Effectiveness of Technology-Aided Instruction Using Microsoft Teams in Teaching Arts

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ABSTRACT

Technology-aided instruction has become an integral component of modern education, responding to the dynamic shifts in teaching methodologies and the increasing reliance on digital platforms. Among these, Learning Management Systems (LMS) like Microsoft Teams (MS Teams) has gained traction for their role in facilitating remote and hybrid learning environments. However, its application in teaching subjects such as the arts remains relatively understudied. This research aimed to bridge that gap by exploring the effectiveness of MS Teams as an LMS in teaching GE 3: Art Appreciation and its correlation with students' academic performance. The study adopted a quantitative, descriptive-correlational research design, drawing from a sample of 214 students at Pangasinan State University – Bayambang Campus during the First Semester of AY 2023-2024. Data were collected via a validated survey instrument to assess student performance and perceptions of MS Teams' utility in art education. The findings reveal that the majority of students exhibited average academic performance, with their grades clustering around the mid-range. A smaller proportion of students were categorized as high and low achievers, indicating variability in outcomes. The perceived effectiveness of MS Teams was also rated as moderate by respondents, suggesting that while the platform offers adequate support, there are areas where its functionality, particularly in terms of its integration as a teaching method and strategy could be enhanced. Interestingly, the study found no statistically significant correlation between the perceived effectiveness of MS Teams and student academic performance. This suggests that other factors such as student motivation, teaching methods, and course structure may play a more substantial role in influencing academic outcomes than the LMS alone. These results underscore the need for further integration of innovative teaching strategies and the enhancement of digital tools to better support learning in art-related subjects, potentially improving both engagement and performance.

Keywords: Academic Performance, Art Appreciation, GE 3, LMS, MS Teams

INTRODUCTION

Technology integration into education has become increasingly prevalent, with digital platforms offering new opportunities to enhance teaching and learning. Among these platforms, Microsoft Teams has emerged as a significant tool for facilitating communication, collaboration, and instruction across various educational settings. As digital transformation continues to reshape education, it is crucial to explore the effectiveness of these technologies in specific disciplines, including the arts. Arts education, traditionally rooted in hands-on, experiential learning, faces unique challenges and opportunities when combined with technology. The adoption of digital platforms like Microsoft Teams has the potential to redefine how art is taught, offering students innovative ways to engage with content and collaborate with peers. However, the effectiveness of technology-aided instruction in this context remains an area that requires empirical investigation.

Existing research has demonstrated the benefits of technology in education, including improved student engagement, enhanced collaboration, and personalized learning experiences (Bond et al., 2018; Redmond et

al., 2018) [1]-[2]. Nevertheless, there is a scarcity of studies examining the use of Microsoft Teams (MS Teams) in arts education. This gap underscores the need for targeted research that assesses the impact of technology-aided instruction on student outcomes in the arts. Existing literature often overlooks how the features of MS Teams—such as its collaborative tools, virtual classroom capabilities, and multimedia integration—affect learning outcomes, student engagement, and overall instructional effectiveness in the art domain.

This research sought to fill this gap by providing a detailed analysis of how MS Teams facilitates arts instruction, identifying best practices, and offering recommendations for optimizing technology-aided teaching in this specialized field. By analyzing student performance, engagement, and satisfaction, this research provides insights into the potential benefits and limitations of integrating this platform into arts education. The findings will contribute to the broader discourse on the role of technology in enhancing educational practices, particularly in disciplines where traditional methods have long been predominant.

The study specifically aimed to evaluate the effectiveness of Microsoft Teams as a learning management system (LMS) for teaching GE 3: Art Appreciation. Its objectives were to: a)identify the sex and assess the academic performance of students enrolled in GE 3: Art Appreciation during the First Semester of A.Y. 2023–2024; b) evaluate the effectiveness of using Microsoft Teams as the LMS for this subject; and c) determine the relationship between students' academic performance and the effectiveness of Microsoft Teams in facilitating their learning.

METHODOLOGY

Research Design

Due to the dearth of literature for this context, this study employed quantitative, descriptive-correlational design in assessing the relationship between technology-aided instruction using MS Teams and students' academic performance in GE 3: Art Appreciation. The purpose is to describe and quantify the effectiveness of MS Teams as a LMS in learning Arts and explore the correlations between students' use of the platform and their academic outcomes. This design helps researchers understand the strength and direction of relationships between variables or explore characteristics of a specific population or phenomenon (Gray et al., 2017) [3].

