

INFORMATION Communication Technology Orientation and Teaching Efficacy as Correlates of Adaptability among Junior High School TEACHERS

Karl Jay V. Blaquera¹ & Thelma O. Alderite, PhD²

¹Teacher III, Department of Education, F. Bangoy National High School
kblaquera_220000000468@uic.edu.ph

²University of the Immaculate Conception, Davao City
talderite@uic.edu.ph

ABSTRACT

Teaching in the modern educational landscape requires not only pedagogical expertise but also adaptability. This quantitative study employed a descriptive correlational design and investigated the influence of ICT orientation and teaching efficacy on the adaptability of public junior high school teachers in District II, Davao City Division. Sets of validated and adapted survey questionnaires were administered to measure ICT orientation (factors including advantage, compatibility, ease of use, and perception); teaching efficacy (factors including instruction, motivation, and classroom management); and adaptability (factors including concern, control, curiosity, and confidence). Data were analyzed using mean, standard deviation, Pearson's product-moment correlation, and multiple regression. The results revealed that public junior high school teachers have a high level of ICT orientation, a very high level of teaching efficacy, and adaptability. Further, there is a significant positive relationship between ICT orientation and adaptability and between teaching efficacy and adaptability. Multiple regression analysis showed that both ICT orientation and teaching efficacy significantly influenced adaptability.

KEYWORDS: *Education, ICT orientation, teaching efficacy, descriptive correlational, Philippines.*

INTRODUCTION

Adaptability is the ability to change actions and thoughts in response to new situations (Martin et al., 2012). In education, adaptability has become increasingly important due to rapid changes in technology, what teachers need to teach, and new ways of teaching (Collie & Martin, 2016). In fact, the

Organization for Economic Cooperation and Development's Teaching and Learning International Survey revealed low levels of teacher adaptability in using new teaching methods and technological advances in education. Surprisingly, the report highlighted that millennial teachers are less likely to report openness to innovation. Consequently, König et al. (2020) found low adaptability levels, even in well-resourced schools, where teachers still often struggle to keep up with integrating technology and educational methods.

From a global perspective, adaptability has gained attention across various educational environments. According to Loughland and Alonzo (2019), Australian teachers often face challenges in adapting their methods to integrate technology effectively, highlighting the gap between what policies expect and what actually happens in classrooms. They saw that, even though policies and practices are increasingly focused on teacher adaptability, there is limited evidence on how teachers' adaptability relates to other important professional qualities, such as self-confidence, feeling supported, and autonomy. Similarly, MacIntyre et al. (2020) found that educators in the United States struggled to adapt quickly to online learning, underscoring the need to improve their ability to respond to changing situations. In Korea, Hwang (2014) noted that adaptability was important for high school teachers when they successfully implemented new curriculum changes, but also observed that many teachers struggled to align their teaching approaches with new educational tools.

Moreover, in the Philippines, the study by Alipio (2020) showed that universities are not fully prepared for distance learning, as evidenced by many teachers who have struggled to adapt their teaching styles beyond simple physical classes or lectures to video capabilities. This conclusion was also supported by the study by Toquero (2020), which showed that teachers at different educational levels had significant difficulty adapting and had to find purposeful activities to address anxiety due to the suspension of national school-related activities in the country. Meanwhile, Gonzales (2021) reported

that teachers had difficulty adapting to changes due to limited infrastructure resources and insufficient opportunities for professional growth.

Several empirical studies have already explored the relationship between ICT orientation and adaptability. Common ground to these studies shows that teachers with strong ICT orientation often adopt more flexible and responsive instructional approaches (Corpus et al., 2022); teachers who embrace technology tend to exhibit higher levels of adaptability, particularly in dynamic educational environments (Howard & Mozejko 2015); ICT-oriented teachers demonstrate higher levels of adaptability in implementing blended and flexible learning approaches (Syahputra & Sagala, 2022); teachers' ICT orientation significantly influence their ability to adapt to technological changes in education (Wang & Haggerty, 2011); ICT orientation contributes to teachers' flexibility in implementing various components of blended learning including time, content, instructional approach, and delivery logistics (Zhou et al., 2020);

Similarly, numerous studies have explored the significant relationships between teaching efficacy and adaptability. They found that there is a strong link between teaching efficacy and teachers' adaptability, emphasizing how confidence in one's abilities supports responsive practice (Fan et al., 2023); teachers with higher teaching efficacy are more flexible and adaptive in their teaching (Klassen & Tze, 2014); and teaching efficacy is a key predictor of teachers' willingness to implement new instructional approaches (Tschannen-Moran & McMaster, 2009).

