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Engaging Learning Experience: Enhancing Productivity Software Lessons with Screencast Videos

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Abstract - The use of screencast videos can improve the effectiveness of the teaching and learning process, whether it is face-to-face or online. Screencast videos are digital resources that capture the computer screen and create an audio-visual experience, and they can be shared online to aid the learning process. It eliminates the need for educators to repeat information multiple times and creates an uninterrupted personalised learning environment for the students. This method of learning gives students a more personalised sense, as if they were given one-on-one guidance from the educator, with students having access to the educator and receiving immediate feedback during the class session. The purpose of this study is to investigate how well students learn when screencast videos are used as instructional materials in lab classes. The report gives the opinions of 34 business programme students regarding their experience learning basic word processing, presentation slides, and spreadsheet creation using screencast recordings. This is a descriptive study with data collected using a Likert scale questionnaire. According to the study's findings, students responded favourably to this technique. Students stated that they can study more effectively and complete their work faster when there is no interruption. They were able to fully concentrate on the videos and effortlessly follow the instructions. When compared to traditional instructor-led lab programmes, the time required to complete the video lessons and supplementary challenge questions was significantly reduced. They also appreciated the educator's immediate feedback because the educator's time was spent facilitating them rather than teaching.

Keywords—screencast video, learning experience, productivity software, online learning, blended learning

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I. INTRODUCTION

The Coronavirus (COVID-19) outbreak in December 2019 disrupted all aspects of our lives to the point where the World Health Organization (WHO) proclaimed COVID-19 a pandemic in March of 2020, as seen in the Centers for Disease Control and Prevention timelines [1]. The pandemic has forced the suspension of ordinary commercial, social, and educational activity in order to prevent the spread of this illness. To avoid disruptions to the teaching and learning processes, the school system was compelled to rely entirely on the Internet. With the announcement of the closing of learning institutions, there is only one solution: online learning. To ensure the continuity of teaching and learning activities for both educators and students, traditional face-to-face classes have been relocated to online platforms. Online learning is a way of learning that takes place in part or totally on the Internet. Online learning can be provided in synchronous, asynchronous, or hybrid learning modes [2]. Learning occurs in real time in a synchronous learning environment whereas asynchronous learning environments are those in which students learn independently without the presence of educators or other peers. Students in a hybrid method receive instructions both in person and online. Despite the fact that online learning has been around for a long time, it has not been made mandatory at educational institutions. Although universities and colleges have their own Learning Management System (LMS), it is primarily used to post learning materials such as notes, assignments and quizzes, and not to conduct lessons. LMS is a collection of tools for students, educators, and administrators that require some form of verification to allow the use of features for different types of users [3].

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Only when face-to-face learning was disrupted by the COVID-19 outbreak did the LMS and other online platforms go the further mile to allow lessons to be conducted online.

The rapid growth of technology has resulted in swift shifts in the teaching and learning environment. These new technologies are becoming more accessible and widely employed due to their flexibility, efficiency, and efficacy, as well as their lower cost [4]. To ensure the effectiveness of the online learning environment, students must be able to engage and be motivated in the learning process. Effective and appropriate technologies and platforms must be used to ensure that students remain persistent, focused, and engaged with the lessons even when educators and classmates are not physically present. Even though many studies have concluded that online learning lacks the interaction and social presence that students receive from educators and their peers during face-to-face learning, it remains the preferred method of delivery because it is cost effective and convenient, especially in emergency situations, allowing students to continue their learning process [4]. In a typical classroom setting, whether online or in person, the educator will teach, and students will take notes or follow the instructions outlined by the educator. Some students would struggle to follow the steps demonstrated by the educator in a classroom with a mix of fast and slow learners. Some students may overlook or forget the steps and require the educator's aid. As a result of this situation, the entire class is paused while the educator assists those students who require assistance. The remaining students may become bored and lose interest in continuing the lesson. This is common in courses dealing with software usage, whereby it is very important to follow steps in order to achieve an end result.

