



## Perceived Usefulness and Ease of Use of ICT as Predictors of Faculty Instructional Adaptability

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**ABSTRACT:** In higher education, using information and communication technology (ICT) is now essential. Faculty need to adjust their teaching to fit technology-rich classrooms. This study looked at how faculty members' views on the usefulness and ease of use of ICT affect their ability to adapt in teaching. The research used a quantitative descriptive-correlational design and regression analysis, collecting data from 37 faculty members at a private college in Iligan City through a survey. Data were analyzed using Mann–Whitney, Kruskal–Wallis, Spearman correlation, and multiple regression. Teachers reported very high levels of perceived usefulness, ease of use, and instructional adaptability. There were no major differences in adaptability based on sex, education, or job status. The results showed a weak but significant link between instructional adaptability and perceived usefulness, while perceived ease of use had a strong and significant link. Regression analysis found that effective resource management and teacher readiness and skills are strong predictors of educational outcomes. Overall, practical skills and confidence in using ICT, rather than just seeing its benefits, were most important for improving faculty adaptability and technology use.

**KEYWORDS:** descriptive-correlational, faculty, perceived usefulness, perceived ease of use, ICT, instructional adaptability.

### INTRODUCTION

The rapid growth of digital technologies has transformed education, reshaping how teaching and learning occur in higher education institutions. Classrooms that once relied on traditional, teacher-centered approaches are now evolving into interactive, technology-enhanced environments supported by information and communication technology (ICT) (Farias-Gaytán et al., 2023). Faculty members are increasingly expected to integrate digital tools into instruction to improve lesson delivery, enhance student engagement, and achieve better learning outcomes (Scherer et al., 2019). However, the effectiveness of ICT integration depends not only on the availability of technology but also on how teachers perceive and use these tools in their professional practice.

How teachers see technology, especially how useful and easy it is to use, is key to whether ICT is adopted successfully (Moradi, 2025). Perceived usefulness means believing that technology helps teaching, while perceived ease of use means it is easy to operate. Research shows that faculty who see the benefits of ICT, like better lesson organization and more student interaction, are more likely to use technology in creative ways (Bancoro, 2024). Also, when technology is simple and easy to use, teachers are more willing to try it and keep using it, even when they are busy or have limited time (Ibrahim & Shiring, 2022; Musthofa et al., 2023).

Instructional adaptability is the ability to modify teaching strategies, learning activities, and assessment methods. It is a key competency for educators in dynamic digital environments (Floyd, 2023). Research indicates that adaptable faculty are more open to innovation, responsive to change, and committed to continuous professional development (Sharma et al., 2024). Yet, few studies have directly examined how perceptions of ICT influence instructional adaptability, particularly in developing countries like the Philippines, where access, training, and digital literacy vary across institutions.

To address these gaps, this study looks at how faculty perceptions of ICT usefulness and ease of use affect their ability to adapt teaching in a private university in Iligan City, Philippines. It aims to find out whether perceived usefulness or ease of use is a stronger predictor of instructional adaptability. The results are expected to help guide policies, training programs, and ICT strategies that build faculty confidence, digital skills, and flexibility for modern teaching.

### METHODOLOGY

This study used a quantitative research design with regression analysis to see how faculty views of ICT affect their instructional adaptability. It focused on how perceived usefulness and ease of use predict how much faculty change their teaching in technology-rich settings. A descriptive-correlational approach measured these perceptions and checked how strongly they relate to instructional adaptability.



Data were gathered using a structured survey based on tools from previous studies. Perceived usefulness and ease of use were measured using items from Bancoro (2024), instructional adaptability from Floyd (2023), and ICT integration from Ghavifekr and Rosdy (2015). These adapted tools made sure the survey fit the higher education context. Responses were analyzed with descriptive statistics and regression analysis to see how ICT perceptions predict instructional adaptability. This approach provided clear, objective results to help guide professional development and ICT planning.

**RESULTS AND DISCUSSION**

This section shares the study’s results and explains how faculty perceptions of ICT affect their instructional adaptability. The findings are organized to clearly show the relationships between the variables studied.