The researchers found this method most applicable to the inquiry to investigate the effectiveness of technology-aided instruction using MS Teams in teaching Arts subjects to the students. With this design, the researchers identified the students' academic performance in GE 3: Art Appreciation for the First Semester of A.Y 2023 – 2024 using their final grade in the subject matter, measured the perceived effectiveness level of using MS Teams for learning Art subject using the developed survey questionnaire and determined the relationship between the student's academic performance and perceived effectiveness level for learning Arts using the MS Teams.

Research Locale

The study was carried out at Pangasinan State University – Bayambang Campus, Bayambang, Pangasinan, Philippines during the First Semester of the Academic Year 2023 – 2024.

Research Participants

The method used to identify the participants of the study was simple random sampling. Participants of the study were the students of Pangasinan State University – Bayambang Campus who were officially enrolled in GE 3: Art Appreciation subject during the First semester of A.Y 2023 – 2024. Using Slovin's formula, the number of sample populations was identified from the total number of populations. There were a total of 214 respondents who participated in the study equivalent to 30.1% of the total population.

Research Instrument

This study used a developed and validated survey questionnaire as the main instrument and primary data source to answer the research questions. This study followed ethical guidelines, and respondents' participation

was voluntary. To ensure the content validity of the instrument, three professionals who are experts in the field of education and technology validated the content of the questionnaire before the conduct of the study.

Data Gathering Procedure

In gathering the relevant data for the study using the developed survey questionnaire, the researchers followed specific steps. First, the researchers secured permission from the Campus Executive Director as the head of the university to conduct the study. Second, the researchers subjected the research instrument to content validation before the start of the actual survey by three expert teachers in the field of educational technology. Third, after the survey instrument had been fully validated, the researchers requested the respondents of the study to answer the survey questionnaire as honestly as possible during their most convenient time. Lastly, the researchers personally collected the answered questionnaires and assured the respondents that all their responses would be kept strictly confidential and that the study's findings would only be used for academic and educational purposes.

Ethical Considerations

This research study followed ethical guidelines. The researchers obtained informed consent from all participants involved in the study and clearly explained the purpose, procedures, potential risks and benefits, and their rights as participants. Participants have the right to freely choose whether or not to participate and understand how their data will be used and anonymized. To ensure the privacy and confidentiality of participant's personal information and data, the researchers implement measures to protect participants' identities and ensure that their data is securely stored and will only be used for the sole purpose of this research activity. To ensure that participation in the study is voluntary and that participants have the right to withdraw at any time without facing negative consequences, the researchers avoided any form of coercion or undue influence that may compromise the voluntary nature of participation. The researchers sought ethical approval from the Pangasinan State University ethics committee before conducting the study. Upon approval, the researchers followed the ethical guidelines and regulations set forth by the institution and research ethics committees. To communicate the purpose, objectives, and potential implications of the study to participants, the researchers provided accurate and comprehensive information regarding the study's scope, limitations, and any potential conflicts of interest. This was employed by providing the participants with the information that describes the study, the objectives, and the data-gathering process. The researchers shared the study findings ethically and responsibly, ensuring that the information was presented accurately and the confidentiality of participants was maintained. This was employed by considering the potential impact of the findings on participants, the concerned institution, and the relevant stakeholders.

RESULTS AND DISCUSSION

For the analysis of the data gathered in the study, descriptive and inferential statistics were used. In identifying the sex and academic performance of the students enrolled in GE 3: Art Appreciation during the First Semester of A.Y 2023 – 2024 using the LMS-Microsoft Teams, frequency count and percentages were used. In measuring the level of effectiveness of using MS Teams for learning GE 3: Art Appreciation, mean and average weighted mean (AWM) were used. Spearman's rho correlation was used to determine the relationship between the student's academic performance and the effectiveness of using MS Teams for learning GE 3: Art Appreciation subject.

Table 1. Sex Distribution

Sex	**Frequency**	**Percent (%)**
Female	144	67.3
Male	70	32.7
Total	**214**	**100.0**

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Table 1 presents the sex distribution of the 214 respondents. The majority, 144 respondents (67.3%), are female, while 70 respondents (32.7%) are male. This indicates that a greater proportion of the participants in the study are female.

