Enhancing Teaching Materials Through Synergy: Combining Pre-Recorded Video Lectures and Traditional Methods to Elevate Engagement and Quality

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1. Abstract

This paper investigates the effectiveness of combining pre-recorded video lectures with traditional face-to-face teaching methods in enhancing the educational process at the College of Basic Education under the Public Authority for Applied Education and Training (PAAET) in Kuwait. The study focuses on college lecturers, exploring how the synergy between both teaching methods improves content delivery, student engagement, and time management. By reducing the need for repetitive lectures, pre-recorded videos allow lecturers to focus on addressing individual learning needs, customizing instruction, and managing classroom dynamics more effectively. The research employs a mixed method, gathering data through a close-ended and open-ended questionnaire administered to lecturers over five academic years. The findings found that this hybrid approach not only benefits lecturers by providing flexibility and clarity but also empowers them to refine their teaching styles and continuously improve their content. Ultimately, the study offers insights into how pre-recorded content can complement traditional teaching and contribute to better educational outcomes in higher education settings.

Keywords: Pre-Recorded Video Lectures, Traditional Teaching Methods, Student Engagement, Hybrid Teaching Approach, Higher Education.

2. Introduction

Traditional teaching methods, particularly in higher education, typically rely on face-to-face lectures where instructors deliver content to students in real-time. While this approach has been a cornerstone of education for centuries, it is not without its limitations. One of the key challenges of traditional teaching is the repetitive nature of content delivery, especially when teaching the same material each semester. Lecturers often find themselves delivering the same lectures to different groups of students, which can lead to diminished enthusiasm, energy, and opportunities for content improvement. This repetition not only increases the strain on lecturers but also limits the time available to focus on student engagement, individualized instruction, and continuous content refinement.

In recent years, technological advancements have introduced new tools and software to complement traditional teaching methods, and one of the most notable is the use of pre-recorded video lectures. Pre-recorded videos allow lecturers to capture high-quality, well-prepared lessons once, which can then be played back to students during live sessions or made available for review. This innovation not only reduces the need for repetitive teaching but also provides lecturers with the flexibility to engage with students in real-time, answer questions, and focus on more interactive aspects of teaching.

Purpose of the Study

The purpose of this study is to investigate how pre-recorded video lectures can complement traditional face-to-face teaching methods in higher education, with a specific focus on lecturers at the Public Authority for Applied Education and Training (PAAET) in Kuwait. By examining the use of pre-recorded content in tandem with live classroom instruction, the study aims to explore the potential benefits this approach offers to lecturers, particularly in terms of enhancing content delivery, managing time more effectively, and improving student engagement. Pre-recorded lectures also offer an additional advantage: lecturers can listen to their own recordings and analyze their performance, identifying

areas for improvement, such as pacing, clarity of explanation, or missed points. This self-reflection enables lecturers to make adjustments in real-time during the class and update the recorded content for future use, ensuring continuous improvement in both teaching style and material quality.

Research Questions

This study seeks to address the following key questions:

1. What are the advantages of combining pre-recorded video content with traditional teaching methods for college lecturers?
2. How can this approach address challenges such as repetitive teaching and improve student engagement and lecturers performance?
3. How can the use of pre-recorded videos alongside traditional methods help cater to individual student learning differences, ensuring that diverse learning needs are met effectively?

These questions aim to uncover how pre-recorded lectures, used alongside traditional methods, can alleviate the burden of repetitive teaching and enhance study outcomes while enabling lecturers to focus on refining their content and enhancing their interaction with students.

Combining pre-recorded video lectures with traditional classroom methods allows lecturers to enhance content delivery, manage time more efficiently, and cater to student learning needs more effectively. By doing so, lecturers not only improve their own teaching performance through self-assessment but also create a more engaging and dynamic learning environment for students.

As education continues to evolve, the role of technology in supporting and enhancing teaching methods becomes increasingly important. This study will explore how the integration of pre-recorded video content into traditional teaching can transform the educational experience for both lecturers and students, ultimately leading to better educational outcomes and a continuous process of development.

3. Literature Review

The use of pre-recorded video lectures in higher education has become increasingly prevalent, sparking interest among lecturers and researchers due to their potential to enhance traditional teaching methods. However, despite extensive research on various forms of

technology-based teaching and blended learning strategies in the Gulf region or Arab region, there is a distinct lack of studies focusing specifically on pre-recorded video lectures as a tool to complement face-to-face instruction. Most existing literature investigates broader aspects of online learning or blended learning but fails to isolate the effects and dynamics of pre-recorded content in particular. This gap underscores the importance of investigating the specific role of pre-recorded video lectures in modern education, making this study particularly significant in the Arab region in particular.

Several studies have explored the general benefits of video-based learning, but they typically bundle pre-recorded lectures into broader categories of digital tools, such as learning management systems or multimedia resources (Bizami, Tasir, & Kew, 2023). For example, Bizami and colleagues emphasize the effectiveness of blended learning in creating immersive learning experiences by combining digital and in-person teaching methods. Yet, their work, like many others, stops short of analyzing pre-recorded video lectures synergy with traditional teaching face to face.

In terms of flexibility and accessibility, pre-recorded video lectures offer undeniable advantages, allowing students to revisit challenging material and learn at their own pace. Alpert et al. (2021) conducted a study with 150 university students, comparing the performance of those who had access to pre-recorded video lectures with those who only attended traditional face-to-face lectures. Their results showed that students who used pre-recorded videos performed better on assessments, particularly in areas where the material was more complex. This finding aligns with the objective of the current study, which aims to explore how pre-recorded video lectures can complement traditional classroom teaching to enhance learning outcomes. However, while Alpert et al. highlight the value of pre-recorded videos, their research also notes the challenge of keeping students engaged with video content alone, stressing the need for a blended approach that maximizes the strengths of both video and face-to-face instruction.

Yang et al. (2020) further contribute to this study by discussing the limitations of pre-recorded video lectures, particularly in terms of student engagement. In their study of 200 undergraduate students, nearly 30% reported feelings of disengagement when relying exclusively on pre-recorded content. The absence of real-time interaction with lecturers, a crucial component of effective learning, was cited as the primary cause of this disconnect. While pre-recorded lectures offer flexibility, they may lead to a reduction in student motivation and a diminished sense of connection to the course material. This limitation highlights the importance of integrating video lectures with other teaching methods, such as live discussions or interactive group work, to create a more engaging and participatory learning environment (Ahmed & Opoku, 2022).

Moreover, while the pedagogical benefits of blended learning—such as using both digital and traditional methods—are well-documented (Bizami, Tasir, & Kew, 2023; Elladora et al., 2022), there remains a gap in understanding the specific dynamics of pre-recorded video lectures within this framework. The existing literature on blended learning often generalizes the use of digital tools without distinguishing between the effects of live online sessions, recorded lectures, or interactive multimedia content. As such, the role of pre-recorded video lectures in enhancing classroom-based learning is still underexplored. This gap in the research suggests that more focused investigations are needed to determine how video lectures can be optimally integrated with traditional pedagogical approaches.

One area where pre-recorded video lectures show considerable promise is in the flipped classroom model, which has been effectively implemented by platforms such as Khan Academy (Elladora et al., 2022). In this model, students view pre-recorded video lectures outside of class, freeing up in-class time for interactive learning activities, such as group discussions, problem-solving exercises, and one-on-one interactions with instructors. Research has shown that students often benefit from the flexibility of watching lectures at their own pace while using classroom time for more active, collaborative learning. However, despite the success of this model, most studies focus on the flipped

classroom as a whole, rather than isolating the impact of the pre-recorded videos and synergy with traditional teaching methods, further highlighting the need for research specifically focused on the role of video content in the learning process.

In essence, Shah et al. (2013) conducted a study on the use of pre-recorded lecture modules in a molecular biology course and found that students overwhelmingly perceived the hybrid learning approach as beneficial. The study revealed that pre-recorded lectures not only allowed students to review difficult concepts at their own pace but also freed up valuable classroom time for active learning exercises. These exercises enabled students to apply, analyze, and synthesize the material in a deeper and more meaningful way. Students in the study believed that the combination of pre-recorded modules and in-class exercises significantly enhanced their recall, understanding, application, and integration of course content. This supports the notion that hybrid models can promote higher-order cognitive skills compared to traditional lecture-based courses, offering a more robust learning experience. The findings underscore the importance of exploring blended learning approaches in higher education, particularly when pre-recorded video content is involved, as it facilitates a more flexible and student-centered learning environment.

In conclusion, while there is substantial literature on blended learning and digital tools in education, research specifically focusing on the integration of pre-recorded video lectures with traditional teaching methods remains limited. Pre-recorded lectures offer significant benefits, such as increased flexibility, improved performance on complex topics (Alpert et al., 2021), and opportunities for lecturers to refine content and manage classroom dynamics more effectively. However, they also present challenges, including reduced real-time interaction and potential student disengagement (Yang et al., 2020). Blended learning, which combines digital tools and face-to-face methods, has demonstrated the ability to enhance engagement and retention but introduces issues like increased workload for lecturers and resistance to new technologies.

This study seeks to address these gaps by investigating how pre-recorded video lectures can be synergistically integrated with traditional teaching methods to improve student engagement, performance, and overall learning experiences. By examining these dynamics, the research aims to provide knowledge into how blended approaches can overcome existing challenges, enhance content delivery, and allow lecturers to focus on individualized instruction, ultimately elevating the quality of higher education.

4. Methodology

This study employs a mixed-methods research design to explore the perceptions and usage of pre-recorded video lectures alongside traditional (face-to-face) teaching methods among lecturers at the Authority for Applied Education and Training (PAAET) in Kuwait. The research aims to assess the effectiveness of this hybrid approach in enhancing teaching and learning outcomes.

4.1 Research Design

The study employs a cross-sectional mixed-methods approach, collecting data over five academic years (2019–2024) through a structured questionnaire distributed to 100 lecturers at PAAET. At the end of each semester, 10 lecturers from various departments were randomly selected, given the questionnaire in person, and asked to return it immediately upon completion. No lecturer participated more than once, allowing the researcher to gather a diverse set of responses. This process was repeated consistently until data collection was completed in 2024.

The questionnaire focuses on participants' past and current experiences with using pre-recorded videos alongside traditional face-to-face teaching methods, exploring whether they had previously incorporated such tools or not.

The questionnaire comprised 12 close-ended questions and 7 open-ended questions, 12 close-ended questions organized around seven main axes:

1.Student Engagement.
2.Time Management.
3.Content Delivery.
4.Individualized Learning.
5.Lecturer Efficiency.
6.Technical Challenges.

7.Perceptions of Hybrid Learning

These areas were selected to address critical teaching challenges and goals in relation to pre-recorded videos in conjunction with traditional teaching methods. Optional open-ended questions were also included to capture qualitative insights, allowing participants to elaborate on their previous experiences, challenges, and suggestions.

The design of the pre-recorded video lectures was a critical aspect of this study. The researcher created the pre-recorded videos and provided a detailed design statement outlining the steps involved in their creation, implementation, and production. This statement was shared with the lecturers prior to distributing the questionnaire, ensuring they fully understood what pre-recorded videos entailed and how they were used in the teaching process. The steps are as follows:

1. Preparing Content: Selecting relevant visuals such as images, graphs, audio, text, and YouTube clips to complement the lesson.
2. Scripting the Lesson: Develop a detailed script that outlines the flow of the lecture to ensure clarity, maintain engagement, and effectively manage time while organizing the content, Writing a detailed scenario or script outlining the flow of the lecture to ensure clarity and engagement, and time management for the slots to organize the content.
3. Designing Slides: Using presentation tools like PowerPoint or Prezi to organize and present the content visually.
4. Recording the Lecture: Utilizing Camtasia Recorder, a screen recording and editing software, to record the lecture while narrating and explaining the slides. The software allowed for editing, voiceovers, Montag, and error correction, ensuring a polished final product.
5. Production: Save the content in a video format to display during the lesson.