*Profile of the respondents*

Table 1 shows the respondents’ profiles using frequency and percentage. It gives an overview of their main demographic and professional traits, helping to set the context for the results. Of the 37 teachers, most were female (62.0%) and 38.0% were male, which matches the usual trend in teaching. Most were probationary (59.0%), with 27.0% contractual and 14.0% regular or tenured. This suggests that many are early or mid-career, which could affect how open they are to learning and using new technologies in teaching.

Regarding educational attainment, most respondents (84.0%) hold a bachelor’s degree, while only 16.0% have completed graduate studies. This suggests that many are still pursuing further professional development. Most respondents (84.0%) have a bachelor’s degree, and only 16.0% have finished graduate studies. This means many are still working on their professional growth.

Overall, the faculty are mostly female, early in their careers, and continuing their education, which helps explain their readiness for technology and ability to adapt in teaching. They strongly agree that integrating ICT supports effective teaching, enhances student learning outcomes, and improves classroom engagement. The moderate standard deviation suggests that although most teachers share positive perceptions of ICT’s usefulness, variations in teaching contexts and access to resources may influence how strongly they experience these benefits.

**Table 1. Frequency and Percentage Distribution of Respondents**

Profile	Category	Frequency	Percentage
Sex	Male	14	38.0
	Female	23	62.0
	<b>TOTAL</b>	<b>37</b>	<b>100</b>
Employment Status	Contractual	10	27.0
	Probationary	22	59.0
	Regular	5	14.0
	<b>TOTAL</b>	<b>37</b>	<b>100</b>
Highest Educational Attainment	Bachelor's Degree	31	84.0
	Master’s/Doctorate Degree	6	16.0
	<b>TOTAL</b>	<b>37</b>	<b>100</b>

*Respondents’ perception of usefulness of ICT*

Table 2 shows that the perceived usefulness of ICT among respondents is very high, with an overall mean of 3.55 (SD = 0.65). This indicates that teachers strongly agree that integrating ICT supports effective teaching, enhances student learning outcomes, and improves classroom engagement. The moderate standard deviation suggests that although most teachers share positive perceptions of ICT’s usefulness, variations in teaching contexts and access to resources may influence how strongly they experience these benefits.



**Table 2. Summary Result of Perceived Usefulness of ICT**

Dimensions	Mean	SD	Description
Teaching Effectiveness	3.79	0.51	Very High
Student Learning Outcomes	3.55	0.64	Very High
Classroom Engagement & Control	3.29	0.68	Very High
<b>Overall</b>	<b>3.55</b>	<b>0.65</b>	<b>Very High</b>

*Legend: 3.25-4.00 (Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)*

Of the three areas measured, Teaching Effectiveness had the highest average score ( $M = 3.79$ ,  $SD = 0.51$ ), showing that teachers widely agree ICT helps them deliver lessons, explain clearly, and teach more efficiently. Classroom Engagement and Control had the lowest mean ( $M = 3.29$ ,  $SD = 0.68$ ), but it was still very high. This suggests that while ICT usually helps with participation and attention, some teachers find it harder to manage engagement and classroom control when using technology.

These results match other research showing that teachers see ICT as helpful for improving teaching quality and making learning more interactive, even though there are some practical challenges (Akram, Abdelrady, Al-Adwan, & Ramzan, 2022). Teachers view ICT as a very useful part of teaching and learning. Its strong impact in all areas shows it helps both academic results and creates more dynamic, interactive classrooms.

**Respondents' perceived ease of use of ICT**

Table 3 shows the summary of teachers' perceived ease of use of ICT based on four dimensions. The computed overall mean of 3.38 ( $SD = 0.65$ ) indicates a Very High level, suggesting that teachers generally find ICT tools easy and manageable to use in their teaching.