This paper examines the use of screencast videos in a software application learning course to support online learning in higher education. The study proposes an integrative theoretical research model based on Technology Acceptance Model (TAM) and Theory of Planned Behaviour (TPB). TAM, created by Davis in 1989, investigates user acceptance and adoption of technology by taking into account perceived usefulness and perceived ease of use [5]. In TAM, perceived usefulness is a fundamental concept whereby people are more willing to adopt and use technology if they think it would improve their performance or make tasks easier. The adoption of screencast videos in lessons will depend on how well the students believe the videos can help them understand difficult concepts or make learning easier. Another essential TAM construct is perceived ease of use. It reflects user's perception of how effortless it is to use a technology. Students will be more inclined to integrate screencast videos into their learning process if they are easy to access and navigate. On the other hand, TPB suggested that individual behaviour is influenced by three primary factors: attitude, subjective norms and perceived behavioural control [6]. These factors collectively shape an individual's intention to engage in a specific behaviour, which in turn predicts the likelihood of actually engaging in the behaviour. Attitude reflects an individual's overall reaction, favourable or unfavourable, or how they view the behaviour. Students' attitude towards using screencast videos are shaped by their beliefs about the benefits (perceived usefulness) and the simplicity (perceived ease of use) [7]. Positive attitudes increase the likelihood of forming a positive intention to perform the behaviour. Besides that, technology accessibility can influence perceived behavioural control. Students' perceptions of available resources and support influence their perceived control over using the screencast videos. It is also important to note that user satisfaction is closely related to the outcomes of perceived usefulness and perceived ease of use. When students find screencast videos beneficial and easy to use, they are more likely to be satisfied with their learning experience. This aligns with the result of the behaviour in TPB. When students perceive positive outcomes from using screencast videos, their satisfaction with the learning process will be higher, thereby reinforcing their adoption. In summary, both TAM and TPB provide a comprehensive framework to explain how perceived usefulness, perceived ease of use, attitude, technology accessibility, and user satisfaction are interconnected when using screencast videos in lessons. These models highlight the connective and attitudinal processes that influence students' behaviour and perceptions in adopting and using technology for learning.

The objectives of this study are:
(1) To determine students' acceptance towards the use of screencast videos in lab classes; and
(2) To explore students' satisfaction in using the screencast videos in lab classes.

II. LITERATURE REVIEW

A. Online Learning

Online learning is the use of the Internet or other web-based technology to support the teaching and learning environment. Communication and multimedia tools such as emails, chats, and videos help the online learning environment [8]. Online learning is also defined as a contemporary technique for delivering materials to remote audiences by use of the Internet [9, 10]. Using various devices like laptops, tablets, and mobile phones in real-time or delayed time, online learning enables students and educators to interact with each other online without any time or geographic restrictions in a cost-effective way [11, 12]. The development of streaming media

technology and the accessibility of high-speed broadband have made it possible for video-based educational resources to be made available [13]. Online learning will benefit students when the proper tools and technological know-how are available [14]. The situation can be rather challenging if there are no or few resources available [15].

B. Screencast Video Usage in Online Learning

The term "screencast" first appeared in the early 2000s. In an article published in InfoWorld, screencast was defined as "narrated movies of software in action" that are used to explain and demonstrate tips for using applications, recording, and sharing demonstrations of products [16]. Screencast technology allows the creation of video recordings of computer screen activities. These recordings are frequently supplemented by audio narration or subtitles, making them perfect for creating educational movies and presentations. The screen recordings not only explain the features, but also how to use them. It teaches viewers how to begin, complete, and end a specific task. Screencasts are valuable instructional forms that can be utilised for tutorials, demonstrations, digital storytelling, and narrated presentations [17, 18].

Since the COVID-19 pandemic, the use of video and audio has played an important role in assisting with the delivery of course materials. Using movies and audio, students may better visualise topics, steps, and examples, hence making them an important aspect of the educational process [19]. Online learning frequently employs text-based instructions and manuals. However, because not every movement can be precisely translated into writing, this method of transmitting information may fall short of capturing the knowledge, abilities, or experiences that the educator is intending to convey. Videos, as opposed to face-to-face or verbal interactions, are believed to be an excellent medium for communicating and sharing information since they overcome geographical boundaries and allow students to learn at their own pace and comfort [17]. Videos have an edge over other methods of delivery such as static images or text-based instruction since they present the content using dynamic motions or changes of the computer screen. The viewer can gain a deeper understanding because they can observe the continuous response to each action.