These pre-recorded videos were designed to be displayed during live classroom sessions. Lecturers used them to present foundational or repetitive content, allowing more time for interactive activities, discussions, and student engagement during class. This approach

contrasts with flipped learning, as the lecturer remains present to facilitate the session and respond to student questions in real-time.

4.2 Participants

The study included 100 lecturers from various academic disciplines at PAAET. Participants were selected through random sampling to ensure diversity in terms of academic background, age, and teaching experience. This diverse participant pool included lecturers from technology, computing, and applied sciences, who are typically more familiar with digital tools, as well as lecturers from theoretical disciplines like English and Arabic, who may be less inclined to use technology in their teaching.

The demographic data of participants is summarized in Table 1, highlighting the distribution of lecturers across age groups and disciplines. This data provides context for analysing how variables like age and specialization influence lecturers' adoption and perception of pre-recorded video lectures.

By examining the responses from both quantitative and qualitative perspectives, the study aims to assess the potential synergy between pre-recorded and traditional teaching methods, providing actionable insights for optimizing hybrid teaching practices in higher education.

Table 1: Demographic Summary of Participants

The data for this study was collected from 100 lecturers at the Public Authority for Applied Education and Training (PAAET), Kuwait, over a period of five academic years, from the first semester of 2019 to the second semester of 2024. A paper-based questionnaire, consisting of both close-ended and open-ended questions, was distributed manually to lecturers. Participants were asked to complete the questionnaire and return it immediately, ensuring prompt and efficient data collection.

The sample was selected based on convenience, and participants used laptops or smartphones to assist in answering the questionnaire. The respondents were drawn from various departments within PAAET's higher education system, providing a diverse range of insights. Each semester, 10 different lecturers were randomly chosen to participate, with care taken to ensure that no individual participated more than once

throughout the study. This systematic process was repeated at the end of each semester until the data collection phase was completed in 2024.

The table below shows participant questionnaire demographic data including, age, gender, job position, education level, teaching academic year, specialty, teaching tool, and average year of experience:

Category	Details
Job Position	Lecturers
Education Level	Higher Education (Authority for Applied Education and Training, College of Basic Education - PAAET, Kuwait)
Gender	Female: 38 Male: 62
Age Distribution	30-35: 11 36-40: 13 41-45: 6 46-50: 16 51-55: 21 56-60: 18 61-65: 9 66-70: 4 70+: 2
Average Years of Experience	2–30 years
Specialties	Diverse Specialties
Academic Year (Data Collection Period)	2019 (1st and 2nd semester) 2020 (1st and 2nd semester) 2021 (1st and 2nd semester) 2022 (1st and 2nd semester) 2023 (1st and 2nd semester) 2024 (1st and 2nd semester)
Teaching Tools	Laptops/Smartphones

Table 1: Participant Questionnaire Demographic Data

4.3 Data Collection Tools

The primary data collection tool was a structured questionnaire comprising 12 cross-sectional questions and 7 sub-open-ended questions. The questionnaire was designed based on the longitudinal analysis tool, a method that tracks perceptions and behaviors over a period. However, this study was adapted for a cross-sectional design to capture a snapshot

of lecturers' experiences and perceptions regarding the use of pre-recorded video in conjunction with traditional (face-to-face) teaching methods.

The development of the questionnaire was informed by previous studies that provided guidance on constructing reliable instruments to assess instructional technology usage. To ensure content validity and relevance to the research goals, the questionnaire was reviewed by a panel of educational experts, following the recommendations of scholars such as Creswell and Creswell (2018), who emphasize expert validation in developing reliable research instruments.

The questionnaire addressed the following seven focus areas:

1). Student Engagements: Evaluating how pre-recorded lectures, combined with traditional teaching methods, influence student-teacher interaction.

Question 6. How do you think combining pre-recorded video in conjunction with face-to-face lectures affects overall student engagement?

Question 10. In your opinion, do you think the blended learning approach (pre-recorded video + traditional face-to-face teaching method) affects students' ability to recall, understand, apply, analyze, and integrate the material compared to traditional methods?

2). Time Management: Exploring whether pre-recorded lectures help lecturers manage their teaching schedules effectively.

Question 1. How frequently do you incorporate pre-recorded video lectures into your teaching?

Q1-SUB A- Why are you not using pre-recorded video in your teaching?

Q1-SUB B- Do you use any other blended learning tools in your teaching?

Q1-SUB C- Do you only use traditional (face-to-face) teaching methods?

Q1-SUB D- Would you like to use pre-recorded video in your teaching but you need support/training to apply it in conjunction with the traditional (face-to-face) teaching method?

3). Content Delivery: Assessing if pre-recorded lectures enhance students' understanding and retention of content.

Question 2: What motivated your decision to integrate pre-recorded lectures into your teaching?

Question 4: Do you think pre-recorded video improves student understanding of complex topics compared to traditional face-to-face lectures?

Question 11. Do you think pre-recorded videos in conjunction with traditional teaching face-to-face help accommodate diverse learning needs (e.g., students with individual differences, different learning styles, and different learning preferences)?

4). Addressing Individual Differences: Investigating whether pre-recorded lectures help lecturers meet the diverse learning needs of students.

Question 7. In your experience, do students actively engage at first with pre-recorded video materials before they start with the traditional (face-to-face) teaching method during the lecture?

Question 12. When you finish your semester, and after taking all the notes and feedback from the students, have you made any adjustments to your pre-recorded video to improve teaching content (e.g., adding new content, or adding visuals)?

5). Lecturer Efficiency: Examining how the use of pre-recorded lectures impacts lecturers' satisfaction with their teaching methods.

Question 3: How would you rate the effectiveness of pre-recorded lectures in enhancing student learning?

Question 9: How has the use of pre-recorded lectures influenced your teaching methods during face-to-face sessions?

6). Challenges: Identifying challenges in using pre-recorded lectures, including reduced engagement, time management difficulties, and adaptability issues.

Question 5: What challenges do you face when integrating pre-recorded lectures into your teaching methods?

7). Perceptions of Hybrid Learning: Exploring ways to improve the use of pre-recorded lectures in combination with traditional teaching methods.

Question 8: How well do you think pre-recorded videos complement face-to-face teaching in terms of:

Q8- SUB A- Improving student comprehension?

Q8- SUB B- Facilitating active learning during class time?

Q8- SUB C- Encouraging a deeper understanding of the material?

The questionnaire was distributed manually to lecturers over a period of five academic years, ensuring an organized and efficient data collection process. Participants were asked to respond based on their experiences with pre-recorded lectures from the first semester of 2019 to the second semester of 2024. The inclusion of both close-ended and open-ended questions ensured the data collection of both quantifiable data and nuanced reflections.

At the end of each semester, the researcher distributed the questionnaire manually to lecturers, ensuring they completed and returned it to the researcher immediately. researcher repeated this process before the end of each subsequent semester, distributing the questionnaire to 10 different lecturers each time. The sample of participants was random and ensured that no lecturer participated more than once. This process continued consistently until the study concluded in 2024, allowing the researcher to gather diverse feedback across multiple semesters.

4.4 Data Analysis Methods

Once the data were collected, a mixed data analysis approach was employed. The responses were coded and analyzed using Excel to summarize the data. Key indicators such as percentages, means, and standard deviations were used to identify general trends among the participants. The data were then subjected to regression analysis to predict the likelihood of lecturers adopting pre-recorded video lectures based on their teaching background, specialties, and perceived ease of use. The results were used to provide recommendations for improving the use of pre-recorded video in conjunction with traditional (face-to-face) teaching.

Thematic analysis was used to identify and analyze patterns in the qualitative data. Following Braun and Clarke's (2006) approach, the responses were first coded into meaningful segments that reflected key concepts related to the research questions. These codes were then grouped into broader themes that captured significant patterns in the data. The coding process was iterative, with themes being refined and adjusted to ensure they accurately represented the data. This approach allowed for a deeper understanding of how lecturers perceive and use pre-recorded video content in their teaching practices.

5. Discussion

5. 1 Benefits of Using Pre-Recorded Video Content for lecturers

Pre-recorded video lectures have become an increasingly popular teaching tool, especially in blended learning environments. For lecturers, this method offers flexibility, the ability to manage time better, and a way to enhance student engagement. However, while many lecturers view pre-recorded video content as a powerful tool, there are also concerns related to its overall effectiveness, student engagement, and technical challenges.

The results are presented in accordance with the questionnaire axes, The following discussion explores the benefits of using pre-recorded video lectures, drawing on the collected data, researcher insights, and relevant studies. This debate considers both the supporting and opposing evidence, ensuring a balanced view on the subject.

5.2 Flexibility and Repetitive Content Reduction

2. What motivated your decision to integrate pre-recorded lectures into your teaching?	
To provide flexible learning options for students	8
To supplement face-to-face lectures	30
To alleviate repetitive content delivery	55
Other (please specify)	7

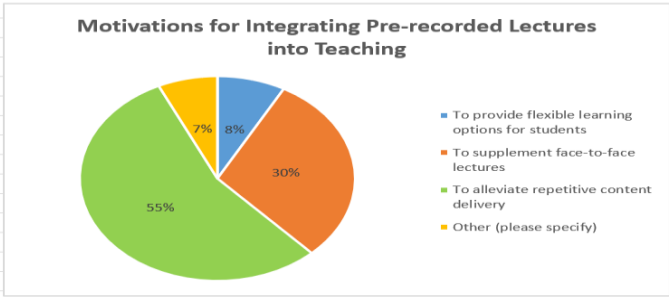


Figure 1 shows the motivation for integrating pre-recorded lectures into teaching

Pre-recorded video lectures offer significant flexibility for both lecturers and students. Data analysis indicates that the primary motivation for integrating pre-recorded video lectures among 55 respondents was to alleviate repetitive content delivery. This is a substantial finding, as it suggests that pre-recorded videos allow lecturers to record foundational or repetitive materials once and reuse them across multiple sessions or semesters. This saves time and reduces the need to repeat the same content, enabling lecturers to focus more on interactive, discussion-based activities during face-to-face sessions. This flexibility aligns with current pedagogical trends favoring active learning approaches, where class time is increasingly dedicated to engagement rather than content delivery.

The findings are consistent with studies such as Randy Garrison et al (2017), who highlight that blended learning emerges from an understanding of the relative strengths of face-to-face and online learning, such as labs, simulations, tutorials, and assessment. Blended learning represents a new approach and mix of classroom and online activities consistent with the goals of specific courses or programs.

However, not all respondents were motivated solely by flexibility. 8 respondents noted that they adopted pre-recorded videos to provide flexible learning options for students, catering to learners who may need to access content at different times due to absence or learning preferences. Additionally, 30 respondents used pre-recorded lectures to supplement face-to-face lectures, allowing them to blend traditional teaching with modern digital tools for a more robust learning experience.

Despite these advantages, there are notable challenges. Garrison and Vaughan (2008) argue that online learning can result in a passive learning experience if not integrated properly with interactive components. They warn that students might treat these videos as optional, or fail to engage fully with the content unless there is a clear structure and guidance from the lecturer.

Furthermore, 7 respondents mentioned other reasons (as captured in the thematic analysis in section 5.6.2) for incorporating pre-recorded lectures, reflecting personal teaching preferences or institutional strategies. This underscores the importance of understanding that while

flexibility and reduced repetition are widely recognized benefits, the successful integration of pre-recorded content requires careful planning and a clear alignment with pedagogical goals.

5.3 Enhancing Student Engagement

Pre-recorded video content offers flexibility and can enhance student engagement when integrated effectively into teaching practices. However, analysis data reveals that the impact of such content on student engagement is mixed, reflecting both potential advantages and challenges.

