

Competence and Performance Analysis of Physical Education (PE) Teachers Using Modular Learning Delivery Modes

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ABSTRACT

The delivery of education drastically changed during the COVID-19 pandemic, revealing a weakness in the preparation of teachers for modular distance learning in Physical Education (P.E) classes. The mixed-methods research investigated competency and performance among Senior high school PE teachers in Davao City, Philippines, in digital literacy, content delivery, and assessment. The study used a purposive sampling of 61 teachers with validated survey instruments and in-depth interviews. The findings demonstrated strong teaching performance ($M=3.28$) and digital literacy proficiency ($M=4.06$). However, the qualitative data highlighted significant challenges in module distribution and technological infrastructure issues. The study recommends improving technology infrastructure, creating development programs specifically for PE, and setting standard limits on the number of modules issued at a given time. Furthermore, the conversation around global educational resilience and adaptation is relevant for developing regions emerging from the pandemic and transitioning to blended learning practices and policies.

Keywords: competence, learning modality, senior high school, teaching performance

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Introduction

The sudden shift to other learning delivery modes has exposed our weaknesses regarding the preparedness and competency of our teachers in rolling out quality distance education programs. Education systems worldwide have embraced different remote learning mechanisms. However, it has been discussed that the core problem is whether teachers are ready and able to maintain the quality of education provided through these new modes (König et al., 2020). This becomes more challenging, particularly in places where systems like learning management are less ventilated, and educators need to adapt their traditional practice to match the distance learning need while providing quality education. Recent research (Trust & Whalen, 2021) has revealed that teachers' readiness for digitally enabled classrooms differs widely from region to region, with many not having the pedagogical digital skills required to effectively teach in an online setting.

Modular distance learning in the Philippines has brought to the surface real issues of either lack of preparation or lack of competency of teachers. It is the most prevalent form of educational delivery mode, with about 94% of Filipino students choosing modular distance learning through self-learning packets (Department of Education, 2019). However, this mass implementation has exposed evident problems with teacher readiness, especially in places without technological access. An estimated 40% of teachers have had no prior training in distance or remote-learning methodologies (Magsambol, 2020), indicating a massive gap between what must be implemented and what teachers could deliver. Furthermore, Toquero (2020) stated that developing and designing effective distance learning strategies

was an excellent challenge for Filipino teachers in translating printed teaching materials into virtual modality.

Davao City, Philippines faces particular difficulties since, apart from issues of technological literacy, teachers find it troublesome to transfer traditional manual writing skills in teaching and learning into digital communications (Llemit, 2020). Within this local context comes the urgency to make sense of teaching ability and, to some extent, teaching performance with modular learning. Likewise, recent research showed that even though distance learning in the new normal was coined, teachers, particularly in the rural and semi-urban areas of the country, are facing hindrances with the implementation, such as limited access to professional practice and provision of appropriate technology (Alvarez, 2020).

Furthermore, though the general effect of distance learning implementation has been covered, limited studies were explicitly focused on the teacher's competence and delivery in modular learning, especially in the Philippines. A significant gap in this context, considering this country's delivery mode of education and its use of modular learning as the dominant distance education form. However, as pointed out by Gillis and Krull (2020), although there has been much focus on student outcomes for distance learning, essential detailed investigations and discussions of teacher preparedness and efficacy in implementing these new modalities still need to be improved. The specific emphasis on PE teachers relates to the difficulties of adapting a subject that relies heavily on physicality and human interaction into a distance learning format. Additionally, Physical Education is about teaching and learning psychomotor skills, physical fitness, and sport-specific skills

by engaging students in physical activity and demonstration (Mercier et al., 2021).

Switching to modular learning brought challenges PE teachers have never faced, such as adapting movement-centered lessons to the written or digital instruction mode, developing self-paced learning activities, and assessing physical performance without seeing students in action. Nevertheless, the research of D'Agostino et al. (2021) states that the nature of how PE engages with traditional kinesthetic learning experiences, which rely heavily on demonstration, immediate feedback on movement exertions, and direct physical response or guidance, is specifically challenged in a modular context (Griggs, 2012).