Besides that, videos also give the viewer the ability to control the viewing of the contents by fast forwarding, pausing, and replaying sections of the video as needed, which helps in quick review and also aids in improved understanding of the digital information [20]. Watching videos can stimulate multiple senses. It is believed that by combining audio and graphical presentations, videos can enhance how information is delivered and received. These characteristics can pique the viewer's interest and serve as motivation to improve one's ability to absorb knowledge [21]. Videos typically include easy-to-follow steps or procedures for a myriad of purposes, such as learning to dance, cook, write programmes for applications and websites, and learning how to assemble hardware such as furniture, computers, and even cars. The demonstration in the video is not only easily replicable by viewers, but the commentary also provides a greater comprehension of each of the steps shown. According to a study on learning calculus via ScreenPal (formerly known as Screencast-O-Matic) conducted in Indonesia, while developing educational videos, the message to be transmitted must be clear and precise, user-friendly, have good visualisation, and be accessible at any time and from any location [22]. Previous studies have shown that videos are more of a supplement tool to support the learning of specific topics exclusively [23]. These could be the result of a failure to develop appropriate video materials, such as delivering a large amount of information in a short period of time, which may prevent learning [24].

Prior to the COVID-19 pandemic, videos were widely used to promote learning as society switched to the concept of life-long and on-demand learning [25]. YouTube, Khan Academy, Coursera, Udacity, and many other platforms make educational video resources available. Screencasting is the process of digitally recording audio and video of a presenter's activities and narration on a computer screen [26]. Its functions include the ability to record the computer screen using a screen recording tool in order to demonstrate how a software is used or to display the stages in problem solving. It can comprise process steps, instructional lectures, feedback presentations, and a method to encourage student collaboration [27]. Screencasting is extensively used and becoming increasingly popular not only among expert users but also among beginners keen on learning a new skill. YouTube is one of the most popular platforms for finding a variety of screencast tutorials. Screencasts are a go-to option because of the visual guidance and ease of learning, and have been implemented in a variety of educational settings, including mathematics [17, 22], computer science [18, 26], and statistics [23, 28], to name a few.

Screencasting is ideal for online learning because it allows the educators to record their screen while explaining the steps. The combination of audio and video can improve the online learner's experience when compared to a typical text-based tutorial [29]. Video-based content is more natural, simpler, and has more clarity than text-based content [30]. Prior studies have shown that videos are comparable to physical lessons and have positive effects on

students' learning [31, 32], for example, the movement and audio in presentations give a better learning experience for learners than text-based instructions [33]. Teaching a big group of students how to use a specific software in a traditional classroom setting, whether online or face-to-face, can be challenging because students' input and processing capacities vary. Pausing and repeating parts of a lesson might be demotivating for better learners because they must wait to proceed with the next steps. Slower students, on the other hand, may become disoriented if they are unable to follow each step of completing specific assignments. Additionally, in a large classroom, it might be difficult to address each student's issues, convey knowledge, and at the same time, discover ways to build excitement and motivate students [34]. To address this issue, screencasting videos will allow each learner to learn at their own speed. If they do not follow the procedures in the videos, all they have to do is pause and return to the relevant area of the video. The educators will serve as a facilitator in this case.

It is also revealed that video-based training benefits students who have less prior understanding of the course contents [34]. Any steps or procedures to be learnt can be demonstrated using working examples that emphasise the sequence of steps required to perform a task, which can be easily demonstrated using screencast to assist novice learners. At the same time, digital recordings also have a favourable impact on students with a technological background [35]. It is also found that when the duration of the screencast is brief, it has a greater impact on students' learning and absorption because it allows students to easily identify the essential information within the video [35, 36]. In a study of 41 Calculus students who used ScreenPal, a screencasting software, it was discovered that this method of learning has a positive effect on reducing the students' mathematics anxiety levels [22].

