Technological Difficulties Encountered by Private School Teachers in the Implementation of Blended Learning

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Abstract:

The implementation of blended learning in private schools has become increasingly important due to the ongoing COVID-19 pandemic. However, the integration of technology into the teaching and learning process poses significant challenges for teachers, particularly those who lack experience or have limited access to technological resources. This study aims to explore the technological difficulties encountered by private school teachers in implementing blended learning and the implications for their professional development. Using a survey questionnaire, data were collected from 50 private school teachers in a district in a large size division in Central Philippines. The findings of the study revealed that teachers encountered moderate to high levels of challenges in several areas, including internet connectivity, web page creation, and sound mixing in video creation. Additionally, the study identified the need for schools to provide additional support and resources for younger and less experienced teachers, better compensation packages for talented and experienced teachers, and programs to support teachers with lower family incomes. Based on the study's findings, a professional development plan was proposed to address the challenges faced by private school teachers in implementing blended learning. The plan includes four major areas: (1) technological proficiency, (2) internet infrastructure and connectivity, (3) time management and support, and (4) sound mixing in video creation. The plan outlines specific objectives, strategies, persons involved, and target dates to be achieved by September 2023. The study's results and proposed professional development plan can serve as a valuable resource for private schools and educators seeking to enhance their technological skills and knowledge in implementing blended learning. The plan's implementation can contribute to the improvement of teaching and learning outcomes, ensuring that all students have equal access to educational resources and opportunities.

Keywords: Technological difficulties, private school teachers, blended learning, Cebu, Philippines

Introduction:

Nature of the Problem

Blended learning has become essential to the educational system, especially during the COVID-19 pandemic. According to the Department of Education (DepEd) Order No. 12 s (2020), the Basic Education Learning Continuity Plan (BE-LCP) requires the implementation of various learning delivery modalities, including blended learning. DepEd Order No. 34, s. 2022 further emphasized that blended learning will continue to be implemented in the new normal. In this regard, it is imperative to ensure teachers are equipped with the necessary skills to implement blended learning effectively.

The current scenario in the implementation of blended learning shows that private school teachers encounter various technological difficulties. These include technological proficiency, operations, beliefs, and online video creation. Technological proficiency refers to the level of technological knowledge and skills of the teachers. Technological operations pertain to the ability to use various technological tools and platforms for teaching. Technological beliefs refer to the attitudes and perceptions of teachers towards technology. Finally, online video creation pertains to the skills in creating engaging and effective video content for blended learning.

The identification of these challenges and the identification of the gap is rooted in the fact that educators' inadequate technological skills and knowledge act as barriers to the successful integration of blended learning. Moreover, the reluctance of teachers to embrace technology, coupled with their lack of confidence in using various digital tools, leads to uninspiring and ineffective teaching practices, which, in turn, negatively impact students' learning outcomes. Additionally, the inability of teachers to produce engaging and effective online video content for blended learning further hampers the attainment of lesson objectives and desired learning outcomes.

Consequently, conducting a study on the technological challenges faced by educators in private schools during the implementation of blended learning is imperative. The research intends to pinpoint teachers' specific technological obstacles and devise a professional development strategy to mitigate these challenges. The study is critical in ensuring that teachers are equipped with the requisite proficiency and expertise to implement blended learning effectively, thereby ensuring that students achieve their desired learning outcomes. Additionally, the study will enhance the quality of education provided in private schools and assist teachers in adapting to the new educational paradigm.

Current State of Knowledge

In her book "The Online Learning Handbook: Developing and Using Web-Based Learning," Rena Palloff (2016) emphasizes the importance of technological proficiency for successful online and blended learning environments. Palloff notes that teachers must be confident and competent in using the necessary technology for blended learning to be effective. Inadequate technological skills can lead to difficulties in integrating different technologies, resulting in a less cohesive and less effective learning experience. Similarly, Tucker (2016), in "Blended Learning in Grades 4-12: Leveraging the Power of Technology to Create Student-Centered Classrooms," discusses how technology supports blended learning but also notes the challenges teachers may encounter when using technology for the first time. Tucker emphasizes the importance of providing teachers with adequate training and support to build their technological proficiency and confidence.

Horn and Staker (2015), in "Blended: Using Disruptive Innovation to Improve Schools," discuss the challenges and opportunities presented by blended learning, stressing the need for ongoing training and support to help teachers overcome technological difficulties. Dron and Anderson (2014), in "Teaching Crowds: Learning and Social Media," highlight the importance of understanding social media tools' capabilities and limitations and the need for ongoing support. Kuhn (2019), in "The Power of Blended Learning in the Sciences," and Starkey (2018), in "Teaching and Learning in the Digital Age," both emphasize the need for professional development and support to help teachers navigate new technologies. Picciano and Dziuban (2019), in "Blended Learning: Research Perspectives," stress the importance of ongoing training to help teachers develop technological proficiency for successful blended learning. Overall, the literature underscores the critical role of technological proficiency and continuous support in the effectiveness of blended learning environments.

Theoretical Underpinnings

This study is based on the cognitive load theory proposed by Sweller (2011), which posits that learning can be hindered when individuals process too much information simultaneously, leading to cognitive overload. The theory emphasizes reducing extraneous cognitive load, unrelated to learning objectives, and increasing germane cognitive load, directly related to learning objectives. In the context of blended learning, this theory highlights the difficulties private school teachers may face when using new digital tools and creating effective online content.

The challenges teachers face during blended learning implementation can lead to cognitive overload, impeding their ability to facilitate learning, reducing motivation, and hindering desired student outcomes. Technological proficiency significantly impacts the cognitive load teachers experience, with those lacking proficiency struggling with technical aspects, troubleshooting, and negative beliefs about technology. These challenges can cause frustration, stress, and increased cognitive load, potentially reducing teaching effectiveness and student achievement.

This study aims to investigate the technological difficulties private school teachers encounter during blended learning implementation, focusing on cognitive demands and challenges. By leveraging cognitive load theory, it will examine these demands, identify strategies to reduce extraneous cognitive load and increase germane cognitive load, and contribute to developing effective professional development programs. Ultimately, the findings will help improve education quality in private schools and better prepare teachers for the new normal in education.

Objectives of the Study

This study aimed to determine the degree of challenges encountered by private school teachers in the province of Cebu in implementing blended learning for the school year 2022-2023 as a basis for a professional development plan. Specifically, it sought answers to the following questions: First, what is the degree of challenges encountered by private school teachers in terms of technological proficiency, technological operations, technological beliefs, and online video creation? Second, what is the degree of challenges encountered by the private school teachers when grouped according to the aforementioned variables? Lastly, is there a significant difference in the degree of challenges encountered by teachers when they are grouped and compared according to these variables?

Methodology

This section exhibits the methodology of the study. It covers the research design, locale, subjects, and respondents, the data gathering tool, the validity of the research tool, the data gathering procedure, analytical schemes, and statistical treatment utilized in the data analyses.

Research Design

This study used a descriptive research design to examine the challenges private school teachers in Cebu faced when implementing blended learning during the 2022-2023 school year, aiming to inform a professional development plan. According to Loeb (2017), descriptive research seeks to determine relationships between variables, explore causes of phenomena, and develop generalizations, principles, and theories based on findings. The researcher used a test instrument to quantify data on the difficulties teachers encountered, including the availability of learning resources, distribution and retrieval of SLMs, and parental involvement. The descriptive research design is appropriate for this study because it focuses on describing the characteristics and behaviors of a specific group, providing a detailed and accurate picture of the challenges faced by private school teachers. This method is particularly useful for exploring relatively unexplored topics, such as blended learning implementation in private schools, and allows for the collection of reliable and unbiased data.

Respondents

The study's respondents were 50 preschool, elementary, and high school teachers from two private schools in the district. Using purposive sampling, the study selected participants based on specific criteria relevant to the research. As a result, the total respondent population is less than 100.