Studies by Mercier et al. (2021b) and Varea and González-Calvo (2020) emphasize the challenge of this transition, as it requires PE teachers to reconceptualize their teaching practices while still ensuring student safety during free physical activities where they are not supervised directly, continuing to provide movement content without demonstrating the appropriate techniques personally, and designing engaging learning materials and experiences to convey and describe adequate movement performance abstractly. Yet these issues are magnified in places such as Davao City, where the absence of wider technological infrastructure further limits the avenues for remote PE teaching. Combined with these other adaptation demands, this urgent need to address unique challenges makes PE teachers a pivotal group to examine if we are to fully understand the implementation and impact of modular learning on education.

Thus, this study aims to assess the performance and competency of senior high school teachers implementing modular learning

in public schools in Davao City. It mainly explores the teacher's preparedness in the distance learning modality with their perspective and experiences, determines factors on teacher competence and performance in teaching, and examines the relationship of skills in digital literacy and performance in the content and assessment. The following are the specific objectives of the study:

1. Determine the level of teaching competence and teaching performance.
2. Examine the associations between competencies and performance.
3. Describe teachers' experiences and perspectives regarding the implementation of modular learning.

In addition, this research would provide a substantial foundation for evidence-based intervention meant to enhance teachers' ability to provide modular learning. Masalimova et al. (2022) state that knowing the competencies teachers need in distance education is essential, as this will help design professional development programs. This will provide evidence to inform professional development and policy recommendations for improving teacher preparation and support systems. Accordingly, this study will contribute additional information, which may be useful for decision-makers/policymakers to find out the appropriate ways of integrating distance education for areas that did not have full access to technologies, opening a door for educational policy and practice that can indeed transfer learning innovatively and interactively, not only in Davao City but, perhaps, in the country and the ASEAN region.

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Furthermore, the findings will guide educational administrators and policymakers as they formalize teacher professional development, targeting areas with the greatest need for professional technological proficiency. Ahmed et al. (2021) highlighted the importance of channelling teacher training in a local context considering community needs, which is more effective than general professional development approaches. Moreover, the results of this study shed light on the discussion of educational resilience and adaptation to adversities. Hobbs and Porsch (2021) noted these observations could be beneficial because they show the importance of understanding how teachers transition and implement new teaching resources in limited-resource settings for global educational systems. Moreover, implications to the literature regarding teacher effectiveness on distance education, adoption of modular learning, and teacher professional development models considering physical education teaching. The literature review provides both the theoretical framework to investigate PE teacher competency and proficiency in modular learning delivery and, more importantly, reveals critical gaps of understanding concerning the same.

The swift shift to modular learning has emphasized the importance of technology skills in teacher success, even for Physical Education (PE) teachers who have to convert physical classes into virtual or digital formats. Assessment of teaching skills in relation to learning outcomes has expanded beyond a simple task of distance learning provision to focus on PE competence in those tasks that provide PE instruction in distance learning environments. The third pillar is digital literacy, which, in addition to a way to approach information technology and internet use, includes technical competence in information, communication, and problem-solving and is the

basis of effective remote instruction (Calvani et al., 2012).

Such competency is essential in the Philippine context, where challenges in digital literacy are more pronounced. As fewer than 50 percent of Filipinos have core ICT skills (Department of Education, 2019; David et al., 2019), PE teachers experience added challenges in using technology-mediated means to deliver their traditional physical curriculum. Although the National ICT Competency Standards (NICS) is a guide for digital literacy, challenges in its effective implementation, such as the need for PE teachers to adopt technological tools and be trained in adapting those tools in the field of movement learning (Brown & Green, 2012), need examination.