Despite the fact that screencasts have been widely used, the bulk of research have demonstrated that they are used as additional or supporting course material [23]. It is what students use for pre-class or post-class lessons so that the in-class or physical lecture sessions can be conducted with only a basic understanding of the contents. For this research, the screencast videos are being used within the lab session. Online learning has drawbacks as well. Other researchers reported on technological issues encountered by students during online lessons in their studies [37, 38]. Technical issues such as disruption of Internet connection, lagging or slowness of Internet connection, inability to log-in into specific online platforms for online or face-to-face classes, and devices such as laptops and computers that are not in good working condition, to name a few, would all have an impact on the lessons for at least a few students during each lab session. On top of that, poor audio and video quality, and errors when downloading materials can be major setbacks during online classes [12]. These issues arise for both the educator and students. Once the challenges are overcome, the remaining time is just adequate to convey the lesson's substance. Due to the limited synchronous time available, additional questions or problems that students may face cannot be addressed. This frustrates both educators and students because the lessons may not reach all the students.

Educators also face the challenge of answering each student's question during lab sessions because the goal is to complete the module for each lab session. Even if the educator pauses the lesson to address questions from a specific student or groups of students, the lesson progress for other students will be disrupted. Once the entire module has been completed during the lab session, there will be no time for the educator to assess or evaluate the work of students in order to provide relevant feedback in the form of solutions to their mistakes or words of motivation and encouragement to those who have completed their work well. Feedback is critical since it is the educator’s remarks on the students' work [39], as well as valuable information on the accuracy of the performed activity [40]. Students feel let down when they do not receive timely feedback [41], which often results in an unsatisfying learning experience. Besides that, some of the issues about online learning include a sense of isolation, a lack of involvement, and a lack of timely or acceptable feedback. Due to the tone and inflection of the educator's voice, students preferred audio feedback over other forms of input [42]. Furthermore, it made the evaluation more personal and showed concern for the students. In line with this, educator feedback is vital in online learning since it facilitates the learning process and promotes student learning [43-45].

III. RESEARCH METHODOLOGY

This study used a survey research design to determine students’ acceptance and satisfaction with using screencast videos during their lab classes. The study is guided by the following research questions:
(1) To determine students’ acceptance towards the use of screencast videos in lab classes; and
(2) To explore students’ satisfaction in using the screencast videos in lab classes.

This study focuses on the Diploma in Digital Business students who enrolled in a course that requires them to attend lab classes to learn basic word processing, presentation slides and spreadsheet creation. The total number of students in this cohort was 34, with 9 male and 25 female students. The data was collected using an online Google Forms questionnaire that included quantitative and open-ended questions. The questionnaire employed a

five-point Likert scale with response options of "(1) Strongly Disagree", "(2) Disagree", "(3) Neutral", "(4) Agree" and "(5) Strongly Agree". A descriptive analysis technique was then used on the collected data.

A. Research Design

In order to create an effective screencast video, there are a few steps which needs attention:

1. The learning objectives
    - The videos must adhere to the course learning objectives.
2. Content creation
    - The contents must be divided into several smaller palatable sections.
    - A script or storyboard is created to organise the flow of information and visuals.
    - Identify necessary demonstrations or examples to illustrate key points effectively.
3. Choosing an appropriate recording software
    - Select a screen recording software that best suit the needs.
    - Many options are available such as ScreenPal, Camtasia and OBS Studio.
4. Recording the screen
    - Use the chosen screen recording software to capture the screen while demonstrating and explaining the steps.
    - Ensure that the audio and video are clear.
5. Review
    - Use video editing software to remove unnecessary parts, enhance visuals, add subtitles or annotations and improve the overall flow and presentation of the video.
6. Upload
    - The file format should be one that the students are familiar with and that is frequently supported by most video players. One example is the .mp3 file format.
    - There should be a dedicated and familiar site where students may readily obtain the files.