7. In your experience, do students actively engage at first with pre-recorded video materials before they start with traditional (face-to-face) teaching method during the lecture?	
Rarely	3
Sometimes	10
Often	4
Always	16
Others (please specify)	67

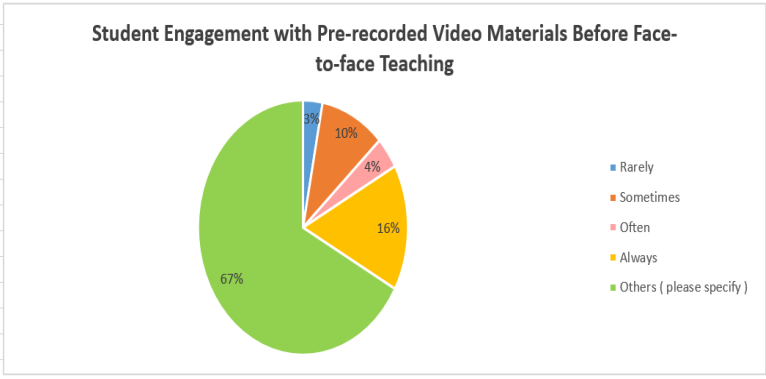


Figure 2: Student Engagement With Pre-recorded video Materials before Face-to-face teaching.

When asked about student engagement with pre-recorded video materials before transitioning to traditional (face-to-face) teaching during lectures, responses varied significantly. Only a small number of lecturers observed consistent engagement, with 3 reporting "Rarely," 10 noting "Sometimes," 4 indicating "Often," and 16 stating "Always." Interestingly, 67 participants chose "Others," suggesting diverse or situational engagement patterns that may require further investigation. The thematic analysis in section 5.6.2 below covers the investigation

upon their comments.

6.How do you think combining pre-recorded video in conjunction with face-to-face lectures affects overall student engagement?	
Significantly decreases engagement	10
Decreases engagement somewhat	11
No effect on engagement	35
Increases engagement somewhat	20
Significantly increases engagement	24

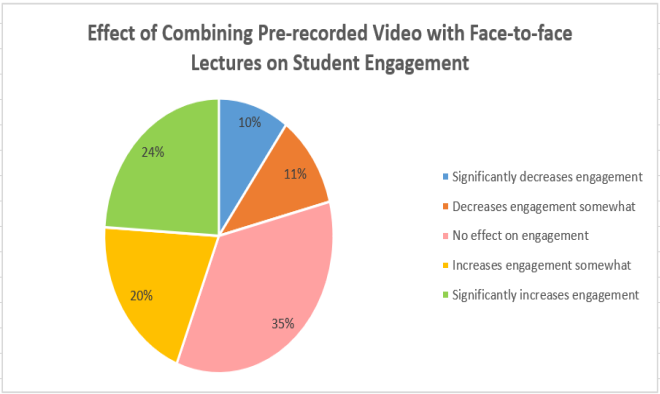


Figure 3: Effect of combining pre-recorded videos with face-to-face lectures on student engagement.

Also, according to Figure 3, 20 respondents indicated that combining pre-recorded video with face-to-face lectures "increases engagement somewhat," while 24 respondents stated that it "significantly increases engagement." This suggests that many lecturers perceive video content as a valuable tool for enhancing student involvement in their learning process. When students can revisit material at their own pace, it allows for deeper understanding and better preparation for in-class activities.

On the other hand, 35 respondents—representing the largest group—felt that pre-recorded video content has "no effect on engagement." This finding highlights the variability in the effectiveness of video content, which could be attributed to differences in how the videos are designed and integrated into the teaching process. It is crucial to understand that simply providing video content does not guarantee higher engagement; the design and guidance of the content play a critical role in capturing students' interest in order to raise the level of comprehension and understanding.

Moreover, 10 respondents believed that the use of pre-recorded video "significantly decreases engagement," and 11 felt it "decreases engagement somewhat." These negative perceptions might be linked to the lack of feedback during real-time lessons, due to students' inability to communicate or interact with the lecturer, because students are not allowed to speak during the video displayed, because the control with the lecturers for stopping the video and resume that might hinder the learning process and student can't interrupt the lecturer while the re-recorded video is displayed.

These findings align with Mayer's (2014) cognitive theory of multimedia learning, which posits that learners are more likely to comprehend and retain information when it is presented in a well-organized and visually appealing manner.

5. What challenges have you encountered when using pre-recorded video in your teaching?	
Technical issues	39
Lack of student engagement	9
Difficulty in maintaining student attention	7
Limited opportunities for real-time feedback	15
Others (please specify)	30

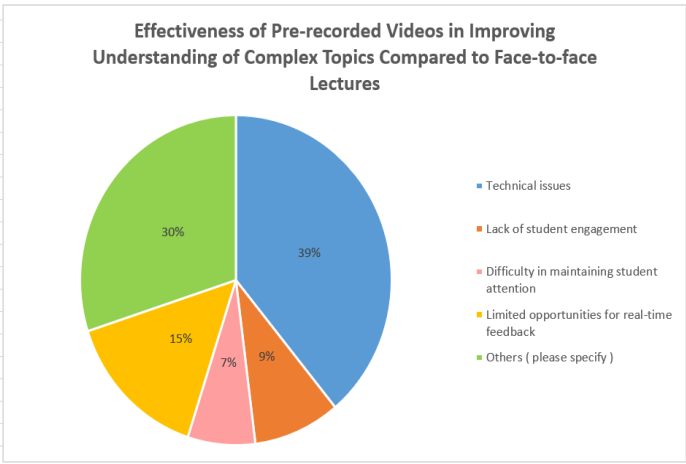


Figure 4: Effectiveness of pre-recorded videos in improving understanding of complex topics compared to face-to-face lectures.

However, if the videos are too lengthy or lack interactive elements, students may struggle to maintain attention, as evidenced by 7 respondents who cited "difficulty in maintaining student attention" as a

key challenge. Therefore, pre-recorded videos need to be designed carefully to balance information delivery with cognitive load.

Data analysis also reveals challenges associated with the use of pre-recorded video content in teaching. Technical issues were the most frequently reported challenge, with 39 respondents citing this as a barrier. This could involve problems with video recording software, internet connectivity, or outdated technology. Addressing these technical barriers is essential to ensure a smooth and effective integration of video content into teaching.

In addition to technical challenges, a lack of student engagement was cited by 9 respondents, suggesting that some lecturers struggle to keep students involved when using pre-recorded videos. This may stem from the fact that video content is often passive, which can limit its impact on active student participation. Research by Seo et al. (2021) emphasizes the importance of keeping pre-recorded video content short and incorporating interactive elements such as quizzes or prompts for reflection. Their study found that short videos (about 6 minutes) with embedded questions were more effective at maintaining student engagement.

Another challenge highlighted in the survey was the lack of real-time feedback (15 respondents), which can reduce the interactive component of learning. Real-time interaction allows for immediate clarification of doubts, which is often missing in pre-recorded video lecture formats. To mitigate this, some lecturers may choose to follow up pre-recorded video content with live Q&A sessions or discussion forums to maintain engagement and provide timely feedback.

Also, 30 participants opted for other reasons in a bid to express the challenge they encounter during teaching with pre-recorded videos. The thematic analysis in section 5.6.2 below covers the investigation upon their comments.

9. How has the use of pre-recorded lectures influenced your teaching methods during face-to-face sessions?	
It has led me to focus more on discussions and problem-solving	22
I now allocate more time for application-based activities	11
It has not changed my teaching approach	17
Others (please specify)	50

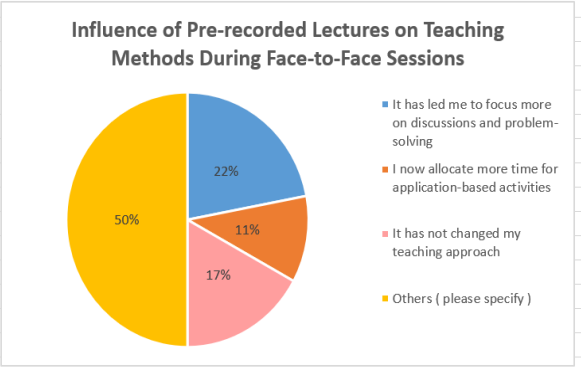


Figure 5: Influence of pre-recorded lectures on teaching methods during face-to-face sessions.

Interestingly, 22 respondents indicated that the use of pre-recorded lectures has led them to focus more on discussions and problem-solving during face-to-face sessions. This reflects a shift in teaching methods where lecturers leverage pre-recorded video content for foundational knowledge, reserving class time for higher-order cognitive activities, such as application and analysis.

In contrast, 17 respondents reported that pre-recorded video content has not changed their teaching approach, indicating that its use may not always result in a shift toward more active learning strategies. The majority of respondents, 50%, selected other options, which made it seem like there were diverse opinions, and some reflected that they had never listened to pre-recorded lectures previously or had laid much emphasis on saving time, less repetition of content, and engaging varied teaching resources.

Given the conflicting perceptions around student engagement, it is clear that the benefits of pre-recorded video content depend heavily on how it is implemented. Data analysis also indicates that when used strategically, pre-recorded videos can allow lecturers to allocate more time for application-based activities, particularly when combined with

active learning strategies. From the data analysis, 11 respondents indicated 'I now allocate more time for application-based activities.' For example, by using videos to deliver core content, lecturers can devote more face-to-face time to discussions, application-based activities, and problem-solving exercises. This approach helps to address the lack of engagement and attention by shifting from a passive to an active learning model.

Research by Garrison (2016) supports the notion that technologies are not inherently effective but become powerful when used in conjunction with active learning techniques. Garrison suggests that technology should serve as a tool to foster greater interaction and collaboration in the classroom, rather than as a standalone teaching method. By integrating interactive elements within videos or using them as a prelude to in-class activities, lecturers can create a more dynamic and engaging learning environment.

To enhance the effectiveness of pre-recorded video content, lecturers should also consider regularly updating their video materials based on student feedback and learning outcomes. However, the survey reveals that only 50 respondents were indifferent, suggesting that there is room for improvement in this area. Also, 11 participants opined that 'it has led the researcher to focus more on discussions and problem-solving.'

12. When you finish your semester, and after taking all the notes and feedback from the students, have you made any adjustments to your pre-recorded video to improve teaching content (e.g., adding new content, or adding visuals)?

Yes	33
No	67

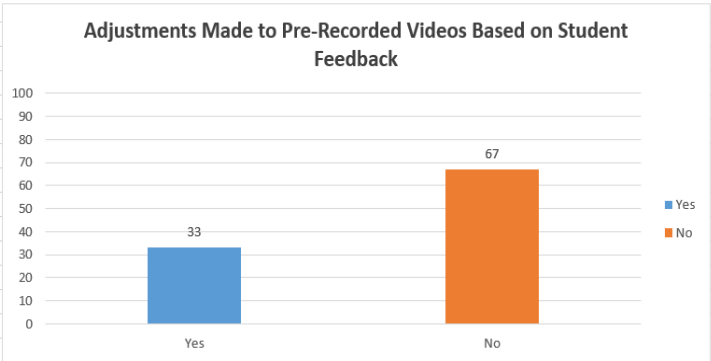


Figure 6: Adjustments Made to pre-recorded videos based on student feedback

At the end of the semester, when asked if they made adjustments to their pre-recorded videos based on student feedback—such as adding new content or visuals—33 lecturers reported making modifications, while 67 did not. previously used pre-recorded videos as a teaching tool. This may be attributed to their focus on other responsibilities, such as delivering course content, interacting with students, conducting assessments, and evaluating student performance, leaving little time for improving or adjusting their teaching methods.