**Table 3. Summary Result of Perceived Ease of Use**

Dimension	Mean	SD	Description
Teacher Readiness & Skills	3.74	0.50	Very High
Access & Support	3.13	0.64	Very High
Time & Resource Constraints	3.32	0.65	Very High
Teacher Autonomy & Comfort	3.50	0.59	Very High
<b>Overall</b>	<b>3.38</b>	<b>0.65</b>	<b>Very High</b>

*Legend: 3.25-4.00 (Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)*

Among the four dimensions, Teacher Readiness and Skills ( $M = 3.74$ ) obtained the highest mean, meaning that most teachers are confident and capable in using ICT for classroom activities, reflecting a strong foundation in basic ICT competencies. Teacher Autonomy and Comfort ( $M = 3.50$ ) also rated very high, showing that teachers feel comfortable and have freedom in integrating ICT into their lessons. Time and Resource Constraints ( $M = 3.32$ ) likewise received a very high rating, indicating that teachers can still manage ICT use effectively despite some limitations. The lowest mean was recorded in Access and Support ( $M = 3.13$ ), although it still falls under the Very High category, suggesting that while ICT resources and technical support are available, there is still room for improvement in ensuring consistent access and timely assistance.

These results are similar to recent studies showing that teachers are generally ready, comfortable, and skilled in using ICT. For example, research has found that teachers' ICT skills and confidence help shape positive attitudes toward digital teaching, and that good support from schools, like training and technical help, makes it easier to use ICT (Caratiquit & Javier, 2025). Other studies also report that teachers are adaptable and ready for online learning, but ongoing training and preparation are important for keeping ICT use effective (De Guia & Solomon, 2024). More evidence shows that regular professional development and strong support from schools help turn teachers' readiness and confidence into effective use of technology in the classroom (Mpuangan, 2024).



**Respondents' perception of instructional adaptability**

Table 4 summarizes how teachers rate their own instructional adaptability in terms of Adaptive Space and Self-Efficacy. The overall average was very high at 3.48 (SD = 0.65). This means most teachers feel flexible and confident in changing their teaching to meet different students' needs.

**Table 4. Summary Result of Instructional Adaptability**

Dimension	Mean	SD	Description
Adaptive Space	3.51	0.64	Very High
Self-Efficacy	3.44	0.66	Very High
<b>Overall</b>	<b>3.48</b>	<b>0.65</b>	<b>Very High</b>

Legend: 3.25-4.00 (Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

Of the two areas, Adaptive Space had a higher average (3.51), showing that teachers are open to trying new teaching methods and tools to improve engagement and effectiveness. Self-Efficacy was also very high (3.44), meaning teachers trust their skills to handle challenges and adjust their teaching as needed.

These results show that teachers in the study not only adapt well to changing instructional contexts but also believe in their capacity to manage and sustain these adjustments effectively, with their openness and confidence serving as key strengths that support continuous improvement in teaching and learning. Research shows that teachers' readiness for change is positively related to their self efficacy and intention to adopt technological innovations in instruction, indicating that confidence in using technology enhances adaptive capacity (Sytziouki et al., 2025). Additionally, high overall self efficacy beliefs have been linked to greater confidence in specific digital and instructional tasks, further underscoring the role of self belief in enabling teachers to navigate instructional change and maintain effective practice (Özden, Yaşar, & Meydan, 2024).

**Significant difference in the respondents' level of instructional adaptability when grouped based on their profile**

Table 5 shows the results of tests for differences in instructional adaptability based on teacher profiles like sex, education, and job status. The analysis found no significant differences for sex ( $t = -1.021$ ,  $p = 0.307$ ) or education ( $t = -0.371$ ,  $p = 0.711$ ), meaning male and female teachers and those with different degrees have similar adaptability. This suggests that adaptability is not affected by gender or education, but may depend more on experience, exposure to change, or school culture.

Similarly, employment status had no significant effect on adaptability (Kruskal-Wallis  $\chi^2 = 0.308$ ,  $p = 0.857$ ), showing that contractual, probationary, and regular teachers are equally capable of adjusting instruction and responding to classroom dynamics. Overall, the findings indicate that instructional adaptability is consistently high across all demographic groups, highlighting that teachers, regardless of sex, educational background, or employment type, share a strong capacity to adapt effectively to evolving teaching contexts and instructional demands.