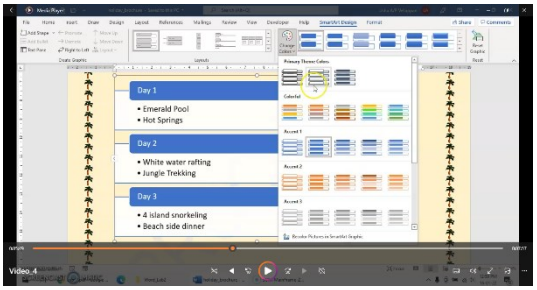
ScreenPal screen recorder was used for this study. The reason for this is that there is a free version available that allows recordings to be paused and edited while they are still being recorded. Another reason is that the recording time restriction in the free edition is fifteen minutes, which serves as a good reminder to keep the videos short. Prior studies found that students can better digest information and learn when videos are made in short segments [46, 47]. Each screencast video begins with the learning objectives before delving into each topic in detail, with no background music to ensure students do not lose attention and to reduce superfluous load [48]. In addition to the videos, a text version of the same topic was developed. The text version was uploaded as a PDF file.

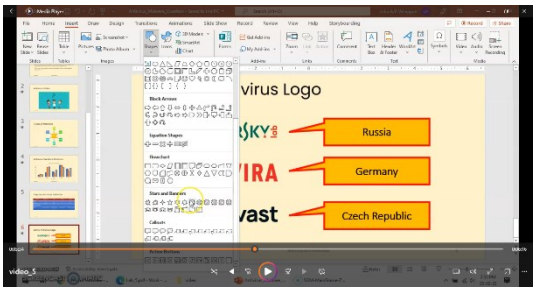
B. Research Implementation

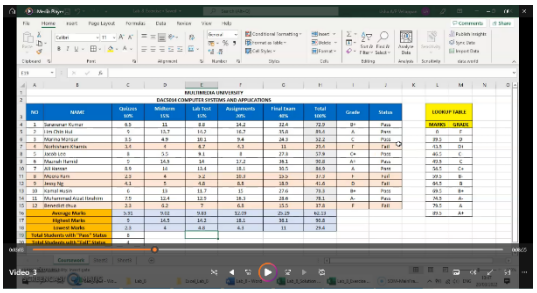
During each lab class, students will be instructed to download the videos and sample files from the LMS (refer Table 1). Each lab class duration will be two hours. There will be a minimum of 3 and a maximum of 5 videos for the students to learn from for each lab class.

Table 1. Topics Covered in the Screencast Videos

Sample Videos	**Video Contents**

	**Word Processing**
	• Lab 1
	  ○ Create a report using heading, paragraphs, tables, pictures and bullet points.
	• Lab 2
	  ○ Design posters using templates, pictures and shapes.
	• Lab 3
	  ○ Create a report with table of contents, header, footer and page numbers.

	**Presentation Slides**
	• Lab 1
	  ○ Determine layout setting, insert SmartArt graphics, charts, images and shapes, and apply transitions.
	• Lab 2
	  ○ Insert videos, tables, footer and slide number, apply animations, and use hyperlinks and action buttons.

	**Spreadsheet**
	• Lab 1
	  ○ Set excel interface, format cells and insert formulas.
	• Lab 2
	  ○ Use filters, sort data and apply conditional statements.
	• Lab 3
	  ○ Use VLOOKUP, IF functions, CountIF function and create charts.

Students will be tested with challenge questions after completing the video lessons (refer Figure 1). These questions will put their knowledge to the test based on what they learned from the videos. Each lab has a maximum of two challenge questions. This is consistent with a prior study that advocated integrating questions as an assignment in video-based classes, which may enhance students' enthusiasm to learn [48].