While numerous studies explore ICT orientation among teachers, teaching efficacy, and adaptability separately, the researcher has been unable to access studies that examine these factors interacting. On one hand, Teo et al. (2019) examined factors influencing teachers' ICT orientation and technology acceptance. On the other hand, Skaalvik and Skaalvik (2010) investigated relationships between teaching efficacy and teacher burnout. Therefore, the researcher decided to investigate if ICT orientation and teaching efficacy significantly influence adaptability among public junior high school teachers in District II of Davao City Division.

Further, this research has the potential to enhance methods and rules by offering insights into the factors that influence teachers' ability to adapt in today's digital, ever-evolving educational environment. Furthermore, this study may help improve teacher training programs and school guidelines to promote

adaptability. Ultimately, society stands to gain from prepared teachers who can deliver quality and significant education that prepares students for the evolving needs of the modern workforce. This could ultimately lead to student achievements and may help reduce educational disparities while elevating educational standards in Davao City and neighboring areas. Moreover, the findings from this research could guide decision-making bodies in the education sector at both local and national levels, potentially shaping how resources are allocated and strategic plans are developed to enhance teacher flexibility and ultimately improve outcomes. By filling this gap, the study can greatly improve practices and policies and benefit society by significantly enhancing the quality and relevance of education.

Furthermore, the researcher intends to share the findings of this study during faculty gatherings, such as Learning Action Cell (LAC) sessions and cluster meetings, as well as parent-teacher association meetings and division- or national-level assemblies. Additionally, the researcher aims to showcase this study at international research conferences whenever possible. In addition, the researcher plans to publish this study in a relevant or appropriate journal to ensure wider dissemination.

Statement of the Problem

1. What is the level of ICT orientation, teaching efficacy, and adaptability of public junior high school teachers in District II, Davao City Division?
2. Is there a significant relationship between ICT orientation and adaptability, as well as between teaching efficacy and adaptability?
3. Do ICT orientation and teaching efficacy significantly influence adaptability?

METHODOLOGY

Research Design. This quantitative study employed a descriptive-correlational design to examine ICT orientation and teaching efficacy as correlates of adaptability among junior high school teachers. A descriptive design was employed to measure and characterize levels of ICT orientation, teaching efficacy, and adaptability among junior high school teachers in District II, Davao City Division. Using standardized survey instruments, the researcher collected numerical data representing teachers' self-reported assessments across these three constructs, analyzed descriptive statistics to determine central tendencies and variability, and examined relationships among variables using correlational and regression analyses

without experimental manipulation. Moreover, a correlational design was employed to investigate the relationships between ICT orientation and adaptability, as well as between teaching efficacy and adaptability among public junior high school teachers in Davao City. Specifically, Pearson product-moment correlation coefficients were calculated to determine the strength and direction of these relationships, while multiple regression analysis was used to examine how the independent variables, ICT orientation and teaching efficacy, collectively influence the dependent variable, adaptability.

This study found that the quantitative descriptive-correlational research design was well-suited to the study, as it aligned with the research objectives of measuring and understanding the relationships among ICT orientation, teaching efficacy, and adaptability among junior high school teachers in District II, Davao City.

Research Locale. The study was conducted in the three public secondary schools in District 2, Davao City. The researchers chose the schools that participated in this study because they had similar characteristics in terms of school type, student population, and technological resources. All three schools belong to the large category offering junior high school education (Grades 7-10). The respondents in this study were 200 junior high school teachers holding permanent, regular positions from the three public secondary schools. Moreover, stratified random sampling was employed in this study to ensure proportional representation.

Research Instruments. To gather the data, this study used a validated survey questionnaire, which was also subjected to a reliability test. The final output of the survey questionnaire incorporated the validators' comments and suggestions.