The generational divide in technological competence further complicates this challenge. Although younger teachers seem more comfortable using technology, older teachers face a more significant challenge adjusting to new tools (Lisenbee, 2016). This gap is pertinent to PE instruction, where teachers must seamlessly transition between face-to-face modelling of skills, routines, and roles using physical demonstrations and the online delivery platform. Research from Lai and Hong (2014) echoes the importance of not only supporting the use of technology but also supporting collaboration and contextualizing digital skills within a domain of teaching practice (p. 11) — this might be especially salient for PE teachers as they need to envision how to reimagine the teaching of movement using technology.

This is compounded by the unsatisfactory levels of digital literacy in the Philippines, where 52% of the population is not digitally literate, including 22% who cannot use the internet

(Carretero et al., 2017). For PE teachers, this added challenge of remote learning is not only setting up learning modules but ensuring that these modules are of quality to replace what physical demonstration and practice can give their students. It calls for a closer look at how PE teachers create and implement technology skills that convert physical education content into readily available modular approaches, particularly in limited-tech settings.

The reviewed literature illustrates three interconnected dimensions critical to understanding the educational landscape. First, teaching competence with technology emerges as a fundamental challenge, particularly in the Philippines, where less than 50% of educators possess core ICT skills (Department of Education, 2019), creating significant barriers for PE teachers who must translate physical instruction into digital or printed formats. Second, established through systems like Results-Based Performance Management System (RPMS), teaching performance and quality frameworks require substantial adaptation to address the unique demands of remote instruction, especially in PE, where traditional performance metrics may not adequately capture the complexities of distance teaching. Third, the widespread adoption of modular distance learning, while necessary due to infrastructure limitations, has revealed significant challenges in delivery and effectiveness, particularly for subjects like PE that traditionally rely on physical demonstration and immediate feedback (Castroverde & Acala, 2021; SEAMEO INNOTECH, 2021).

Despite the growing body of research on emergency remote teaching, a significant gap exists in understanding the specific challenges and adaptations required for PE teachers implementing modular learning, particularly

in resource-constrained environments. While existing studies examine general teacher readiness for remote instruction, they fail to address the unique complexities PE teachers face who must transform kinesthetic learning experiences into self-directed modules. This gap is particularly pronounced in the Philippine context, where the intersection of limited technological infrastructure, varying levels of teacher digital literacy, and the inherent physical nature of PE instruction creates unique challenges that remain largely unexplored.

Therefore, this study aims to evaluate PE teachers' competency and performance in implementing modular learning in Davao City public schools, with specific attention to how they navigate the transformation of physical instruction into distance learning formats. By examining the relationship between technological competence, teaching performance, and modular learning implementation in PE contexts, this research seeks to provide evidence-based insights that can inform targeted professional development initiatives and policy recommendations for enhancing PE instruction in distance learning environments.

Theoretical Framework

This research explores how teachers adapted to emergency remote instruction during the COVID-19 pandemic. Their experiences provide insights into effective teaching with sudden transitions to new modalities like modular learning.

Bandura's Social Cognitive Theory (1986) serves as this study's primary theoretical foundation, particularly its triadic reciprocal determinism concept. It explains how personal

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factors, environmental influences, and behavior interact in teaching and learning. This framework is pertinent as it highlights the roles of teacher self-efficacy beliefs, settings (including technology assets and virtual platforms), and practices in influencing each other during adaptation to new modes of teaching (Bandura, 1986). In this theory, teacher performance is regarded as the composite function of their personal characteristics, environmental aids, and behavioral adjustments. Besides, Bandura's theory adequately accounts for how performance about teacher competence is persuaded, which selects four primary mechanisms. According to Bandura's Social Cognitive Theory (1986), mastery experiences are the moments in teaching that help establish and grow expertise by placing educators directly into practice. The focus here is on indirect learning, which happens when teachers see and learn from what works in the practices of their colleagues. Thirdly, social persuasion by building professional development and support systems enhances teachers' self-belief and efficacy. Lastly, the emotional state profoundly affects teaching to be effective on the teacher's psychological influences on their classroom performance (Bandura, 1986).