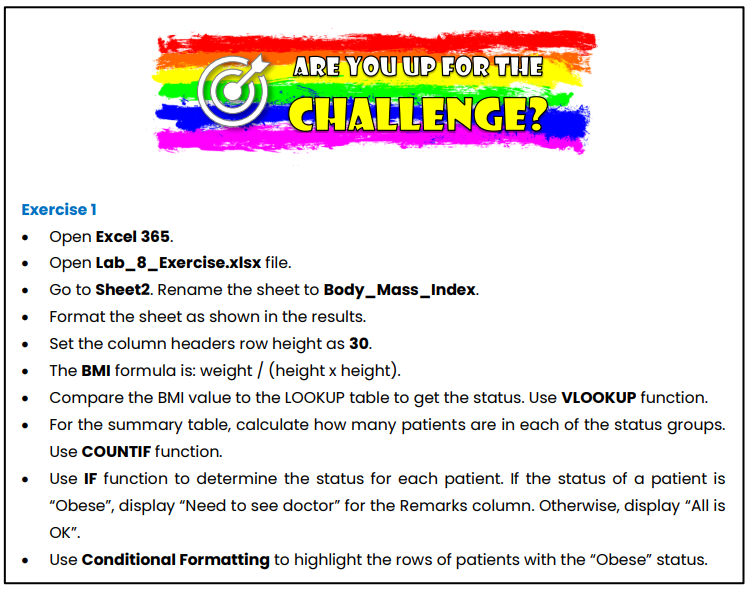


Figure 1. Example of challenge question.

When a student has finished all the questions, he or she will notify the instructor. The instructor will go through each activity completed by the student, followed by a brief question-and-answer session. This is done to demonstrate that the student understands how to use the software's features and how to complete specific tasks. Due to time constraints, bonding between each student and the instructor may be less likely in a typical instructor-led lab class where the instructor is teaching in the class. To address this issue, screencast recordings will allow the instructor to be mobile and on the move while still monitoring the students. Students may contact the instructor at any time if they require additional assistance or have questions. The question-and-answer session provides

students with feedback on how well they performed and where they need to improve. Many studies have found that educator feedback is a potent stimulant for improving students' academic motivation and performance [49-51].

IV. RESULTS AND DISCUSSIONS

The survey findings, as shown in Table 2 were analysed descriptively, which included the frequency, average, and standard deviation. The study's participants were all diploma students, with 73.5% being female and 26.5% being male.

Table 2. Perceived Usefulness

Part 1: Perceived Usefulness The degree to which you believe that using the video-based lab instructions enhances your understanding and learning efficiency.							
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
The video-based instruction enables me to learn more quickly.	1	-	-	11	22	4.56	0.79
The video-based instruction enables me to finish the given task more quickly.	-	-	1	10	23	4.65	0.54
The video-based instruction makes my learning more productive.	-	-	1	11	22	4.62	0.55
The video-based instruction shows me the steps for each task much clearer compared to the text-based manual.	-	-	-	9	25	4.74	0.45
I get more information when I view the videos than the text-based instructions.	-	1	-	9	24	4.65	0.65
The video-based instruction gives me more control on my individual learning speed.	-	-	-	9	22	4.56	0.66

Table 2 displays the survey findings based on the perceived usefulness of the screencast recordings. It clearly shows that, even though the students were provided a text version of the lab instructions, the screencast videos were able to show the steps to accomplish the tasks better (m=4.74). Students agree that screencast videos explain more than written instructions and allow them to complete activities more quickly (m=4.65). The survey also discovered that students could stay focused, making learning more productive, as evidenced by a mean of 4.62. With a mean of 4.63, students found the screencast video useful in their learning. This is supported by previous study on students' acceptance of audio and video teaching styles that perceived usefulness of the audio and visual teaching materials directly influences the students' acceptance of the materials [52].

Table 3. Perceived Ease of Use

Part 2: Perceived Ease of Use The degree to which you believe that the video-based lab instructions is easy to use.							
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
The narration/voice in the videos are easy to understand.	-	-	2	10	22	4.59	0.61
It is easy for me to pause and replay the videos at any time to aid my understanding.	-	-	-	8	26	4.76	0.43
I am able to watch the videos successfully every time.	-	-	-	11	23	4.68	0.47
I am able to present my work to the instructor easily during the online lab.	-	-	2	11	21	4.56	0.61

Table 3 shows the results of the survey in terms of usability. All students agreed that they could simply pause and replay the videos to better comprehend the actions demonstrated. Due to the clear voice and good narrative, the videos were easily understood by the students (m=4.59). The brief videos, which average 11 minutes and 57 seconds in length, obviously make it easy for students to view them from beginning to end (m=4.68). With an average mean of 4.66, students perceive the screencast video to be easy to use. Similarly, prior study found that the perceived ease of use of video-based learning had a significant influence on students' acceptance of the education materials in learning Economics [53].