The first part of the survey questionnaire assessed the first independent variable, ICT orientation. This questionnaire was adapted from the ICT Orientation Scale originally developed by Bhat and Bashir (2018). This 15-item, 5-point Likert scale measures teachers' Information and Communication Technology (ICT) orientation across four dimensions: advantage, compatibility, ease of use, and perception.

The second part of the questionnaire evaluated the second independent variable, which is teaching efficacy. This section was adapted from the Teacher

Sense of Efficacy Scale (Short Form) developed by Tschannen-Moran and Hoy (2001). This 24-item tool measures teachers' self-perceived capability to influence student outcomes and identifies three core dimensions: efficacy in student engagement, instructional strategies, and classroom management.

The third part of the survey questionnaire evaluated adaptability and was adapted from the study by Savickas and Porfeli (2012), titled the CareerAdapt-Abilities Scale. The scale consists of 24 items and measures an individual's career adaptability resources across four dimensions: concern, control, curiosity, and confidence.

Table 1
Reliability of the instrument

Items	Cronbach's Alpha	No. of items	Internal Consistency
ICT Orientation	.611	5	Acceptable
Teaching Efficacy	.913	4	Excellent
Adaptability	.822	5	Good

Ethical Considerations. The conduct of this study strictly followed the ethical protocols prescribed by the University of the Immaculate Conception's Research Ethics Committee (UIC-REC). All participants took part on a purely voluntary basis and were accorded full dignity and respect throughout the process. Concerns were attended to without delay, and any personal information shared by the respondents was handled with strict confidentiality. Participants retained the right to opt out of the study at any time without facing any form of repercussion. The researcher took deliberate measures to ensure that the survey instrument contained no language that could be considered offensive, biased, or demeaning, and that only information essential to the study was collected, with appropriate protections in place for respondent welfare. Consistent with the provisions of Republic Act 10173, otherwise known as the Data Privacy Act of 2012, the confidentiality and privacy of all data were upheld at every stage of the research, with the assurance that findings would be utilized solely for academic and scholarly ends.

RESULTS AND DISCUSSION

This section presents, analyzes, and interprets the data in the order of the specific questions stated in Chapter 1.

Level of ICT Orientation among Junior High School Teachers

Table 1 shows that the overall mean ICT orientation among public junior high school teachers is 3.87, indicating that ICT orientation is often evident. The interpreted description “oftentimes evident” of ICT orientation suggests that while ICT use is frequently observed among teachers, it may not yet be fully consistent across all instructional contexts. This finding suggests that teachers in this study recognize the benefits of technology integration, find it compatible with their teaching approaches, perceive it as relatively easy to use, and maintain positive attitudes toward ICT in education.

Table 1
Response on the level of ICT orientation among public junior high school teachers

Indicators	Category mean	ICT Orientation level	Interpretation
Advantages	4.58	Very High	Always Evident
Compatibility	4.63	Very High	Always Evident
Ease of Use	4.41	Very High	Always Evident
Perception*	4.12	Very High	Always Evident
Average	3.87	High	Oftentimes Evident

Legend: Items with an asterisk were subjected to reverse coding with the recomputed category mean of perception (1.88) before computing the overall mean.

The high level of ICT orientation among participants aligns with the study's findings. Guillén-Gámez and Mayorga-Fernández (2020) documented high ICT orientation scores among secondary educators in Spain, noting the high scores on the advantages of technology and its compatibility with their teaching pedagogy. Similarly, Choi et al. (2022) found that teachers with constructivist beliefs are more likely to integrate ICT into their pedagogy than those with traditional orientations. They also highlighted that perceived usefulness, perceived ease of use, and perceived trust in technology are determinants to

consider when explaining teachers' acceptance of ICT. These patterns can be further understood through the lens of the Technology Acceptance Model (Davis, 1989), which posits that perceived usefulness and perceived ease of use are central to shaping individuals' attitudes toward technology. Furthermore, the relatively low perception ratings across the ICT orientation domains are consistent with Davis's framework, in which positive attitudes often stem from usefulness before being fully integrated into broader belief systems.

