



# TECHNOLOGY INTEGRATION, COLLABORATIVE COHESION, AND FEEDBACK MECHANISMS ON TEACHERS' INSTRUCTIONAL DELIVERY SKILLS IN LOCAL UNIVERSITIES AND COLLEGES

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**Abstract :** This study evaluates the instructional delivery skills of teachers in Local Universities and Colleges (LUCs) and assesses how technology integration, collaborative cohesion, and feedback mechanisms influence these skills. A descriptive-correlational research design was employed, with 520 teachers from selected LUCs in Region 10 serving as respondents. The descriptive method was used to examine the prevailing conditions of variables related to technology integration, collaborative cohesion, feedback mechanisms, and instructional delivery skills. Pearson's product-moment correlation was utilized to measure and identify the relationships among these variables, while multiple linear regression analysis was conducted to determine the predictors of teachers' instructional delivery skills.

The results highlight various factors that contribute to improving teachers' instructional delivery skills. These include attitudes toward technology, such as students believing that technology enhances creativity in teaching methods by enabling interactive and innovative approaches. Teamwork, which emphasizes a strong sense of community among faculty, fosters collaboration and shared expertise, leading to more effective teaching strategies. Additionally, student feedback, where students are encouraged to provide constructive input on teaching, helps teachers refine their methods to better meet learners' needs and improve overall instructional quality.

There is a significant relationship between technology integration, collaborative cohesion, and feedback mechanisms. These elements collectively enhance instructional delivery by fostering creativity, motivation, and active learning. The predictors of teachers' instructional delivery skills in Local Universities and Colleges include student feedback, self-efficacy, and continuous improvement processes, which are vital for refining teaching practices and aligning them with learners' evolving needs.

**Index Terms - Student Feedback, Self-Efficacy, Continuous Improvement Processes, Pedagogical Skills, Professional Development, Active Learning, Teamwork, Innovative Teaching Methods, Faculty Collaboration, and Teaching Effectiveness.**

## I. INTRODUCTION

### INTRODUCTION

The integration of technology into education has been widely recognized as a transformative force in modern teaching practices. Research shows that a positive attitude toward technology enhances teaching effectiveness, leading to better student engagement and learning outcomes (Gallo, 2023; Hurtado & Reyes, 2024). However, Morales et al. (2021) found that only 15% of teachers actively use advanced technology in classrooms, with many relying on traditional methods. Furthermore, only 34% feel confident incorporating technology into their lessons, a challenge compounded by the lack of teamwork and feedback systems. The Commission on Higher Education (CHED) reports that nearly 40% of teachers require more training programs focused on technology integration and collaboration to meet the demands of 21st-century education.

Collaborative teaching strategies have emerged as critical for enhancing instructional quality. Khan and Abid (2021) highlighted the role of collaborative practices during the transition to online learning, while Guoyan et al. (2021) found that higher levels of collaborative cohesion among faculty improve self-efficacy and teaching quality. Studies by Healy and Blade (2020) and Zhang et al. (2022) emphasize that structured teamwork and professional development activities significantly enhance pedagogical approaches. Institutional support also plays a vital role in fostering collaboration, as noted by Bhebhe et al. (2023), who stressed

the importance of creating environments where educators can share resources and expertise. Feedback mechanisms, particularly peer and student feedback, further refine instructional practices, aligning them with learners' evolving needs (Caingcoy, 2020; Carless & Winstone, 2020).

To address these challenges, professional development programs must focus on integrating Information and Communication Technology (ICT) into teaching practices. Simin Ghavifekr and Wan Athirah Wan Rosdy (2015) demonstrated how ICT transforms traditional methods into dynamic, technology-driven approaches aligned with global educational standards. The TPACK framework has been widely recommended for equipping teachers with technological pedagogical content knowledge to adapt to digitally evolving classrooms effectively (Brinkley-Etzkorn, 2018). Studies by Fernández et al. (2023) and Kafyulilo et al. (2015) underscore the need for team-based professional development to enhance teachers' confidence in using digital tools. Ultimately, fostering collaboration, leveraging feedback systems, and building technological competencies will not only improve teacher performance but also create innovative learning environments that benefit students.