5.4 Technical Issues and Training Challenges

A- Why are you not using pre-recorded video in your teaching?	
Technical issues	7
I'm not a technology person	3
Lack of training.	51
Will not add any value to my teaching content	6

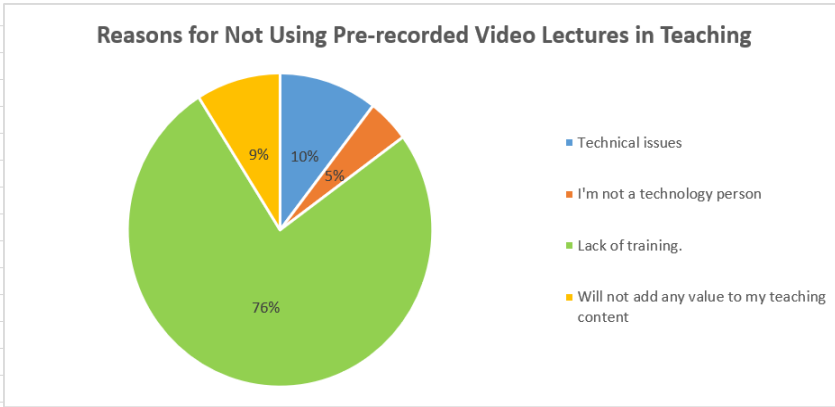


Figure 7: Reasons for not using pre-recorded video lectures in teaching.

Despite the benefits of using pre-recorded video content in teaching, technical challenges and a lack of training remain significant barriers to its widespread adoption.

According to the findings, out of 76 respondents, 7 indicated that technical issues were a reason for not using pre-recorded video lectures in their teaching. Additionally, 3 respondents mentioned not being a "technology person" as their reason, while the majority—51

respondents—cited a lack of training as the primary obstacle. This highlights a crucial gap in lecturers ability to leverage digital tools effectively in their teaching practices.

These findings align with broader research on the subject. For example, a study by Butler and Sellbom (2002) revealed that many lecturers face "substantial technical barriers" when integrating new technologies into their courses. In their research, over 50% of the community expressed frustration with outdated equipment, lack of time to learn new technologies, incompatibilities, and insufficient internet infrastructure, alongside the lack of institutional support. From a faculty perspective, the biggest problem with using technology for teaching is reliability. Unreliability was the most commonly cited “significant problem,” the problem most often addressed by faculty who offered solutions to correct problems, and the most commonly cited factor in whether faculty will adopt a technology.

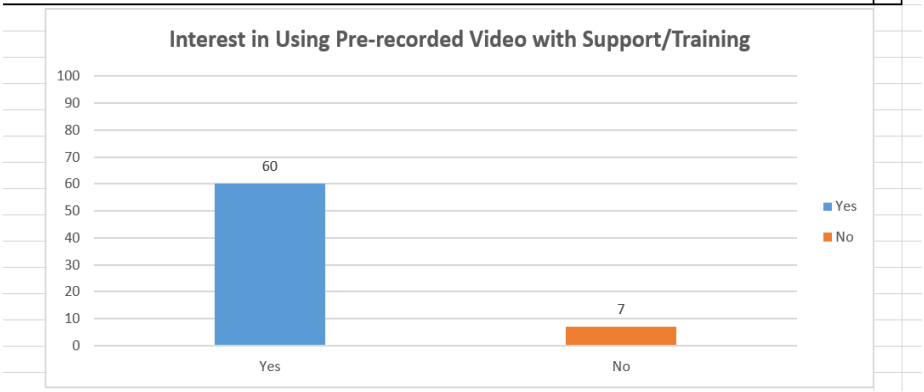
Although some participants indicated they lacked the necessary training to incorporate pre-recorded video content, 6 respondents expressed that they did not see any added value in using it and therefore chose not to adopt it. This highlights a broader interest in video content among lecturers, contingent on institutions providing adequate resources and training to overcome these barriers.

5.5 The Need for Training and Institutional Support

The data strongly suggests that training is a key factor in the successful integration of pre-recorded video content into teaching. 51 respondents in Figure 7 citing a lack of training as their primary reason for not using video lectures, it's clear that more institutional investment is needed in professional development. Ra et al., 2019 emphasized that comprehensive training programmes are important, as they equip personnel with the essential digital competencies required to proficiently utilise and adjust to emerging technologies. This is particularly true for lecturers who are not naturally inclined toward using technology, as evidenced by the 3 respondents who identified themselves as "not technology persons."

Figure 8: Interest in using pre-recorded video with support/training.

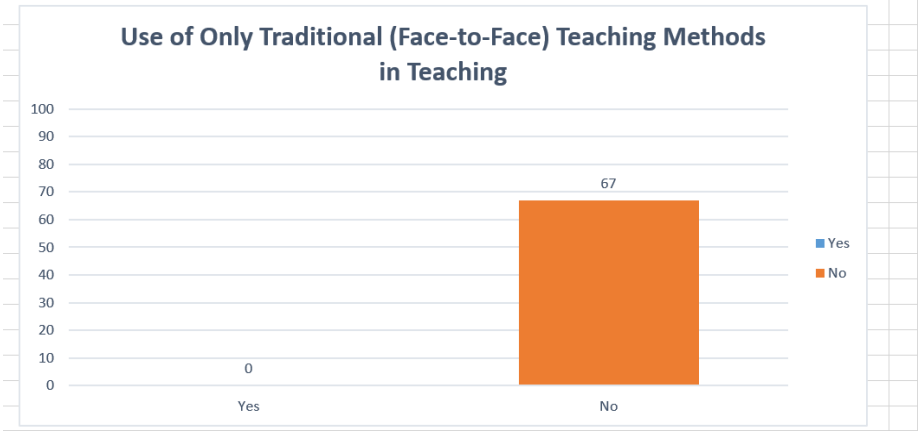
D- Would you like to use pre-recorded video in your teaching but you need support/training to apply in conjunction with traditional (face-to-face) teaching method?	
Yes	60
No	7



The demand for training is further reinforced by the fact that 60 respondents expressed a desire to use pre-recorded video content if given support and training to integrate it alongside traditional face-to-face methods, while 7 respondents affirmed in the negative. This suggests that, for most lecturers, the issue is not a lack of interest in pre-recorded videos, but rather the absence of the skills and resources needed to implement

Figure 9: Use of only Traditional Face-to-face teaching methods in teaching them effectively.

C- Do you only use traditional (face-to-face) teaching methods?	
Yes	0
No	67



Furthermore, data analysis evidenced that 67 lecturers indicated they do not rely solely on traditional (face-to-face) teaching methods, while none reported using only traditional methods. This suggests a growing interest in blended learning approaches, though barriers still hinder full integration.

5.6 Impact on Student Learning and Cognitive Development

The integration of pre-recorded video content into teaching has demonstrated a complex impact on student learning, particularly in enhancing comprehension and supporting cognitive development. Data analysis collected from lecturers reveal varying degrees of perceived effectiveness regarding the use of pre-recorded lectures.

11. Do you think pre-recorded videos in conjunction with traditional teaching face-to-face help accommodate diverse learning needs (e.g., students with individual differences, different learning styles, and different learning preferences)?

Yes	64
No	4
Neutral	32

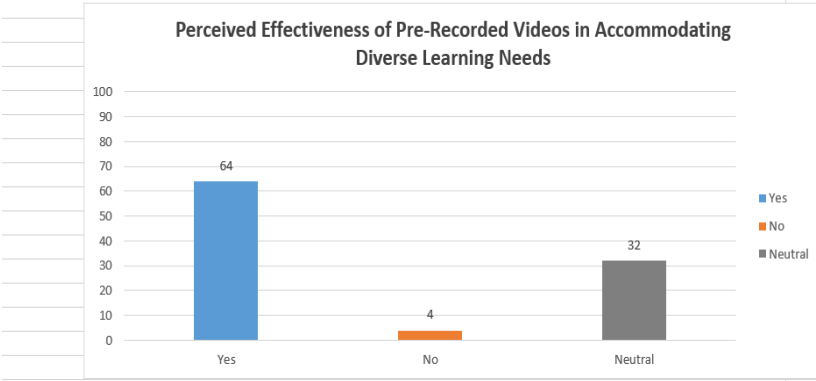


Figure 10: Perceived effectiveness of pre-recorded videos in accommodating diverse learning needs.

Data analysis also evidenced that 64 participants agreed, highlighting the potential of this blended approach. Meanwhile, 4 respondents disagreed, and 32 remained neutral, suggesting that while the majority see value in this method, some may perceive limitations or require training for the design and implementation of how to use pre-recorded video.

3. How would you rate the effectiveness of pre-recorded lectures in enhancing student learning?	
Not effective at all	0
Slightly effective	17
Moderately effective	8
Very effective	51
Extremely effective	24
Not effective at all	0

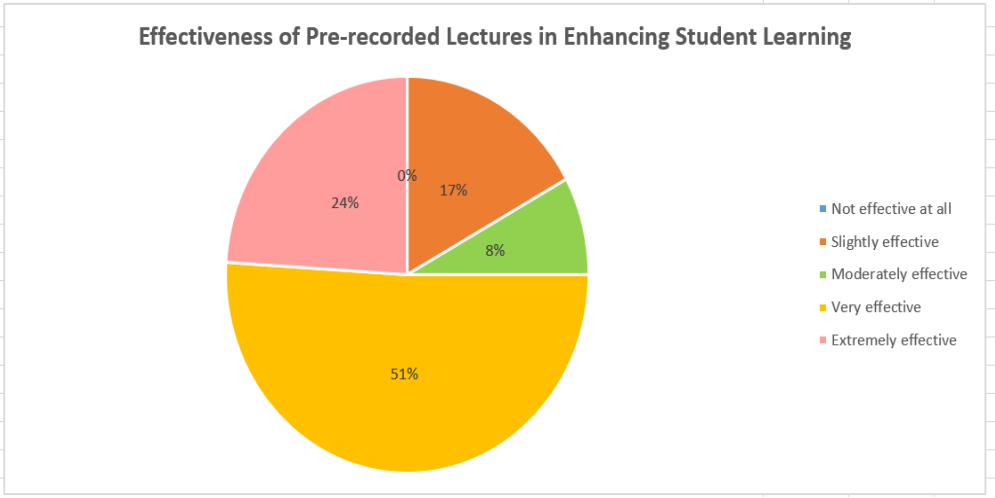
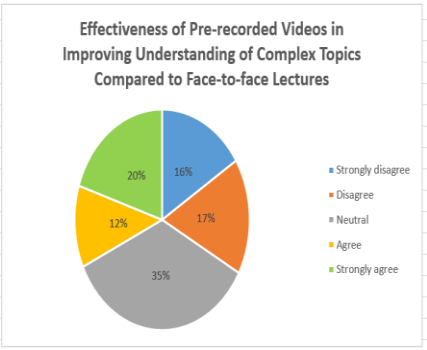


Figure 11: Effectiveness of pre-recorded videos in enhancing student learning.

Also, from the findings, the majority of respondents expressed positive opinions. Specifically, 51 respondents (47%) found pre-recorded lectures to be "very effective," while 24 respondents (22%) rated them as "extremely effective." This suggests that approximately 69% of lecturers believe that pre-recorded videos significantly enhance student learning outcomes. On the other hand, a smaller proportion—17 respondents (15%)—rated them as "slightly effective," and 8 respondents (7%) rated them as "moderately effective." Notably, none of the respondents rated pre-recorded videos as "not effective at all."

Figure 12: Effectiveness of pre-recorded videos in improving understanding of complex topics compared to face-to-face lectures.

