams for remote teaching and learning.

Recommendations

Based on the findings of the study, the following recommendations can be made:

1. Educational institutions should consider adopting Microsoft Teams as a learning management system for online education. The respondents perceived the platform as effective and user-friendly, with solid agreement on its essential functions, discussions, and assessment features. This recommendation aligns with previous studies highlighting the benefits of using MS Teams for online learning.
2. Instructors should provide guidance and training to students on effectively using Microsoft Teams. While most respondents found the platform easy to use, ensuring that all students are familiar with its features and functionalities is essential. This can help maximize the potential of MS Teams for collaborative discussions, submitting assignments, taking quizzes, and viewing grades.

3. Educational institutions should ensure reliable internet connectivity for students. While a significant portion of respondents agreed that MS Teams works well even with low internet speed, providing a stable internet connection is crucial to enhance the overall learning experience. This recommendation is significant for institutions operating in areas with limited internet infrastructure.

Acknowledgements

The researchers would like to express sincere gratitude and appreciation to all those who contributed to the successful completion of this study.

First and foremost, the researchers would like to thank the participants of this study, the undergraduate students from the Tertiary Education Unit of the Philippine Women's College of Davao. Their willingness to participate and provide valuable insights through the survey questionnaire was crucial in obtaining the necessary data for this research. The researchers would also like to acknowledge the support and guidance of the faculty members and administrators of the Philippine Women's College of Davao. Their assistance in facilitating the research process and providing access to the necessary resources is greatly appreciated.

Furthermore, the researchers would like to extend gratitude to Microsoft for developing and providing the Microsoft Teams platform, which served as the focus of this study. The availability of this technology enabled the researcher to explore its perceived effectiveness in the context of higher education.

The researcher would also like to acknowledge previous researchers' contributions to educational technology and learning management systems. Their work laid this study's foundation and helped shape the research questions and methodology. Lastly, the researcher would like to thank family, friends, and colleagues for their continuous support and encouragement throughout the research process.

- The Researchers

References

- Ally. (2008). *Foundations of educational theory for online learning. Online and Distance Education*.
- Almodiares, A., Almutaire, M., & Almsaud, E. A. (n.d.). Pre-Service Teachers' Perceptions of the Effectiveness of Microsoft. *International Education Studies*, 14.
- Basilaia, G., & Kvavadze, D. (2020). Transition to Online Education in Schoola during a SARS-CoV-2 Coronavirus (COVID-19) Pandemic in Geogia. *Pedagogical Research*, 5(4)(1–9).
- Benson, A. (2002). Using online learning to meet workforce demand: A case study of Stakeholder Influence. *Quarterly Review of Distance Education, Using Online Learning to Meet Workforce Demand: A Case Study of Stakeholder Influence. Quarterly Review of Distance Education*, 3(4).
- Cardenas, J., Castellanos, V., Gonzales, & Choco, M. (2020). Learning Management System. *Teachers' Perception and Evaluation of the Success of Microsoft Teams Learning Management System at Walk Technical High Schoo*, 4(1).

- Gayathri, R. (2020). Efficacy of Microsoft Teams During COVID-19-A Survey. *Efficacy of Microsoft Teams During COVID-19-A Survey*.
- Juanis, A. A. (2020). Microsoft Teams As An Online Learning Tool : Exploring The Students. International Conference on Multidisciplinary Approaches in Social Sciences, 1-9. *Microsoft Teams as an Online Learning Tool : Exploring the Students. International Conference on Multidisciplinary Approaches in Social Sciences, 1-9., 1–9(1–9)*.
- Moore, J., Dickson-Deane, C., & Gaylen, K. (2011). The Internet and Higher Education. - *learning, Online Learning, and Distance Learning Environments: Are They the Same? The Internet and Higher Education, 12(2)*.
- Namachivayam, A. (2021). *An Appraisal of Microsoft Teams and Its Features*. (Vols. 463–478).
- Olugbade, D., & Olurinola, O. (2021). Teachers' Perception of the Use of Microsoft Teams for Remote Learning in Southwestern Nigerian Schools. *African Journal of Teacher Education, Teachers' Perception of the Use of Microsoft Teams for Remote Learning in Southwestern Nigerian Schools. African Journal of Teacher Education, 10(1)*.
- Purba, L. (2021). Microsoft Teams 365. *Microsoft Tams 365 and Online Learning: The Student's Perception. Journal Pendidikan Kimia, 12(2)*.
- Rojabi, A. (2020). Microsoft Teams. *Exploring EFL Students' Perception of Online Learning via Microsoft Teams: University Level in Indonesia. English Language Teaching Educational Journal, 3(2)*.
- Salam, S., Jianqiu, Z., Pathan, Z. H., & Lei, W. (2017). Integration of Information Technology. *Strategic Barriers in the Effective Integration of ICT in the Public Schools of Pakistan. International Conference on Computer Science and Artificial Intelligence,*
- Wains, S. I., & Mahmood, W. (2008). Integrating m-learning with e-learning. Proceedings of the 9th Conference on Information Technology Education. *Integrating M-learning With E-learning. Proceedings of the 9th Conference on Information Technology Education.*