This finding aligns with the study by Guramatunhu (2015), who explored enrollment trends in higher education and found that female students have consistently outnumbered male students over the past decade. The study highlighted several factors, including gender-based differences in academic motivation and access to financial aid, which contribute to the higher enrollment of females in college programs.

Additionally, the Pew Research Center (2022) indicated that the growing proportion of female college students in the U.S., where women made up 59.5% of college enrollments as of 2021, reflects broader socio-economic changes. These changes include increased career opportunities for women and heightened educational aspirations. Moreover, men have been disproportionately affected by the pandemic, leading to greater enrollment declines for males than for females in recent years.

Table 2. Academic Performance of Students in GE 3: Art Appreciation

Final Grade in GE 3	**Frequency**	**Percent (%)**	**Rank**
2.75	39	18.2	1
1.5	36	16.8	2
3	33	15.4	3
2	27	12.6	4
2.25	27	12.6	4
2.5	26	12.1	6
1.75	22	10.3	7
1.25	4	1.9	8
Total	**214**	**100.0**	

Table 2 presents the distribution of students' final grades along with corresponding frequencies, percentages, and ranks in the GE 3 subject. It can be gleaned from the table that the rank 1 grade in GE 3 was 2.75, achieved by 18.2% of students, followed closely by 1.5 with 16.8%, 3 with 15.4%, 2 with 12,6%, 2.5 with 12.1%, 1.75 with 10.3%, and 1.25 with 1.9% respectively. The grades are fairly evenly distributed across the middle range, which suggests that most students fall within the average range of performance.

This is supported by the study by Deslauriers et al. (2019)[6] who explored the distribution of student grades in active learning environments and noted that most students tend to fall within the middle range of performance. In addition, the study by Yanier et al. (2021)[7] discussed how course delivery methods (online vs. in-person) influence the distribution of student grades. It finds that students' performance typically clusters in the average range, regardless of the mode of instruction, which supports the observation that most students perform at a moderate level.

Table 3. Effectiveness of Using MS Teams for Learning GE 3: Art Appreciation

Indicators	**Mean**	**Interpretation**
1. MS Teams fosters higher engagement in the Arts subject through its collaborative features.	3.01	ME
2. MS Teams provides more chances for students to reflect on their learning in Arts Appreciation.	3.03	ME
3. MS Teams enhances comprehension of Arts Appreciation content through its integrated tools.	2.87	ME
4. MS Teams improves access to academic information and resources for students.	3.08	ME

5. MS Teams helps students better understand the course expectations and deliverables.	3.06	ME
6. MS Teams manages the learning tasks and responsibilities of students.	2.97	ME
7. MS Teams enables more precise assessments of academic progress through its digital tools.	3.07	ME
8. MS Teams increases opportunities for interaction between faculty and students, as well as peer collaboration.	3.13	ME
9. MS Teams promotes direct instruction which is effectively communicated using the platform's features.	3.14	ME
10. MS Teams implements instructional strategies and class activities successfully,	3.05	ME
11. MS Teams provides assistance with navigating the platform enhancing its usability.	2.97	ME
12. MS Teams integrates course resources and materials which are easily accessible.	3.02	ME
13. MS Teams plays an essential role in helping students meet course objectives.	2.93	ME
14. MS Teams online discussions are more productive than face-to-face interactions.	2.95	ME
15. MS Teams enables instructors to use a variety of teaching methods and activities.	2.86	ME
AVERAGE WEIGHTED MEAN	**3.00**	**ME**

Note:	***Scale***	***Mean Range***	***Interpretation***	***Verbal Description***
	5	*4.20 – 5.00*	*HE*	*Highly Effective*
	4	*3.40 – 4.19*	*VE*	*Very Effective*
	3	*2.60 – 3.39*	*ME*	*Moderately Effective*
	2	*1.80 – 2.59*	*SE*	*Slightly Effective*
	1	*1.00 – 1.79*	*NE*	*Not Effective*

Table 3 shows the data on the effectiveness of using MS Teams for learning the GE 3: Art Appreciation course based on the given indicators. It can be seen that among the 15 indicators, indicator 9 "MS Teams promotes direct instruction which is effectively communicated using the platform's features.", got the highest mean of 3.15 interpreted as moderately effective which suggests that students found MS Teams most effective for communicating instruction.