4. Do you think pre-recorded video improve student understanding of complex topics compared to traditional face-to-face lectures?	
Strongly disagree	16
Disagree	17
Neutral	35
Agree	12
Strongly agree	20



However, the impact of pre-recorded videos on understanding complex topics presents a more divided opinion among lecturers. According to the findings, 35 respondents (32%) remained neutral on whether pre-recorded videos improve student understanding of complex topics when compared to traditional face-to-face lectures. Additionally, a significant number expressed skepticism: 16 respondents (15%) "strongly disagreed" and 17 respondents (16%) "disagreed" with the notion that pre-recorded videos are more effective than face-to-face methods for teaching complex topics. Meanwhile, 12 respondents (11%) "agreed," and 20 respondents (19%) "strongly agreed" that pre-recorded videos enhance comprehension of challenging topics.

The mixed opinions highlight some of the limitations of pre-recorded videos in addressing more intricate subject matter. Critics, such as Stein and Graham (2014), argue that while online materials are convenient, they may oversimplify complex concepts, potentially leading to superficial understanding. This perspective is reflected in the 35% of lecturers who are either neutral or disagree with the idea that pre-recorded videos outperform traditional lectures in helping students grasp difficult topics. The challenge is to ensure that online materials are

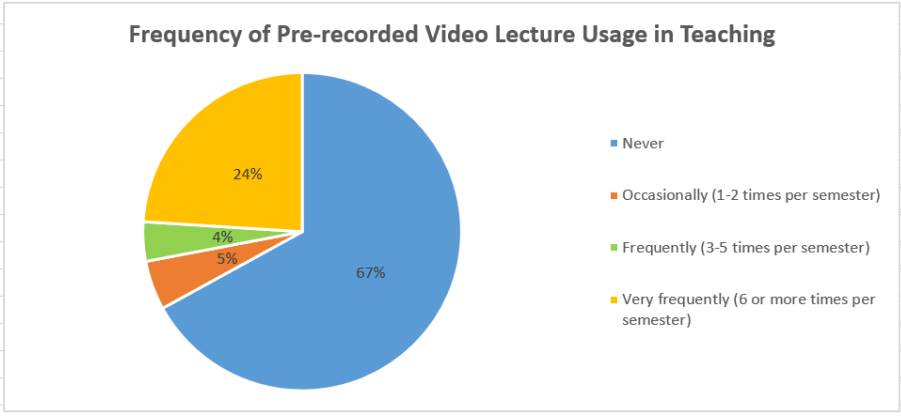
designed to engage higher-order thinking and critical analysis rather than merely delivering surface-level information.

5.7 Blended Learning and Active Learning Opportunities

Blended learning, which combines pre-recorded video content with traditional face-to-face teaching methods, has grown in popularity as an educational approach. By integrating both pre-recorded video content with traditional face-to-face teaching methods, it offers flexibility and promotes active learning. Data analysis collected from lecturers provides valuable insights into how they perceive the role of pre-recorded videos in fostering student comprehension, engagement, and overall learning effectiveness.

Figure 13: Frequency of pre-recorded videos lecture usage

1. How frequently do you incorporate pre-recorded video lectures into your teaching?	
Never	67
Occasionally (1-2 times per semester)	5
Frequently (3-5 times per semester)	4
Very frequently (6 or more times per semester)	24



The findings reveal a significant disparity in how often lecturers use pre-recorded video content. A large majority—67 out of 100—reported that they "never" incorporate pre-recorded videos into their teaching, while 24 indicated they use them "very frequently" (6 or more times per semester), with smaller groups reporting occasional or frequent use. This wide variation suggests that while some lecturers are

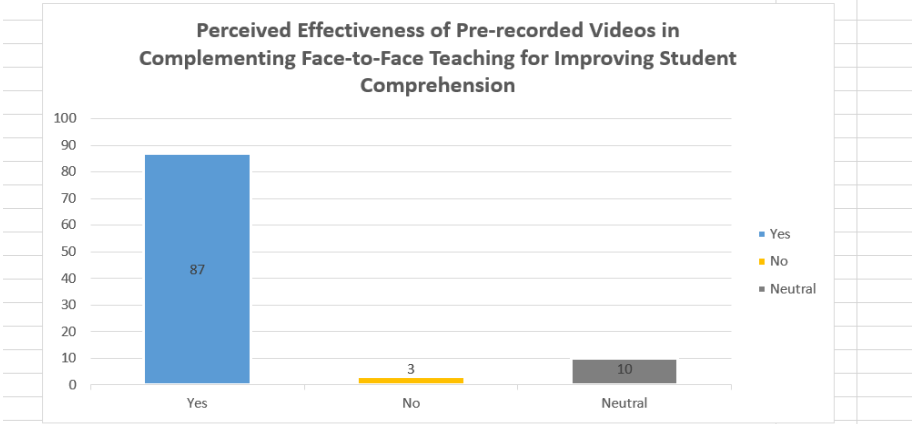
embracing pre-recorded videos as part of their teaching strategies, the majority remain hesitant or face barriers to their adoption.

Why is this the case? The data shows that many lecturers may prefer traditional teaching methods or face technical challenges. According to demography data collection, age range revealed the possibility of hesitation in using technology due to the fact that the age of the participants are above 50+ age. There are 54 participants out of 100 in total, which means half of the study sample. The age factor which could be another challenge factor or another reason for less interest in using technology besides the lack of training.

Figure 14: Effectiveness of pre-recorded videos in complementing face-to-face teaching for improving student comprehension.

8. How well do you think pre-recorded videos complement face-to-face teaching in terms of:
a) Improving student comprehension?

Yes	87
No	3
Neutral	10

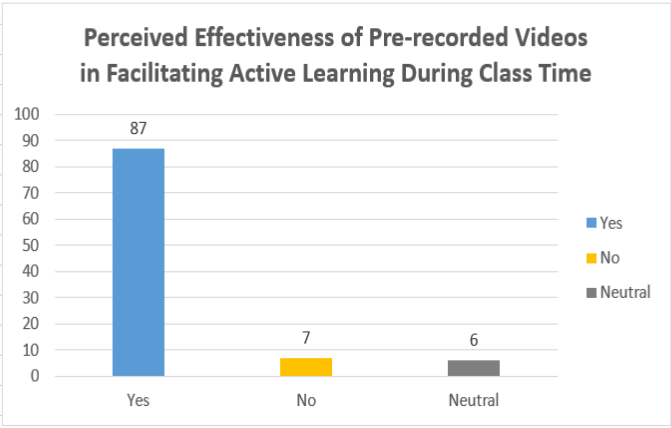


When it comes to combining pre-recorded videos with face-to-face methods, the data overwhelmingly supports the effectiveness of this approach. According to the findings, 87% of respondents believe that pre-recorded videos help improve student comprehension. As seen in figure 15, 87% of the participants feel that videos facilitate active learning during class time, and in figure 16, 87% also think pre-recorded videos encourage a deeper understanding of the material.

However, 3 participants did not believe in the effectiveness of pre-recorded videos in complementing face-to-face teaching for improving student comprehension. The findings also revealed that 10 participants were indecisive; they neither chose whether pre-recorded videos complemented face-to-face teaching in terms of improving student comprehension. Despite these outliers, there is a strong consensus among lecturers that pre-recorded videos, when used appropriately, significantly enhance the learning process.

Figure 15: Perceive the effectiveness of pre-recorded videos in facilitating active learning during class time.

b) Facilitating active learning during class time?	
Yes	87
No	7
Neutral	6

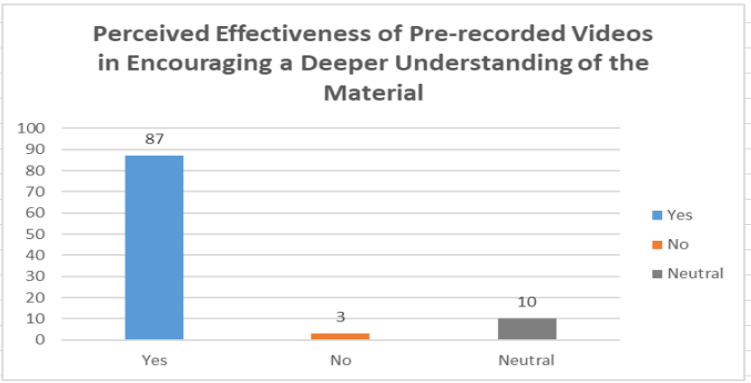


Also, in Figure 15 above, a significant majority of participants, 87, indicated that they believe pre-recorded videos effectively facilitate active learning. In contrast, only 7 respondents expressed disagreement with this assertion, while 6 participants remained neutral. This strong consensus among lecturers highlights the value placed on integrating pre-recorded video content into teaching strategies, suggesting that such resources can enhance engagement and interactivity in the learning environment. The findings underscore the potential for pre-recorded

videos to serve as effective tools in fostering active learning experiences for students.

Figure 16: Perceived effectiveness of pre-recorded videos in encouraging a deeper understanding of the materials.

c) Encouraging a deeper understanding of the material?	
Yes	87
No	3
Neutral	10



For Figure 16, an overwhelming majority of participants, totalling 87, affirmed that pre-recorded videos contribute positively to fostering a deeper understanding of the content. Conversely, only 3 respondents disagreed with this viewpoint, while 10 participants remained neutral regarding the effectiveness of these resources. This strong agreement among lecturers indicates a broad recognition of the value of pre-recorded videos as tools for deepening students' grasp of complex topics, thereby enhancing the overall educational experience.

In line with this, research by Stieff M et al (2018) highlights how blended learning environments, which leverage online materials like pre-recorded videos, create opportunities for active learning. They argue that by shifting content delivery to the online space, lecturers can use face-to-face time for more engaging, higher-order learning activities such as problem-solving and collaborative work.

This view is reinforced by data analysis. With a large proportion of participants affirming the benefits of pre-recorded video content in active learning, it seems clear that this method can lead to better student engagement and comprehension. The shift to blended learning allows for

more dynamic class sessions where students can apply concepts learned through videos, promoting deeper learning outcomes.

10. In your opinion, do you think the blended learning approach (pre-recorded video + traditional face-to-face teaching method) affect students' ability to recall, understand, apply, analyze, and integrate the material compared to traditional methods?

Yes	80
No	6
Neutral	14

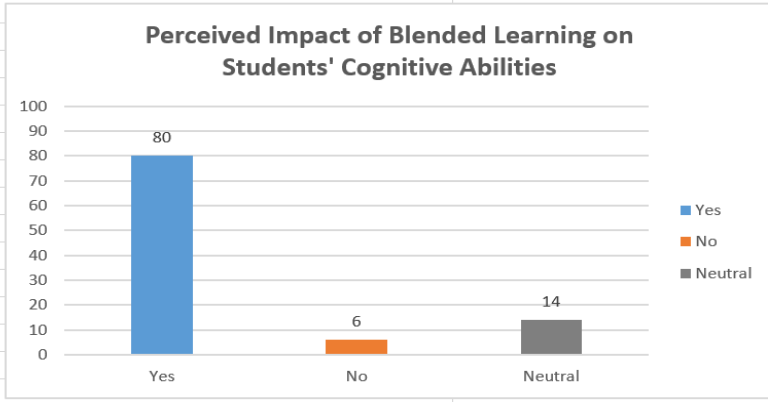


Figure 17: Perceived impact of blended learning on students' cognitive abilities.

The data analysis also explored whether lecturers believe that the blended learning approach—combining pre-recorded video with traditional face-to-face teaching—improves students' ability to recall, understand, apply, analyze, and integrate material. The results show that 80% of lecturers agree that this approach positively affects these critical thinking skills, while 14% remained neutral and only 6% disagreed.

This is a crucial finding, as it underscores the potential of blended learning to enhance cognitive processes beyond simple content retention. By providing students with both pre-recorded videos for foundational learning and face-to-face sessions for deeper exploration, lecturers can support various stages of the learning process. For example, students may watch a video multiple times to understand the basic principles, then

engage in class discussions or problem-solving exercises that require higher-order thinking.

