CHALLENGES IN CRAFTING TECHNOLOGY-BASED DIFFERENTIATED INSTRUCTIONS: BASIS FOR COACHING AND MENTORING PROGRAM

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Abstract

This study explores the challenges faced by Araling Panlipunan teachers in crafting technology-based differentiated instructions, with a particular focus on how various demographic factors influence these challenges. The study reveals that teachers encounter significant barriers, such as a lack of technology resources outside of school, limited proficiency with technology tools, and time constraints related to non-teaching responsibilities. These challenges hinder teachers' ability to effectively integrate technology into their instructional practices, limiting the potential benefits of technology in enhancing learner learning. The findings underscore the importance of addressing these barriers to enable more effective teaching strategies that cater to the diverse needs of learners. Moreover, the study examines the

relationship between teachers' demographic profiles and the challenges they face in technology integration. Statistical analysis indicates that teachers' highest educational attainment, years of teaching experience, and age are significantly associated with the challenges encountered in implementing technology-based lessons. Teachers with higher educational qualifications and more years of experience tend to face different types of challenges compared to their less experienced counterparts. These results highlight the need for differentiated professional development programs that cater to the unique needs of teachers based on their background and experience. To address the challenges identified, the study proposes a coaching and mentoring program that targets Araling Panlipunan teachers at various stages of their careers. This program aims to enhance their technological proficiency, provide effective strategies for integrating technology into their lessons, and offer continuous support. In offering tailored interventions based on teachers' profiles, the proposed program seeks to reduce the barriers to technology adoption and improve the quality of instruction in the Araling Panlipunan subject. The study contributes valuable insights into how targeted professional development can support teachers in overcoming the challenges of technology-based differentiated instruction.

Keywords: technology integration, differentiated instruction, professional development

Introduction

The advent of technology has undeniably transformed the landscape of education, offering innovative tools and platforms to enhance teaching and learning processes. Differentiated instruction, a pedagogical approach that recognizes and responds to the diverse needs of learners, has also gained significant traction in recent years. When combined, technology and differentiated instruction hold immense potential to create engaging and personalized learning experiences. However, the integration of technology into the teaching of Araling Panlipunan, a subject rich in historical, cultural, and social content, presents unique challenges.

The effective integration of technology into the classroom is a complex process, requiring teachers to possess adequate technological skills and knowledge. As noted by Mishra and Koehler (2016), the Technological Pedagogical Content Knowledge (TPACK) framework highlights the interplay between technology, pedagogy, and content knowledge. Araling Panlipunan teachers need to develop a deep understanding of how technology can be used to enhance the teaching of social studies concepts.

Furthermore, designing differentiated instruction requires a thorough understanding of learners' diverse needs, learning styles, and abilities. Tomlinson (2014) emphasizes the importance of creating a classroom environment that supports individual learner differences. The integration of technology can provide opportunities to tailor instruction to meet these diverse needs, but it also necessitates careful planning and implementation.

Another critical aspect is the availability and accessibility of technological resources. As highlighted by Cuban (2021), the digital divide can create disparities in access to technology, which can hinder the implementation of technology-based differentiated instruction. Ensuring equitable access to technology is essential to promote inclusive and effective learning experiences.

Several studies have explored the challenges faced by teachers in integrating technology into their teaching practices. For instance, Dede (2008) found that teachers often lack the necessary training and support to effectively use technology in the classroom. This lack of professional development can hinder their ability to design and implement technology-based differentiated instruction.

A study by Cuban and Kirkpatrick (2021) revealed that teachers may resist incorporating technology into their teaching due to factors such as workload, time constraints, and lack of perceived effectiveness. Overcoming these barriers is crucial for successful technology integration.

Research by Mishra and Koehler (2016) demonstrated the importance of TPACK in effective technology integration. Teachers who possess a strong understanding of how technology can be used to enhance teaching and learning are more likely to implement technology effectively.

While foreign studies provide valuable insights, it is essential to examine the challenges faced by Araling Panlipunan teachers in the local context. Limited studies have specifically explored the integration of technology-based differentiated instruction in this subject area in the Philippines. Understanding the unique challenges encountered by Filipino teachers in this regard is crucial for developing effective support and professional development programs.

Moreover, the rapid advancements in technology and the changing educational landscape necessitate a continuous exploration of the challenges and opportunities in technology integration. This study, we aim to contribute to the growing body of knowledge on technology-based differentiated instruction in Araling Panlipunan and provide practical recommendations for improving teaching and learning outcomes.

This study was essential to address the pressing need for research on the challenges faced by Araling Panlipunan teachers in integrating technology-based differentiated instruction. The challenges served as a basis for developing targeted strategies to support teachers in effectively utilizing technology to cater to the diverse needs of their learners. Ultimately, this

research aimed to enhance the quality of education in the Philippines through the promotion of innovative and learner-centered teaching practices.

It was in this light that the researcher targeted investigating the challenges encountered by the secondary Junior High School Araling Panlipunan teachers in the Division of Mabalacat City during the school year 2024-2025. It specifically described the demographic profile of teachers in terms of age, length of service, highest educational attainment, position, and relevant training attended; the challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions and how serious they were; and the relationship between the profile of the respondents and the challenges they encountered in crafting technology-based differentiated instructions, with the end view of crafting a coaching and mentoring program that would address the challenges encountered in crafting technology-based differentiated instructions.

