RESEARCH ARTICLE

Evaluating Google Meet and Zoom as Platforms for Digital Learning Delivery

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Abstract

This study evaluated Google Meet and Zoom as platforms for digital learning delivery among students enrolled in Aircraft Maintenance Technology and Avionics Technology programs at Indiana Aerospace University. Using a quantitative descriptive design, data were collected from 100 students through a structured questionnaire measured on a five-point Likert scale. The study examined students' perceptions in terms of academic preference, financial accessibility, and information safety and security, as well as the challenges encountered during platform use. Findings revealed that both platforms were generally perceived as supportive of students' learning needs, with high ratings in accessibility, academic usability, and affordability. However, technical issues such as audio problems, unstable internet connections, video quality concerns, and difficulty maintaining focus were commonly reported. Students also expressed moderate concerns regarding privacy and data protection. The results suggest that while Google Meet and Zoom are effective tools for digital learning, improvements in technical reliability, engagement features, and security measures are necessary. The study recommends that educational institutions consider both pedagogical and technological factors when selecting digital learning platforms, particularly for students in highly technical and practice-oriented programs.

Introduction

The rapid transition to online learning has significantly reshaped higher education, particularly in technically demanding disciplines. Platforms such as Google Meet and Zoom became essential tools for maintaining instructional continuity, enabling virtual lectures, discussions, and demonstrations. While these platforms offer accessibility and convenience, their effectiveness for students in hands-on programs such as Aircraft Maintenance Technology (AMT) and Avionics Technology (AVT) remains a critical concern. These fields require precision, real-time interaction, and visual clarity, which may be affected by the limitations of online platforms.

Students' experiences with digital learning platforms extend beyond usability alone. Academic effectiveness, financial accessibility, and information security are increasingly important considerations. Reliable audio-visual performance, screen-sharing quality, and recorded lectures support comprehension of complex technical content. At the same time, students from varied socioeconomic backgrounds may face challenges related to internet costs and device limitations. Furthermore, concerns regarding privacy and data protection influence students' trust in digital platforms.

Although numerous studies have examined online learning tools, most focus on general satisfaction rather than the specialized needs of technical learners. There remains limited research comparing Google Meet and Zoom in the context of aviation-related programs. This study addresses this gap by evaluating the two platforms based on academic preferences, financial factors, and information safety, while also identifying the common challenges encountered by students. The findings aim to inform institutional decisions regarding digital learning technologies that best support students in highly technical educational environments.

Research Objectives

This study aimed to evaluate Google Meet and Zoom as digital platforms for online learning in Aircraft Maintenance Technology and Avionics Technology students at Indiana Aerospace University for the academic year 2024–2025. Specifically, the study sought to answer the following sub-problems:

1. Determine the respondents' profile in terms of their program.
2. To evaluate the perceptions of students' preference on both Google Meet and Zoom as a platform for digital learning delivery in terms of:
    2.1. academic preferences;
    2.2. financial stability; and
    2.3. information safety and security?
3. Rank the problems encountered by the Aircraft Maintenance Technology and Avionics Technology students.

Methodology

Research Design

The study utilized a quantitative descriptive research design to assess students' perceptions of Google Meet and Zoom as digital learning platforms. A survey method was employed to collect measurable data regarding platform effectiveness and user experiences.

Respondents

The respondents consisted of 100 students enrolled in Aircraft Maintenance Technology (AMT) and Avionics Technology (AVT) programs at Indiana Aerospace University during the Summer Term of Academic Year 2025. Participants ranged from first-year to fourth-year students. Purposive sampling was used to ensure that all respondents had prior experience using both Google Meet and Zoom for online learning.

Research Instrument

A self-constructed questionnaire was developed to evaluate students' perceptions of the two platforms. The instrument used a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The survey included four sections:

- Academic Preference – learning support, interaction, clarity, and instructional effectiveness
- Financial Stability – accessibility, internet cost, and affordability
- Information Safety and Security – privacy, data protection, and user trust
- Problems Encountered – technical and engagement-related challenges

The questionnaire was reviewed and pre-tested to ensure clarity and relevance.

Data Collection Procedure

Data collection followed three phases. During the preparation phase, permission was secured and the questionnaire was pre-tested. In the implementation phase, the survey was distributed online to selected students. In the final phase, responses were compiled and analyzed to identify trends and patterns in platform evaluation.

Data Analysis

Descriptive statistical tools were used, including frequency counts, percentages, weighted means, and ranking. Weighted means determined students' overall perceptions of each platform, while ranking identified the most common problems encountered.

Ethical Considerations

Participation was voluntary, and respondents were informed about the study's purpose and procedures. Anonymity and confidentiality were ensured, and data were securely stored. Participants had the right to withdraw at any time without consequences.

Results and Discussion

Academic Preference

It reflects the unique ways students learn best, stay motivated, and feel supported in their educational journey. Recognizing these preferences is essential because when students feel aligned with their learning environment, they become more engaged, confident, and capable of reaching their full potential, especially in digital settings where human connection and clarity can easily be lost.

Table 1 presents the perceptions of Aircraft Maintenance Technology and Avionics Technology students regarding academic preferences.