**Table 5. Test of significant difference in instructional adaptability when grouped based on profile**

Profile	Category	Mean Rank	Test Statistic	p-value	Decision	Interpretation
Sex	Male	21.07	-1.021	0.307	Do not reject $H_{01}$	Not Significant
	Female	17.74				
Highest Educational Attainment	Bachelor's Degree	18.74	-0.371	0.711	Do not reject $H_{01}$	Not Significant
	Master's/ Doctorate Degree	20.33				
Employment Status	Contractual	17.6	0.308	0.857	Do not reject $H_{01}$	Not Significant
	Probationary Regular	19.64 19				



These findings are supported by Sharma, Tripathi, Madan, and Khatri (2024), who found that teachers in different schools can adapt their teaching to include digital systems. Viberg et al. (2023) also reported that confidence and understanding of technology, not gender or education, are the best predictors of teachers' use and trust of AI, showing that competence and confidence are key for adaptability in tech-rich classrooms.

**Significant relationship between perceived usefulness and instructional adaptability**

Table 6 shows the test for the relationship between perceived usefulness and instructional adaptability using Spearman Rho. The correlation was 0.355, which is considered weak, but the p-value was 0.031, making it statistically significant.

**Table 6. Test on the Significant Relationship between Perceived Usefulness and Instructional Adaptability**

Variables	Correlation Coefficient	Coefficient Interpretation*	p-value	Decision	Relationship Interpretation
Perceived Usefulness and Instructional Adaptability	0.355	Weak	0.031	Reject H <sub>0</sub>	Significant

\*Note: Very Weak ( $\pm 0.01 - 0.30$ ); Weak ( $\pm 0.31 - 0.50$ ); Strong ( $\pm 0.51 - 0.70$ ); Very Strong ( $\pm 0.71 - 0.99$ )

Table 6 shows that the link between perceived usefulness and instructional adaptability is weak but positive and significant. This means teachers who see technology as useful are more likely to adapt their teaching, but usefulness alone does not fully explain adaptability. Other factors like self-efficacy, experience, resources, and support also matter.

Amemasor et al. (2025) support this by saying that good professional development should do more than just show the usefulness of tools. They stress that hands-on training, mentorship, and steady support from schools are key to building teachers' confidence and ability to adapt, showing that practical skills and support are just as important as seeing the benefits.

**Significant relationship between dimensions of perceived usefulness and instructional adaptability**

**Table 7. Summary Table of Test on the Significant Relationship between the Dimensions of Perceived Usefulness and Instructional Adaptability**

Perceived Usefulness	Instructional Adaptability	
	Adaptive Space	Self-Efficacy
Teaching Effectiveness	$\rho = 0.194$	$\rho = 0.222$
	$p = 0.250$	$p = 0.186$
Student Learning Outcomes	$\rho = 0.313$	$\rho = 0.285$
	$p = 0.060$	$p = 0.087$
Classroom Engagement & Control	$\rho = 0.245$	$\rho = 0.198$
	$p = 0.144$	$p = 0.240$

\*Legend: Significant at  $\alpha = 0.05$

Table 7 shows that while the overall link between perceived usefulness and instructional adaptability was significant ( $\rho = 0.355, p = 0.031$ ), none of the specific areas, teaching effectiveness, student outcomes, or classroom engagement, were significant on their own. This means that seeing usefulness in certain areas does not strongly affect adaptability. Other factors like self-efficacy, ICT skills, and confidence are more important for helping teachers adapt and use technology (Paetsch, 2023; Akram et al., 2022).

**Significant relationship between perceived ease of use and instructional adaptability**

Based on Table 8, the relationship between perceived ease of use and instructional Table 8 shows that the relationship between perceived ease of use and instructional adaptability is strong and significant ( $\rho = 0.587, p = 0.000$ ). This means teachers who find technology easy to use are more likely to adapt their teaching well. The strong correlation suggests that ease of use is a key factor in helping teachers become more adaptable and confident.