Research Objectives

This study examined the challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions in the Division of Mabalacat City during the school year 2024-2025 which served as basis in developing coaching and mentoring program to address the challenges encountered by the teachers.

Specifically, it aimed to answer the following questions:

1. What is the demographic profile of teachers ?

2. What are the challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions and how serious are they?

3. Is there any significant relationship between the profile of the respondents and the challenges they encountered in crafting technology-based differentiated instructions?

4. What Coaching and Mentoring program for Araling Panlipunan teachers can be proposed based on the results of the study?

Methods

This section presents the research design, the sources of data which includes the locale of the study and the research population, instrumentation and data collection, and the tools for data analysis.

Research Design

The study employed a descriptive-correlational design to investigate the challenges encountered by the secondary Junior High School Araling Panlipunan teachers in the Division of Mabalacat City during the school year 2024-2025. The study involved 135 Araling Panlipunan teachers from the division as respondents.

Descriptive-correlational research is a quantitative research method used to systematically describe the characteristics of a population or phenomenon and explore the relationships between variables without manipulating them (Creswell, 2014). This design is often used to answer questions about the current situation and to identify potential associations between variables. It involves describing and summarizing data related to variables of interest, as well as examining the relationships between two or more variables. Correlation coefficients are utilized to quantify the strength and direction of these relationships.

However, it is crucial to emphasize that correlation does not imply causation. Descriptive-correlational research is valuable for generating hypotheses for future experimental studies and providing a foundation for program development or intervention planning.

The descriptive component focused on describing the demographic profile of teachers in terms of age, length of service, highest educational attainment, position, and relevant trainings attended; and examining the challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions and how serious they were.

The correlational component assessed the relationship between the profile of the respondents and the challenges they encountered in crafting technology-based differentiated instructions, with the end view of developing a coaching and mentoring program that would address the

challenges encountered in crafting technology-based differentiated instructions.

Sources of Data

The data for this study was sourced from 135 Araling Panlipunan teachers in the Division of Mabalacat City during the school year 2024-2025. These teacher-respondents completed a questionnaire developed by the researcher. Simple random sampling was employed to ensure a representative selection of participants and to gather the necessary data for the study.

Locale of the Study

The study was conducted with 135 Araling Panlipunan teachers in the Division of Mabalacat City during the school year 2024-2025.

Population Sampling

To ensure a representative sample of Araling Panlipunan teachers, simple random sampling was employed to select 135 participants from the Division of Mabalacat City during the 2024-2025 school year. This method guaranteed that every teacher in the target population had an equal probability of being chosen, thereby minimizing selection bias. In randomly selecting participants, the study aimed to achieve a sample that accurately reflected the characteristics of the broader population of Araling Panlipunan

teachers in the division, enhancing the generalizability and reliability of the research findings.

Instrumentation and Data Collection

The study utilized a researcher-made questionnaire as its primary data collection instrument. This questionnaire was divided into two sections: Part I focused on describing the demographic profile of teachers in terms of age, length of service, highest educational attainment, position, and relevant trainings attended. Part II examined the challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions and how serious they were.

The questionnaire was carefully developed through an in-depth review of relevant literature, encompassing previous studies, professional publications, and both published and unpublished theses. To ensure clarity and relevance, the instrument design prioritized the alignment of statements with respondents' knowledge and expertise. This approach was intended to create a robust and efficient tool for collecting precise and informative data.

Tools for Data Analysis

The following tools were utilized to treat the data statistically: In describing the age, length of service, highest educational attainment, position, and relevant trainings attended of the Araling Panlipunan teachers, frequency and percentage were used. Frequency refers to the number of cases while percentage is computed using the formula,

where:

Percentage

Frequency

Total Number of Cases

In determining the prevailing challenges encountered by Araling Panlipunan teachers in crafting technology-based differentiated instructions and how serious are they, weighted mean were used. Weighted mean is computed using the formula,

where:

Weighted Mean

Weight

Raw Scores

Number of Cases

The data will be interpreted as:

	4.50-5.00	**Very Much A Challenged**	
	3.50-4.49	Much A Challenged	
	2.50-3.49	Challenged	

	4.50-5.00	**Very Much A Challenged**	
	1.50-2.49	Moderately Challenged	
	1.00-1.49	Not A Challenged	

In testing the significant relationship between the profile of the respondents and the challenges they encountered in crafting technology-based differentiated instructions, the Chi-Square of Independence Test was utilized. Categorical classifications were done in the continuous data.

Ethical Considerations

Ethical considerations were paramount in conducting the research to safeguard the rights, dignity, and well-being of participants while maintaining scientific integrity. Adherence to ethical principles ensured public trust in the research findings. In this study, ethical considerations were essential to protect the rights and privacy of the Araling Panlipunan teachers involved. In obtaining informed consent, maintaining confidentiality of participant data, and minimizing potential harm, the researcher demonstrated respect for participants and upheld professional standards. Ethical conduct also enhanced the credibility and trustworthiness of the research findings, fostering public confidence in the research process.