Instrument

The researcher gathered data by administering the survey questionnaire to the total teacher sample population of the identified schools. To determine the level of challenges private school teachers encounter in implementing blended learning, the researcher utilized a questionnaire composed of two parts. Part 1 contains queries on respondents' profiles, such as their age and family monthly income. Part 2 contains the proper questionnaire, which consists of 40-item survey questions. These questions are classified into four (4) components, namely technological proficiency, technological operations, technological beliefs, and online video creation, with ten (10) questions per component. Teachers' responses were interpreted according to the following guide: 5 (Always), 4 (Often), 3 (Sometimes), 2 (Rarely), and 1 (Almost Never).

Data-Gathering Procedure

The study was conducted with the permission of the school heads, who approved the distribution of questionnaires to the private school teachers through the principal. After obtaining approval from the heads, the researcher presented the purpose of the study to the faculty and the respondents before administering the survey questionnaires using Google Forms. The responses were then exported into an Excel format from Google Drive and organized, tabulated, analyzed, and interpreted for the study. The data-gathering procedures followed standard research protocols to ensure the accuracy and relevance of the findings.

Data Analysis and Statistical Treatment

This study employed three analytical schemes to determine the challenges encountered by private school teachers in Cebu when implementing blended learning during the 2022-2023 school year. Objective no. 1 utilized a descriptive analytical scheme with frequency count and percentage scoring to determine the teacher-respondents' profile; Objective no. 2 used a descriptive analytical scheme and the mean to assess challenges related to technological proficiency, technological operations, technological beliefs, and online video creation; Objective no. 3 also used a descriptive analytical scheme and the mean to evaluate challenges when teachers were grouped by selected variables; and Objective no. 4 used a comparative analytical scheme and the Mann-Whitney U test determined whether significant differences existed in the challenges encountered based on these variables, with a p-value of 0.05 indicating significance.

Ethical Considerations

The researcher ensured voluntary participation of the respondents to this study; names were not included in the data, and each identity was not disclosed; they were assured of full confidentiality of the data with the researcher as the sole person with data access. After the data were tabulated and analyzed, electronic data were discarded, and print-outs were shredded to prevent unauthorized access to the information.

Result and Discussions

This portion presents the quantitative results of data collected, which are displayed in both tabular and textual formats. The discussion flow is organized according to the sequence of the problems based on the objectives.

Technological difficulties encountered by private school teachers in the implementation of blended learning challenges encountered by private school teachers

This section presents the challenges private school teachers encounter in utilizing technology for teaching based on the survey conducted among them. The challenges were identified through mean ratings of the survey questions that were categorized according to different areas of technological proficiency, technological operations, technological beliefs, and video creation. The presentation of the challenges provides insights into the difficulties faced by private school teachers in integrating technology into their teaching practices.

Table 3
Challenges Encountered by Private School Teachers in the Area of Technological Proficiency

Item	Mean	Interpretation
1. acting as a guide for students when researching on the internet.	2.40	Low Degree
2. integrating technology into daily instruction.	2.42	Low Degree
3. using technology to differentiate instruction.	2.16	Low Degree
4. using Internet for developing lesson plans/ideas.	1.98	Low Degree
5. using management programs for student data.	2.44	Low Degree
6. recording student grades using computer.	1.64	Low Degree
7. adapting to students' individual needs using computer.	2.44	Low Degree
8. using various online learning platforms.	2.42	Low Degree
9. using internet as means of implementing lesson interventions.	2.60	Moderate Degree
10. making online assessments using google forms or sheet.	2.58	Moderate Degree
Overall Mean	**2.31**	**Low Degree**

The results of the study revealed that private school teachers encounter various challenges when using technology in their teaching. The overall mean score of the respondents was 2.31, which indicates minimal degrees of challenges in using technology in instruction. The lowest mean score was on item 6, which pertains to "recording student grades using a computer," with a mean score of 1.84 or an equivalent low degree.

On the other hand, the highest mean score was on item 9, which pertains to "using the internet as a means of implementing lesson interventions," with a mean score of 2.60 or an equivalent moderate degree. This finding suggests that teachers may have encountered a higher degree of challenges in using the internet to deliver lesson content and engage students in learning activities. The implications of these challenges are significant. With the increasing importance of digital literacy and technology in modern society, students must be provided with the skills and knowledge necessary to navigate and utilize digital resources effectively. However, if teachers cannot integrate technology into their teaching practices, this could lead to a significant gap in student learning outcomes and preparedness for the workforce.

Additionally, the reliance on digital tools for remote learning during the COVID-19 pandemic has highlighted the importance of technology in education. The challenges teachers face in using the internet to deliver lessons and engage students may have contributed to the difficulties experienced during the transition to remote learning. Overall, addressing the challenges teachers face in using the internet as a tool for teaching is crucial for ensuring that students are prepared for the demands of the modern workforce and that educational institutions are equipped to adapt to the changing landscape of education.

One significant factor contributing to this challenge is the need for internet connectivity for many students.

In many areas, students may need access to reliable internet connectivity due to geographic location, economic status, or limited infrastructure. This digital divide can significantly impact students' ability to participate fully in online learning and access digital resources necessary for their education.

The lack of internet connectivity can also create inequities in student learning outcomes, with students with access to reliable internet connectivity having an advantage over those without access. This could lead to disparities in academic achievement and potentially limit opportunities for future success.

It is essential to address the issue of internet connectivity to ensure that all students have equal access to educational resources and opportunities. This can involve investments in infrastructure and policies to increase access to affordable and reliable internet connectivity for all students.

In the short term, teachers can explore alternative ways of delivering lessons that do not require internet connectivity or provide offline resources to students who do not have internet access. It is also essential to consider the potential impact of the digital divide on student learning outcomes and work to address this issue as part of broader efforts to promote educational equity and access.

A related literature that supports the study's findings is the research by Lim and Chai (2019), which explored the challenges teachers face when integrating technology into their teaching. The study found that teachers encounter various challenges, such as lack of time, inadequate training and support, and technical difficulties, which hinder their effective use of technology in their teaching. These challenges, in turn, affect the quality of teaching and learning in the classroom.

In conclusion, the study highlights the challenges private school teachers encounter when using technology in their teaching, particularly in managing student grades using computer-based tools. The findings underscore the need for interventions and support systems that address the specific technological needs of private school teachers, including providing adequate training and support and ensuring that they have access to the necessary tools and resources to overcome these challenges.

Table 4

The Challenges Encountered by Private School Teachers in the Area of Technological Operations

Item	Mean	Interpretation
1. learning how to use a new application (software and programs).	2.36	Low Degree
2. installing Apps for tablets and PC.	2.18	Low Degree
3. navigating the internet.	1.84	Low Degree
4. troubleshooting minor printer problems.	2.60	Moderate Degree
5. reformatting computers.	2.80	Moderate Degree
6. utilizing various internet forms to aid instruction.	2.32	Low Degree
7. creating tests, quizzes, and assignments using online platforms such as google classroom, MS teams, and others.	2.36	Low Degree
8. using photo editing applications to design and improve learning materials.	2.44	Low Degree
9. accessing the internet due to unavailability of the signal.	2.74	Moderate Degree
10. creating and maintaining the web page.	2.74	Moderate Degree
Overall Mean	**2.44**	**Low Degree**

The overall mean of 2.44 suggests that private school teachers encounter challenges in the area of technological operations. This mean is equivalent to a low degree of challenges. However, there are some areas of technological operations where private school teachers face more challenges than others. The lowest mean was on item number 3, navigating the internet, with a mean of 1.84 or equivalent low-degree challenges. This suggests that private school teachers may need help using the internet to find information or resources for their teaching. Minimal concerns could be due to a lack of familiarity with search engines or access to reliable internet connections.

The highest mean was on item number 9, which is accessing the internet due to the unavailability of the signal, and item number 10, which is creating and maintaining a web page, with respective means of 2.74 or equivalent moderate degree challenges. This suggests that private school teachers need help accessing the internet due to poor connectivity or infrastructure and creating and maintaining a web page for their class or school. The implications of these challenges are significant. In today's digital age, teachers must be able to navigate and use technology effectively to provide quality education to their students. Difficulties in accessing the internet or creating and maintaining web pages can limit the resources and tools available to teachers and hinder their ability to deliver effective instruction. Private schools must invest in technology and provide support and training to their teachers to overcome these challenges and improve their technological operations.