Similarly, the influential work of Shulman stressed that pedagogical content knowledge is inseparable from elements of subject matter and teaching strategies to develop understanding among students (Shulman, 1986). As a result, Mishra and Koehler extended this to technology integration skills, where they first introduced technological pedagogical content knowledge (Mishra & Koehler, 2006). These innovative concepts indicate that successful distance learning demands student-centered approaches and creative uses of technology tailored to different learning contexts and needs. Furthermore, it was expected that understanding how Filipino

teachers' knowledge, skills, and attitudes influenced their preparedness and effectiveness with the swift modular learning brought by the pandemic could inform educational practices.

The study sought to investigate the claim that teachers could efficiently integrate content, pedagogies, and technologies, resulting in better preparedness for emergency modular instruction. Probing this relationship through the lens of Social Cognitive Theory could inform policies to improve access, training, and tools for learning and equitable remote education. The theory suggests that enhancing teacher self-efficacy through targeted support and resources directly impacts teaching performance and student outcomes in the modular learning environment.

Moreover, the Social Cognitive Theory emphasizes research design by requiring both survey instruments (to measure observable performance) and in-depth interviews (to capture personal and environmental factors), leading to adopting an explanatory sequential mixed-methods approach. Furthermore, The TPACK framework guided the construction of interview protocols and survey questionnaires to assess how teachers integrated their technological, pedagogical, and content knowledge in emergency modular instruction.

Methodology

Research Design

This study used a mixed method research that involved explanatory sequential design, which entailed gathering predominantly quantitative data, followed by qualitative data to provide further explanation of a set of quantitative data, along with additional qualitative insights from

Senior High School (SHS) Physical Education teachers regarding the current pandemic crisis. Fundamentally, it promoted a greater comprehension of a particular phenomenon as experienced and described by the participants (Creswell, 2018; Giorgi, 2012). In this instance, the research employed semi-structured interviews to gain deeper insights into the real experiences of SHS teachers teaching remotely in the face of a health concern. The aim was to better understand the characteristics of highly effective teachers during distance education to learn about their performance and competency as teachers. Additionally, to have a deeper understanding of the current phenomena that have impacted the teacher’s preference in the chosen learning mode. The results of this study provided evidence of several contributions to the data investigation.

Participants

The study’s respondents were 61 senior high school teachers from public schools in Davao City who underwent the challenges of modular

learning during the COVID-19 pandemic. Participants were enlisted from purposive sampling based on specific inclusion criteria. Eligible teachers were those teaching Grades 11-12 in Davao City public schools and had been involved in implementing modular instruction since it was first rolled out due to restrictions due to COVID-19. Also, participants needed to be specialized or non-specialized PE teachers, teaching PE as part of their teaching load. Data were collected from teachers who were willing to participate and those who were available during data collection. Etikan et al. (2016) permitted the selection of instances directly pertinent to the study’s objective, ensuring a broad variation in the teaching experiences and backgrounds of the participants.

Similarly, for the qualitative component, six participants (P1 to P6) were purposely chosen for all-embracing interviews, covering a mix of years of teaching experience, specializations, and technology skills.

Table 1

Demographic Profile of Respondents

Characteristics	Category	<i>f</i>	%
Age	22 and below	5	8.2
	23 – 38 years	36	59.0
	39 – 54 years	20	32.8
Specialization	P.E specialized	28	45.9
	Non-P.E specialized	33	54.1
Teaching Experience	Less than 5 years	31	50.8
	6-10 years	10	16.4
	11-15 years	8	13.1
	More than 15 years	12	19.7
Highest Educational Attainment	Bachelor’s Degree	47	77.0
	Master’s	12	19.7
	Doctorate	2	3.3

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Ethical Considerations

Following standard ethical principles for research involving human participants (General Assembly of the World Medical Association, 2014), the protocol of this study was reviewed and approved by the university's graduate thesis panel committee. Participants were explicitly informed that their participation was optional and would be kept anonymous. The study was restricted to participants who agreed and signed the informed consent form.