Moreover, ethical considerations contributed to the overall quality of the research. The researcher avoided biases and ensured that the study was conducted rigorously and objectively. Ultimately, ethical research was fundamental to advancing knowledge and improving practices in a responsible and accountable manner.

Results And Discussion

This section presents the discussion of findings brought from the data gathering procedure. The data gathering procedures were based on the questions posited in the beginning of this study.

1. Profile of Araling Panlipunan Teachers

Table 1

Profile of Araling Panlipunan Teachers

N =

Demographics	**f**	**%**	**Std. Dev.**	**Skewness**	**Kurtosis**
Highest Educational Attainment	f	%	Std. Dev.	Skewness	Kurtosis

Demographics	**f**	**%**	**Std. Dev.**	**Skewness**	**Kurtosis**
Doctoral degree	1	1	26.145	-0.172	1.509
Earned doctoral units	34	25			
Master's degree	65	48			
Earned masteral units	35	26			
Total	135	100			
Trainings Attended	f	%	Std. Dev.	Skewness	Kurtosis
International	14	10	19.613	1.024	2.084
National	29	22			
Regional	61	45			
Division	31	23			
Total	135	100			
No. of Years of Teaching	f	%	Std. Dev.	Skewness	Kurtosis
20 years and over	4	3	25.652	0.786	-0.322

Demographics	**f**	**%**	**Std. Dev.**	**Skewness**	**Kurtosis**
15-19 years	38	28			
10-14 years	65	48			
5-9 years	24	18			
less than 5 years	4	3			
Total	135	100			
Age	f	%	Std. Dev.	Skewness	Kurtosis
61-64 years old	3	2	13.877	0.071	-1.824
56-60 years	4	3			
51-55 years	11	8			
46-50 years	19	14			
41-45 years	32	24			
36-40 years	38	28			
35 years or younger	28	21			
Total	135	100			
Gender	f	%	Std. Dev.	Skewness	Kurtosis
Male	35	26	45.962	-	-
Female	100	74			
Total	135	100			

In analyzing the profile of Araling Panlipunan teachers presented in Table 1, it is evident that the majority of the teachers possess at least a master's degree or higher, with 48% holding a master's degree and 25% having earned doctoral units. This suggests a relatively well-educated teaching force, with a significant portion having pursued advanced studies, potentially indicating a commitment to professional development. The data also reveals that a large portion of the teachers (48%) has between 10 to 14 years of teaching experience, suggesting that the sample largely comprises teachers with moderate experience, which is valuable for understanding the challenges they face in crafting technology-based differentiated instruction. The relatively low percentage (3%) of teachers with fewer than five years of teaching experience indicates that the study focused on teachers with a certain degree of familiarity with the classroom environment, likely leading to more robust insights into their challenges with technology and instructional strategies.

The distribution of age shows a broad range, with the largest age group being between 36-40 years (28%), followed by those in the 41-45 age group (24%). This indicates that the sample consists of a diverse mix of mid-career teachers, many of whom are in the prime of their teaching careers. It is also notable that there is a significant representation of younger teachers (21% are 35 years or younger), which may bring a fresh perspective on integrating technology into teaching practices. The relatively small representation of

older teachers (only 2% are 61-64 years old) could suggest a potential challenge in adapting to rapidly changing technological tools or a preference for staying within traditional teaching methodologies. Given the technological aspect of the study, this demographic variation could have implications for how different age groups perceive and integrate technology into their instructional practices.

Gender distribution reveals a clear majority of female teachers (74%), with only 26% male representation. This disparity may reflect broader gender trends in the teaching profession in the Philippines, where the education sector is predominantly female. The gender imbalance could affect the findings, as it is possible that gender-related dynamics, such as access to technology or the use of certain instructional methods, may vary, although this would need further exploration to determine its relevance to the study's focus on technology-based differentiated instruction.

The data on training attendance highlights a substantial engagement in professional development opportunities. With 45% of the teachers having attended regional training, 23% division-level training, and 22% national-level training, it is clear that the majority of the sample is actively seeking professional growth. However, the relatively small percentage of teachers who have attended international training (10%) suggests a gap in exposure to global best practices in education. This discrepancy might influence their understanding of international standards for technology integration in

teaching. It also raises the possibility that more localized training might be focusing more on traditional methods, which could present a challenge when teachers attempt to implement differentiated instruction that requires advanced technological tools and strategies. The skewness in the distribution of training levels also suggests that while many teachers receive some form of training, the depth and scope of the training may vary significantly.

The findings from the demographic profile provide valuable context for understanding the experiences and challenges of Araling Panlipunan teachers in crafting technology-based differentiated instruction. The fact that a significant number of teachers are experienced professionals with advanced degrees and some training in educational development indicates that they are likely knowledgeable about the general principles of teaching and learning. However, the data also suggests that the teachers may face challenges in fully embracing and integrating technology into their teaching practices. The variation in the number of years of experience and training types suggests that the teachers may require additional support, particularly in the area of technology integration. There may be a need for more tailored professional development opportunities that specifically focus on technology-based differentiated instruction, particularly for those who have not had the benefit of international or specialized training in this area. The broad range of age groups and gender diversity also implies that any

intervention, such as a coaching or mentoring program, should be sensitive to the different needs of these diverse groups, ensuring that it addresses both the technological and pedagogical challenges teachers face in today's educational environment.