The findings indicate that perceived ease of use is a crucial facilitator of instructional adaptability, as teachers who find tools and systems sThese results show that ease of use is important for adaptability. Teachers who find tools simple can try new teaching methods, adjust activities for students, and use new ideas with confidence. When technology is easy to use, teachers can focus on teaching instead of dealing with complicated tools. Kuo and Kuo (2025) also found that ease of use predicts teachers' willingness to use open educational resources.

**Table 8. Test on the Significant Relationship between Perceived Ease of Use and Instructional Adaptability**

Variables	Correlation Coefficient	Coefficient Interpretation*	p-value	Decision	Relationship Interpretation
Perceived Ease of Use and Instructional Adaptability	0.587	Strong	0.000	Reject H <sub>03</sub>	Significant

\*Note: *Very Weak* ( $\pm 0.01 - 0.30$ ); *Weak* ( $\pm 0.31 - 0.50$ ); *Strong* ( $\pm 0.51 - 0.70$ ); *Very Strong* ( $\pm 0.71 - 0.99$ )

**Significant relationship between the dimensions of perceived ease of use and instructional adaptability**

Based on Table 9, the analysis of the relationship between the dimensions of perceived ease of use and instructional adaptability indicates that all dimensions are positively and significantly correlated with both adaptive space and self-efficacy ( $p < 0.05$ ). This suggests that teachers who perceive technologies and tools as easy to use are more likely to adapt their instructional strategies effectively across multiple aspects of teaching.

Specifically, teacher readiness and skills showed a strong positive relationship with adaptive space ( $\rho = 0.530, p = 0.001$ ) and self-efficacy ( $\rho = 0.486, p = 0.002$ ). This indicates that teachers who feel prepared and skilled are more confident in creating flexible learning environments and applying adaptive instructional strategies. Access and support also demonstrated a significant, though slightly weaker, positive relationship with adaptive space ( $\rho = 0.379, p = 0.021$ ) and self-efficacy ( $\rho = 0.344, p = 0.037$ ). This implies that when teachers have sufficient resources and institutional support, they are better able to implement adaptive practices and maintain confidence in their instructional decisions. The dimension time and resource constraints showed the strongest relationship with both adaptive space ( $\rho = 0.649, p = 0.000$ ) and self-efficacy ( $\rho = 0.590, p = 0.000$ ). This suggests that when teachers perceive fewer limitations in time and resources or effectively manage existing constraints, they are most capable of adapting teaching strategies and sustaining instructional confidence. Finally, teacher autonomy and comfort exhibited strong positive relationships with adaptive space ( $\rho = 0.549, p = 0.000$ ) and self-efficacy ( $\rho = 0.478, p = 0.003$ ), indicating that teachers who feel autonomous and comfortable with the instructional tools are better able to adjust their teaching to student needs and maintain confidence in applying adaptive methods.

**Table 9. Summary Table of Test on the Significant Relationship between the Dimensions of Perceived Ease of Use and Instructional Adaptability**

Perceived Ease of Use	Instructional Adaptability	
	Adaptive Space	Self-Efficacy
Teacher Readiness and Skills	$\rho = 0.530$ $p = 0.001^{**}$	$\rho = 0.486$ $p = 0.002^{**}$
Access and Support	$\rho = 0.379$ $p = 0.021$	$\rho = 0.344$ $p = 0.037$
Time and Resource Constraints	$\rho = 0.649$ $p = 0.000^{**}$	$\rho = 0.590$ $p = 0.000^{**}$
Teacher Autonomy and Comfort	$\rho = 0.549$ $p = 0.000^{**}$	$\rho = 0.478$ $p = 0.003^{**}$

\*Legend: Significant at  $\alpha = 0.05$



These results suggest that ease of use is a key factor in helping teachers adapt. Unlike usefulness, which has a weaker effect, ease of use directly helps teachers change and improve their teaching. Research shows that when teachers think technology is easy to use, they are more likely to adopt it and be satisfied, which supports adaptability and better use of digital tools (W. Xiao et al., 2024).