### NEED OF THE STUDY.

This study highlights the importance of understanding technology integration, collaborative cohesion, and feedback mechanisms in enhancing teachers' instructional delivery skills in Local Universities and Colleges. Effective technology integration fosters creativity, motivation, and active learning through innovative approaches like multimedia and collaborative platforms (Yılmaz, 2021), while teachers' self-efficacy and technological competencies play a vital role in successful implementation (Guoyan et al., 2021; Abbasi et al., 2021). Collaborative cohesion, characterized by teamwork, resource sharing, and shared leadership, strengthens peer mentorship and facilitates continuous improvement in teaching practices (Aslam et al., 2020). Feedback mechanisms, particularly structured student feedback, refine instructional approaches by aligning them with learners' needs (Khan & Abid, 2021). Professional development programs focusing on Technological Pedagogical Content Knowledge (TPACK) are essential for equipping teachers to adapt to digitally transforming educational environments (Popova et al., 2022). By improving teacher proficiency in technology integration and fostering collaborative practices, educators can create diverse, innovative, and efficient learning environments for students, laying the groundwork for future research across various educational contexts.

## RESEARCH METHODOLOGY

### 3.1 Population and Sample

The respondents of this study included 520 teachers from selected Local Universities and Colleges (LUCs) in Region 10. Total enumeration was employed to determine the sample size, ensuring comprehensive representation of the target population.

### 3.2 Data and Sources of Data

This study employed a structured survey questionnaire, meticulously validated and pilot-tested, to evaluate technology integration, collaborative cohesion, feedback mechanisms, and instructional delivery skills of teachers in local universities and colleges. The Likert scale format ensured precise, measurable, and consistent quantitative data, directly capturing teachers' perspectives. The instrument demonstrated high reliability, evidenced by a Cronbach's Alpha of 0.809 for the overall questionnaire.

The questionnaire consisted of four main sections:

**Technology Integration Scale:** Adapted from Simin et al. (2015), this section assessed teachers' perceptions of technology's effectiveness in teaching practices, utilizing a 5-point Likert scale ranging from 1 (Very Low) to 5 (Very High). It evaluated dimensions such as creativity, motivation, and active learning through technology use.

**Collaborative Cohesion Scale:** Adapted from Prof. David Mhlanga (2020), this section measured the level of teamwork and shared goals among faculty members, employing a similar 5-point Likert scale to gauge collaboration effectiveness.

**Feedback Mechanisms Scale:** Adapted from Manuel Caingcoy (2020), this section evaluated the effectiveness of feedback processes in enhancing instructional delivery, using specific scoring criteria to assess structured student input and its impact.

**Instructional Delivery Skills Scale:** Adapted from Pradip A. Jadhav (2021), this section comprehensively assessed various dimensions of instructional delivery, providing a detailed overview of teachers' skills and practices.

### 3.3 Theoretical framework

This study explores how Technology Integration, Collaborative Cohesion, and Feedback Mechanisms enhance teachers' instructional delivery skills in Local Universities and Colleges, grounding its framework in several key theories. The Technology Acceptance Model (TAM) (Davis, 1989) explains that teachers are more likely to adopt technology if they perceive it as useful and easy to use. For instance, teachers who find online platforms intuitive and beneficial for student learning are more inclined to integrate them into their practices. Similarly, the Diffusion of Innovations Theory (Rogers, 2003) highlights how collaboration among teachers facilitates the spread of new technologies and teaching strategies. Schools fostering teamwork enable educators to share ideas and resources, accelerating the adoption of innovative practices. The study also draws on Constructivist Learning Theory (Piaget, 1970), which emphasizes collaborative knowledge-building through shared experiences. Teachers improve their skills by discussing strategies and solving problems collectively, underscoring the importance of professional collaboration. Social-Cognitive Theory (Bandura, 1986) further supports this by emphasizing learning through observation and feedback. Teachers refine their instructional methods by observing effective practices among peers and incorporating constructive feedback into their teaching. Finally, Connectivism Theory (Siemens, 2005) underscores the role of technology and social networks in fostering professional growth. Digital tools like online platforms allow teachers to share resources, engage in discussions, and learn from one another.