2. Challenges Encountered by Araling Panlipunan Teachers In Crafting Technology-Based Differentiated Instructions and How Serious Are They

Table 2

Challenges Encountered by Araling Panlipunan Teachers

Challenges Encountered by Araling Panlipunan Teachers	**Mean**	**Verbal Interpretation**
Learners lack technology resources outside of school.	4.8	Very Much Serious
Learners have different ways of learning and processing information.	4.68	Very Much Serious
Teacher is overwhelmed with non-teaching	4.64	Very Much Serious

Challenges Encountered by Araling Panlipunan Teachers	Mean	Verbal Interpretation
responsibilities, limiting technology integration time.		
Difficulty in measuring learner outcomes using technology-based assessments.	4.46	Very Much Serious
Lack of sufficient time for planning and implementing technology-based lessons.	4.43	Very Much Serious
Teachers lack proficiency in using technology tools for instruction.	4.42	Very Much Serious

Challenges Encountered by Araling Panlipunan Teachers	Mean	Verbal Interpretation
Lack of assistance with technology-related issues.	4.38	Very Much Serious
Limited access to training on technology integration and differentiation.	4.31	Very Much Serious
Insufficient availability of computers, internet connectivity, and software.	3.48	Serious
Scarcity of quality online materials for Araling Panlipunan.	3.43	Serious
Difficulty in incorporating technology into existing curriculum.	2.89	Moderately Serious

Challenges Encountered by Araling Panlipunan Teachers	**Mean**	**Verbal Interpretation**
Teachers' reluctance to adopt new teaching methods and technologies	2.84	Moderately Serious
Poor internet connectivity, outdated computer equipment.	2.78	Moderately Serious
Learners possess different levels of technology skills and knowledge.	2.52	Slightly Serious
Insufficient encouragement and motivation from school leaders.	2.38	Slightly Serious
Total	3.76	Serious

The challenges encountered by Araling Panlipunan teachers, as presented in Table 2, highlight several serious and pressing issues that teachers face in attempting to integrate technology into their teaching practices. The most prominent concern, according to the table, is the lack of technology resources outside of school, which received a very high mean score of 4.8. This indicates that the majority of teachers consider the absence of technology resources at home as a major barrier for their learners. This challenge can exacerbate the digital divide, particularly in rural or underserved communities, where access to technology is already limited. Without these resources, learners may be unable to complete technology-based assignments, engage in online learning, or fully benefit from differentiated instruction that relies heavily on digital tools. This underscores the need for solutions that address technology accessibility, such as community-based initiatives or school-provided resources to bridge the gap.

Another significant challenge is the varying learning styles of learners, with a mean of 4.68. This issue highlights the inherent diversity in classrooms, where learners possess different ways of learning and processing information. The challenge of catering to these different needs is amplified when trying to integrate technology into instruction. While technology has the potential to cater to diverse learning styles through multimedia, interactive tools, and differentiated tasks, the difficulty lies in

effectively utilizing these resources to accommodate such diversity. Teachers must not only be equipped with the right tools but also with the pedagogical skills to harness technology in ways that meet the needs of all learners, making this challenge crucial in the context of differentiated instruction.

The third most serious challenge is the overwhelming non-teaching responsibilities of teachers, which received a mean score of 4.64. This indicates that many teachers struggle to balance administrative tasks, grading, and other duties, which reduces the time available for preparing and implementing technology-based lessons. This issue is especially relevant in the context of the Philippines, where teachers often juggle multiple roles beyond their teaching responsibilities. The pressure of these additional duties can lead to burnout and hinder the ability of teachers to focus on professional development in technology integration. Addressing this challenge requires a reassessment of teachers' workloads, possibly through the delegation of non-teaching tasks or through the provision of additional support staff to ease the burden on teachers.

Other notable challenges include the difficulty of measuring learner outcomes using technology-based assessments (mean = 4.46), which points to the challenge of assessing learner performance in ways that align with technology-based learning. While technology enables more dynamic and interactive assessments, it also introduces complexities in ensuring fairness

and reliability, especially in subjects like Araling Panlipunan, where critical thinking and analysis are key. This issue is intertwined with the limited access to training on technology integration and differentiation (mean = 4.31), which affects teachers' ability to effectively use digital tools for instruction and assessment. Furthermore, the lack of proficiency in using technology tools (mean = 4.42) suggests that teachers may not feel confident or adequately trained to integrate these tools effectively into their lessons.