This concept aligns with Bloom's taxonomy, which suggests that learning should progress from basic knowledge acquisition to more complex skills like analysis and synthesis. Pre-recorded videos can facilitate the initial stages, while in-class activities support the development of more advanced skills.

B- Do you use any other blended learning tools in your teaching?	
Yes	67
No	0

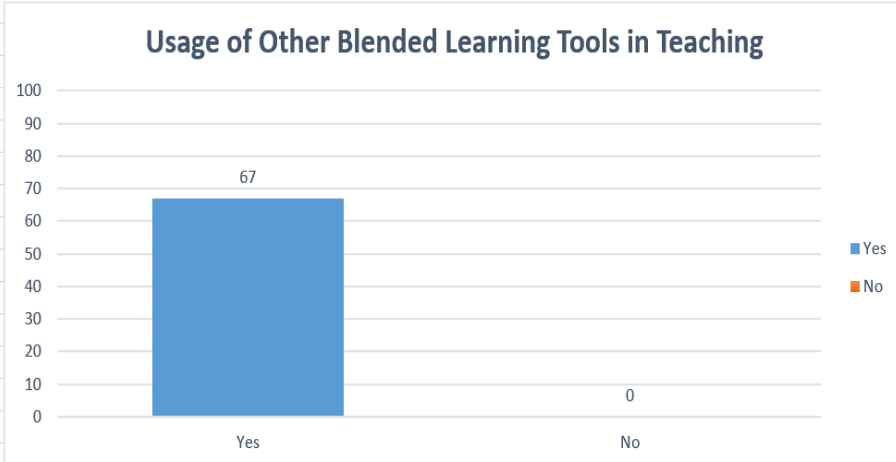


Figure 18: Usage of other blended learning tools in teaching.

In addition to pre-recorded videos, all 67 respondents in the findings indicated that they use other blended learning tools in their teaching. This finding suggests that lecturers are not opposed to using technology but may prefer to use technological tools related to their specialization. It is possible that pre-recorded video content is seen as a precise tool with specific purposes, and its effectiveness depends on how well it aligns with course objectives. From another perspective, the responsibility also falls on educational institutions and stakeholders to raise awareness and provide training for lecturers. This guidance should focus on helping them select the most appropriate and effective technological tools that enhance the teaching and learning process, ensuring a positive impact on student outcomes.

Blended learning tools, including pre-recorded videos, offer flexibility and allow for differentiated instruction tailored to individual student needs. In today's diverse classrooms, where students may have different learning styles, this flexibility is crucial. According to the findings, participants recognize this advantage: 87% feel that pre-recorded videos help cater to diverse learning needs, providing an opportunity to reach students who may not thrive in traditional lecture-based environments.

In conclusion, while pre-recorded video content offers numerous benefits for lecturers, including flexibility, enhanced student engagement, and improved learning outcomes, it also presents challenges such as technical barriers, lack of training, and age-related challenges. The findings suggest that many lecturers recognize the value of pre-recorded videos, but successful implementation requires adequate training, strategic and awareness of use, and careful integration with face-to-face teaching. Ultimately, the debate surrounding the benefits of pre-recorded video content highlights the need for ongoing research, institutional support, and pedagogical innovation to ensure that this tool is used effectively to enhance both teaching and learning.

5.2.1 Addressing Student Needs and Individual Differences

The rapid growth of blended learning—where pre-recorded video lectures are combined with traditional face-to-face teaching—presents new opportunities to address the diverse needs of students. By utilizing multiple formats for content delivery, lecturers can create more flexible, inclusive, and engaging learning environments. The data gathered from the findings of lecturers provides a comprehensive understanding of how pre-recorded videos and blended learning strategies can help accommodate different learning styles, learning paces, and engagement levels. This analysis focuses on how these approaches address student needs, support individual differences, and promote active learning.

5.2.2 Customizing Teaching for Different Learning Styles

One of the most significant advantages of blended learning is its ability to accommodate various learning styles—visual, auditory, and kinesthetic. Pre-recorded video content, when designed effectively, can

serve all styles of learners, ensuring that no student is left behind. Research by Mayer (2014) on multimedia learning emphasizes the value of incorporating diverse content formats to support different learning preferences. Mayer's Cognitive Theory of Multimedia Learning suggests that combining visual and auditory elements can enhance comprehension and retention, while interactive components can engage kinaesthetic learners by encouraging active participation.

8. How well do you think pre-recorded videos complement face-to-face teaching in terms of:

a) Improving student comprehension?

Yes	87
No	3
Neutral	10

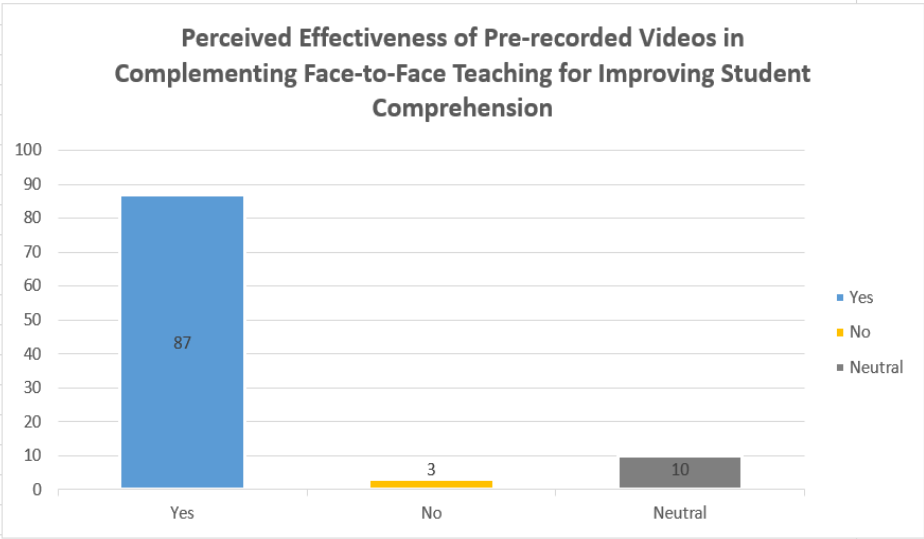
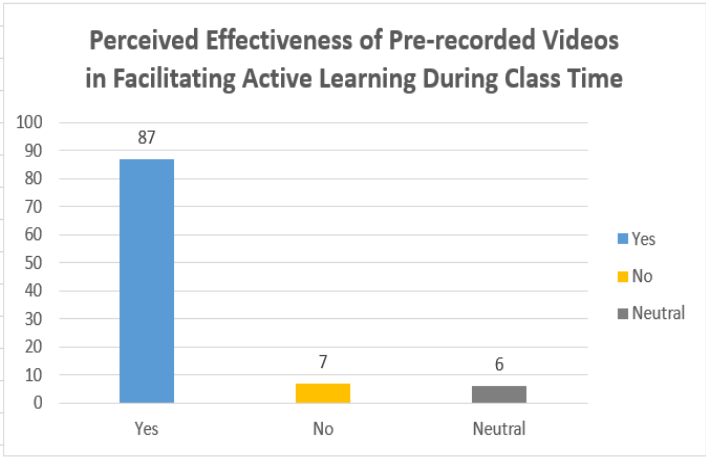


Figure 19: Perceived effectiveness of pre-recorded videos in complementing face-to-face teaching for improving student comprehension.

According to the findings, 87 participants believe that pre-recorded videos help improve student comprehension. In contrast, only 3 respondents expressed disagreement with this perspective, while 10 participants remained neutral on the effectiveness of pre-recorded videos in complementing face-to-face teaching for improving student comprehension.

Figure 20: Perceived effectiveness of pre-recorded video in facilitating active learning during class time.

b) Facilitating active learning during class time?	
Yes	87
No	7
Neutral	6



Interestingly, 87 participants also feel that pre-recorded videos facilitate active learning during class time. However, 7 respondents disagreed with this assertion, and 6 participants maintained a neutral stance on the issue. This demonstrates a strong consensus among lecturers regarding the potential of pre-recorded videos to enhance student engagement and participation in the learning process, while also highlighting that some lecturers may have reservations about their effectiveness

This overwhelming consensus highlights how well-structured video content can present information in a format that resonates with different learning styles. For example:

- Visual learners benefit from diagrams, charts, and other visual aids embedded in the video.
- Auditory learners can process the spoken explanation of concepts, which may be reinforced through additional audio cues like changes in tone or emphasis.

- Kinesthetic learners can be engaged through interactive activities prompted during the video or incorporated into subsequent face-to-face sessions.

Pre-recorded videos also allow lecturers to pause and engage with students in real time, ensuring the video content becomes a part of an interactive session. For example, a lecturer can pause the video at critical moments to ask questions, facilitate group discussions, or initiate hands-on activities that support kinaesthetic learners. This flexibility in teaching is crucial in ensuring that the diverse needs of students are met.

According to Mayer (2014), people learn better from words and pictures than from words alone, which enhances learning by combining words and pictures in multimedia content. This principle emphasizes that people retain information more effectively when visual elements accompany textual explanations.

c) Encouraging a deeper understanding of the material?

Yes	87
No	3
Neutral	10

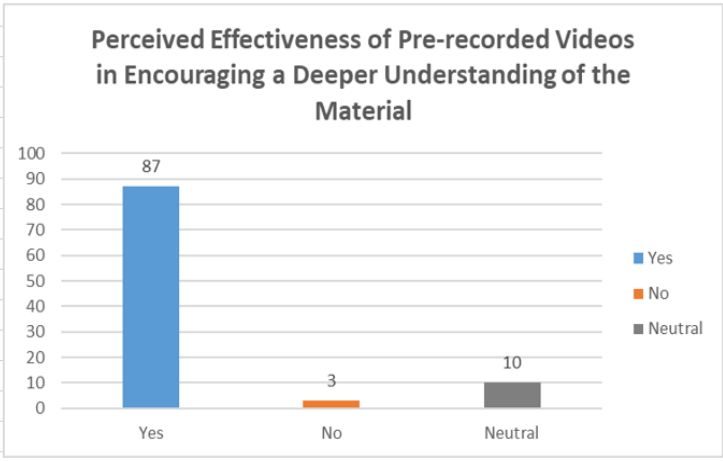


Figure 21: Encourage deeper Understanding of pre-recorded videos

Moreover, 87% of the surveyed lecturers agree that pre-recorded videos promote a deeper understanding of the material. In contrast, 3 respondents disagreed with this perspective, while 10 participants

remained indecisive whether pre-recorded videos can encourage a deeper understanding of the material.

By providing foundational content in pre-recorded video format, lecturers can ensure that the classroom experience is more focused on application-based activities and interactive learning, rather than one channel content delivery. In his study, Mayer explains that the brain takes in information and processes it in multiple channels, based on how that information is presented. The first channel is for visually represented material and the second is for auditorily represented material. When a learner is presented with visual information, including pictures, videos, charts, or printed words, all of that information goes into the visual channel and is processed there. Auditory information includes spoken words in a narration and other non-verbal sounds, and these are processed by the brain separately from the visual. As a learner is learning, the new material first gets logged in their sensory memory. For a brief moment, the image is captured in its entirety, or the spoken words are logged in their entirety. After that initial moment, the learner must begin to work with the information in order to process it and learn. This happens in the working memory.