Table 4. Attitude Towards Use

Part 3: Attitude Towards Use The degree to which you experience positive feelings when using the video-based instructions.							
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
I believe that using the video-based instruction is a good idea.	-	-	-	11	23	4.68	0.47
I believe that using the video-based instruction makes learning more interesting and trendier.	-	-	1	11	22	4.62	0.55
I believe that learning using the video is better than the text-based instruction manual.	-	1	-	7	26	4.71	0.63
I believe I can remember the steps better when using the video-based instruction compared to the text-based manual.	0	0	1	11	22	4.62	0.55
I believe that learning using the video lets me finish my tasks more quickly.	0	0	2	8	24	4.65	0.6

Table 4 shows the results of an evaluation of attitudes concerning the use of screencast recordings. A large number of students (m=4.71) agreed that the videos are superior to the text lab instructions and that using them instead of instructor-led classes is a good idea. This could be due to the visual format that they see on screen, which clearly outlines the steps for a task. The majority of students also believed that this method mirrored contemporary technological trends, such as the widespread use of video-based tutorials online, and that the visual depiction helped them remember the instructions better than text-based formats (m=4.62). The results clearly show a positive outcome when it comes to attitudes towards using screencast videos. Likewise, previous study on students' perception on video-based learning revealed that student exhibited favourable attitude with the use of video as active learning materials which boost their motivation and engagement [54].

Table 5. Technology Accessibility

Part 4: Technology Accessibility The degree to which you experience the ease of accessing the videos through the online platform.							
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
I did not have any problems accessing the videos through Google Classroom.	0	0	1	12	21	4.59	0.56
I did not have any problems downloading the videos from Google Classroom.	0	0	1	8	25	4.71	0.52
It is easy for me to access all the videos through multiple smart devices (laptops, smartphones, tablets, etc.)	0	0	1	11	22	4.62	0.55
The videos have good resolution and clear audio.	0	1	1	11	21	4.53	0.71

When implementing online learning, it is crucial that users have simple access to technology. Table 5 displays the findings of technological accessibility. Google Classroom is a popular and widely utilised application in educational institutions. It is easily accessible, as evidenced by the data (m=4.59). Students also agreed that due to the small size of the videos, they could be quickly downloaded or streamed due to the high Internet bandwidth (m=4.71). The availability of a variety of devices, ranging from the modest laptop to various types of smart gadgets, does not impede viewing of screencast videos (m=4.62). Finally, with an average mean of 4.61, the majority of students had no concerns with technology accessibility. This is supported by previous study that students are inclined to use visual learning materials if the resources are readily accessible in their online educational setting which serves as a valuable learning [52].

Table 6: Satisfaction

Part 5: Satisfaction The degree to which you experience happiness when using the video-based instructions for the lab sessions.							
	SD	**D**	**N**	**A**	**SA**	**Mean**	**Std. Dev.**
I am satisfied with the video instructions.	0	0	2	11	21	4.56	0.61
I am satisfied with the duration of each video.	0	0	2	13	19	4.5	0.62
I received enough feedback from the instructor during the online lab session.	0	0	5	8	21	4.47	0.75
I am satisfied that my work was checked by the instructor during the online lab session.	0	0	6	11	17	4.32	0.77

I would recommend using this method of learning for future practical or software related courses.	0	0	2	11	21	4.56	0.61
I am satisfied with the video instructions.	0	0	2	11	21	4.56	0.61
I prefer the videos made by the instructor of the course.	0	0	0	13	21	4.62	0.49
I feel that I have a one-to-one coaching from the instructor using the videos better than the text-based instructions.	0	0	5	9	20	4.44	0.75
I feel a sense of belonging and connectedness to the course and the instructor when using the videos better than the text-based instructions.	0	0	3	14	17	4.41	0.66
I feel motivated to complete the exercise when using the videos better than the text-based instructions.	0	1	1	14	18	4.44	0.7