Despite these serious challenges, a few concerns were categorized as moderately serious or slightly serious, such as the reluctance of teachers to adopt new teaching methods (mean = 2.84) and the lack of encouragement from school leaders (mean = 2.38). These challenges, while significant, are perhaps more nuanced and may reflect cultural or institutional resistance to change. The reluctance to embrace new teaching methods could be rooted in a lack of understanding of the benefits of technology integration, fear of the unknown, or a lack of motivation to engage with new instructional approaches. Similarly, the insufficient encouragement from school leaders could be indicative of a leadership gap in terms of supporting teachers through professional development opportunities or fostering a school culture that values innovation and the use of technology in the classroom.

The implications of these challenges are far-reaching. If left unaddressed, they could limit the effectiveness of differentiated instruction,

which relies on personalized learning experiences enabled by technology. Teachers may continue to struggle to meet the diverse needs of their learners, which could lead to decreased learner engagement and achievement. Furthermore, the lack of support, both in terms of resources and training, could result in teachers becoming disheartened or resistant to technology adoption. The issues identified in this table suggest that the solution to these challenges lies not only in providing more technology but also in offering professional development opportunities that focus on how to integrate technology effectively into the teaching process. Additionally, school leadership plays a crucial role in addressing these challenges by providing adequate support and resources for technology integration.

One of the primary limitations of this study is that it focuses only on Araling Panlipunan teachers, which may not fully represent the challenges faced by teachers in other subject areas. The specific challenges of integrating technology into a social studies curriculum, with its emphasis on historical analysis, cultural understanding, and critical thinking, may differ from those encountered in other subjects like mathematics or science, where technology tools may be more easily applied. Furthermore, the study does not delve deeply into the specific types of technology resources available to teachers, which could vary significantly from one school to another. A more granular understanding of the specific technological tools

and platforms being used, as well as their effectiveness, would provide a more comprehensive picture of the challenges faced by teachers.

3. Significant Relationship between the Profile of the Respondents and the Challenges they Encountered in Crafting Technology-Based Differentiated Instructions

Table 3

Significant Relationship between the Profile of the Respondents and the Challenges they Encountered in Crafting Technology-Based Differentiated Instructions

Profile	Profile	Challenges Encountered
Highest Educational Attainment	Chi Square Statistic	17.44
Highest Educational Attainment	p-Value	0.042
Highest Educational Attainment	Decision	Sig.
Highest Educational Attainment	Cramer's V (Effect Size)	0.241
Trainings Attended	Chi Square Statistic	14.325
Trainings Attended	p-Value	0.111

Profile	**Profile**	**Challenges Encountered**
Trainings Attended	Decision	Not Sig.
Trainings Attended	Cramer's V (Effect Size)	0.219
No. of Years of Teaching	Chi Square Statistic	29.721
No. of Years of Teaching	p-Value	0.000
No. of Years of Teaching	Decision	Sig.
No. of Years of Teaching	Cramer's V (Effect Size)	0.315
Age	Chi Square Statistic	22.452
Age	p-Value	0.008
Age	Decision	Sig.
Age	Cramer's V (Effect Size)	0.274
Gender	Chi Square Statistic	13.197
Gender	p-Value	0.154
Gender	Decision	Not Sig.

Profile	Profile	Challenges Encountered
Gender	Cramer's V (Effect Size)	0.210
Total	Chi Square Statistic	17.548
Total	p-Value	0.041
Total	Decision	Sig.
Total	Cramer's V (Effect Size)	0.242

The table on the significant relationship between the profile of respondents and the challenges they encountered in crafting technology-based differentiated instructions (Table 3) reveals that certain demographic factors have a notable impact on the difficulties teachers face. The significant results obtained from the Chi-Square tests highlight key areas that influence how teachers approach and encounter challenges in technology integration and differentiated instruction.

The highest educational attainment of the teachers significantly relates to the challenges they face in using technology for differentiated instruction, as indicated by a Chi-Square statistic of 17.44 and a p-value of 0.042. This suggests that teachers with different educational backgrounds face varying degrees of difficulty in incorporating technology into their instruction.

Teachers with higher levels of education may have more advanced teaching strategies, which could influence their ability to use technology in a differentiated manner. They may also be more adept at finding innovative ways to engage learners through technology. On the other hand, teachers with lower levels of educational attainment may struggle more with these technologies, either due to a lack of exposure to such methods during their studies or a lack of confidence in using them effectively. This underscores the importance of targeted professional development and educational support for teachers based on their current level of education.

The number of years of teaching experience is another factor that significantly influences the challenges teachers face in integrating technology into differentiated instruction. With a Chi-Square statistic of 29.721 and a p-value of 0.000, it is clear that more experienced teachers encounter different challenges compared to those with fewer years of experience. Teachers with more years of experience may have established traditional teaching methods that they are comfortable with, and incorporating technology could present a challenge in breaking away from these established practices. Conversely, teachers with less experience may be more open to adopting new technologies but may lack the necessary experience to integrate them effectively. This finding suggests that professional development programs should consider not just the teachers' experience but also the potential resistance to change among more

experienced teachers. Tailoring professional development to suit both novice and seasoned teachers could improve their comfort level and proficiency with technology integration.