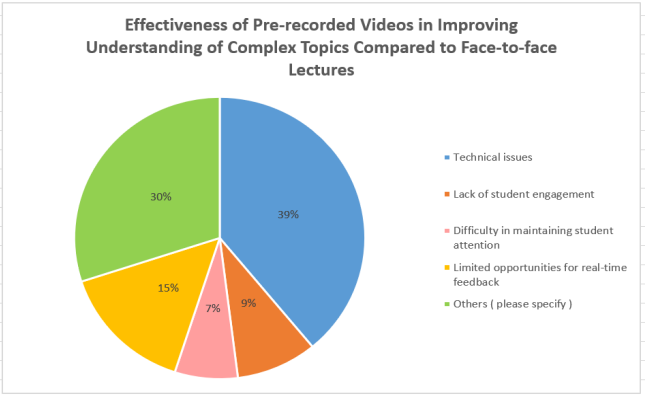
5.2.3 Supporting Students with Different Learning Paces

One of the key challenges in any classroom is accommodating students who learn at different paces. In traditional, face-to-face lectures, audio channel is usually in use; this indicates that all students are expected to absorb information at the same rate, often leaving slower learners behind or faster learners disengaged.

Pre-recorded video content enhances two key learning channels—audio and visual—promoting student engagement by catering to individual preferences in learning styles. This underscores the importance of integrating multimedia into educational practices. Also, according to Mayer, R. E. (2014), individuals should actively engage in the learning process rather than passively receive information.

Figure 22: Effectiveness of pre-recorded video in improving understanding of Complex topics compared to face-to-face lecturers.

5. What challenges have you encountered when using pre-recorded video in your teaching?	
Technical issues	39
Lack of student engagement	9
Difficulty in maintaining student attention	7
Limited opportunities for real-time feedback	15
Others (please specify)	30



The findings reveal that while numerous lecturers encounter difficulties in engaging students with pre-recorded content, 39 respondents cited technical issues (see Figure 22), 9 indicated a lack of student engagement, 7 struggled to maintain student attention, and 15 noted limited opportunities for real-time feedback. Additionally, 30 participants reported other challenges, including a lack of training in using pre-recorded videos and related tools such as Montage and editing software. This will be discussed further in the thematic analysis section 5.6.2. Some expressed that they did not use pre-recorded videos in their teaching, while others stated they had no problem with using them. Notably, the majority of lecturers assert that the blended learning approach enhances students' ability to recall, understand, apply, and analyze information. This aligns with a study by Garrison and Vaughan (2008), which found that blended learning environments significantly enhance student engagement and improve learning outcomes by integrating various instructional strategies.

The pre-recorded video is customized to be watched either before, during, or after the lesson depending on the lecturer's lesson, objectives, and the demand of the subject content lecturers can also use class time

more effectively by offering personalized support to students who struggle with the content. While faster learners can progress independently through the material, lecturers can devote additional time and resources to those who need more help. This dual approach benefits all students, promoting a more individualized learning experience that can improve overall outcomes.

For example, students can be required to watch pre-recorded videos before coming to class. And during the class session, the lecturer can focus on clarifying doubts, encouraging discussions, or organizing hands-on activities that build on the video content. Additionally, after the class, the pre-recorded video can be made available to students for review, helping those who may need a second or third viewing to fully grasp the material.

5.2.4 Promoting Active Learning and Engagement

A major challenge in traditional lectures is maintaining student engagement, especially in large classes where direct interaction between students and lecturers is limited. The use of pre-recorded videos offers opportunities to promote more active learning, as lecturers can use the pre-recorded videos as a base for discussion, group work, and critical thinking exercises during live sessions.

6.How do you think combining pre-recorded video in conjunction with face-to-face lectures affects overall student engagement?

Significantly decreases engagement	10
Decreases engagement somewhat	11
No effect on engagement	35
Increases engagement somewhat	20
Significantly increases engagement	24

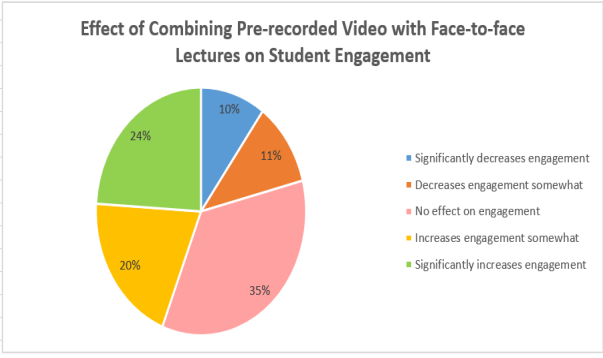


Figure 23: Student Engagement With Pre-recorded Materials

The findings reveal that 24 lecturers believe that pre-recorded videos significantly increase student engagement, while 20 indicated that they somewhat increase engagement. This suggests that, when used effectively, pre-recorded content can foster greater participation and interaction among students. Lecturers can encourage active learning by using pre-recorded video content as a springboard for classroom activities.

For example, lecturers can pose questions or initiate discussions at key points in a video, encouraging students to reflect on and apply what they've learned. Group activities based on video content can foster collaborative work, which strengthens both students' understanding of the material and their communication skills. Additionally, interactive tasks like quizzes or problem-solving exercises can be embedded within videos to assess comprehension and promote critical thinking.

By controlling and managing lessons effectively, lecturers can use a blended learning approach that incorporates various teaching tools to address individual learning differences. Student outcomes from pre-recorded videos, quizzes, and interactive activities provide valuable feedback, enabling lecturers to refine and improve teaching materials based on students' responses. Leveraging different learning styles—such as auditory through discussions and tactile through experiments and group activities, alongside visual learning through videos—enhances students' critical thinking, understanding, and engagement.

In traditional lectures, the focus is often on the lecturer delivering information in a one-way communication. However, blended learning allows for a more student-centered approach, where students are actively involved in the learning process. By combining pre-recorded videos with live discussions and activities, lecturers can maintain students' attention and foster a more dynamic learning environment.

Despite these advantages, the findings also reveal several challenges: 10 respondents indicated that combining pre-recorded videos with face-to-face lectures significantly decreases engagement, while 11 participants felt it somewhat decreased engagement. Notably, 35 respondents expressed that there is no significant engagement at all. This suggests a possible lack of knowledge regarding how to effectively

integrate technology with traditional teaching methods. Additionally, the age and limited experience of some lecturers may hinder their ability to successfully combine pre-recorded video content with interactive activities in face-to-face lectures, ensuring that pre-recorded videos are used as a tool for promoting active learning, rather than simply as a replacement for traditional lectures, is key to overcoming this issue.

Blended learning, with its integration of pre-recorded video content and traditional face-to-face teaching, offers significant opportunities for addressing student needs and accommodating individual differences. Data analysis underscores the potential of pre-recorded videos to support diverse learning styles, allow students to learn at their own pace, and promote active learning. However, for blended learning to be truly effective, lecturers need adequate training and support to overcome challenges and fully integrate pre-recorded video content into their teaching. By doing so, they can create a more inclusive, flexible, and engaging learning environment that benefits all students.

5.3.1 Enhancing Teaching Styles Through Pre-Recorded Content

Pre-recorded videos offer a powerful avenue for lecturers to refine and develop their teaching methods. It not only provides opportunities for lecturers to critically evaluate and improve their instructional styles but also encourages experimentation and innovation in classroom delivery.

5.3.2 Opportunities for lecturer Development

The integration of recorded lectures enables lecturers to review their own teaching styles, which can lead to meaningful professional growth. As Schön (1983) emphasized in his work on "reflective practice," reviewing one’s teaching methods and delivery can prompt self-improvement and heightened awareness of instructional effectiveness. When lecturers observe their recorded sessions, they gain insights into areas that may need clarification or additional resources to aid student understanding.

Furthermore, student interactions during playback sessions—where a lecturer can pause for questions and discussion—can reveal unanticipated questions or misconceptions, ultimately enriching the

lecturer's perspective on student needs. According to a study by Boud and Molloy (2013), feedback loops in teaching can significantly improve instructional quality, as students' immediate reactions to the content highlight areas for refinement. This reflective process aligns with the principles of formative feedback, where continuous adjustments are made based on observations and student input.

5.3.3 Innovation in Classroom Delivery

Pre-recorded videos enable lecturers to explore different teaching approaches, such as the flipped classroom model, where students engage with content before class, allowing in-person time for interactive discussions and problem-solving activities. This shift enables lecturers to use face-to-face sessions more effectively, focusing on higher-order thinking skills as suggested by Fisher et al., (2021).

Technology integration in teaching also empowers lecturers to enrich lessons with multimedia presentations, infographics, and interactive activities, creating a more engaging and diverse learning environment. Studies by Mayer (2005) on multimedia learning underscore that students tend to achieve better outcomes when exposed to varied instructional materials that stimulate different senses, making pre-recorded videos an ideal tool for fostering engagement.

5.3.4 Encouraging Continuous Improvement

The adaptability of pre-recorded content allows lecturers to keep pace with evolving pedagogical practices. In a field where educational techniques and student expectations continually change, videos can be easily updated to align with current standards and learning objectives. This adaptability creates a continuous learning cycle, not only for students but also for lecturers who regularly update their content and teaching methods to reflect the latest educational research and student needs.

By integrating pre-recorded videos into the curriculum, lecturers can foster a dynamic environment that emphasizes continual growth and responsiveness to feedback, contributing to a richer, more interactive learning experience for students.

5.4.1Potential Challenges and Limitations of Using Pre-Recorded Video Content

5.4.2 Generational and Training-Related Barriers

A significant challenge in integrating pre-recorded video content lies in generational differences in technology adoption among faculty members. Data from the current study reflects this trend, particularly among participants aged 56 and above, who demonstrated a lower inclination toward adopting new technology. This was evident in their responses to survey questions highlighting the lack of usage or preference for traditional teaching methods over technological tools. For example, older lecturers often cited insufficient training or discomfort with digital tools as barriers to adoption, corroborating findings by Tomczyk et al. (2023), which revealed a similar hesitance among older lecturers to embrace new technologies.

In contrast, younger lecturers (aged 30–40) were more likely to integrate technology into their teaching, indicating a generational gap influenced by familiarity and confidence in digital tools. These differences emphasize the critical role of targeted institutional support, such as age-specific training programs, in bridging this divide. By addressing the unique needs and concerns of older faculty members, institutions can promote equitable digital engagement across all age groups, ensuring that no lecturer is left behind in the shift toward blended learning approaches

5.4.3 Impact of Specialization on Technology Adoption

The relevance of technology in teaching varies considerably across disciplines, affecting its adoption rate. For instance, theoretical specialties, such as math or English) modules that rely on lecturer's explanation, writing texts, or studying mathematical problems, lecturers from their perspectives think that they only need the traditional teaching method. This perceived disconnect can lead to lower interest in training or experimentation with technology in these fields.

Findings indicated that lecturers specializing in technology-related fields, such as IT and computing, are more likely to incorporate digital tools into their teaching. Younger lecturers also tend to be more inclined

to use technology compared to their older counterparts. In contrast, lecturers in theoretical subjects, such as English and Arabic, show less frequent use of technology in the classroom, which may reflect differing views on its relevance to their teaching practices (Kumi-Yeboah et al., 2020).

5.4.4 Technical Issues and Accessibility

Access to quality recording equipment, appropriate recording video software, and reliable internet remains a significant challenge in implementing video content effectively. Limited technical resources can impair a lecturer's ability to produce high-quality videos, . This is a particular challenge in blended learning settings, as studies highlight the importance of equitable access to educational technology for effective learning outcomes (Selwyn, 2010). Additionally, lecturers need practical training on recording, editing, and correcting errors in videos to enhance quality and ensure clear, engaging content delivery.

5.4.5 Maintaining Student Attention

Pre-recorded videos can risk reduced student engagement compared to live teaching, as the lack of real-time interaction might lead to passive viewing. Research by Mayer (2009) on multimedia learning suggests that interactive features, such as in-video quizzes or prompts, can significantly improve attention and retention. To keep students engaged, lecturers can add such elements, or integrate follow-up Q&A sessions to encourage active participation.