On the other hand, indicator 15, "MS Teams enables instructors to use a variety of teaching methods and activities", got the lowest mean of 2.86 interpreted as moderately effective, indicating that students felt that MS Teams was less effective in supporting diverse teaching methods and activities. Furthermore, the average weighted mean level of 3.00 suggests that the use of MS Teams for learning GE 3: Art Appreciation subject is moderately effective indicating that the platform is useful but has areas for improvement.

Similar findings have been reported by Prestridge et al. (2021) [8], who explored student engagement and learning outcomes using MS Teams across various disciplines. They found that the platform offers sufficient tools for collaboration and communication, though its effectiveness varied depending on the subject matter and instructor's usage. The relatively moderate satisfaction could be attributed to factors such as user interface, ease of use, and the extent of interactive features provided by MS Teams.

Moreover, a study by Mai and Uyen (2021) [9], analyzed how the features of LMS, such as real-time collaboration and accessibility, contribute to moderate student satisfaction levels. Their research suggested that while Microsoft Teams provides adequate resources for learning, its effectiveness can be enhanced by

integrating additional pedagogical strategies, and active learning techniques, and supporting students' diverse learning styles.

Table 4. Relationship between Students' Academic Performance and Effectiveness of Using MS Teams for Learning GE 3

		Effectiveness of Using MS Teams for Learning GE 3	**Final Grade in GE 3**	**Remarks**
Effectiveness of Using MS Teams for Learning GE 3	Correlation Coefficient	1.000	.070	
	Sig. (2-tailed)	.	.311	Not Sig.
	N	214	214	
Final Grade in GE 3	Correlation Coefficient	.070	1.000	
	Sig. (2-tailed)	.311	.	Not Sig.
	N	214	214	

Table 4 shows the relationship between the effectiveness of using MS Teams and students' academic performance in the GE 3 subject. It can be noticed from the table that the p-value is 0.311, which is greater than the common alpha level of 0.05. This means the correlation is not statistically significant, and that there is no significant relationship between the effectiveness of using Microsoft Teams and the respondents' academic performance in GE 3: Art Appreciation subject.

As pointed out by Limniou (2021)[10], while digital tools can enhance learning experiences, their direct impact on academic performance is often not significant, suggesting that other factors play a crucial role in determining student outcomes. Furthermore, Raes et al. (2020)[11] found out that while technology can support learning, it does not consistently lead to improved academic performance, emphasizing that the effectiveness of technology is influenced by various contextual and pedagogical factors.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the following conclusions were drawn:

1. The academic performance of students in GE 3: Art Appreciation subject as measured by their final grade is relatively even across the middle range, indicating that most students have achieved average performance. This suggests that while there are some high and low achievers, the majority of students fall within a moderate range of academic performance.
2. The mean effectiveness level of using MS Teams for learning GE 3: Art Appreciation subject reflects that the use of the learning management system is moderately effective for learning the GE 3 subject. This indicates that while the platform provides moderate learning support, there are areas for improvement to enhance its overall effectiveness in delivering course content and engaging students in this subject.
3. The level of effectiveness of using MS Teams for learning GE 3: Art Appreciation has no significant relationship with the student's academic performance as measured in their final grades. This indicates that while students may perceive MS Teams as moderately effective, their academic outcomes are not directly influenced by their experiences with the platform, suggesting that other factors may play a more significant role in determining academic success.

With the conclusions drawn as bases, the following recommendations are given:

1. For teachers, since most students are performing within the middle range, offering a variety of assessment formats such as creative projects, peer reviews, and self-assessments may allow students

with different learning styles to excel. This can help high achievers further challenge themselves and support lower achievers in improving their performance.

2. For school administrators, to enhance the moderately effective rating of MS Teams, consider incorporating more interactive elements, such as polls, breakout sessions, and multimedia resources that align with the artistic nature of GE 3: Art Appreciation. These features could boost student engagement and make the learning experience more dynamic.
3. For other researchers, since MS Teams' effectiveness does not correlate significantly with academic outcomes, further research should focus on identifying other key factors impacting student performance, such as intrinsic motivation, instructor feedback, or study habits. Surveys or interviews could be conducted to gain deeper insights.

CONTRIBUTIONS OF AUTHORS

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CONFLICT OF INTERESTS

The authors declare no conflicts of interest about the publication of this paper.

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