Age is another demographic factor that significantly correlates with the challenges teachers face, with a Chi-Square statistic of 22.452 and a p-value of 0.008. This suggests that age influences how teachers approach technology-based differentiated instruction, with older teachers potentially facing more challenges in adopting and integrating technology. Teachers in older age groups may be less familiar with new digital tools or may feel overwhelmed by the constant evolution of technology. Younger teachers, on the other hand, may be more adept at using technology, but they could still face challenges in implementing differentiated instruction effectively. Age-related factors could also be tied to generational differences in learning and teaching styles, where older teachers may prefer traditional methods, whereas younger teachers may be more open to using technology in the classroom. These findings highlight the need for age-appropriate support and training that addresses the specific challenges faced by teachers of different age groups.

Interestingly, the training that teachers have attended did not show a significant relationship with the challenges they encounter in crafting technology-based differentiated instruction, as indicated by the p-value of 0.111. This finding suggests that the types or quality of training programs

that teachers have attended might not be sufficient in helping them overcome the challenges of integrating technology into their instruction. It is possible that the training programs provided are not comprehensive enough or do not directly address the specific challenges of using technology for differentiated instruction. Moreover, there may be a gap between what is covered in training programs and the practical application of technology in the classroom. This calls for a review of the training programs available to teachers, ensuring they are up-to-date, relevant, and tailored to the specific needs of teachers attempting to implement technology-based differentiated instruction.

The gender of the respondents also did not show a significant relationship with the challenges faced by teachers in using technology for differentiated instruction, as indicated by a Chi-Square statistic of 13.197 and a p-value of 0.154. This suggests that, in the context of this study, gender does not significantly influence how teachers perceive or encounter challenges related to technology integration. This result aligns with the broader trend in educational research, which often finds that gender does not play a substantial role in the adoption of new teaching methods, including the use of technology. However, this does not rule out the possibility that other factors, such as confidence or motivation, might be influenced by gender. Future studies could explore these potential

underlying factors to better understand how gender may impact the use of technology in education.

Finally, the total analysis also shows a significant relationship with a Chi-Square statistic of 17.548 and a p-value of 0.041, indicating that, when considered collectively, the profile characteristics of teachers do impact the challenges they face in integrating technology for differentiated instruction. This highlights the complexity of the issues at hand, where multiple demographic factors interact to shape teachers' experiences with technology. This finding emphasizes the need for a holistic approach to addressing the challenges of technology integration in education, one that considers the diverse backgrounds and experiences of teachers and provides targeted support based on their individual profiles.

In terms of limitations, one major limitation of this study is the potential for generalization. The sample size and scope of the study may not fully represent the broader population of teachers, particularly those in different regions or in other subjects. The study is also limited to Araling Panlipunan teachers, meaning that the challenges faced by teachers in other subject areas may differ. Additionally, the study only examines the profile characteristics of teachers without delving deeper into the specific technological tools or methods being used in the classroom, which could provide further insights into the challenges they face. Moreover, while the study identifies correlations between teacher profiles and challenges, it does

not explore causality. Further qualitative research could provide a more nuanced understanding of how different teacher profiles impact the integration of technology and differentiated instruction.

4. Proposed Coaching and Mentoring Program for Araling Panlipunan Teachers

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
Needs Assessment	To assess the specific needs and challenges faced by Araling	Surveys, interviews, and classroom observations to gather data on current technology	1 month	Clear understanding of the teachers' challenges and needs.	Program coordinator, School heads	Survey tools, interview protocols, observation sheets	Data analysis, summary report

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	Panlipunan teachers in using technology for differentiated instruction.	usage, skills, and barriers.					
Technology Proficiency Training	To improve teachers' profici	Workshops on basic to advanced technol	2 months	Teachers will gain proficiency in using	IT specialists, external	Computers, projectors, online learnin	Pre- and post-test assessments

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	ency in using technology tools for differentiated instruction.	ogy tools (e.g., Google Classroom, educational apps).		relevant technology tools.	trainers	g platforms	to measure progress
Pedagogical Differentiation Workshop	To equip teachers with strategies for differentiatin	Hands-on workshops where teachers create technol	1 month	Teachers will learn how to differentiate instruction	Subject-matter experts, instructiona	Lesson plan templates, educational apps, access	Peer review of lesson plans, teacher feedbac

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	g instruction using technology.	ogy-based differentiated lessons.		using digital tools and resources.	l designers	to online resources	k surveys
Peer Mentoring Sessions	To facilitate peer support and exchange of best practices among	Monthly mentoring sessions where experienced teachers coach less experie	Ongoing (6 months)	Improved confidence and skills in technology-based teaching	Senior teachers, mentors	Meeting rooms, materials for discussion	Mentor and mentee feedback, observation of lesson delivery

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	teachers.	nced ones in using technology for differentiated instruction.		among mentees.			
Coaching for Technology Integration	To provide personalized coaching for teachers	One-on-one coaching sessions focusing on trouble	Ongoing (6 months)	Increased teacher competence in integrating technology	Trained coaches, instructional technology	Computers, projectors, specific technology tools	Feedback from teachers after coaching sessions, observa

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	struggling with specific technology integration issues.	shooting specific technology integration problems.		into lessons.	experts		tion of classroom implementation
Collaborative Lesson Planning	To foster collaboration among teachers in design	Group planning sessions where teachers work togethe	2 months	Teachers will collaboratively design lessons that	Teachers, school heads	Collaborative planning time, internet access, lesson	Review of lesson plans, teacher reflections

