



DIGITAL COMPETENCE AND PRACTICES: THEIR INFLUENCE ON THE MASTER TEACHERS' PERFORMANCE IN THE DIVISION OF BUTUAN CITY, PHILIPPINES

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ABSTRACT

This study explored the influence of digital competence and practices of master teachers in the Division of Butuan City, on their professional performance. Specifically, it investigated the level of performance among elementary master teachers in terms content knowledge and pedagogy, learning environment and diversity of learners, curriculum planning, assessment and reporting and community linkages and professional engagement and personal growth and professional development as stipulated in their IPCRF. Also, it looked into the extent of digital competence as evident among master teachers in terms of professional engagement, digital resources, digital instruction, digital assessment, empowering students' digital growth and facilitating students' digital competence. Likewise, the standard digital practices employed by the master teachers were also assessed.

Ninety-two elementary master teachers served as the respondents and 20 participants were included to gather the qualitative data. The study employed a multi-method research design using both quantitative and qualitative approaches. Quantitative data were treated using mean, standard deviation, Pearson r , and Regression while the qualitative data were treated using thematic analysis. Findings revealed that while master teachers demonstrated outstanding performance in content knowledge, pedagogy, and classroom management, their professional engagement in curriculum planning, assessment, and professional development was only rated as very satisfactory. Although they showed high levels of digital competence,

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this did not significantly influence their overall performance except in curriculum planning, assessment, and reporting, where it emerged as a key predictor.

Keywords: *Influence, Digital Competence, practices of master teachers, professional performance, IPCRF, professional engagement, digital resources, digital instruction, digital assessment, empowering students' digital growth and facilitating students' digital competence*

INTRODUCTION

The educational landscape is continuously evolving, influenced by technological advancements, globalization, and the shifting demands of 21st century learners. Today, schools are tasked with preparing students to be digital citizens equipped with the essential skills needed to thrive in a highly digital society. In this dynamic context, the role of master teachers has become increasingly critical. Master teachers are responsible not only for delivering high quality instruction but also for guiding less experienced educators and fostering a culture of continuous improvement. The increasing integration of digital technologies in education is recognized globally as essential to achieving sustainable development (Zhao, 2018).

According to UNESCO (2019), the United Nations' Sustainable Development Goal No. 4 emphasizes the need for quality education and lifelong learning, with digital competence playing a pivotal role in modern educational practices that contribute to global efforts in fostering high-quality education supported by technology. Additionally, this aligns with SDG 9, which emphasizes the importance of innovation and infrastructure, particularly in the context of digital transformation. Strengthening the digital competence of master teachers will not only improve local educational practices but also contribute to the broader objective of sustainable development through technological innovation in education (World Bank, 2021).

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In the Philippines, educational reforms like the Enhanced Basic Education Act of 2013 (Republic Act No. 10533) seek to provide Filipino learners to prepare them to take on the challenges of the 21st century. It emphasizes the legal mandate of promoting the right of all citizens to take appropriate steps in making education accessible to all. The Department of Education is geared towards the transformation of education through the Dep Ed's Computerization Program, which provides public schools with appropriate technologies (DepEd Order No. 78 s. 2010). The department emphasizes that teachers can integrate the use of technology into the different parts of the lesson, the use of computers to speed up the preparation of the daily lesson, creating a portal as a resource for their lesson preparation, classroom assessment, instructional methods and strategies with the ICT integration in teaching and learning process (DepEd Order No.42 s. 2016).

Master teachers, as instructional leaders, play a central role in aligning their teaching performance with these frameworks, particularly in making education and guiding classroom teachers in integrating digital tools. In this light, master teachers' digital competence becomes essential for fostering innovation, as their guidance can support the successful implementation of national educational standards. Despite these reforms, there were disparities in master teachers' ability to meet Dep Ed's standards, particularly in integrating technology into teaching practices. This gap suggests a need for more targeted professional development and support structures to standardize digital competence across educators.

The transition to digital education in Butuan City presents both advantages and challenges for master teachers, whose leadership skills are crucial in a technology-focused educational landscape. This research aims to investigate the influence of digital competence on master teachers' effectiveness, leadership capabilities, and instructional quality by employing the DigCompEdu framework, which is specific to educators. This was carried out by the European Union 6 Commission to determine the digital competencies of master teachers and develop them accordingly. It will identify the digital practices employed in educational integration and explore the influence of digital competence. Moreover, the study

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assessed how policies reveal and address the challenges teachers face in developing the necessary digital competencies to enhance teaching effectiveness and support student learning. The findings are expected to address the need for technical assistance and training programs and provide policy recommendations that empower master teachers to improve their performance and student outcomes in a rapidly changing educational environment.