Research Instruments

Two validated instruments were used for data collection to measure teachers' competency and performance. The first measure tailored an existing 10-item digital literacy scale (Ng, 2012) to assess the technology competency of teachers, using a five-point Likert scale where 5 = Strongly Agree, and 1 = Strongly Disagree. The second survey instrument consisted of 28 items measuring teaching performance in subject delivery and assessment, based on the Philippine Department of Education's National Competency-Based Teacher Standards (NCBTS), with a scale ranging from a five-point scale of below basic to highly proficient. The two instruments passed a formal content validation by subject matter experts and exhibited high reliability in pilot testing ($N = 13$ teachers; $\alpha > .80$). Through a systematic validation process, these instruments were validated for their appropriateness for assessing teacher competence and performance in emergency remote instruction.

Data Gathering Procedure

This study utilized the explanatory sequential research design, conducted in three phases (i.e.,

preliminary, survey, and post-survey). Each phase was systematically executed to ensure the reliability and validity of the research findings.

The initial stage, covering the period of October to November 2021, began with validation and testing of instrument reliability. A panel of field experts evaluated the research instrument for content and construct validity on October 20, 2021. The suggestions were then integrated to improve the effectiveness of the instrument. Additionally, reliability tests were carried out after this pilot test on December 03, 2021, using Cronbach Alpha Coefficient to get the result and adjust the tools when necessary. Simultaneously, the researcher began the process of administrative requirements. On November 08, 2021, a letter request was forwarded to the Davao City School Division, and on November 22, 2021, the said request was approved by the School Division Superintendent. This permission enabled access to the database of school email addresses in Division Office XI and granted permission to conduct both the quantitative and qualitative phases of the study.

The surveys were conducted from 10 December 2021 to 10 March 2022 (the survey phase). In this stage, Google Forms was used by the researcher for the online dissemination of the survey instrument to DepEd School Emails of secondary schools providing Senior High. The digital questionnaire gave detailed information about its aims and had an informed consent section at the beginning of the questionnaire regarding being in the study and adhering to the data protection and security requirements. Data was collected over three months, and response rates were monitored regularly, with follow-up reminders to optimize participation, until 10 March 2022.

Moreover, in-depth interviews with six purposively chosen senior high school teachers were conducted in the post-survey phase, and the qualitative data from the interviews were recorded and collated. All interviews were conducted on the Zoom platform, lasting around three hours each, and this extra time enabled an in-depth exploration of the participants' experiences and perspectives. Each interview began with a briefing and confirmation of consent before moving to the primary interview, where teachers discussed their experiences, views and context around contemporary educational challenges. The public health crisis focused on competency and performance across their learning delivery modes. All interviews were recorded via Zoom, and transcription was done right after each interview to ensure that data would not change over time. The interview was also lengthy, which helped us to collect rich and thick data that complement the quantitative findings based on the survey phase.

Data Analysis Procedure

Data were treated and analyzed based on descriptive statistics. The level of teaching competence in digital literacy was specified using a 5-point Likert weighted mean and standard deviation. A 4-point Likert scale was also used to analyze and evaluate the mean levels of *teaching performance* in terms of content and assessment as perceived by the respondents. The level of teaching competence and the respondents' teaching performance were interpreted using Pearson R to identify whether there was any correlation. Additionally, qualitative data analysis complemented and enriched the quantitative outcomes, leading to a deeper understanding of the research goals. Furthermore, the results of the survey and interviews were then sequentially incorporated with the data from statistical calculations using SPSS for the

study's interpretation and discussion, which the respondents provided.

Findings

The results from the analysis of teachers' competence and performance concerning three significant aspects (digital literacy competence, delivery of content performance, and assessment methods) were characteristically substantial to the capabilities of our SHS teachers. Both quantitative and qualitative data findings were integrated to identify trends and challenges.

Level of Teaching Competence and Performance

Table 2 comprehensively analyzes teachers' competence and performance across three key domains: *digital literacy, content delivery, and assessment methods*. The integration of these measures provides a holistic view of teacher capabilities, with standard deviation values indicating response variability.