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	ing technology-enhanced, differentiated lessons.	r to create lessons that integrate technology for differentiation.		incorporate technology and differentiation.		planning tools	
Continuous Professional Development	To ensure ongoing development and	Quarterly online webinars on new tools,	Ongoing (Every quarter)	Teachers stay up-to-date with new technol	External trainers, education techn	Access to webinar platforms, guest	Feedback from webinars, participant

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	adaptation of technology skills and teaching strategies.	methods, and research in educational technology and differentiation.		ogy and methods.	ology experts	speakers	evaluations
Support for Technology Resources	To provide teachers with continuous	A dedicated resource center where teacher	Ongoing	Increased access to technology tools	School heads, IT department	Tablets, laptops, educational software,	Usage statistics, teacher feedback

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	access to technology tools and resources.	s can access and borrow technology tools, apps, and devices.		that can support differentiated instruction.		internet access	
Feedback and Evaluation	To evaluate the effectiveness of the coachi	Regular surveys and feedback forms from	Ongoing (Every 3 months)	Continuous improvement of the program	Program coordinator, schoo	Survey tools, data analysis software	Analysis of survey data, revision of progra

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	ng and mentoring program.	teachers, mentors, and coaches to assess program effectiveness.		based on feedback.	l heads		m components based on results
Program Sustainability Plan	To ensure the continuity and long-	Development of a plan for integrating the progra	2 months	A sustainable framework for ongoin	School heads, education leaders	Documentation, planning materials	Evaluation of program impact on teacher

Program Component	Objective	Activities	Timeline	Expected Outcome	Responsible Party	Resources Needed	Evaluation Method
	term impact of the coaching and mentoring program.	m into the school's professional development structure.		g professional development.			development and classroom performance

The proposed Coaching and Mentoring Program for Araling Panlipunan teachers focuses on addressing the challenges they face in crafting technology-based differentiated instructions. Based on the study, which identified several obstacles such as lack of technology resources, insufficient training, and non-teaching responsibilities, this program aims to equip teachers with the necessary skills and support to integrate technology effectively into their teaching practices. The program's

components are designed to address these specific challenges and to provide teachers with a comprehensive, sustainable support structure to improve their teaching practices through technology.

The program begins with a needs assessment, which is crucial for understanding the specific challenges faced by Araling Panlipunan teachers in using technology for instruction. In conducting surveys, interviews, and classroom observations, the program will collect data that can inform the development of targeted interventions. This phase ensures that the coaching and mentoring program addresses the unique needs of the teachers, providing a tailored approach rather than a one-size-fits-all solution. This initial step is essential in creating a baseline for evaluating the effectiveness of the program in subsequent stages. The data gathered from the needs assessment will provide a clear picture of the barriers teachers are facing, such as lack of resources or time constraints, which will guide the subsequent design of activities.

The second component of the program focuses on technology proficiency training, which aims to improve teachers' skills in using technology tools for differentiated instruction. Workshops will be offered, ranging from basic to advanced levels, covering a variety of digital tools such as Google Classroom and educational apps. This part of the program addresses the challenges related to teachers' lack of proficiency in technology tools, as identified in the study. In improving their technological

literacy, teachers will feel more confident in integrating digital tools into their classrooms, which will help them overcome some of the barriers they currently face. Furthermore, as technology becomes an increasingly integral part of education, ensuring that teachers have the necessary skills to use these tools is critical for their professional development.

Another essential component of the program is the pedagogical differentiation workshop, which will help teachers learn how to adapt their teaching methods to meet the diverse needs of learners using technology. This aspect of the program will focus on practical strategies for differentiating instruction, such as providing varied learning paths for learners and using digital resources to cater to different learning styles. The goal is to equip teachers with the knowledge and tools to create more inclusive and personalized learning experiences for their learners. In integrating technology into their teaching practices, teachers will be better able to address the diverse needs of their learners, including those who may require additional support or challenge. This workshop is designed to improve the overall quality of teaching by ensuring that lessons are tailored to the unique needs of each learner, fostering a more engaging and effective learning environment.

The peer mentoring sessions will provide ongoing support through collaboration among teachers. Experienced teachers will mentor less experienced ones, sharing best practices for using technology in

differentiated instruction. This component fosters a culture of collaboration and knowledge-sharing within the school, ensuring that teachers do not feel isolated in their professional development journey. Peer mentoring allows for a more personalized approach to teaching improvement, as mentors can offer tailored advice based on the specific challenges faced by their mentees. This program will help build a supportive community where teachers can share resources, strategies, and experiences, creating a network of teachers who are committed to improving their practice and overcoming the challenges of technology integration.

To provide additional support for teachers struggling with specific technology integration issues, the program includes one-on-one coaching sessions. These sessions are designed to offer personalized guidance, addressing individual concerns and helping teachers overcome specific obstacles they face in the classroom. Whether it's troubleshooting technical difficulties or navigating complex technology tools, these coaching sessions will ensure that teachers receive the individualized support they need. This aspect of the program directly responds to the teachers' need for more hands-on, practical assistance in integrating technology into their teaching practices. In offering one-on-one coaching, the program ensures that no teacher is left behind, allowing each teacher to progress at their own pace and gain the confidence they need to use technology effectively.