**Significant influence of perceived ease of use and instructional adaptability**

**Table 10. Model 2 Test on the Significant Influence of Perceived Ease of Use and Instructional Adaptability**

Predictors	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t-value	p-value	Decision	Interpretation
(Constant)	0.168	-----	0.321	0.75	-----	-----
Teacher Readiness and Skills	0.413	0.373	2.53	0.017	Reject H <sub>04</sub>	Significant
Access and Support	0.070	0.062	0.51	0.614	Do not reject H <sub>04</sub>	Not Significant
Time and Resource Constraints	0.435	0.483	3.427	0.002	Reject H <sub>04</sub>	Significant
Teacher Autonomy and Comfort	0.055	0.057	0.347	0.731	Do not reject H <sub>04</sub>	Not Significant

**Model Summary:**

$R^2 = 0.633$ ;  $Adjusted R^2 = 0.587$ ;  $F\text{-value} = 13.772$

$p\text{-value} = 0.000$  (Reject H<sub>0</sub>); Interpretation = Significant

Table 10 shows that out of four predictors, teacher readiness and skills ( $B = 0.413$ ,  $\beta = 0.373$ ,  $t = 2.53$ ,  $p = 0.017$ ) and time and resource constraints ( $B = 0.435$ ,  $\beta = 0.483$ ,  $t = 3.427$ ,  $p = 0.002$ ) have a significant effect on instructional adaptability. This means that being prepared and managing time and resources well leads to higher adaptability. Access and support ( $B = 0.070$ ,  $\beta = 0.062$ ,  $t = 0.51$ ,  $p = 0.614$ ) and teacher autonomy and comfort ( $B = 0.055$ ,  $\beta = 0.057$ ,  $t = 0.347$ ,  $p = 0.731$ ) were not significant, so they do not add much to adaptability when the other factors are considered.

Based on the findings presented in Table 10, the regression equation is given by

$$Y = 0.168 + 0.413X_1 + 0.435X_2 + \epsilon$$

where Y represents instructional adaptability, which is the outcome variable. The predictor X<sub>1</sub> corresponds to teacher readiness and skills, while X<sub>2</sub> represents time and resource constraints both of which were found to be significant contributors in the model. The term ε accounts for the variance in instructional adaptability that is not explained by these predictors, capturing the influence of other unmeasured factors.

The constant value of 0.168 shows the baseline level of instructional adaptability when readiness, skills, and time/resource management are zero. The coefficient for readiness and skills (0.413) means that for each one-unit increase, adaptability goes up by about 0.41 units. For time and resource constraints (0.435), a one-unit increase leads to a 0.44-unit rise in adaptability.

These results demonstrate that readiness, skills, and time/resource management are meaningful contributors to instructional adaptability, while other factors such as access, support, autonomy, and comfort may play a secondary or indirect role. The error term (ε) accounts for the variance in instructional adaptability not explained by the significant predictors, highlighting that additional unmeasured variables may also influence teachers' adaptability in practice. Consistent with the studies of Paetsch (2023) and De Guia and Solomon (2024), that teacher readiness and skills, as well as effective management of time and resources, significantly predict instructional adaptability, while factors such as access, support, autonomy, and comfort have a weaker or indirect influence. Paetsch (2023) found that teachers' technological literacy and self efficacy strongly relate to their ability to integrate technology and adapt instructional practices. Similarly, De Guia and Solomon (2024) reported that individual adaptability and readiness, including competence with ICT resources and time/resource planning, significantly predict teachers' preparedness to teach in online environments. These findings underscore that core competencies and efficient use of time and resources are central to enhancing teachers' instructional adaptability.



## CONCLUSION

The study found that faculty at a private university in Iligan City, Philippines, strongly agree on the usefulness and ease of use of ICT, seeing it as important for better teaching, student outcomes, and classroom engagement. Faculty also showed high adaptability, with confidence and flexibility in changing their teaching for different students and situations. Demographic factors like sex, education, or job status did not affect adaptability, but ease of use had a stronger link to adaptability than usefulness. Teacher readiness, skills, and good time and resource management were key for effective adaptation. Overall, the study suggests that teachers' adaptability depends more on their confidence, preparation, and ability to use technology than just on seeing its benefits.

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