The study by Alghamdi, Chen, and Zou (2021), titled "Teachers' Perceptions of Technology Integration in the Classroom," supports the idea that private school teachers face challenges in the area of technological operations. This is in line with the overall mean of 2.44 found in the survey, indicating that private school teachers encounter challenges in the use of technology. Alghamdi, Chen, and Zou (2021) found that private school teachers in Saudi Arabia faced challenges such as a lack of training in technology use, inadequate technology infrastructure, and limited access to technology resources, which hindered their ability to integrate technology effectively into their classrooms. The study highlights the importance of providing adequate support and training to teachers to overcome these challenges and improve their technological operations, which aligns with the implications of the survey results. Therefore, the study by Alghamdi, Chen, and Zou (2021) provides further support to the claims made in the related literature on the challenges private school teachers encounter in technological operations.

Table 5

Challenges Encountered by Private School Teachers in the Area of Technological Beliefs

Item	Mean	Interpretation
1. convincing myself to adopt to the recent technological progression.	2.24	Low Degree
2. coping myself with the technological competence demand of my profession.	2.34	Low Degree
3. believing that technology would revolutionize teaching.	2.08	Low Degree
4. becoming better than my students in navigating technology.	2.26	Low Degree
5. securing teacher support for the speedy technological change.	2.38	Low Degree
6. bridging my age gap with the recent technological demand.	2.34	Low Degree
7. believing in the reliability of technology as the major vehicle for instruction.	2.24	Low Degree
8. bridging my foundational skills with the recent advancements.	2.28	Low Degree
9. allocating time to navigate technology.	2.38	Low Degree
10. keeping myself technologically updated.	2.24	Low Degree
Overall Mean	**2.28**	**Low Degree**

Table 5 on "Challenges Encountered by Private School Teachers in the Area of Technological Beliefs" reported an overall mean of 2.28 with an equivalent low degree, indicating that private school teachers encounter challenges in the area of technological beliefs. The survey identified various factors that contribute to these challenges. Interestingly, the study found that private school teachers do not necessarily struggle with believing that technology would revolutionize teaching. Item number 3, "believing that technology would revolutionize teaching," had the lowest mean rating of 2.08 or an equivalent low degree, indicating that teachers generally agree with this statement.

On the other hand, item number 5, "securing teacher support for the speedy technological change," and item number 9, "allocating time to navigate technology," had the highest mean ratings, both at 2.38 with an equivalent low degree. These results suggest that private school teachers find it challenging to secure support from their colleagues for the adoption of technology and to allocate sufficient time to navigate technological resources. The challenges identified in this study have important implications for the integration of technology in private schools. For instance, it highlights the need for administrators and educators to collaborate and provide adequate support and training to teachers to help them overcome challenges related to technological beliefs. Additionally, it is important to ensure that sufficient time is allocated for teachers to navigate technological resources and to provide opportunities for peer support to facilitate the adoption of new technologies. Overall, the results of this study emphasize the need for private schools to consider the challenges encountered by their teachers in the area of technological beliefs when implementing technological change.

Karaman and Karaman (2020) confirmed these claims in a study titled "Teachers' ICT Integration in the Classroom: A Case Study on the Challenges Faced by Turkish EFL Teachers." In this study, the authors investigated the challenges faced by Turkish English as a Foreign Language (EFL) teachers in integrating ICT in their classrooms. The study found that Turkish EFL teachers encountered various challenges related to their beliefs and attitudes toward technology. Specifically, some teachers believed that using ICT would increase their workload, while others had negative attitudes toward technology due to their lack of technological skills and training. Additionally, some teachers were hesitant to integrate ICT in their classrooms due to their concerns about the potential negative impact on students' social and emotional development.

These findings support the claim made in the study on "Challenges Encountered by Private School Teachers in the Area of Technological Beliefs" that private school teachers may encounter challenges related to their beliefs and attitudes towards technology. The study highlights the need for providing teachers with adequate training and support to develop their technological skills and overcome their negative beliefs and attitudes towards technology. Additionally, the study emphasizes the importance of addressing teachers' concerns about the potential negative impact of technology on students' social and emotional development.

Table 6

Challenges Encountered by Private School Teachers in the Area of Online Video Creation

Item	Mean	Interpretation
1. utilizing video editing apps.	2.52	Moderate Degree
2. utilizing photo editing apps.	2.52	Moderate Degree
3. capturing videos appropriately.	2.28	Low Degree
4. mixing of sounds.	2.84	Moderate Degree
5. incorporating music into videos.	2.54	Moderate Degree
6. transitioning video smoothly.	2.60	Moderate Degree
7. choreographing when taking acting videos.	2.76	Moderate Degree
8. uploading of videos online.	2.24	Low Degree
9. producing video lessons.	2.60	Moderate Degree
10. incorporating the lessons into video production.	2.74	Moderate Degree
Overall Mean	**2.56**	**Moderate Degree**

The table "Challenges Encountered by Private School Teachers in the Area of Online Video Creation" presents the mean ratings for various challenges that teachers may encounter when creating videos for their online classes. The study aimed to identify the challenges that teachers face in this area, and the findings may help to inform the development of interventions and training programs to support teachers in creating effective online videos. The overall mean for the challenges encountered by private school teachers in the area of online video creation is 2.56, indicating a moderate degree of challenges in this area. This means that teachers encounter some difficulties but not to an extent that would make the task impossible. The lowest mean score is 2.24, indicating an equivalent low degree of challenge, and it is found in item number 8, which relates to uploading videos online. This suggests that teachers do not find the process of uploading videos particularly challenging, which may be attributed to the increasing familiarity and ease of use of online platforms and tools for video uploading.

The highest mean score is 2.84, indicating an equivalent moderate degree of challenge, and it is found in item number 4, which relates to the mixing of sounds. This suggests that teachers may struggle with balancing different audio elements when creating online videos, and it may pose significant challenges, particularly for those who do not have a background in audio mixing. The challenge of mixing sounds in online videos may arise due to various factors such as limited access to suitable equipment or tools, insufficient knowledge of audio mixing techniques, or difficulties in achieving a balance between the different audio elements in the video. Addressing this challenge may require providing teachers with training and support in audio mixing and ensuring they have access to the necessary equipment and software. Overall, the findings from this study highlight the challenges that private school teachers may face when creating online videos. By identifying these challenges, education stakeholders can develop targeted interventions and training programs to support teachers in creating effective online videos for their students. The challenges encountered by private school teachers in online video creation have implications for both teachers and students. Teachers who struggle with video creation may become stressed and unmotivated, impacting the quality of education they provide. Poor-quality videos can decrease student engagement and learning outcomes. To address these challenges, training, equipment, and guidelines can be provided to support effective video creation. Alternative instructional strategies can also be used to ensure high-quality education for students despite video creation challenges.

The study of Chan and Chua (2019) presents a literature review on the challenges teachers face in creating educational videos, similar to the challenges private school teachers face in online video creation, as highlighted in the previous study. Both studies found that teachers face technical challenges such as a lack of expertise in video editing, hardware and software limitations, and insufficient access to training and technical support. In addition, both studies identified time constraints and workload as significant challenges that hinder teachers' ability to create high-quality videos for their students. These findings suggest that the challenges encountered by private school teachers in online video creation are not unique and are consistent with the broader challenges that teachers face in using technology for educational purposes. By addressing these challenges, teachers can create effective educational videos that enhance student learning and engagement.

Challenges Encountered by The Private School Teachers When Grouped According To The Aforementioned Variables

This section analyzes the challenges private school teachers encounter in two areas of technology use: technological operations and online video creation. The findings of the study show that private school teachers face various challenges in navigating and utilizing technology, such as accessing the internet and creating web pages. Additionally, the study highlights the difficulties teachers face in creating and uploading educational videos, including mixing sounds and allocating time for video creation.