### 3.4 Statistical tools

The data were summarized, translated and analyzed using the following statistical tools:

### 3.4.1 Descriptive Statistics

The data gathered in this study was analyzed using descriptive statistics, specifically mean, to determine the technology integration, collaborative cohesion, feedback mechanisms, and teachers' instructional delivery skills in Local Universities and Colleges for the SY 2024-2025.

### 3.4.2 Correlation Analysis

The Pearson Product Moment Correlation was employed to measure and identify the relationship between technology integration, collaborative cohesion, and feedback mechanisms on teachers' instructional delivery skills in Local Universities and Colleges.

### 3.4.3 Regression Analysis

Linear Regression Analysis was used to identify which variables, singly or in combination, influence the teachers' instructional delivery skills.

## IV. RESULTS AND DISCUSSION

### 4.1 Results of Descriptive Statics for the Technology Integration of the teachers

Table 4.1: Mean Scores of Technology Integration of the teachers.

INDICATORS	MEAN	Descriptive Rating	Qualitative Interpretation
Attitudes towards technology	4.33	Agree	High
Technological knowledge	4.30	Agree	High
Self-efficacy	4.29	Agree	High
Pedagogical Skills	4.26	Agree	High
Institutional Support	4.19	Agree	High
Overall Mean	4.28	Agree	High

LEGEND:

Range	Descriptive Rating	Qualitative Interpretation
4.51- 5.00	Strongly Agree	Very High
3.51- 4.50	Agree	High
2.51- 3.50	Moderately Agree	Moderate
1.51-2.50	Disagree	Low
1.00-1.50	Strongly Disagree	Very Low

Table 4.1 highlights the critical role of institutional support, self-efficacy, and pedagogical skills in driving the successful integration of technology, collaborative cohesion, and feedback mechanisms into teachers' instructional practices. Institutional backing fosters innovation and effective technology adoption (Tate et al., 2020; Eng et al., 2022), while higher self-efficacy enables teachers to confidently implement digital tools (Zhang et al., 2021). Continuous skill development and technological knowledge are essential for educators to adapt to evolving educational demands (Ferrari et al., 2022; Costa et al., 2021), and positive attitudes toward technology significantly influence educators' willingness to embrace innovative methods (Ahmed et al., 2020). Collaboration among teachers enhances resource-sharing and strategy development (Rogers, 2003; Zhang et al., 2022), and structured feedback mechanisms refine instructional approaches to better meet learners' needs (Caingcoy, 2020). Together, these factors create a synergistic framework that strengthens teaching quality and fosters innovative, adaptable instructional practices in Local Universities and Colleges.

### 4.2 Results of Descriptive Statics for the Level of Level of collaborative cohesion of teachers

Table 4.2: Mean Scores of collaborative cohesion of teachers.

Variables	Mean	Descriptive Rating	Qualitative Interpretation
Teamwork	4.35	Agree	Collaborative
Communication	4.31	Agree	Collaborative
Resource Sharing	4.29	Agree	Collaborative
Professional Development	4.29	Agree	Collaborative
Shared Leadership	4.26	Agree	Collaborative
Overall Mean	4.30	Agree	Collaborative

LEGEND:

Range	Descriptive Rating	Qualitative Interpretation
4.51- 5.00	Strongly Agree	Highly Collaborative
3.51- 4.50	Agree	Collaborative
2.51- 3.50	Moderately Agree	Partially Collaborative
1.51-2.50	Disagree	Weak Collaboration
1.00-1.50	Strongly Disagree	No Collaboration

Table 4.2 presents the overall collaborative cohesion of teachers based on five key variables: teamwork, communication, resource sharing, professional development, and shared leadership, with an overall mean of 4.30, indicating a collaborative environment among faculty members. This suggests that teachers perceive their working relationships as supportive, with teamwork and communication providing a strong foundation for collaboration, while resource sharing and professional development enhance teaching effectiveness. However, the slightly lower rating for shared leadership highlights a potential area for improvement, where more inclusive leadership models could further strengthen cohesion. These findings align with Vangrieken et al. (2015), who emphasized that high levels of collaboration improve instructional quality and student outcomes, and Dollinger et al. (2018), who noted that trust and mutual support are essential for effective collaboration. García-Morales et al. (2021) reinforced the role of communication in fostering shared learning, while Bhebhe et al. (2023) highlighted the impact of resource sharing on teaching innovation. Zhang et al. (2022) underscored the importance of structured collaborative activities in professional development, and Healy and Blade (2020) emphasized shared leadership in empowering educators to contribute to institutional improvements.