The analysis reveals notable variability in teachers' digital literacy competence ($M = 4.06$, $SD = 0.52$), with the highest scores in emerging technology updates ($M = 4.31$, $SD = 0.43$) and digital collaboration ($M = 4.31$, $SD = 0.44$). Interviews with participants identified information that informs these digital competencies as they apply to teaching, especially the connection between technical skills and efficacy in online instruction. This finding is supported by interview data, with one participant noting that "*It does not lessen our competency in teaching. The only difference is how you provide feedback to the student, which is easier when you have face-to-face classes.*" (P6, Personal Communication, 27 June 2022).

Table 2

Teachers' Competence and Performance

Domains	Indicator	Mean	SD	Interpretation	
Digital Literacy Competence	Knowledge and Skills Resolution	4.11	0.52	Agree	
	Technology Adoption	4.18	0.48	Agree	
	Updates on Emerging Technology	4.31	0.43	Strongly Agree	
	Technology Understanding	3.77	0.61	Agree	
	ICT Usage and Artifact Production	3.97	0.55	Agree	
	Digital Proficiency	3.84	0.58	Agree	
	Information Search Skill	4.02	0.49	Agree	
	Web-based Activity Proficiency	4.03	0.47	Agree	
	Digital Collaboration	4.31	0.44	Strongly Agree	
	Online Peer-Engagement	4.08	0.51	Agree	
	Domain Mean	4.06	0.52	Agree	
	Content Delivery Performance	Goal Alignment	3.26	0.48	Highly Proficient
		Methodological Diversity	3.21	0.53	Proficient
Systematic Instruction		3.28	0.47	Highly Proficient	
Intervention Strategies		3.16	0.59	Proficient	
Cultural Responsiveness		3.28	0.46	Highly Proficient	
Special Need Accommodation		3.34	0.45	Highly Proficient	
Equitable Treatment		3.44	0.42	Highly Proficient	
Domain Mean		3.28	0.49	Highly Proficient	
Assessment Methods	Assessment Design	3.28	0.46	Highly Proficient	
	Alternative Evaluation	3.30	0.45	Highly Proficient	
	Outcome Analysis	3.25	0.48	Highly Proficient	
	Challenge Identification	3.28	0.47	Highly Proficient	
	Intervention Management	3.18	0.52	Proficient	
	Learning Evaluation	3.34	0.44	Highly Proficient	
	Feedback Provision	3.31	0.45	Highly Proficient	
	Documentation	3.39	0.43	Highly Proficient	
	Parent Communication	3.28	0.46	Highly Proficient	
	Domain Mean	3.29	0.47	Highly Proficient	

Legend:

Digital Literacy Scale: 4.20 – 5.00 = *Strongly Agree*, 1.80 – 2.59 = *Disagree*, 2.60 – 3.39 = *Neutral*,
3.40 – 4.19 = *Agree*, 1.00 – 1.79 = *Strongly Disagree*,
Performance Scale: 3.25 – 4.00 = *Highly Proficient*, 1.75 – 2.49 = *Basic*, 2.50 – 3.24 = *Proficient*,
1.00 – 1.74 = *Below Basic*

In content delivery performance, teachers demonstrated high proficiency overall (M = 3.28, SD = 0.49), with particular strength in equitable treatment (M = 3.44, SD = 0.42). However, intervention strategies showed lower scores (M = 3.16, SD = 0.59) with higher variability, suggesting inconsistent implementation. The qualitative data revealed significant systemic challenges in module distribution and preparation, providing context to understand the quantitative performance scores better when looking closely at teachers' experiences in content delivery. This finding is reflected in teacher responses that *“Due to the centralized system of module distribution, we need to acquire the modules per cluster.”* (P1, Personal Communication, 27 June 2022); P2 agreed and concurred with P1 that *“There is a discrepancy of the content and lack of preparedness in the production of modules of thousands of students.”* (Personal Communication, 27 June 2022).