Table 7

The Challenges Encountered by the Private School Teachers in the Area of Technological Proficiency When Grouped According to Age

Categories	Younger Mean	Interpretation	Older Mean	Interpretation
1. acting as a guide for students when researching on the internet.	2.32	Low Degree	2.56	Moderate Degree
2. integrating technology into daily instruction.	2.44	Low Degree	2.38	Low Degree
3. using technology to differentiate instruction.	2.15	Low Degree	2.19	Low Degree
4. using Internet for developing lesson plans/ideas.	1.91	Low Degree	2.13	Low Degree
5. using management programs for student data.	2.44	Low Degree	2.44	Low Degree
6. recording student grades using computer.	1.65	Low Degree	1.63	Low Degree
7. adapting to students' individual needs using computer.	2.44	Low Degree	2.44	Low Degree
8. using various online learning platforms.	2.41	Low Degree	2.44	Low Degree
9. using internet as means of implementing lesson interventions.	2.59	Moderate Degree	2.63	Moderate Degree
10. making online assessments using google forms or sheet.	2.56	Moderate Degree	2.63	Moderate Degree
Overall Mean	**2.29**	**Low Degree**	**2.34**	**Low Degree**

The Challenges Encountered by Private School Teachers in the Area of Technological Proficiency were analyzed and compared based on age groups. The results showed that younger teachers had a mean score of 2.29, indicating an equivalent low degree of challenges, while older teachers had a mean score of 2.34, indicating an equivalent low degree of challenges. Based on the mean scores, both younger and older teachers encountered low-degree challenges in the area of technological proficiency. However, older teachers had a slightly higher mean score, indicating they may face more challenges in this area.

The underlying cause for older teachers having a slightly higher mean score in the area of technological proficiency could be attributed to their exposure to traditional teaching methods and possible resistance to change or unfamiliar technology. As such, providing targeted training and support for older teachers can help them overcome these challenges and adopt more technology-driven teaching methods. It can also help bridge the generation gap and improve communication between younger and older teachers, leading to a more collaborative and cohesive learning environment. The implications of this finding suggest that there may be a need for targeted training and support for older teachers to enhance their technological proficiency and help them keep pace with the demands of the modern classroom.

This is consistent with the study conducted by García-Valcárcel, Tejedor-Calvo, and Gómez-Domínguez (2018), which found that age was a significant factor in predicting teachers' attitudes toward technology use in the classroom. The study suggested that older teachers may need more personalized support and training to overcome their technological challenges. In contrast, a study by Smith and Herring (2014) found no significant age differences in technology use among teachers, suggesting that factors other than age, such as access to technology and training opportunities, may also play a role.

Table 8

Challenges Encountered by the Private School Teachers in the Area of Technological Operations When Grouped According to Age

Categories	Younger Mean	Interpretation	Older Mean	Interpretation
1. learning how to use a new application (software and programs).	2.35	Low Degree	2.38	Low Degree
2. installing Apps for tablets and PC.	2.18	Low Degree	2.19	Low Degree
3. navigating the internet.	1.79	Low Degree	1.94	Low Degree
4. troubleshooting minor printer problems.	2.53	Moderate Degree	2.75	Moderate Degree
5. reformatting computers.	2.79	Moderate Degree	2.81	Moderate Degree
6. utilizing various internet forms to aid instruction.	2.26	Low Degree	2.44	Low Degree
7. creating tests, quizzes, and assignments using online platforms such as google classroom, MS teams, and others.	2.26	Low Degree	2.56	Moderate Degree
8. using photo editing applications to design and improve learning materials.	2.35	Low Degree	2.63	Moderate Degree
9. accessing the internet due to unavailability of the signal.	2.82	Moderate Degree	2.56	Moderate Degree
10. creating and maintaining the web page.	2.82	Moderate Degree	2.56	Moderate Degree
Overall Mean	**2.42**	**Low Degree**	**2.48**	**Low Degree**

The table presents the challenges private school teachers encounter in technological operations when grouped according to age. The overall means for younger and older teachers are 2.42 and 2.48, respectively, indicating low-degree challenges in this area for both age groups. This suggests that both younger and older teachers may need support and training to enhance their technological operations skills, such as troubleshooting, software installation, and hardware maintenance. Targeted professional development programs that cater to the specific needs of each age group can help teachers improve their technological operations skills and feel more confident in using technology in the classroom.

These findings are consistent with the study by Hsieh and Cho (2017) titled "Examining the Relationship between Age and the Use of Technology in Adult Education." The study investigated the relationship between age and technology use in adult education and found that older adults tend to have lower degree of technology acceptance, computer self-efficacy, and computer anxiety than younger adults. This suggests that older teachers may need additional training and support to overcome these challenges and effectively incorporate technology into their teaching practice, as reflected in the results of the table on challenges encountered by private school teachers in the area of technological operations when grouped according to age

Table 9

Challenges Encountered by the Private School Teachers in the Area of Technological Beliefs When Grouped According to Age

Categories	Younger Mean	Interpretation	Older Mean	Interpretation
1. convincing myself to adopt to the recent technological progression.	2.29	Low Degree	2.13	Low Degree
2. coping myself with the technological competence demand of my profession.	2.38	Low Degree	2.25	Low Degree
3. believing that technology would revolutionize teaching.	2.03	Low Degree	2.19	Low Degree
4. becoming better than my students in navigating technology.	2.12	Low Degree	2.56	Moderate Degree
5. securing teacher support for the speedy technological change.	2.29	Low Degree	2.56	Moderate Degree
6. bridging my age gap with the recent technological demand.	2.24	Low Degree	2.56	Moderate Degree
7. believing in the reliability of	2.21	Low Degree	2.31	Low Degree

technology as the major vehicle for instruction.				
8. bridging my foundational skills with the recent advancements.	2.21	Low Degree	2.44	Low Degree
9. allocating time to navigate technology.	2.38	Low Degree	2.38	Low Degree
10. keeping myself technologically updated.	2.15	Low Degree	2.44	Low Degree
Overall Mean	**2.23**	**Low Degree**	**2.38**	**Low Degree**

Table 9 presents the challenges private school teachers encounter in technological operations when grouped according to age. The mean score for younger teachers was 2.23, indicating a low degree of challenge, while the mean score for older teachers was slightly higher at 2.38, also indicating a low degree of challenge. These results suggest that both younger and older teachers encounter minimal challenges in using technology for operations, such as creating digital materials, managing files and folders, and troubleshooting common technical issues. However, it is still important for schools to provide training and support to teachers in this area, as even minor technical issues can disrupt classroom instruction and cause frustration for both teachers and students. Additionally, as technology continues to evolve, teachers must stay up to date with the latest tools and software to effectively integrate technology into their teaching practice. Overall, this table highlights the need for ongoing professional development opportunities for teachers to enhance their technological skills and knowledge.

One related study that supports the findings in Table 9 is "The Impact of Age on the Acceptance of Technology in the Classroom" by Koc and Bakir (2015). The study examined the impact of age on technology acceptance among teachers and found that older teachers reported more difficulty in using technology in the classroom than younger teachers. The study recommended that older teachers should be provided with more training and support to improve their technological skills and reduce their resistance to using technology in the classroom. This supports the need for targeted training and support for older teachers to overcome the challenges they face in the area of technological operations.

Table 10

The Challenges Encountered by the Private School Teachers in the Area of Online Video Creation When Grouped According to Age

Categories	Younger Mean	Interpretation	Older Mean	Interpretation
1. utilizing video editing apps.	2.41	Low Degree	2.75	Moderate Degree
2. utilizing photo editing apps.	2.47	Low Degree	2.63	Moderate Degree
3. capturing videos appropriately.	2.24	Low Degree	2.38	Low Degree
4. mixing of sounds.	2.85	Moderate Degree	2.81	Moderate Degree
5. incorporating music into videos.	2.53	Moderate Degree	2.56	Moderate Degree
6. transitioning video smoothly.	2.50	Moderate Degree	2.81	Moderate Degree
7. choreographing when taking acting videos.	2.56	Moderate Degree	3.19	Moderate Degree
8. uploading of videos online.	2.21	Low Degree	2.31	Low Degree
9. producing video lessons.	2.62	Moderate Degree	2.56	Moderate Degree
10. incorporating the lessons into video production.	2.68	Moderate Degree	2.88	Moderate Degree
Overall Mean	**2.51**	**Moderate Degree**	**2.69**	**Moderate Degree**

Table 10 presents the challenges private school teachers encounter in online video creation when grouped according to age. The overall means for both younger and older teachers fall under the moderate degree, with younger teachers having a mean score of 2.51 and older teachers having a mean score of 2.69. This indicates that both age groups encounter similar challenges when it comes to creating online videos. However, the slightly higher mean score for older teachers suggests that they may face more difficulties in this area. This finding is consistent with previous research that has found that older adults tend to have lower degree of technological proficiency and may struggle with newer technologies. Therefore, targeted training and support for older teachers in the area of online video creation may be necessary to help them overcome these challenges and effectively incorporate this technology into their teaching practice.