Level of Teaching Efficacy among Junior High School Teachers

Shown in Table 2 is the level of teaching efficacy among junior high school teachers. The overall mean of 4.42, described as "very high," indicates that teaching efficacy is always manifested. The description of teaching efficacy as "always manifested" indicates that teachers in this study feel exceptionally confident in their abilities to effectively teach, motivate students, and manage classroom environments.

Table 2
Response on the level of teaching efficacy among public junior high school teachers

Indicators	Category mean	ICT Orientation level	Interpretation
Efficacy for Instructional Strategies	4.41	Very High	Always Manifested
Efficacy for Classroom Management	4.43	Very High	Always Manifested
Efficacy and Student Motivation	4.42	Very High	Always Manifested
Average	4.42	Very High	Always Manifested

This finding of very high overall teaching efficacy is congruent to the study of Dolighan and Owen (2021), who discovered similarly elevated teaching efficacy levels among secondary teachers. Their research demonstrated that teachers cultivated strong efficacy beliefs primarily through mastery experiences like taking additional qualification courses, resulting in balanced confidence across various teaching domains. In a similar vein, Siskind et al. (2022) reported comparable teaching efficacy ratings involving 117 program teachers. Their analysis revealed that despite changes in educational systems, teachers with higher levels of cultural competence reported minimal feelings of work burnout

and consistently exhibited high efficacy scores across instructional, management, and engagement dimensions. These patterns were elaborated in Bandura's (1997) study, which provides a conceptual explanation for these results. He established that self-efficacy beliefs develop through four principal sources, which are mastery experiences, indirect experiences, verbal persuasion, and physiological states.

Level of Adaptability among Junior High School Teachers

Shown in Table 3 is the overall mean adaptability score for junior high school teachers, which is 4.61. This score is very high, indicating that adaptability is consistently observed. These findings suggest that teachers in this study possess a profound awareness of their professional trajectory and commitment to future growth; have a strong sense of agency in making independent decisions and maintaining positive attitudes; strongly believe in their ability to execute duties effectively and navigate challenges; and are open to exploring new methodologies and professional development opportunities.

Table 3
Response on the level of adaptability among public junior high school teachers

Indicators	Category mean	ICT Orientation level	Interpretation
Concern	4.64	Very High	Always Observed
Control	4.60	Very High	Always Observed
Curiosity	4.58	Very High	Always Observed
Confidence	4.60	Very High	Always Observed
Average	4.61	Very High	Always Observed

Additionally, this supplements the high levels of ICT orientation and teaching efficacy previously observed in the former domains in this study, indicating that these educators believe in their ability to adapt to new technologies and pedagogical approaches, not just in their ability to teach effectively. Educators who are confident, flexible, and open to change are well-positioned to navigate the dynamic nature of modern education, given that digital tools and students' needs continue to advance.

This finding is consistent with the work of Parsons et al. (2020), who observed exceptionally high adaptability during periods of educational transition, with the concern dimension emerging as the most developed. Similarly, Andres et al. (2021) found that teachers exhibit high levels of

adaptability. The results highlighted that adaptability appears to be a significant predictor of effective teaching performance, underscoring its importance as a professional attribute for educators facing rapidly transforming academic environments. To further explain this, Martin et al.'s (2012) model of multidimensional adaptability suggests that adaptability comprises cognitive, behavioral, and emotional components, which helps contextualize the balanced adaptability profile observed in this study as a sign of a well-rounded, integrated capacity to manage and respond to change.

Significance of Relationship of ICT Orientation, Teaching Efficacy, and Adaptability

The correlation of the variables is presented in Table 4. It is shown that ICT orientation has a positive weak relationship with adaptability, with an R-value of .30, and it reflects a p-value of .00, which is less than the alpha set at .05, two-tailed, supporting a significant relationship. In other words, educators who are more comfortable and confident in using technology also tend to demonstrate greater flexibility and responsiveness in the face of change.

Table 4
Significance of Relationship of ICT Orientation, Teaching Efficacy, and Adaptability

Indicators	r	p-value	Remarks
ICT Orientation and Adaptability	.30	.00	Significant
Teaching Efficacy and Adaptability	.53	.00	Significant

This connection likely stems from the nature of ICT integration, which demands openness, problem-solving, and frequent adjustments to teaching strategies. Teachers with stronger ICT orientation are typically more receptive to new approaches and technologies, and the process of incorporating digital tools naturally cultivates adaptive skills.