Moreover, assessment methods showed consistently high proficiency (M = 3.29, SD = 0.47), with the most robust performance in documentation (M = 3.39, SD = 0.43). This domain's relatively low standard deviations suggest more uniform assessment practices across teachers. However, teacher interviews achieved a more nuanced understanding of assessment implementation by identifying technological and pedagogical adaptations required in the online learning environment. This qualitative information served as vital context for the quantitative assessment score proficiency ratings, which indicates challenges in implementation:

It's different when you interact physically with the students because you can feel their presence in the classroom, compared to having an online class where you can

only see their faces on screen. The reinforcement is much more complex, be it positive or negative. (P4, Personal Communication, 27 June 2022)

Relationship between Teaching Competence and Teaching Performance

The analysis of relationships between digital literacy competence and teaching performance revealed interesting patterns.

Table 3

Relationship Between Digital Literacy Competence and Teaching Performance

Variables	r-value	p-value
Digital Literacy – Content Delivery	0.226	.080*
Digital Literacy – Assessment	0.341	.007**

**p<.00 *p>.05

The data reveals a significant positive correlation between digital literacy and assessment performance (r = 0.341, p = .007), while no significant correlation was found with content delivery (r = 0.226, p = .080). This result suggests that teachers' digital literacy skills influence their ability to conduct and manage assessments rather than content delivery. Additionally, the teachers' narratives of their assessment experiences shed light on the reasons underlying this relationship, specifically technological obstacles and adaptations in the digital assessment process. This statistical finding is supported by teachers' experiences with digital assessment challenges *“Teachers are having a difficult time managing the enormous number of students in each area, and the school is not ready. Even with an*

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advisory, circumstances need to be adjusted.” (P3, Personal Communication, 27 June 2022).

Overall, the results revealed that teachers had a high level of digital literacy, which translated to effective content delivery and assessment. Nevertheless, they had massive systemic challenges over module distribution, technical infrastructure and adjustment of new normal assessment within modular distance learning mode.

Discussion

The discussion from this research provides meaningful and relevant insights related to digital literacy level and teaching performance with assessment techniques in modern-day education.

Level of Teaching Competence and Performance

Digital Literacy Competence

Results showed that a digital literacy competence analysis for senior high school PE teachers in Davao City, Philippines, provides valuable information about how teachers adopt technology in schools. The mean score stands highly from the quantitative results. However, references are made in the discussion to give meaning to the results based on the literature. These powerful reported skills with apps and technologies for digital collaboration indicate that, from the school's perspective, they are implementing technology in their educational offerings. This is in line with Greenhow et al. (2022) research on trends in technology adoption, which highlights the dynamics of digital competence within the framework of education in the information society.

In addition, the variation in digital literacy score shows the average standard deviation of educators' varied technological readiness. This variability highlights the importance of developing professional development strategies contextualized to different technological capacities. Greenhow et al. (2022) also argue that this view must be refined, focusing on the desirability of target pathways to up-skill technology. The results indicate more comprehensive digital literacy and an opportunity for targeted action to create personnel software competence across the teaching profession.

Content Delivery Performance

The findings on content delivery performance shed light on the multi-dimensional nature of educational adjustment during adverse pedagogical contexts. Moderate performance indicates that there are subtle challenges in instructional delivery. The wide variation in the type of intervention adopted suggests systemic discrepancies in educational practices.

Subsequently, these results align with research done by Reimers and Schleicher (2020) regarding inequities in access to remote learning, especially in low-tech environments. Qualitative data bringing out the module distribution challenges add critical context to the numbers around performance. This implies that the content delivery challenge is technical and systemic, involving resources, modules, and institutional support.