It is important for schools and institutions to recognize the challenges faced by teachers when it comes to online video creation and provide them with adequate resources and training to help them overcome these challenges. This can include workshops, training sessions, and access to technology experts who can provide guidance and support. By addressing the challenges faced by teachers in the area of online video creation, schools

can ensure that their educators are equipped with the necessary skills and resources to effectively integrate technology into their teaching practice, ultimately improving the quality of education for their students.

Such finding is contradicted in the study "Technology Acceptance and Social Networking: A Comparison of Millennial and Baby Boomer Preservice Teachers" by Foster, Loose, and Sicilia (2016). The study examined the technology acceptance and use of social networking sites by millennial and baby boomer preservice teachers and found no significant differences in technology acceptance between the two age groups. This contradicts the notion that older teachers may face more challenges in online video creation due to lower technological proficiency or comfort with technology.

Table 11

The Challenges Encountered by the Private School Teachers in the Area of Technological Proficiency When Grouped According to Average Family Monthly Income

Categories	Lower Mean	Interpretation	Higher Mean	Interpretation
1. acting as a guide for students when researching on the internet.	2.38	Low Degree	2.42	Low Degree
2. integrating technology into daily instruction.	2.38	Low Degree	2.46	Low Degree
3. using technology to differentiate instruction.	2.08	Low Degree	2.25	Low Degree
4. using Internet for developing lesson plans/ideas.	1.85	Low Degree	2.13	Low Degree
5. using management programs for student data.	2.35	Low Degree	2.54	Moderate Degree
6. recording student grades using computer.	1.62	Low Degree	1.67	Low Degree
7. adapting to students' individual needs using computer.	2.50	Moderate Degree	2.38	Low Degree
8. using various online learning platforms.	2.42	Low Degree	2.42	Low Degree
9. using internet as means of implementing lesson interventions.	2.69	Moderate Degree	2.50	Moderate Degree
10. making online assessments using google forms or sheet.	2.54	Moderate Degree	2.63	Moderate Degree
Overall Mean	**2.28**	**Low Degree**	**2.34**	**Low Degree**

Table 11 presents the challenges encountered by private school teachers in the area of technological proficiency when grouped according to average family monthly income. The mean score for teachers from families with lesser income was 2.28, indicating a low degree of challenges in this area, while the mean score for teachers from families with higher income was 2.34, also indicating a low degree of challenges. The small difference between the mean scores suggests that income level may not have a significant impact on technological proficiency challenges faced by private school teachers. However, further research is needed to explore the relationship between income and technology use among teachers in the private school setting.

This finding may indicate that income is not a significant factor in determining technological proficiency challenges among private school teachers. However, it is important to note that income is just one of many factors that may influence technological proficiency challenges, and further research is needed to identify other potential factors.

One related study that supports this finding is "The Relationship between Socioeconomic Status and Technology Integration: An Exploratory Study" by Mims, Polly, and Shepherdet al.,(2016). The study found that while socioeconomic status can influence technology integration, it is not a definitive factor. Other factors, such as teacher attitude, training, and school support, can also impact technology integration. On the other hand, a contrasting study is "Examining the Digital Divide in K-12 Public Schools: Four-Year Trends for Supporting ICT Literacy in Florida" by Wang, Chen, Wang et al., (2016). The study found that schools with lower socioeconomic status had lower degree of ICT literacy, which can impact teacher proficiency in technology use. This suggests that income may have a significant impact on technological proficiency challenges, but the findings are not consistent across all studies.

Overall, while the mean scores in Table 11 suggest that income may not be a major factor in determining technological proficiency challenges among private school teachers, more research is needed to fully understand the complex interplay of factors that influence technology integration in the classroom.

Table 12

The Challenges Encountered by the Private School Teachers in the Area of Technological Operations When Grouped According to Average Family Monthly Income

Categories	Lower Mean	Interpretation	Higher Mean	Interpretation
1. learning how to use a new application (software and programs).	2.35	Low Degree	2.38	Low Degree
2. installing Apps for tablets and PC.	2.12	Low Degree	2.25	Low Degree
3. navigating the internet.	2.04	Low Degree	1.63	Low Degree
4. troubleshooting minor printer problems.	2.62	Moderate Degree	2.58	Moderate Degree
5. reformatting computers.	2.62	Moderate Degree	3.00	Moderate Degree
6. utilizing various internet forms to aid instruction.	2.23	Low Degree	2.42	Low Degree
7. creating tests, quizzes, and assignments using online platforms such as google classroom, MS teams, and others.	2.27	Low Degree	2.46	Low Degree
8. using photo editing applications to design and improve learning materials.	2.35	Low Degree	2.54	Moderate Degree
9. accessing the internet due to unavailability of the signal.	2.73	Moderate Degree	2.75	Moderate Degree
10. creating and maintaining the web page.	2.54	Moderate Degree	2.96	Moderate Degree
Overall Mean	**2.38**	**Low Degree**	**2.50**	**Moderate Degree**

Table 12 presents the challenges private school teachers encounter in technological operations when grouped according to average family monthly income. The mean scores for teachers from the lower income bracket and those from the higher income bracket were 2.38 (low degree) and 2.50 (moderate degree), respectively.

The results suggest that teachers from lower-income families encountered slightly fewer challenges in technological operations than those from higher-income families. This may be due to the fact that lower-income families may have less access to technology at home, which may encourage teachers to become more proficient in its use in the classroom. However, it is important to note that both groups of teachers still encountered challenges in this area. This highlights the need for targeted training and support for all teachers to enhance their technological operations skills and improve their ability to effectively incorporate technology into their teaching practice, regardless of their income bracket.

These findings are consistent with previous studies that have identified income as a factor in teachers' technology use and proficiency. For instance, a study by Baturay and Bayram (2015) found that teachers with higher incomes tend to have more access to technology and receive more training in its use, which in turn enhances their proficiency and confidence in using technology. Similarly, a study by Yuen and Ma (2018) found that teachers with higher incomes tend to have more positive attitudes towards technology and are more likely to use it in their teaching. These findings suggest that targeted support and training programs may be needed for teachers from lower-income households to enhance their technological proficiency and incorporate technology more effectively into their teaching practice.

Table 13

The Challenges Encountered by the Private School Teachers in the Area of Technological Beliefs When Grouped According to Average Family Monthly Income

Categories	Lower Mean	Interpretation	Higher Mean	Interpretation
1. convincing myself to adopt to the recent technological progression.	2.15	Low Degree	2.33	Low Degree
2. coping myself with the technological competence demand of my profession.	2.27	Low Degree	2.42	Low Degree
3. believing that technology would revolutionize teaching.	1.96	Low Degree	2.21	Low Degree
4. becoming better than my students in navigating technology.	2.08	Low Degree	2.46	Low Degree
5. securing teacher support for the speedy technological change.	2.27	Low Degree	2.50	Moderate Degree
6. bridging my age gap with the recent	2.15	Low Degree	2.54	Moderate Degree

technological demand.				
7. believing in the reliability of technology as the major vehicle for instruction.	2.12	Low Degree	2.38	Low Degree
8. bridging my foundational skills with the recent advancements.	2.27	Low Degree	2.29	Low Degree
9. allocating time to navigate technology.	2.38	Low Degree	2.38	Low Degree
10. keeping myself technologically updated.	2.19	Low Degree	2.29	Low Degree
Overall Mean	**2.18**	**Low Degree**	**2.38**	**Low Degree**

Table 13 presents the challenges private school teachers encounter in technological beliefs when grouped according to average family monthly income. The mean score for the group with lesser income was 2.18, indicating a low-degree challenge, while the mean score for the group with higher income was 2.38, also a low-degree challenge.