#### 4.3 Results of Descriptive Statics for the Level of feedback mechanism of teachers. s

Table 4.3: Mean Scores of feedback mechanism of teachers.

INDICATORS	MEAN	Descriptive Rating	Qualitative Interpretation
Student Feedback	4.27	Agree	Effective
Constructive Feedback	4.27	Agree	Effective
Administrative Support	4.26	Agree	Effective
Continuous Improvement Processes	4.24	Agree	Effective
Peer Feedback	4.23	Agree	Effective
Overall Mean	4.26	Agree	Effective

#### LEGEND:

<i>Range</i>	<i>Descriptive Rating</i>	<i>Qualitative Interpretation</i>
4.51 – 5.00	Strongly Agree	Highly Effective
3.51 – 4.50	Agree	Effective
2.51 – 3.50	Moderately Agree	Somewhat Effective
1.51 – 2.50	Disagree	Ineffective
1.00 – 1.50	Strongly Disagree	Highly Ineffective

The findings present the overall feedback mechanism of teachers, highlighting its effectiveness in enhancing instructional quality, with an overall mean of 4.26, categorized as "Effective." Constructive feedback (mean = 4.27) and administrative support (mean = 4.26) play crucial roles in fostering professional growth and sustaining structured feedback systems, as emphasized by Harrison et al. (2021) and MacLean (2021). Continuous improvement processes (mean = 4.24) ensure iterative feedback cycles that refine teaching practices over time (Cohen-Vogel et al., 2015), while peer feedback (mean = 4.23), though slightly lower, remains impactful in promoting collaboration and shared pedagogical advancements (Carlucci et al., 2019). Padró and Sankey (2018) and Harrison et al. (2022) further reinforce that an institution-wide culture of feedback, integrating student, peer, and administrative input, contributes to sustained improvements in faculty performance and student engagement. This well-rounded feedback system, supported by administrative leadership and continuous improvement efforts, is essential for maintaining high-quality education.

#### 4.4 Results of Descriptive Statics for the level of teachers' overall instructional delivery skills.

Table 4.4: Mean Scores of teachers' overall instructional delivery skills.

INDICATORS	MEAN	Descriptive Rating	Qualitative Interpretation
Student Engagement and Interaction	4.40	Agree	Proficient
Classroom Management	4.39	Agree	Proficient
Assessment Practices	4.37	Agree	Proficient
Instructional Strategies	4.34	Agree	Proficient
Teacher Qualifications and Professional Development	4.30	Agree	Proficient
Overall Mean	4.36	Agree	Proficient

#### LEGEND:

<i>Scale/Range</i>	<i>Descriptive Rating</i>	<i>Qualitative Interpretation</i>
4.51 – 5.00	Strongly Agree	Highly Proficient
3.51 – 4.50	Agree	Proficient
2.51 – 3.50	Moderately Agree	Moderately Proficient
1.51 – 2.50	Disagree	Low Proficiency
1.00 – 1.50	Strongly Disagree	Very Low Proficiency

The findings present the teachers' overall instructional delivery skills across five key dimensions: student engagement and interaction (mean = 4.40), classroom management (mean = 4.39), assessment practices (mean = 4.37), instructional strategies (mean = 4.34), and teacher qualifications and professional development (mean = 4.30), with an overall mean of 4.36, categorized as "Proficient." These results indicate that teachers effectively foster inclusive, interactive learning environments, maintain structured classrooms, and employ diverse teaching and assessment methods aligned with learning objectives. However, the slightly lower score for professional development suggests a need for more targeted and practical training initiatives to enhance instructional effectiveness. This is supported by Mufidah et al. (2024), who emphasized the impact of teacher qualifications on instructional quality, and Darling-Hammond et al. (2017), who highlighted the importance of structured, content-focused professional development in improving teaching practices. Additionally, Sinatra et al. (2021) and Cohen-Vogel et al. (2015) underscored the role of reflective teaching and aligning teacher education with current standards to ensure educators are well-prepared for modern classroom demands. Together, these findings reinforce the necessity of continuous skill enhancement and experiential learning opportunities to strengthen instructional competencies and maintain high-quality education.