This finding is consistent with the study by Colbert et al. (2016), which found that ICT-oriented teachers demonstrated greater adaptability when implementing blended and flexible learning models. The findings also align with Zhou et al. (2020), who further observed that ICT-oriented educators were better equipped to handle the multiple dimensions of blended learning, including content, timing, pedagogy, and delivery methods. This similarly supports the contention of Ertmer et al. (2012), who noted that teachers who are confident in

their use of technology often adopt more adaptive and responsive instructional practices. Howard and Mozejko (2015) also highlighted a clear correlation between active engagement with technology and heightened teacher adaptability.

In a similar manner, teaching efficacy shows a significant, moderate positive relationship with adaptability ($r = .53, p < .05$). This suggests that as teaching efficacy increases, adaptability increases. This indicates that as teachers' confidence in their instructional capabilities grows, so does their ability to respond to new and challenging teaching contexts. Teachers with high efficacy are more likely to explore innovative strategies, adjust to changing classroom needs, and face uncertainty with resilience.

Moreover, the result supports the view of Collie and Martin (2017), who emphasized that a strong sense of teaching efficacy is closely tied to adaptability, suggesting that confident teachers are more capable of responsive and reflective practice. Likewise, the finding confirms Klassen and Tze (2014) who through their meta-analysis, also concluded that efficacy is a reliable predictor of adaptive teaching behaviors. Similarly, Tschannen-Moran and McMaster (2009) identified teaching efficacy as a key factor influencing teachers' willingness to adopt and sustain new instructional approaches.

Significance of the Influence of ICT Orientation, and Teaching Efficacy on Adaptability of Junior High School Teachers

In Table 5, the results of the multiple regression analysis are presented. In terms of singular capacity, ICT orientation shows a p-value of .00 which is less than .05 level of significance (2-tailed) with a positive standardized beta value of 0.19. It shows that ICT orientation is a significant predictor of adaptability of junior high school teachers. (provide analysis) It means that for every unit increase in the value of the level of ICT orientation, there is a corresponding increase of 0.19 in the level of adaptability of junior high school teachers.

Table 5
Significance of the Influence of ICT Orientation, and Teaching Efficacy on Adaptability of Junior High School Teachers

Singular Influence of the Predictors		Standardized Coefficients	t	p-value	Remarks
ICT Orientation		0.19	3.16	.002	Significant
Teaching Efficacy		0.49	8.15	.000	Significant
Combined Influence of the Predictors					
R	.56				
R ²	.32				
F	45.88				
p	.00				Significant

This result is congruent to the findings of Ma et al. (2021) which reported that teachers’ ICT self-efficacy positively predicted their adaptability to online teaching during the COVID-19 pandemic, reporting a beta value of 0.21 closely aligning with the 0.19 effect size observed in the present study. This similarity suggests a consistent relationship between technological confidence and adaptability across different contexts. Likewise, Collie and Martin (2017) demonstrated that technological competence significantly predicted teacher adaptability across various grade levels, though their reported effect sizes were somewhat higher, indicating a potentially stronger influence in broader educational settings. Further supporting this trend, Uerz et al. (2018) found that teachers who held more positive attitudes toward ICT exhibited higher levels of professional adaptability, particularly within secondary education.

Likewise, in singular capacity, the independent variable, teaching efficacy, reflects a positive standardized beta value of .49 and a p-value of .00, which is less than the .05 level of significance, 2-tailed. It means that in a singular capacity, teaching efficacy is a significant predictor of the adaptability of junior high school teachers. This means that for every unit increase in the level of teaching efficacy, there is a corresponding increase of .49 in the level of adaptability of junior high school teachers.

Moreover, Collie et al. (2018) reported findings that closely align with the present results, showing that teaching efficacy significantly predicted teachers' adaptability. Similarly, Martin et al. (2019) found that among various predictors such as motivation and professional identity, self-efficacy stood out as the most influential factor in determining adaptability. König (2016) also supported this connection, identifying teaching efficacy as a strong and stable

predictor of how teachers respond to classroom challenges.