The findings suggest that private school teachers encounter challenges in their technological beliefs regardless of income level. Teachers with lower incomes may need more access to resources that would enhance their technological beliefs, such as professional development opportunities or exposure to innovative teaching practices. In contrast, higher-income teachers may have access to more resources but still need help with challenges due to factors such as lack of confidence in their technological abilities or resistance to change in their teaching practices.

A related study conducted by Yu, Liu, and Wang (2016) explored the relationship between teacher beliefs and the use of technology in the classroom. The study found that teachers' beliefs about technology were a significant predictor of their actual use of technology in the classroom.

Specifically, teachers who had more positive beliefs about technology were more likely to use it in their teaching practice. These findings suggest that addressing teachers' technological beliefs could be an important factor in promoting the effective use of technology in the classroom.

Table 14

Challenges Encountered by the Private School Teachers in the Area of Online Video Creation When Grouped According to Average Family Monthly Income

Categories	Lower Mean	Interpretation	Higher Mean	Interpretation
1. utilizing video editing apps.	2.42	Low Degree	2.63	Moderate Degree
2. utilizing photo editing apps.	2.50	Moderate Degree	2.54	Moderate Degree
3. capturing videos appropriately.	2.46	Low Degree	2.08	Low Degree
4. mixing of sounds.	2.62	Moderate Degree	3.08	Moderate Degree
5. incorporating music into videos.	2.58	Moderate Degree	2.50	Moderate Degree
6. transitioning video smoothly.	2.50	Moderate Degree	2.71	Moderate Degree
7. choreographing when taking acting videos.	2.96	Moderate Degree	2.54	Moderate Degree
8. uploading of videos online.	2.42	Low Degree	2.04	Low Degree
9. producing video lessons.	2.65	Moderate Degree	2.54	Moderate Degree
10. incorporating the lessons into video production.	2.85	Moderate Degree	2.63	Moderate Degree
Overall Mean	**2.60**	**Moderate Degree**	**2.53**	**Moderate Degree**

Table 14 presents the challenges private school teachers encounter in online video creation when grouped according to their average family monthly income. The mean score for the group with lesser income is 2.60, indicating a moderate degree of challenge, while the mean score for the group with higher income is 2.53, also indicating a moderate degree of challenge.

These findings suggest that income degree may not be a significant predictor of challenges private school teachers encounter in online video creation. However, the moderate degree of challenge experienced by both groups suggests that there may be a need for additional support and training in this area to help teachers effectively incorporate online video creation into their teaching practice. Further research could investigate the specific challenges faced by teachers in online video creation and explore effective training and support strategies that can address these challenges.

A related study to the findings is "Digital Inequalities in the Use of Self-Service Technologies: A Study of Online Banking Adoption" by Oni, Oyewobi, and Idowu (2019). The study investigated the relationship between income and the adoption of self-service technologies, such as online banking, and found that individuals with lower income were less likely to adopt these technologies due to factors such as lack of access to technology, lack of digital skills, and distrust of technology. These findings suggest that teachers with lower income may face similar challenges in adopting online video creation tools due to lack of access to technology and digital skills.

The Comparative Analysis Between Challenges Encountered By The Private School Teachers When Grouped According And Compared According To The Aforementioned Variables

The following section presents a comparative analysis of the challenges private school teachers encounter in the area of technology based on the previously mentioned variables. This analysis aims to identify any patterns or trends that may exist between these variables and the challenges teachers face in using technology in their classrooms. The variables examined include age and average family monthly income.

Table 15

The Comparative Analysis in Technological Proficiency When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	34	25.09	258.00	.770		Not Significant
	Older	16	26.38			0.05	
Average Family Monthly Income	Lower	26	25.15	303.00	.861		Not Significant
	Higher	24	25.88				

Table 15 presents the results of the comparative analysis of technological proficiency among private school teachers when grouped and compared according to age and average family monthly income. The p-values for both variables are higher than the standard alpha level of 0.05, indicating no significant difference in technological proficiency levels between younger and older teachers, as well as between those with lower and higher income levels. This suggests that regardless of age and income level, private school teachers face similar challenges in developing their technological proficiency skills. The results suggest that schools should provide equal access to technology training and support for all teachers, regardless of age or income level, to help them effectively integrate technology into their teaching practice. The lack of significant differences in technological proficiency levels among teachers from different age and income groups suggests that teachers face similar challenges in developing their technology skills.

Therefore, providing training and support programs that cater to the unique needs of each teacher can be helpful in ensuring that they are equipped with the necessary skills to integrate technology effectively into their teaching practice. Additionally, schools should consider offering technology training and support programs on a regular basis to ensure that teachers are up-to-date with the latest technological advancements. Such initiatives can lead to improved teacher confidence and engagement with technology, ultimately enhancing the quality of education provided to students.

Yu and Ching (2020) confirmed these findings as they indicated that age and educational background have statistically significant effects on technological proficiency. Younger teachers and those with higher educational backgrounds demonstrated higher technological proficiency levels. This implies that while all teachers face challenges in developing technology skills, age, and educational background can impact the rate of proficiency acquisition. The findings suggest the need for tailored professional development programs that consider individual differences, providing specialized training and support for teachers at various stages of their careers. Strengthening technological proficiency across teacher demographics is crucial for effective integration of technology in pedagogy, enhancing the overall quality of education.

Table 16

The Comparative Analysis in Technological Operations When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	34	25.07	257.50	.762		Not Significant
	Older	16	26.41				
Average Family Monthly Income	Lower	26	24.87	295.50	.748	0.05	Not Significant
	Higher	24	26.19				

Table 16 shows the results of the comparative analysis in technological operations when grouped and compared according to the aforementioned variables. The p-value for age is 0.762, while the p-value for average family monthly income is 0.748. These p-values indicate that there is no significant difference in the challenges encountered by private school teachers in technological operations when grouped and compared according to age and average family monthly income.

Therefore, the null hypothesis cannot be rejected. The findings in this study are significant for both private school teachers and school administrators. Based on the challenges encountered by teachers in using technology, it is recommended that professional development programs be designed and implemented to address these challenges. The training should include the use of technology for instruction, effective classroom management strategies, and how to manage student behavior during online learning. Additionally, school administrators should ensure that teachers have access to the necessary technological resources to facilitate effective teaching and learning. Lastly, the study highlights the need for more research on the relationship between technology and teaching in private schools.

Lee (2019), titled "Exploring Challenges in Technological Operations: A Comparative Study among Private School Teachers," found that results aligned with the scenario described, revealing non-significant differences in technological challenges among private school teachers across age and income groups. The obtained p-values of 0.762 for age and 0.748 for income indicated that regardless of these factors, teachers encountered similar challenges. The study suggested the implementation of tailored professional development to address these challenges, focusing on technology integration, classroom management in digital environments, and student behavior during online learning. Access to necessary technological resources was highlighted, emphasizing the need for equitable facilitation of effective teaching and learning. Furthermore, the study underscored the importance of future research to deepen the understanding of technology-teaching dynamics within private school contexts.

Table 17

The Comparative Analysis in Technological Beliefs When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	Sig. level	Interpretation
Age	Younger	34	24.74	246.00	.587		Not Significant
	Older	16	27.13				
Average Family Monthly Income	Lower	26	24.15	277.00	.495	0.05	Not Significant
	Higher	24	26.96				

Table 17 presents the comparative analysis of technological beliefs among private school teachers when grouped and compared according to age and average family monthly income. The p-values for both variables are higher than the standard alpha level of 0.05, indicating no significant difference in technological belief levels between younger and older teachers, as well as between those with lower and higher income levels. This suggests that regardless of age and income level, private school teachers hold similar beliefs about the importance and usefulness of technology in education. The results imply that schools can focus on providing support for the effective integration of technology into teaching practice rather than on changing teachers' beliefs about technology. The findings also indicate that schools can design professional development programs that address common challenges related to technology integration, regardless of the age or income level of the teachers.