#### 4.5 Results of Correlation between the Independent Variables and the Dependent Variable

Table 4.5: Correlation of the Variables

VARIABLES	CORRELATION COEFFICIENT ®	P-VALUE
Technology Integration	.340**	.000
Technological Knowledge	.274**	.000
Pedagogical Skills	.256**	.000
Self-Efficacy	.344**	.000
Attitude towards Technology	.267**	.000
Institutional Support	.030	.030
Collaborative Cohesion	.276**	.000
Communication	.281**	.000
Teamwork	.231**	.000
Professional Development	.253**	.000
Shared Leadership	.152**	.001
Resource Sharing	.129**	.003
Feedback Mechanism	.329**	.000
Constructive Feedback	.172**	.000
Peer Feedback	.224**	.000
Administrative Support	.189**	.000
Student Feedback	.383**	.000
Continuous Improvement Processes	.323**	.000

\*\*  $p < 0.01$ , NS = Not Significant

Table 4.5 reveal significant correlations between instructional delivery skills and the independent variables of technology integration, collaborative cohesion, and feedback mechanisms. Technology integration demonstrated a positive and significant correlation ( $r = .340$ ,  $p < .01$ ), with self-efficacy ( $r = .344$ ,  $p < .01$ ) emerging as the strongest sub-variable, highlighting the importance of teachers' confidence in utilizing digital tools effectively (Guoyan et al., 2021). Other sub-variables such as technological knowledge ( $r = .274$ ,  $p < .01$ ), pedagogical skills ( $r = .256$ ,  $p < .01$ ), and attitude toward technology ( $r = .267$ ,  $p < .01$ ) also showed moderate correlations, while institutional support had a weaker correlation ( $r = .030$ ,  $p = .030$ ) (Aslam et al., 2021; Abbasi et al., 2021; Ghavifekr & Rosdy, 2015). Collaborative cohesion was also significantly correlated with instructional delivery skills ( $r = .276$ ,  $p < .01$ ), with communication ( $r = .281$ ,  $p < .01$ ) showing the strongest relationship, followed by professional development ( $r = .253$ ,  $p < .01$ ) and teamwork ( $r = .231$ ,  $p < .01$ ), emphasizing the role of collegial support and shared learning experiences (García-Morales et al., 2021; Gallardo-Fuentes et al., 2017; Darling-Hammond et al., 2017). Feedback mechanisms exhibited a strong correlation overall ( $r = .329$ ,  $p < .01$ ), with student feedback ( $r = .383$ ,  $p < .01$ ) being the most influential factor, while continuous improvement processes ( $r = .323$ ,  $p < .01$ ), constructive feedback ( $r = .172$ ,  $p < .01$ ), and peer feedback ( $r = .224$ ,  $p < .01$ ) further underscored the importance of iterative evaluations in refining teaching practices (Sinatra et al., 2021; Cohen-Vogel et al., 2015; Harrison et al., 2021; Carlucci et al., 2019). These findings highlight the multifaceted nature of instructional delivery skills and the need for fostering technological proficiency, collaboration, and robust feedback systems to sustain high-quality teaching.

#### 4.6 Results of Regression Analysis Among the Variables

Table 4.6: Regression Analysis Among the Variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.938	.192		10.117	.000
Feedback Mechanism					
Student Feedback	.151	.032	.209	4.765	.000
Continuous Improvement Processes	.111	.029	.170	3.753	.000
Technology Integration					
Self-Efficacy	.132	.031	.186	4.202	.000

Institutional Support	-.091	.023	-.167	-4.010	.000
Technological Knowledge	.085	.030	.116	2.871	.004
Attitude towards Technology	.067	.033	.090	2.032	.043
Collaborative Cohesion					
Professional Development	.080	.029	.125	2.722	.007
Shared Leadership	-.062	.030	-.097	-2.099	.036
Communication	.090	.030	.132	2.945	.003
<hr/>					
R = 551 <sup>i</sup> R <sup>2</sup> = .304	F = 24.736	P = 0.000			