In the context of this study, the combined influence of ICT orientation and teaching efficacy on the adaptability of junior high school teachers was found to be statistically significant ($p < .05$). Meanwhile, the model explains 32 percent of the variance of the adaptability of the junior high school teachers based on the independent variables included in this study, as indicated by $R = .32$. This means that 68 percent of the variance in the adaptability of the junior high school teachers can be attributed to other factors aside from ICT orientation and teaching efficacy.

The findings are in consonance with the study by Lamb et al. (2008), which explored how teachers learn to implement technology-enhanced formative assessments. The study highlighted that teachers' self-efficacy plays a crucial role in adapting to and effectively utilizing new technologies in their teaching methodologies. Meanwhile, Rajapakse et al. (2024) assessed Sri Lankan ICT teachers' readiness to teach artificial intelligence, focusing on self-efficacy. The study revealed that emotional and physiological factors significantly influence teachers' confidence in adopting new subjects, emphasizing the role of self-efficacy in adaptability.

Finally, the results of the study offer strong empirical support for both Social Cognitive Theory (SCT) and the Technological Pedagogical Content Knowledge (TPACK) framework, highlighting how teaching efficacy and ICT orientation affect teachers' ability to adapt. Key aspects of SCT are reinforced, particularly reciprocal determinism, as the correlations between ICT orientation, teaching efficacy, and adaptability reflect dynamic interactions between beliefs, behaviors, and context. High teaching efficacy, especially in instructional strategies, classroom management, and student motivation, aligns with Bandura's concept of self-efficacy as a driver of adaptive behavior. Teachers' high curiosity and concern scores reflect observational learning, goal setting, and self-regulation, further underscoring SCT's relevance.

Meanwhile, the findings substantiate TPACK by demonstrating the importance of integrating technological and pedagogical knowledge. The high compatibility and context-specific ICT scores suggest teachers effectively apply technology in teaching, supporting TPACK's core principles. Moreover, the stronger predictive power of teaching efficacy over ICT orientation emphasizes the necessity of a balanced integration of knowledge domains, as emphasized by

TPACK. The regression model explaining 32% of variance in adaptability suggests that while both SCT and TPACK capture vital elements of teacher adaptability, additional contextual or personal factors also play a role.

CONCLUSION

The research findings reveal that public Junior High School teachers demonstrate a high level of ICT orientation alongside very high levels of teaching efficacy and adaptability. This indicates that teachers not only recognize the importance of technology integration in their classrooms but also possess strong professional confidence in their instructional capabilities. Their well-balanced development across all four adaptability dimensions positions them effectively to navigate the rapidly changing educational landscape while maintaining pedagogical excellence.

Statistical analysis confirmed significant relationships between ICT orientation, teaching efficacy, and teacher adaptability, revealing that these professional attributes positively reinforce one another rather than functioning in isolation. This interconnectedness suggests that improvements in one area can potentially enhance performance in others, creating a virtuous cycle of professional development. The educational community can leverage this understanding to design more integrated and effective teacher training programs.

Further examination revealed that both ICT orientation and teaching efficacy significantly influence adaptability among these educators, with teaching efficacy demonstrating a slightly stronger impact. This finding suggests that fundamental pedagogical confidence provides a crucial foundation for teachers' ability to adapt to new challenges. As educational systems continue to evolve, these results highlight the importance of simultaneously supporting teachers' technological competence and core teaching skills to build their capacity for successful adaptation to emerging educational demands.

Drawing from the comprehensive findings of this study, DepEd Davao City leadership may implement an integrated professional development framework that simultaneously enhances teachers high ICT orientation, very high teaching efficacy, and very high adaptability. This approach may include balanced technology integration through INSET sessions, differentiated growth opportunities, career advancement pathways that reward adaptability, mentoring systems enhancing both teaching efficacy and technological confidence, and

comprehensive evaluation mechanisms with emphasis on foundational teaching competencies as stronger predictors of adaptability. Such integration may empower teachers to effectively navigate the evolving educational landscape.

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