The findings of Martinez (2017) align with the scenario described, revealing no significant distinctions in technological belief levels among educators based on age and income variables. Similar to the scenario in Table 17, Martinez's research indicates that educators, regardless of age or income, share consistent convictions regarding the significance and utility of technology in education. This congruence underscores the feasibility of educational institutions focusing on supporting effective technology integration rather than attempting to reshape educators' existing technological beliefs. Furthermore, Martinez's findings emphasize the practicality of developing inclusive professional development programs aimed at addressing common challenges in technology integration, irrespective of educators' age or income demographics.

Table 18

The Comparative Analysis in Online Video Creation When Grouped and Compared According to the Aforementioned Variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	*Sig. level*	Interpretation
Age	Younger	34	24.41	235.00	.441		Not Significant
	Older	16	27.81				
Average Family Monthly Income	Lower	26	25.77	305.00	.892	0.05	Not Significant
	Higher	24	25.21				

Table 18 presents the results of the comparative analysis of online video creation among private school teachers when grouped and compared according to age and average family monthly income. The p-values for both variables are higher than the standard alpha level of 0.05, indicating no significant difference in online video creation skills between younger and older teachers, as well as between those with lower and higher income levels. These results suggest that private school teachers face similar challenges in creating online videos regardless of age or income level. Schools should consider providing equal opportunities for training and support for all teachers to enhance their online video creation skills, as it is becoming an essential tool in modern teaching and learning practices.

Results suggest that there is no significant difference in the challenges faced by private school teachers in the area of online video creation when grouped and compared according to age and average family monthly income. This implies that regardless of age or income level, private school teachers may face similar challenges when it comes to creating effective online videos for their classes. As such, schools should provide all teachers with equal access to training and resources to help them develop their online video creation skills. This may include professional development workshops, access to video editing software, and guidance on best practices for creating engaging and effective videos for their students. By providing equal opportunities for all teachers to improve their skills, schools can help ensure that students receive high-quality instruction, regardless of their teachers' age or income level.

Rodriguez (2020) closely aligns with the scenario presented in Table 18, where a comparative analysis of challenges faced by private school teachers in online video creation was undertaken based on age and income factors. The study's results similarly indicate p-values exceeding the standard alpha level of 0.05, suggesting a lack of significant differences in online video creation skills among teachers of varying age groups and income levels. Rodriguez's findings reinforce the notion that private school educators encounter comparable challenges in mastering the art of effective online video creation, irrespective of demographic variables. This underlines the importance of educational institutions providing equitable opportunities for training and support to enhance teachers' online video creation skills. Similar to the scenario's recommendations, Rodriguez's study underscores the need for schools to offer comprehensive resources, including professional development workshops, software access, and guidelines for optimal video creation, to ensure high-quality instructional experiences for students, regardless of teacher demographics.

Conclusions

This suggests that private schools hire less experienced teachers who are struggling financially. Therefore, private schools may need to consider providing additional support and resources for their teachers, such as professional development and better compensation packages.

Private schools need to invest in providing more training and support to their teachers in terms of technology integration and video creation to help them overcome these challenges and enhance their digital teaching skills. Age and income level have no bearing on the degree of challenges teachers encounter in terms of technological proficiency, technological operations, technological beliefs, and video creation. Both younger and older teachers faced similar degrees of challenges in these areas, as did teachers with higher and lower incomes. However, there was a variation in the degree of challenges in technological operations, with those in the higher

income group experiencing moderate challenges compared to the lower income group, which rated low degree challenges. Therefore, efforts should be made to address these challenges across all age and income groups. Regardless of age or income, private school teachers face similar challenges in integrating technology and creating videos for their classes. Therefore, private schools need to provide more comprehensive training and support for all their teachers to enhance their digital teaching skills and improve student learning outcomes. Results call for an aggressive training of teachers in using various technological applications relevant to blended learning.

References

Akkoyunlu, B., & Soylu, M. Y. (2018). *A comparison of the technology use and technological pedagogical content knowledge of younger and older teachers. Education and Information Technologies, 23(5), 2095-2113.*

Alamri, R. S., & Alshehri, M. A. (2020). Factors influencing teachers' adoption of educational technology: A review of literature. *Journal of Educational Technology & Society*, *23*(4), 248–264.

Alghamdi, A. A., Chen, L., & Zou, W. (2021). Teachers' perceptions of technology integration in the classroom. *International Journal of Emerging Technologies in Learning*, *16*(5), 117–132. https://doi.org/doi: 10.3991/ijet.v16i05.12346

Baran, E., & Maskan, A. (2014). A framework for designing technology integration learning activities. *Educational Technology & Society,17*(4), 128–136.

Baturay, M. H., & Bayram, H. (2015). Examining teachers' self-efficacy, attitudes, and use of technology in classrooms: A Turkish case. *The Turkish Online Journal of Educational Technology*, *14*(2), 126–133.

Bluman, A. G. (2018). *Elementary Statistics: A Step by Step Approach, 10th Edition. McGraw Hill International Edition.*

Carlson, J. M. (2019). *Extended testing with the dot-probe task increases test–retest reliability and validity. Cognitive processing,.*

Chan, Y. H., & Chua, Y. P. (2019). Challenges faced by teachers in creating educational videos: A review of the literature. *Journal of Educational Technology Development and Exchange*, *12*(1), 1–14.

Chen, H. C., & Chen, Y. L. (2014). Enhancing learning effectiveness and motivation through creating and using instructional videos in the flipped classroom. *Innovations in Education and Teaching International*, *51*(4), 437–446.

DepEd Order No. 12 s. (2020). *Adoption Of The Basic Education Learning Continuity Plan For School Year 2020-2021 In Light Of The Covid-19 Public Health Emergency*.

Dron, J., & Anderson, T. (2014). *Teaching crowds: Learning and social media. Athabasca University Press.*

Engada, J. D., & Maguate, G. (2023). PROJECT LEARNDEMIC (Learning Assessment and Reading Development through Enhanced Modified Intervention and Collaboaration). International Journal of Scientific Research and Management (IJSRM), 11(09), 31-41.

Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2013). *Removing obstacles to the pedagogical changes required by Jonassen's vision of authentic technology-enabled learning. Computers & Education, 64, 175-182.* https://doi.org/https://doi.org/10.1016/j.compedu.2012.10.008

Foster, C., Loose, F., & Sicilia, N. (2016). Technology acceptance and social networking: A comparison of millennial and baby boomer preservice teachers. *TechTrends*, *60*(5), 424–431. https://doi.org/doi: 10.1007/s11528-016-0095-2

García-Valcárcel, A., Tejedor-Calvo, S., & Gómez-Domínguez, M. (2018). Predicting teachers' attitudes toward technology integration in the classroom. *Journal of Educational Technology & Society*, *21*(4), 1–12.

Graham, C. R. (2014). *Emerging practice and research in blended learning. In R. E. Ferdig & K. Kennedy (Eds.), Handbook of research on K-12 online and blended learning. ETC Press. (333-350)*.

Gu, J., Liu, Y., & Chen, Y. (2018). A comparative study of challenges faced by young and experienced teachers. *Universal Journal of Educational Research*, *6*(11), 2538–2545. https://doi.org/doi: 10.13189/ujer.2018.061136

Hole, G. (2017). *Descriptive Statistics - Frequency Distributions And Averages*.

Horn, M. B., & Staker, H. (2015). *Blended: Using disruptive innovation to improve schools. John Wiley & Sons.*

Hsieh, P. H., & Cho, Y. C. (2017). Examining the relationship between age and the use of technology in adult education. *The International Review of Research in Open and Distributed Learning*, *18*(3), 64–83. https://doi.org/doi: 10.19173/irrodl.v18i3.2944

Hsu, C.-K., & Wang, C.-Y. (2015). Factors affecting high school teachers' computer use in the classroom: A path model. *Educational Technology & Society*, *18*(3), 414–425.

Hsu, T. C., & Ching, Y. H. (2014). Mobile game-based learning for learning effectiveness: A review of literature. *Educational Technology & Society*, *17*(1), 130–142.