The first predictor variable, student feedback, has a regression coefficient of 0.209 and is highly significant at the 0.000 level, followed by self-efficacy at 0.186. The third predictor variable, continuous improvement processes, has a regression coefficient of 0.170 and is also highly significant at the 0.000 level, followed by communication at 0.132. Additionally, technological knowledge ( $\beta = 0.116$ ) and attitude towards technology ( $\beta = 0.090$ ) further contribute to instructional delivery skills, highlighting the importance of technical expertise and a positive mindset toward digital tools.

The table displays the standard coefficient estimates of the variables, representing the percentage of covariance of the predictors of instructional delivery skills. It reveals that student feedback explains the highest proportion of variance, making it the best predictor for teachers' instructional delivery skills. Moreover, the R-squared (R<sup>2</sup>) coefficient of 0.304 provides empirical evidence that approximately 30.4% of the variance observed in instructional delivery skills can be attributed to the independent variables, with the remaining 69.6% attributed to other factors outside this study.

The significance of these predictors is evident in the table, where their p-values are all less than 0.05. Consequently, the six significant predictors identified are student feedback, self-efficacy, continuous improvement processes, communication, technological knowledge, and attitude towards technology in relation to instructional delivery skills. These findings collectively emphasize the multifaceted nature of effective teaching practices and the critical role of feedback, confidence, professional growth, and technological proficiency in enhancing instructional quality.

The regression equation formulated is:

$$Y_1 = 1.938 + 0.151 X_1 + 0.111 X_2 + 0.132 X_3 - 0.091 X_4 + 0.085 X_5 + 0.067 X_6 + 0.080 X_7 - 0.062 X_8 + 0.090 X_9$$

Where:

- Y<sub>1</sub> = Instructional Delivery Skills
- X<sub>1</sub> = Student Feedback
- X<sub>2</sub> = Continuous Improvement Processes
- X<sub>3</sub> = Self-Efficacy
- X<sub>4</sub> = Institutional Support
- X<sub>5</sub> = Technological Knowledge
- X<sub>6</sub> = Attitude towards Technology
- X<sub>7</sub> = Professional Development
- X<sub>8</sub> = Shared Leadership
- X<sub>9</sub> = Communication

Therefore, the results of this study reject the null hypothesis that there is no significant relationship between the independent variables and instructional delivery skills. The findings highlight that student feedback, self-efficacy, continuous improvement processes, communication, technological knowledge, and attitude towards technology positively enhance instructional delivery, while institutional support and shared leadership have a negative impact. This aligns with Cohen-Vogel et al. (2015), who emphasized that student feedback mechanisms provide direct insights for refining instructional approaches, and West et al. (2016), who confirmed that self-efficacy is a key determinant of instructional effectiveness. Similarly, Jadhav et al. (2024) and Mufidah et al. (2024) underscored the importance of continuous professional development and pre-service training in developing quality delivery skills among educators.

The negative impact of institutional support and shared leadership aligns with Naylor and Sayed (2023), who suggested that excessive reliance on administrative structures can limit teachers' autonomy in instructional decision-making. Their study revealed that overly rigid frameworks hinder teachers' ability to implement creative and responsive pedagogical strategies. This is further supported by Mangiante's (2021) research, which found that high-quality teaching requires adaptability and student engagement, both of which are constrained by excessive administrative oversight. These findings collectively emphasize the need for a balanced approach to institutional support, ensuring it enhances rather than hinders instructional flexibility.

The findings underscore the importance of fostering self-efficacy, promoting continuous professional growth, and integrating student feedback mechanisms to enhance instructional delivery. Future research may further explore the complex interplay between institutional support and instructional practices to optimize its role in educational settings. By addressing these factors, educational institutions can create an environment that empowers teachers to deliver high-quality instruction, ultimately improving student learning outcomes.

## V. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings previously stated, the following conclusions are derived:

This study investigated the relationship between technology integration, collaborative cohesion, feedback mechanisms, and instructional delivery skills among teachers in universities and colleges in Mindanao. The findings revealed that teachers generally demonstrate proficiency in instructional delivery, particularly in student engagement and interaction, classroom management, and assessment practices, while showing room for improvement in instructional strategies and professional development.