Assessment Methods

The assessment methods domain represents a meaningful dimension of educational effectiveness. The high level of competence in assessment universal highest performance in

documentation indicates a structured process. The qualitative data showed that online assessment environments required significant changes in technology and pedagogy. Participants emphasized that the interaction and reinforcement of online assessment have unique complexities, and indeed, the interactions between students and instructors in a physical versus digital classroom are fundamentally different. Such findings indicate that reinforcement and interaction in the context of digital assessment are much more complex than one might assume, underscoring how dynamic interaction within a traditional physical classroom is much more different than in an online one.

Relationship between Teaching Competence and Teaching Performance

A significant finding emerges from the analysis of assessment methods and their relationship with digital literacy. The strong correlation between digital literacy and assessment performance suggests that technological competence directly influences teachers' ability to evaluate student learning effectively.

According to Abel et al.'s study (2022), this relationship indicates that digital literacy skills assessment methods are much more than content dissemination strategies. The researchers also sought this tendency, which likely emerges from the complicated nature of digitized environment exam administration and execution, which need higher technological capability than physical material delivery.

Overall, the findings may be utilized for further research into effective hybrid models that could support differing levels of technology mastery and access while providing a high level of quality in education. These implications are

consistent with the literature on (1) systemic approaches to educational technology integration (Reimers & Schleicher, 2020) and (2) a professional learning agenda for digital teaching practices (Abel et al., 2022). In addition to providing targeted but more intensive support for instructors in areas where they have expressed clear need, primarily around the design and delivery of assessments, the sector should turn some focus towards future-proofing their digital infrastructure.

Moreover, the findings also highlight a need for further research into effective hybrid styles that suit varying levels of technology expertise and accessibility while maintaining high standards of educational quality. Such implications reflect previous findings where some researchers recommend systematic approaches to educational technology integration (Reimers & Schleicher, 2020), while others highlight the ongoing demand for and attention given to PTs continuing professional development in digital methods of teaching (Abel et al., 2022).

Conclusion and Recommendation

This study determined the degree of competence and performance level in implementing modular distance learning among senior high school PE teachers in Davao City, Philippines during the COVID-19 pandemic. By filling in some of the gaps in the literature, these findings contribute valuable information to the literature concerning teacher preparedness and abilities to implement emergency remote instruction.

The quantitative results showed moderate competence among teachers regarding digital literacy and technical skills. They could perform basic educational technology tasks but optimize

more advanced features. Teachers also self-reported high proficiency in delivering content tailored to student needs, and assessments provide robust monitoring and feedback. Additionally, the study findings identified a relationship between competence and evaluation performance but not content delivery. Moreover, the interviews further revealed systemic barriers that limited the support for teachers required in expanded infrastructure and the localized nature of training. Although the program is highly flexible, teachers highlighted issues such as the availability of modules and the development of formative assessment skills.

The findings suggest essential policy and theoretical implications. Policymakers should invest in targeted professional development to enhance teachers' technology integration skills, especially for assessment design and implementation. This aligns with research showing the benefits of technological training. The study also indicates a need for systemic improvements in digital infrastructure and resource distribution to address inequities exacerbated by remote learning. Theoretically, the vital link between digital literacy and assessment performance contributes to understanding how technological competence impacts teaching effectiveness, particularly in online environments.

Moreover, while teachers may have proven that they can adjust to modular training and self-learn, an upskilling in technology integration skills and addressing institutional inequalities could ensure better access and quality online education delivery. A comprehensive strategy that supports teacher development and addresses systemic issues should be suggested. Furthermore, appropriate policies to ensure inclusive utilization of remote learning materials would augment and enhance the quality and

accessibility of technology for assessment and differentiated teaching via remote learning.

Nevertheless, the study's self-reported data and restricted geographic coverage pose limitations. The reliance on self-reported teacher competence data means future research should incorporate more objective measures such as classroom observations. Additionally, focusing on Davao City teachers limits generalizability, and expanding the sample to other regions would strengthen the external validity. Incorporating student perspectives on remote learning experiences could also provide valuable complementary insights. Future research could examine measured competence and teaching observations. Broader samples would strengthen generalizability across Philippine contexts. Exploring student perspectives could provide additional insights into remote learning experiences.



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