Table 1. *Academic Preference*

Indicators	Weighted Mean	Description
1. Both platforms support the way I prefer to participate in online classes.	4.24	Strongly Agree
2. I can achieve my learning goals using either Google Meet or Zoom	4.20	Agree
3. The overall learning experience on both platforms matches my academic expectations.	4.14	Agree
4. Google Meet and Zoom allow me to interact with institutions in a way that fits my academic needs.	4.08	Agree

5 I can easily follow lessons and instructions on either Google Meet or Zoom.	4.04	Agree
Average Mean.	4.14	Agree

Legend: 4.21-5.00: Strongly Agree, 3.41- 4.20: Agree, 2.61.3.40: Neutral, 1.81-2.60: Disagree, 1.81 - 2.60: Strongly Disagree

Financial Stability

Shapes not only a student's learning experience but also their sense of security and motivation in a digital learning environment. When students are not burdened by financial strain, they're more likely to engage actively, access the necessary tools, and focus on their academic growth.

Table 2 presents the perceptions of Aircraft Maintenance Technology and Avionics Technology students regarding financial stability.

Table 2. *Financial Stability*

Indicators	Weighted Mean	Description
1. I can participate in online learning without added financial stress when using either platform.	4.28	Strongly Agree
2. Both Google Meet and Zoom are Accessible platforms for online learning.	4.21	Strongly Agree
3. The financial cost of using either Google Meet or Zoom is manageable for my academic needs,	4.20	Agree
4. Google Meet and Zoom both offer features that are useful without requiring additional expenses.	4.15	Agree
5.Using either Google Meet or Zoom has not caused me significantly.	4.10	Agree
Average Mean	4.19	Agree

Legend: 4.21-5.00: Strongly Agree, 3.41- 4.20: Agree, 2.61.3.40: Neutral, 1.81-2.60: Disagree, 1.81 - 2.60: Strongly Disagree

Information Safety and Security

The safety and security of personal information become just as important as the lessons themselves. When students feel confident that their data is protected, they can focus on learning without fear or distraction. Trust becomes the silent foundation of every virtual classroom.

Table 3 presents the perceptions of Aircraft Maintenance Technology and Avionics Technology students regarding Information Safety and Security.

Table 3. *Information Safety and Security*

Indicators	Weighted Mean	Description
1. I feel confident in the privacy controls provided by Google Meet and Zoom during online classes.	4.15	Agree
2. Google Meet and Zoom both make me feel safe sharing academic content during online learning.	4.11	Agree
3. I have not experienced any security concerns while using Google Meet or Zoom.	4.10	Agree
4. I feel that my personal information is secure when using either Google Meet and Zoom.	3.99	Agree
5. Both Google Meet meet and Zoom provide adequate protection for my academic data.	3.97	Agree
Average Mean	4.06	Agree

Legend: 4.21-5.00: Strongly Agree, 3.41- 4.20: Agree, 2.61.3.40: Neutral, 1.81-2.60: Disagree, 1.81 - 2.60: Strongly Disagree

Problems Encountered

Common technical and functional challenges experienced by students when using Google Meet and Zoom for online learning. These issues include poor audio and video quality, difficulty navigating platform features, frequent disconnections, privacy concerns, and limited control over class disruptions. Table 4 presents the problems encountered during the evaluation of Google Meet and Zoom as Platforms For Digital Learning Delivery.

Table 4. *Problems Encountered*

Indicators	Frequency	Rank
Often experience audio issues when using Google Meet or Zoom	51	1
I frequently experience disconnections or lag during classes on Google Meet and Zoom	49	2
I struggle to stay focused and engaged during online sessions using Google Meet and Zoom	37	3
The video quality is frequently poor during online sessions on Google Meet and Zoom	36	4
Google Meet and Zoom lack sufficient controls to manage noise or distraction during sessions	33	5
Google Meet and Zoom use too much internet	31	6
I often miss important class information due to technical issues on Google Meet	30	7

and Zoom		
Find it difficult to navigate the features of Google Meet and Zoom	23	8
Sharing screens or files on Google Meet and Zoom is often difficult or inefficient	19	9
Google Meet and Zoom do not provide adequate privacy and data protection	15	10

The ranking of the problems encountered in evaluating Google Meet and Zoom as Platforms for Digital Learning Delivery faces several challenges, with the most significant being the frequent occurrence of audio issues when using Google Meet or Zoom, which affects 51% of users. Audio problems, such as muffled sound, delays, or microphone malfunctions, disrupt communication and make it difficult to follow discussions during online classes.

The second-highest problem occurs at a frequency of 49. I frequently experience disconnections or lag during classes on Google Meet and Zoom. Unstable internet connections often result in frequent disconnections or lag, causing missed instructions and interruptions in learning. The third-highest problem is at a frequency of 37. I struggle to stay focused and engaged during online sessions using Google Meet and Zoom. The online setting and lack of physical interaction make it difficult for students to maintain concentration and actively participate.

The fourth highest problem is with a frequency of 36. The video quality is frequently poor during online sessions on Google Meet and Zoom. Low-resolution or frozen video during classes hinders visual learning and makes it more difficult to interpret nonverbal cues.

The fifth most frequent problem is with a frequency of 33. Google Meet and Zoom lack sufficient controls to manage noise or distraction during sessions. Inadequate features to mute participants or filter background noise make sessions disorderly and reduce learning efficiency.

Conclusion

The study concludes that both Google Meet and Zoom are generally perceived as effective platforms for digital learning among students in Aircraft Maintenance Technology and Avionics Technology programs. Students recognized the platforms' strengths in supporting academic participation, accessibility, and affordability. However, technical difficulties—particularly audio issues, unstable connections, and video quality limitations—remain significant barriers to optimal learning. Concerns related to engagement and information security were also noted.

These findings suggest that while digital learning platforms are capable of supporting technical education, their effectiveness depends on consistent technological reliability and enhanced engagement features. Institutions should provide technical support, promote best practices for online learning, and ensure secure digital environments. By addressing these challenges, educational institutions can improve the quality of online learning experiences for students in highly technical and practice-oriented programs.

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