The study indicated that student feedback, self-efficacy, and continuous improvement processes are the strongest predictors of instructional delivery skills, highlighting the importance of learner perspectives, teacher confidence, and iterative professional growth. Additionally, communication, technological knowledge, and attitude towards technology significantly contribute to teaching effectiveness, emphasizing the role of effective interactions, technical expertise, and a positive mindset toward digital tools.

The study also found that institutional support and shared leadership negatively impact instructional delivery skills, suggesting that excessive reliance on administrative structures and diffused leadership responsibilities may hinder teachers' autonomy and adaptability. There is a significant relationship between technology integration, collaborative cohesion, feedback mechanisms, and instructional delivery skills. Specifically, the research determined that student feedback, self-efficacy, continuous improvement processes, communication, technological knowledge, and attitude towards technology significantly enhance instructional delivery, while institutional support and shared leadership require careful optimization to avoid constraining teaching effectiveness. These findings collectively emphasize the need for fostering confidence, promoting professional growth, and integrating robust feedback systems to strengthen instructional quality.

Some of the recommendations are as follows:

The Commission on Higher Education (CHED) Region 10 may conduct targeted professional development programs focused on technology integration, collaborative cohesion, and feedback mechanisms to empower faculty members in Local Universities and Colleges (LUCs) across the region. Through these initiatives, teachers can cultivate confidence in utilizing digital tools, foster a positive attitude toward technology, and improve their teaching practices to enhance student learning experiences.

Administrators in LUCs may organize Learning Action Cells (LACs) to encourage collaboration among faculty members, enabling them to share best practices, integrate technology trends, and refine instructional strategies. It is also encouraged to invest in continuous improvement processes and structured feedback systems that support teachers' professional growth and adaptability. Additionally, fostering a culture of shared leadership while maintaining teacher autonomy can enhance instructional effectiveness and foster innovation in teaching.

Curriculum developers in LUCs might consider integrating technology-enhanced learning and student-centered approaches into the curriculum in a meaningful and relevant way. Ensuring that faculty members are equipped with the necessary technological knowledge and pedagogical skills will enable them to implement these changes effectively. Developing curricula that emphasize hands-on experience and real-world applications can further strengthen teachers' instructional competencies and prepare students for the demands of the modern workforce.

For faculty members in LUCs, it is recommended to embrace a growth mindset and remain open to learning new technologies and teaching strategies. Actively participating in professional development opportunities and seeking feedback from students and peers can enhance instructional delivery. Experimenting with diverse instructional strategies and feedback mechanisms can help identify the most effective methods for engaging students and improving learning outcomes.

Finally, to expand upon the current findings, it is recommended that future researchers in CHED Region 10 or LUCs explore the long-term impact of technology integration, collaborative cohesion, and feedback mechanisms on instructional delivery skills and student learning outcomes. Further studies may investigate the effectiveness of specific interventions designed to promote self-efficacy, continuous improvement, and communication among faculty members. Moreover, future research should focus on developing robust methods to accurately measure the impact of these factors on teaching effectiveness and student achievement in the context of higher education in Region 10.

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## REFERENCES

- Abbasi, I. A., Ali Shah, S. Z., & Baloch, N. (2021). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Educational Technology Research and Development*, 70(3), 567-588.