Finally, it could support guidance for the continuous professional development of educators and hope to allow for not only revealing and comparing the current situation according to the DepEd standards but also contributing to attempts and improvements to be made towards the fulfillment of the Dep Ed ICT benchmarks therefore, high educational performance in schools is a "must," as the digitization of society is "the 'lifeblood' of the 21st-century economy" (WEF, 2019).

MATERIALS AND METHODS

The study used a multi-method research design, employing quantitative and qualitative methods, which allowed for a more comprehensive understanding of the study by combining various perspectives and data sources. The quantitative method was used to determine the level of digital competence of the master teachers and its influence on their master teachers' performance. Likewise, it was used to determine the predictors. The qualitative method was used to discover the patterns and themes in the respondents' practices in relating technology-supported instructions and their perceived barriers and challenges faced by the master teachers in integrating digital tools and technologies in the teaching and learning process. The approaches involved collecting and analyzing both types of data separately and then combining the findings to provide a comprehensive understanding of the research questions

The study utilized the master teachers' Individual Performance Commitment and Review Form (IPCRF) of the Department of Education in the Philippines to evaluate the

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teachers' performance on how well teachers are meeting their goals and expectations and to provide feedback, guidance for professional development, and to ensure alignment between individual teacher performance and the overall goals of the schools. The DigCompEdu Check-in tool as adapted to assess the master teachers' digital competence. Interview guide questions were used to gather the practices of the master teachers.

RESULTS AND DISCUSSION

The master teachers demonstrated an "outstanding" performance in content knowledge and pedagogy. They effectively apply content knowledge across the curriculum, model proficient language use, and evaluate teaching strategies with an outstanding rating. However, one indicator, evaluating teaching strategies for literacy and numeracy, is rated "very satisfactory".

In the Learning Environment and Diversity of Learners, the master teachers achieve an "outstanding" performance. All indicators are rated outstanding, showcasing their remarkable ability to create inclusive, learner centered environments and implement effective strategies to support diverse learners, including those from Indigenous groups. For curriculum planning, assessment, and reporting, was categorized as "very satisfactory." Strengths included providing constructive feedback mean=4.57 and collaborating with colleagues to utilize assessment data. However, the indicators for setting learning outcomes and modifying practices based on assessment data received "very satisfactory" ratings. Community linkages, professional engagement, personal growth, and professional development was also rated as "very satisfactory." Indicators such as strengthening relationships with parents and initiating professional reflections were rated positively. However, they showed room for further improvement to reach the "outstanding" level

The findings indicate that master teachers consistently perform at an outstanding level, particularly excelling in demonstrating content knowledge and pedagogy and creating a learning environment and diversity of learners. However, there are slight gaps in the

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performance within the domain of curriculum and planning and assessment and reporting and working on community linkages, professional engagement per personal growth, and professional development, where further enhancement could elevate all domains to an outstanding level. The DepEd emphasized continuous personal growth and professional development as vital for maintaining high standards in these domains.

The master teachers demonstrated a high level of digital competence, indicating they are generally "highly competent" in utilizing digital technologies. Teachers showed notable skills in managing, protecting, and sharing digital resources, selecting appropriate tools and materials, and creating or modifying digital content. These results suggest that master teachers are confident and capable of integrating digital resources into their instructional practices. In the area of Professional Engagement, teachers also displayed a high level of competence, though with a slightly lower mean score. Specific indicators like digital continuous professional development, organizational communication, reflective practice, and professional collaboration reflect consistent, though slightly varied, levels of engagement. Overall, the findings highlight that master teachers are well-equipped to use digital technologies not only in the classroom but also in supporting their professional growth and collaboration.

The regression analysis reveals that professional engagement, digital competence, and facilitating students' digital competence of the digital competence variables are predictors of the master teachers' performance, considering that the p-values of these variables are all less than the level of significance of 5%. Hence, the null hypothesis is rejected. This means that the collected data provided strong evidence against the null hypothesis.