Collaborative lesson planning is another key feature of the program, enabling teachers to work together to design lessons that incorporate technology for differentiation. Group planning sessions will provide teachers with the opportunity to collaborate on lesson design, share ideas, and offer feedback to one another. This collective approach to lesson planning will encourage teachers to think creatively about how to integrate technology into their instruction in ways that are both pedagogically sound and responsive to learner needs. Collaborative planning allows teachers to benefit from the collective expertise and insights of their colleagues, helping to improve the overall quality of teaching within the school. This part of the program also strengthens the sense of community among teachers, fostering an environment of mutual support and shared responsibility for learner success.

The program also includes continuous professional development through quarterly webinars. These webinars will cover new developments in educational technology, best practices for differentiated instruction, and emerging trends in the field. In keeping teachers up-to-date with the latest research and innovations, the program ensures that they remain at the forefront of educational technology and pedagogy. This ongoing professional development will help teachers continue to grow in their roles, ensuring that they are always equipped with the most current knowledge and skills to meet the evolving needs of their learners. In participating in

these webinars, teachers will be able to expand their knowledge base, stay engaged with their professional learning, and apply new insights to their teaching practice.

To ensure that teachers have the resources they need to implement technology in their classrooms, the program includes a resource center where teachers can access and borrow various technological tools, apps, and devices. This resource center addresses the challenge of limited access to technology, as identified in the study. In providing teachers with the necessary tools, the program removes one of the barriers to effective technology integration. Additionally, the resource center will be continuously updated with new tools and resources to keep pace with developments in educational technology. This ensures that teachers have access to the best available resources, enabling them to create more engaging and effective lessons.

Regular feedback and evaluation are integral to the program's success. Teachers, mentors, and coaches will provide feedback on the program's effectiveness, which will be used to make adjustments and improvements as needed. In gathering feedback regularly, the program ensures that it remains relevant and responsive to the needs of the teachers. The evaluation process will also allow the program administrators to assess the impact of the coaching and mentoring program on teachers' professional development and classroom practices. This continuous evaluation ensures that the

program remains adaptable and effective in addressing the challenges faced by Araling Panlipunan teachers.

Lastly, the program includes a sustainability plan to ensure its long-term success. This plan outlines strategies for integrating the coaching and mentoring program into the school's ongoing professional development framework, ensuring that the program continues even after the initial funding and support have been exhausted. In developing a sustainability plan, the program aims to create lasting change in the teaching practices of Araling Panlipunan teachers, ensuring that they continue to receive support and professional development for years to come. The sustainability plan will also help secure institutional support for the program, ensuring its continued success and impact on the quality of education.

Conclusion And Recommendations

Conclusions

The educational attainment of Araling Panlipunan teachers is significantly related to the challenges they encounter in integrating technology-based differentiated instruction, suggesting the need for more targeted professional development for teachers with lower educational qualifications.

The number of years of teaching experience is a significant factor in the challenges faced by teachers, highlighting the importance of providing support.

Teachers' age is also a significant factor influencing the challenges they face, indicating that age-specific interventions may be necessary to address the diverse needs of teachers at different stages in their careers.

Recommendations

The Department of Education (DepEd) should provide targeted professional development programs that address the specific needs of teachers based on their educational attainment and teaching experience.

Schools should consider offering ongoing training and support on technology integration, particularly for teachers who lack proficiency with technology tools, to ensure effective differentiation in instruction.

School leaders should allocate more time and resources for teachers to plan and implement technology-based lessons, reducing the burden of non-teaching responsibilities that hinder effective technology integration.

References

Akyol, Z., & Bulut, O. (2018). Connectivism as a theoretical framework for

educational technology integration. The Turkish Online Journal of Educational Technology, 17(1), 141-148.

Bandura, A. (1977). Social learning theory. Prentice-Hall.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approach. Sage Publications.

Cuban, L. (2021). Oversold and underused: Computers in the classroom. Harvard University Press.

Dede, C. (2018). Implications for learning: Technologies of engagement. Journal of Science Education and Technology, 17(1), 3-13.

Jonassen, D. H. (2021). Objectivism and constructivism: Two sides of the same coin. Educational Technology Research and Development, 39(3), 207-224.

Mishra, P., & Koehler, M. J. (2016). Technological pedagogical content knowledge: A framework for teacher knowledge. Journal of Teacher Education, 57(1), 60-75.

Piaget, J. (1936). The origin of intelligence in children. Routledge & Kegan Paul.

Siemens, G. (2014). Connectivism: Learning as network creation. Retrieved from
https://www.scirp.org/reference/referencespapers?referenceid=5875
Technological pedagogical content knowledge: A framework for teacher knowledge. Journal of Teacher Education, 57(1), 60-75.
Tomlinson, C. A. (2014). The differentiated classroom: Responding to the needs of
all learners. ASCD.