- Ahmed, S. F., & Khan, M. A. (2020). Shaping behaviors through institutional support in British higher educational institutions: Focusing on employees for sustainable technological change. *International Journal of Educational Management*, 34(5), 1003-1017.
- Aslam, H., Khan, M. N., & Abid, M. (2021). The role of collaborative learning environments in enhancing teachers' quality delivery skills during online instruction. *Education and Information Technologies*, 26(4), 4539-4559.
- Bhebhe, S., Mhlanga, D., & Moyo, T. (2023). The role of institutional support in enhancing teachers' technology integration: A case study in private higher education institutions. *Journal of Educational Technology Systems*, 51(2), 145-162.
- Caingcoy, M. (2020). Feedback mechanisms of school heads on teacher performance. *International Journal of Educational Management*, 34(5), 1041-1053.
- Carlucci, D., De Luca, L., & De Santis, F. (2019). Enhancing institutional responsiveness through continuous improvement frameworks: The role of student feedback. *Journal of Educational Administration*, 57(6), 637-653.
- Cohen-Vogel, L., Harrison, C., & Henson, R. (2015). Continuous improvement frameworks in higher education: Implications for practice and policy. *Educational Policy Analysis Archives*, 23(25), 1-24.
- Darling-Hammond, L., Hyler, M.E., & Gardner, M. (2017). Effective teacher professional development. Learning Policy Institute.
- Dollinger, M., & Riedner, B. (2018). Building trust in collaborative professional development: The role of interaction and communication among teachers. *Teaching and Teacher Education*, 75, 1-12.
- Gallo, M., & Smith, J. (2023). The role of mentorship in enhancing school disaster management capabilities among staff: A qualitative study. *International Journal of Educational Leadership*, 37(2), 245-262.
- García-Morales, V. J., Benavides-Velasco, C., & Pino-Fan, L. R. (2021). The impact of digital strategies on teaching quality during emergency remote teaching: Evidence from higher education institutions in Spain. *Computers & Education*, 161, 104091.
- Ghavifekr, S., & Wan Rosdy, W. A. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science (IJRES)*, 1(2), 175-191.
- Guoyan, Z., Wang, Y., & Liu, Y. (2021). The relationship between teachers' self-efficacy and technology integration in teaching practices at private higher education institutions: A structural equation modeling approach. *Computers in Human Behavior*, 112, 106467.
- Healy, M., & Blade, J.-A. (2020). Digital competencies and their impact on teaching quality in higher education settings: A systematic review of the literature. *Educational Technology Research and Development*, 68(2), 459-487.
- Jadhav, P. V., & Patil, S. R. (2021). Enhancing instructional quality through professional development: A case study of teacher education programs in India. *Journal of Education and Practice*, 12(4), 45-56.
- MacLean, M. (2021). Continuous improvement in higher education: A conceptual framework. *Higher Learning Research Communications*, 11(1), 1-14.
- Mangiante, E. (2021). Measures of teacher effectiveness in low-income minority schools: Characteristics that promote quality teaching. *Educational Studies*, 57(2), 123-138.
- Mhlanga, D., & Denhere, V. (2020). Determinants of financial inclusion in Southern Africa. *Studia Universitatis Babeş-Bolyai Oeconomica*, 65(3), 39-52. <https://doi.org/10.2478/subboec-2020-0019>
- Morales, J., Santos, R., & Cruz, M. (2021). Technology integration traditions, transitions, and best practices in Philippine higher STEAM education. *Philippine Journal of Science*, 150(5), 1-12.
- Mufidah, N., & Almarwani, A. (2024). An exploration of the quality of graduates of Philippine teacher education institutions. *Frontiers in Education*, 9, Article 1235261.
- Naylor, R., & Sayed, Y. (2023). The "problem" of teacher quality: Exploring challenges and opportunities in developing teacher quality during the Covid-19 global pandemic in England. *Journal of Education Policy*, 38(3), 317-335.
- Padró, F., & Sankey, L. (2018). Integrating continuous improvement practices into faculty development programs: Implications for teacher quality. *Journal of Higher Education Policy and Management*, 40(2), 175-188.
- Sinatra, R., & Cummings, K. (2021). Reflective teaching practices and their impact on student engagement in higher education settings. *Educational Technology Research and Development*, 69(4), 1235-1256.
- Vangrieken, K., Dochy, F., Raes, E., & Kyndt, E. (2015). Teacher collaboration: A systematic review. *Educational Psychologist*, 50(2), 120-135.
- West, P. E., Lunenburg, F. C., & Hines, M. T. (2016). Teacher quality variables and efficacy for teaching minority students: A review of the literature. *International Journal of Educational Leadership Preparation*, 11(1), 1-15.
- Zhang, Y., & Chen, L.-H. (2022). Enhancing teacher collaboration through activity-oriented design methods in higher education settings: Implications for instructional practices. *Teaching and Teacher Education*, 113, Article 103671.