5.5.6 Balancing Traditional and Video-Based Teaching

Introducing pre-recorded videos without diminishing the importance of in-person teaching is essential. A successful blend of teaching styles requires that video content supplements rather than replaces traditional instruction. Effective teaching through blended methods lies in balancing passive video learning with interactive class activities that reinforce understanding. Research suggests that blended learning should ideally complement active, face-to-face engagements, facilitating deeper learning (Garrison & Vaughan, 2008).

5.6.1 Thematic analysis

Thematic analysis is a qualitative approach used to identify and interpret patterns or themes within data (Braun & Clarke, 2006). This

systematic and flexible method is well-suited for studies involving large textual datasets, such as survey responses and open-ended questionnaires. According to Byrne (2021), thematic analysis follows six distinct phases: familiarization with data, coding, theme identification, theme checking, defining and naming themes, and writing up.

In this study, Braun and Clarke's (2006) framework was applied to analyze lecturers' responses regarding the adoption of pre-recorded lectures. The data was coded and grouped into meaningful themes, providing insights into the impact of pre-recorded lectures on lecturers' interactions, student engagement, and instructional quality. Thematic analysis facilitated a deeper understanding of how pre-recorded videos complement traditional teaching methods, revealing five key themes: Efficiency and Flexibility, Technology as a Teaching Aid, Barriers to Adoption, Student Engagement, and Professional Development. These themes highlight the diverse influences on lecturers' use of pre-recorded content and offer practical suggestions for improving hybrid teaching methods in higher education.

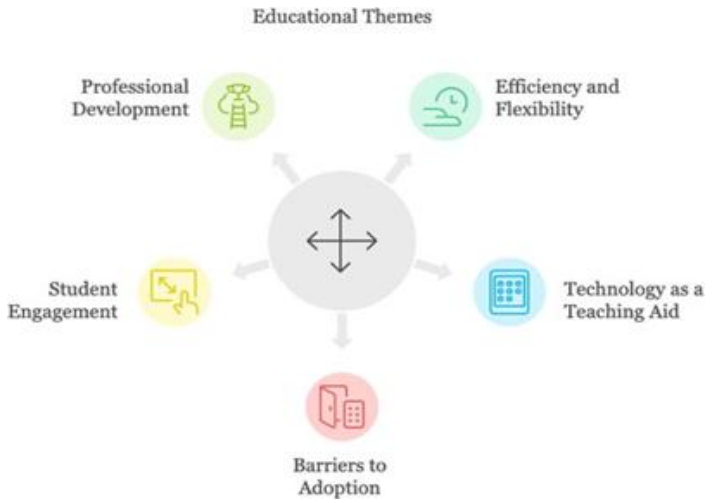


Chart 1. Types of Educational Themes

The themes were reviewed to ensure they accurately represented the data and were distinct from each other. For instance, "Efficiency and Flexibility" was refined to emphasize the benefits of time management,

while “Barriers to Adoption” focused on limitations and challenges (Doe & Smith, 2024).

5.6.2 Thematic Analysis of Lecturer Comment

The open-ended questions, including Question 2, Question 5, Question 7, and Question 9, were designed to capture participants' detailed comments and reflections, providing deeper insights into their experiences and perspectives.

2-Question: What motivated your decision to integrate pre-recorded lectures into your teaching?

-Motivation for Integrating Pre-recorded Lectures

Analysis	Comment	Theme	Category
Pre-recorded lectures allow for diversified teaching approaches that align with modern learners' preferences. They enable asynchronous learning, catering to different paces and styles, and improving engagement and interaction.	*"I want to make the content more varied and engaging for students."*	Making content more varied and engaging for students	Enhancement of Student Engagement
Lecturers see innovation as key to staying relevant. Experimenting with pre-recorded lectures helps evaluate their impact on learning, fostering professional curiosity and a commitment to improving outcomes through evidence-based practices.	*"I am keen to experiment with new teaching methods and explore how they affect student learning outcomes."*	Openness to new teaching methods	Experimentation and Innovation in Teaching
Pre-recorded lectures are seen as tools that enhance efficiency and facilitate flexible teaching without compromising the lecturers control over curriculum delivery and classroom dynamics. They complement rather than replace traditional roles.	"While I believe the lecturer's role is essential in delivering content, technology is a valuable complement to the educational process."	Balancing technology with lecturer authority	Lecturer Autonomy and Technology as a Supportive Tool

Analysis	Comment	Theme	Category
Multimedia tools like pre-recorded lectures enhance comprehension by making abstract concepts more tangible. Visual aids appeal to diverse learners and provide innovative ways to present and reinforce information in engaging formats.	*"Visual aids, in all forms, are powerful tools for enhancing teaching and learning."*	Importance of visual aids in education	Visual Learning Tools
Adapting to new methods like pre-recorded lectures ensures lecturers remain relevant in their field. Continuous learning and embracing evolving practices foster both career growth and effectiveness in meeting modern educational demands.	*"For career advancement, faculty members are required to stay current with developments in educational practices."*	Staying current with educational trends	Professional Development and Adaptability

5 - Question: What challenges have you encountered when using pre-recorded video in your teaching?

-Comments on Challenges

Analysis	Comment	Theme	Category
This shows a gap in professional development. lecturers face difficulties in effectively using advanced tools like editing software or pre-recorded video platforms. This underscores the need for structured training to build confidence and competency.	*"Lack of training for using pre-recorded video and others such as Montag, Editing."*	Insufficient training for using pre-recorded tools	Lack of Professional Development and Technical Skills

Analysis	Comment	Theme	Category
Some lecturers may resist adopting new technologies due to unfamiliarity, lack of trust in the effectiveness of the method, or comfort with traditional approaches. This reflects the challenge of encouraging cultural or mindset shifts in teaching practices.	*"I didn't use pre-recorded video in my teaching."*	Hesitation to integrate technology into teaching	Resistance or Inadequate Adoption of Technology
This indicates that not all lecturers encounter difficulties. Some are comfortable and adept at integrating pre-recorded lectures, which may serve as examples or mentors for peers less confident in adopting such tools.	"*I have no problem with using pre-recorded video."*	Positive experiences with pre-recorded technology	Comfort and Ease with Technology
The lack of regular technology usage points to broader institutional or systemic issues. lecturers may lack the infrastructure, resources, or support to fully integrate digital tools, which limits the potential of pre-recorded videos as a teaching aid.	*"Lack of use of technology."*	Limited use of technology in general	Insufficient Technological Integration

7- Question: In your experience, do students actively engage at first with pre-recorded video materials before they start with traditional (face-to-face) teaching method during the lecture?

-Comments on Engagement

Analysis	Comment	Theme	Category
This comment reflects a reluctance to incorporate pre-recorded videos into teaching practices. The individual may feel uncomfortable with the technology or prefer traditional methods, showing a barrier to adopting new pedagogical tools.	*"I didn't use the pre-recorded video method in my teaching"*	Resistance to Technology	Engagement

9- Question: How has the use of pre-recorded lectures influenced your teaching methods during face-to-face sessions?

- Comments on Teaching Adjustments

Analysis	Comment	Theme	Category
This comment suggests a decision to not integrate pre-recorded videos into the teaching approach. The reluctance may stem from discomfort with technology or preference for traditional teaching methods.	*"I didn't use the pre-recorded video method in my teaching"*	Technology Integration	Teaching Adjustments
This comment shows an effort to better manage classroom time by using pre-recorded videos for content delivery outside of class. This shift allows for more interactive and engaging in-person activities during face-to-face sessions.	*"Time management in the classroom"*	Classroom Efficiency	
The use of pre-recorded lectures reduces repetition in live sessions, optimizing class time for deeper learning. This approach encourages more active, application-based teaching, focusing on reinforcement.	*"Decrease repetition for teaching content"*	Content Reinforcement	
This comment demonstrates a commitment to diverse teaching strategies. Pre-recorded videos are used as one tool among others to reach different learning styles and promote varied engagement methods.	*"I encourage diversity in using different teaching tools to deliver my teaching content"*	Diverse Teaching Approaches	

Analysis	Comment	Theme	Category
The integration of pre-recorded content provides more opportunities for students to engage with one another in conjunction with the lecturer. This approach focuses on fostering a collaborative, participatory classroom atmosphere.	*"Increase student interaction"*	Promoting Student Engagement	
The mention of enthusiasm points to how pre-recorded videos can energize lecturers by reducing the burden of content delivery, leading to increased motivation and more interactive teaching during in-person sessions.	*"Enthusiasm"*	lecturer Engagement & Motivation	lecturer Motivation
The use of pre-recorded videos may prompt a reevaluation of assessment practices, as it allows students to engage with content at their own pace. This flexibility could influence how lecturers assess comprehension and participation.	"Evaluation"	Evaluation and Reflection	Assessment & Reflection

6.1 Conclusion

The findings from this study underscore the considerable advantages of integrating pre-recorded videos alongside traditional teaching methods. This blended approach offers a unique opportunity to enhance the educational experience by allowing lecturers to focus more effectively on interactive and application-based activities during class time, which promotes a deeper understanding of the material among students. By using pre-recorded content to address foundational or repetitive information, lecturers can improve the quality of content delivery, as they have more opportunities to refine their teaching materials and address diverse learning needs. Additionally, this method aligns with active learning principles, fostering higher levels of student engagement and participation.

Future Research Directions

While this study illustrates several benefits of blended learning, further research is needed to explore its long-term effects on student outcomes, particularly regarding critical thinking, retention, and application of knowledge. Investigating how these methods influence learning outcomes across different education levels and disciplines may reveal insights into the scalability and adaptability of blended learning in various contexts. Such studies could provide a more comprehensive understanding of the broad potential of pre-recorded video content and its integration into diverse educational settings.

Recommendations

Based on the findings of this study, the following recommendations are proposed to enhance the integration and effectiveness of pre-recorded video lectures in higher education:

1. Provide Comprehensive Training for Lecturers
   Institutions should offer targeted training programs for lecturers, particularly those from non-technical disciplines and older age groups, to improve their confidence and competence in using pre-recorded video technologies. These programs should cover:
   - Basics of video design, creation, editing, and production software such as Camtasia recorder.
   - Best practices for integrating visuals, text, and multimedia into educational content.
   - Techniques for enhancing engagement and interactivity during video-based lessons.
2. Standardize the Design and Quality of Pre-Recorded Videos
   To maximize their effectiveness, pre-recorded videos should follow standardized design guidelines that emphasize:
   - Clear and concise presentation of content using tools like PowerPoint or Prezi.
   - Integration of relevant visuals, graphs, and video clips from reliable sources to support the learning objectives.

- A well-prepared script or scenario to ensure the content flows logically and is easy to follow.
- High-quality audio and visual production, with attention to eliminating distractions such as background noise and repetition.

3. Encourage Hybrid Teaching Strategies
   Lecturers should be encouraged to use pre-recorded videos as a complement to live teaching, not as a replacement. This approach allows them to:
   - Use videos for delivering foundational or repetitive content.
   - Focus on interactive and hands-on activities during face-to-face sessions, fostering deeper student engagement.
   - Pause videos at key points to prompt discussions or answer student questions, ensuring active participation.
4. Develop a Centralized Repository for Pre-Recorded Content
   Institutions should create a centralized repository where lecturers can store, share, and access pre-recorded videos. This repository would:
   - Facilitate the reuse of high-quality instructional videos across different courses and semesters.
   - Encourage collaboration among lecturers by allowing them to share best practices and content.
   - Serve as a resource for new lecturers to quickly adopt video-based teaching methods.
5. Continuously Evaluate and Update Video Content
   To maintain relevance and effectiveness, lecturers should regularly review and update their pre-recorded videos. This includes:
   - Incorporating new research findings, case studies, or technological advancements into the content.
   - Collecting student feedback to identify areas for improvement in both the video content and its delivery.
   - By adopting these recommendations, institutions can optimize the use of pre-recorded video lectures, enhancing both teaching efficiency and student learning outcomes in higher education.

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