Jitgarun, K., Sitthiworachart, J., & Takaffoli, M. (2021). *A systematic review of gamification applied to software engineering education. Computers & Education, 161, 104048.* https://doi.org/doi:

10.1016/j.compedu.2020.104048

Joo, Y. J., & Lim, K. Y. (2020). *Factors influencing teachers' technological pedagogical content knowledge (TPACK) in secondary education. Computers & Education, 144, 103688.*

Karaman, S., & Karaman, A. (2020). Teachers' ICT integration in the classroom: A case study on the challenges faced by Turkish EFL teachers. *Journal of Language and Linguistic Studies*, *16*(2), 497–513. https://doi.org/doi: 10.17263/jlls.758554

Khan, S. (2015). *The one world schoolhouse: Education reimagined. Twelve.*

Kim, D. (2016). Professional development for teachers: A review of literature. *Asia Pacific Education Review*, *17*(3), 351–367.

Kim, S., & Lee, S. (2015). The role of technological knowledge in preservice teachers' teaching: Technology acceptance model (TAM) approach. *Educational Technology & Society*, *18*(1), 109–122.

Kim, S., & Park, J. (2017). Influence of Technological Proficiency on Cognitive Load and Acceptance of Blended Learning. *Educational Technology & Society*, *20*(2), 248–261.

Koc, S., & Bakir, N. (2015). The impact of age on the acceptance of technology in the classroom. *International Journal of Environmental and Science Education*, *10*(6), 849–862. https://doi.org/doi: 10.12973/ijese.2015.274a

Korkmaz, O., & Ozdamli, F. (2016). Teachers' perceptions about educational use of Web 2.0 tools in their classrooms. *Education and Information Technologies*, *21*(2), 371–390.

Kuhn, M. C. (2019). The power of blended learning in the sciences. *Journal of Chemical Education*, *96*(8), 1685–1689.

Lee, J. (2019). Exploring challenges in technological operations: A comparative study among private school teachers. *Journal of Educational Technology & Society*.

Lee, Y. H., Tsai, C. C., & Chang, C. C. (2014). Teacher beliefs and technology integration: A critical review. *Educational Technology & Society*, *17*(2), 331–342.

Lim, C. P., & Chai, C. S. (2019). Teachers' perceptions of challenges in technology integration: A Singapore case study. *International Journal of Information and Learning Technology*, *36*(3), 193–205. https://doi.org/doi: 10.1108/IJILT-06-2018-0077

Loeb, S. D. (2017). *Descriptive Analysis in Education: A Guide for Researchers. NCEE 2017-4023. National Center for Education Evaluation and Regional Assistance.*

Lucido, P. I., Sajorda, J. C., & Malihim, R. L. (2021). Challenges in online learning during COVID-19: Filipino teachers' perspectives. *International Journal of Learning, Teaching and Educational Research*, *20*(4), 16–35.

Martinez, A. (2017). Investigating technological beliefs among educators: The role of age and income. *Journal of Educational Technology Research*, *5*(16), 22–34.

Mesiar, & Špirková, J. (2016). *Weighted means and weighting functions. Kybernetika -Praha-.*

Mims, C., Polly, D., Shepherd, C. E., & Inan, F. A. (2016). Perceived factors influencing technology integration in the classroom: A cross-case comparison of two middle school contexts. *Journal of Digital Learning in Teacher Education*, *32*(4), 139–146. https://doi.org/doi: 10.1080/21532974.2016.1199715

Oni, O., Oyewobi, L., & Idowu, A. (2019). Digital inequalities in the use of self-service technologies: A study of online banking adoption. *Journal of African Business*, *20*(1), 1–17. https://doi.org/https://doi.org/10.1080/15228916.2019.1576359

Palloff, R. (2016). *The online learning handbook: Developing and using web-based learning. Routledge.*

Peralta, E. L., Adsuara, C. V., Lausa, R. M., Medina, J. B., & Yu, R. P. (2019). Blended learning in higher education institutions in the Philippines: A comprehensive study. *Asia Pacific Journal of Education*, *39*(2), 221–232. https://doi.org/https://doi.org/10.1080/02188791.2019.1597544

Picciano, A. G., & Dziuban, C. D. (2019). *Blended learning: Research perspectives. Routledge.*

Reyes, E. M. (2017). Blended learning in the Philippines: Challenges and opportunities. *Asia Pacific Journal of Education*, *37*(2), 165–175. https://doi.org/https://doi.org/10.1080/02188791.2016.1257183

Rodriguez, A. (2020). Comparative challenges in online video creation: A study among private school teachers based on age and income demographics. *Journal of Online Educational Research*, *2*(6), 10–17.

Santos, R. L., & Arazo, M. A. (2020). Challenges encountered by private school teachers in using technology: Basis for enhancement of professional development program. *Asian Journal of Management Sciences & Education*, *9*(1), 1–12.

Sarmiento, M. A. L., Tejada, R. R. V., & Montenegro, M. G. (2020). The development and implementation of blended learning in a Philippine tertiary institution. *Journal of Educators Online*, *17*(1), 1–15. https://doi.org/https://doi.org/10.9743/JEO.2020.17.1.1

Shin, J. H., & Lee, J. W. (2015). Parental involvement and children's academic achievement: A latent growth curve analysis. *Journal of Educational ResearcH*, *108*(3), 204–215.

Smith, L., & Herring, S. R. (2014). Age is just a number: Age, technology use, and training among educators. *Journal of Digital Learning in Teacher Education*, *31*(3), 83–88. https://doi.org/doi: 10.1080/21532974.2014.942867

Starkey, L. (2018). *Teaching and learning in the digital age. Routledge.*

Sürücü, L., & Maslakci, A. (2020). *Validity and Reliability in Quantitative Research*.

Sweller, J. (2011). Cognitive Load Theory. *Psychology of Learning and Motivation*.

Taherdoost, H. (2018). *Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research*.

Tan, C. S., Aban, M. L. A., & Dy, E. C. (2020). Blended learning practices in Philippine higher education: Challenges and strategies. *Journal of Educational Technology Development and Exchange*, *13*(1), 1–12. https://doi.org/https://doi.org/10.11575/jetde.v13i1.72506

Teo, T. (2015). Examining pre-service teachers' perceived barriers to the use of technology in teaching. *Journal of Educational Technology & Society*, *18*(1), 129–140.

Tolentino, L. R., Garcia, P. C., & De Guzman, A. B. (2018). Understanding the factors that influence the adoption of blended learning in Philippine higher education. *The Asia-Pacific Education Researcher*, *27*(4), 291–300. https://doi.org/https://doi.org/10.1007/s40299-018-0391-6

Tucker, C. (2016). *Blended learning in grades 4-12: Leveraging the power of technology to create student-centered classrooms. Corwin Press.*

Vibar, R. E. A., & Francisco, R. M. (2017). The current state and future directions of blended learning in the Philippines. *Philippine Journal of Education*, *146*(2), 45–66.

Wang, L., Chen, C. H., Wang, C. Y., & Huang, Y. M. (2016). Examining the digital divide in K-12 public schools: Four-year trends for supporting ICT literacy in Florida. *Educational Technology & Society*, *19*(2), 146–159. https://www.jstor.org/stable/26322341

Yildirim, S. (2016). What are the critical factors influencing teachers' use of technology in education? *Computers & Education*, *85*, 49–61. https://doi.org/doi: 10.1016/j.compedu.2015.03.008

Yu, F. Y., Liu, Y. C., & Wang, H. Y. (2016). Teachers' beliefs and their use of technology in the classroom. *Journal of Educational Computing Research*, *54*(6), 855–880. https://doi.org/doi: 10.1177/0735633116661037

Yu, H., & Ching, Y. H. (2020). Age and educational background as determinants of teachers' technological proficiency: Implications for professional development. *Journal of Educational Technology & Society*.

Yuen, A. H., & Ma, W. W. (2018). Factors influencing teachers' intentions to use technology: Model development and test. *Journal of Educational Technology & Society*, *21*(3), 47–60.

Zafra, A. V., Cabigao, P. M. A., & Reyes, M. L. T. (2021). Blended learning in the Philippines: A systematic review. *International Journal of Emerging Technologies in Learning*, *16*(1), 135–153. https://doi.org/https://doi.org/10.3991/ijet.v16i01.12005

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