Table 6 shows the level of satisfaction with the use of screencast videos. The important thing to take note of is that all students prefer videos created by the instructor (m=4.62). In comparison to a video made by a stranger, it demonstrates that the learner feels a sense of connection and assurance. The results also suggest that students prefer the videos over the text manual because they can sense the instructor's personalised coaching (m=4.44) and it inspires them to complete the activities (m=4.44). They also believe that this strategy is better suited to practical and software-related courses (m=4.56). Besides that, students appreciated that their work was examined, and helpful criticism was provided to help them improve and understand better. Similarly, prior research on the effects of mobile learning through delivering video lectures found that video-based instructional materials were effective and fascinating resulting in a high degree of student satisfaction and acceptance [55].

A minority of students provided neutral feedback, particularly when they believed there was inadequate engagement from the instructor or that their work was not sufficiently examined by the instructor. This may be due to the fact that the instructor entertains the students on a first come, first served basis. Moreover, not all students have strong technological background and are able to follow the steps in the screencast videos smoothly. As a result, students did not manage to complete their work on time. In line with this, students who finished their work at the end of the lab class may have less time or none at all to have it reviewed. Despite the fact that the majority of students approved this novel approach to lab classes, the effectiveness of screencast videos is dependent on the students' personal drive and motivation to engage with the given materials. The lack of motivation to watch the videos and complete the activities may have an impact on overall satisfaction with screencast.

In the open-ended questions, students commented on a few items related to the screencast videos. The videos are 11 minutes and 57 seconds long on average. Students suggested that the videos be shortened further. Students also suggested that the video and audio quality be enhanced. They stated that the audio in some parts of the videos is very low volume, making it difficult for them to hear and grasp the narration. Overall, the students have given positive feedback on the experience.

V. CONCLUSION

In conclusion, this novel approach to teaching a practical software-related lab class has yielded promising outcomes in terms of perceived usefulness, perceived ease of use, attitude, technology accessibility and user satisfaction. Based on our findings, the visual and audio aspects in the screencast videos helped students obtain a better comprehension of the lab materials and contents while also enjoying the flexibility of tailored learning based on their learning styles and needs. It implied that instructors may save time on repetitious explanations while fostering an engaged and collaborative learning environment during lab lessons. This method overcomes some of the difficulties that an instructor faces when teaching software-related topics in the lab. It also decreases the difficulties that students encounter during lab session. This technique gives students a fresh perspective on self-learning and strengthens their bonds with the instructor, increasing their motivation to study.

The findings of our study also revealed that students gave positive feedback on the perceived ease of use of screencast videos in their lab classes. This could be due to students' ability to access, watch, and interpret screencast videos at their learning preferences during lab classes, resulting in higher knowledge comprehension. Students reported that after learning through screencast videos, they were able to present their work to the instructors, which was thought to be a more effective educational experience. The findings of this study also revealed that students have a positive attitude regarding the use of screencast videos in lab classes. Students recognised the benefits of screencast videos as more interesting and better learning resources that allowed them to readily explore and understand new concepts easily.

Our findings also revealed that students gave favourable feedback on technological accessibility when watching screencast recordings during lab classes. It showed that students had no trouble downloading and accessing screencast videos from multiple platforms. It was thought that including high-quality screencast videos would improve students' learning experiences. Furthermore, the study's findings revealed that students were pleased with the use of screencast videos in their practical lab lessons. Students' satisfaction could be attributed to personalised videos prepared by their instructors, which contributed to a sense of belonging because they were able to connect and engage with instructors by receiving coaching and having their work checked by the instructors during lab classes.

Future studies should include the pre-test and post-test design in evaluating the students' acceptance and students' satisfaction on the use of screencast videos in physical learning. Future research should also incorporate more substantial sample sizes in order to extend the applicability of the findings of the study. Due to the small sample size of our research, the data's variability is higher, leading to wider fluctuations in the differences between means and larger standard deviations, which can impact the generalisability of the statistical results.

Also, additional research on the effectiveness of screencast videos can also be examined by investigating students' performance with the use of screencast videos.

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