The master teachers' frequency of use of digital tools shows considerable variation, with some integrating technology regularly while others report using it sparingly. Many teachers primarily use digital tools for administrative tasks or occasional student engagement, indicating that while the desire to incorporate technology exists, its frequent use is constrained by limited access to resources or time (Salmon & Chase, 2021), inadequate training, traditional methods, and resource limitations.

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When it comes to the variety of digital tools used, many educators employ diverse resources, such as apps, online learning platforms, and multimedia tools to engage students. However, some teachers limit their toolsets due to limited use of technology, content-focused, curriculum-driven instruction, and test-oriented teaching (Kumar et al., 2022). As a result, there is a missed opportunity, digital divide, and learning deficiencies for personalizing learning and promoting student engagement. Teachers relying on a narrow selection of digital tools may also find it challenging to address the varied needs of students, limiting the reach and impact of digital education (Moodle, 2021).

The inability to expand the range of tools limits the creative application of digital technology in enhancing learning. In terms of differentiation of methods, teachers are aware of the importance of adapting their instructional strategies to meet diverse student needs. However, many report challenges in fully leveraging digital tools for this purpose, such as comfort with tradition, preference for personalization, lack of resources, poor technological infrastructure, and insufficient digital access.

The perceived tool limitations, familiarity over innovation, confidence in tradition, and limited access to devices, combined with a lack of training on how to effectively use technology for differentiated instruction, prevent educators from utilizing 69 digital tools to their full potential (Darling-Hammond, 2021). While there are efforts to incorporate differentiated strategies in teaching, the actual integration of technology to meet individual learning styles and needs remains insufficient (Black & William, 2020).

Assessment integration through digital tools has seen some adoption, particularly for tracking student progress and providing real-time feedback. Teachers often use digital tools for formative assessments, but integrating these tools for summative assessments is less common due to barriers like lack of technical skills or access to devices (William, 2021), comfort with tradition, preference for personalization, lack of resources, poor technological infrastructure and insufficient digital access.

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Although digital platforms can enhance assessment practices, their integration into everyday teaching is inconsistent, with some teachers still relying on paper-based or traditional methods for final evaluations (Zhao et al., 2021). The complexity and time-consuming nature of setting up digital assessments also contributed to this gap.

The findings highlight that while teachers recognize the value of digital tools, their consistent and meaningful integration is hindered by inadequate training, traditional practices, limited resources, and time constraints. The restricted variety and inconsistent use of technology limit opportunities for personalized learning, differentiated instruction, and comprehensive digital assessment. To fully realize the potential of digital tools in education, systemic support, targeted training, and a shift toward more flexible, student-centered pedagogies are essential.

Conclusions

Based on the findings of the study, the following conclusions are drawn:

While master teachers in Butuan City demonstrate an outstanding level of professional performance and possess high digital competence, their ability to fully leverage digital technologies for enhanced teaching and learning is significantly hampered by a range of interconnected challenges. Master teachers' strong digital skills positively contributed to their overall performance, and factors like professional engagement and their efforts to facilitate students' digital competence further contributed to their effectiveness.

The master teachers' digital competence could be due to the support given by DepEd in the form of training and workshops, as well as their initiatives to enhance their digital competence. The teacher's active involvement in their profession, their proficiency in using digital technologies, and their efforts to develop their students' digital skills are key drivers of their overall effectiveness. The restricted variety and inconsistent use of technology due to

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some students' economic conditions limit the opportunities for personalized learning, differentiated instruction, and comprehensive digital assessment.

While master teachers exhibit strong instructional capabilities, they demonstrate outstanding performance in content knowledge, pedagogy, and learner- centered classroom management; their professional engagement in areas such as curriculum planning, assessment, community linkages, and continuous professional development remains an area for enhancement.

Despite a high level of digital competence in handling digital resources and promoting responsible digital use, this competence does not significantly impact their overall professional performance across domains, except in curriculum planning, assessment, and reporting, where it plays a notable role. This suggests that digital competence alone is not a universal determinant of professional effectiveness but becomes critical when applied to specific pedagogical functions.

Master teachers acknowledge the potential of digital tools; however, their integration into practice is hampered by structural and personal barriers, including limited training, traditional teaching preferences, inadequate resources, time limitations, and digital literacy issues among both teachers and students. These challenges highlight the need for a systemic approach to professional development.

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