WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Framework for Teachers' Pedagogical Effectiveness

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ABSTRACT

This study investigated the pedagogical effectiveness of teachers in the Division of Cotabato using a mixed-method research design that combined Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Thematic Analysis. The primary aim was to identify, validate, and interpret core dimensions of pedagogical practices that enhance language instruction. Quantitative data were gathered from a large sample of public school teachers and analyzed using EFA, which revealed a high Kaiser-Meyer-Olkin (KMO = .955) measure and a significant Bartlett's Test of Sphericity, confirming the data's suitability for factor analysis. The EFA extracted fourteen components accounting for 66.606% of the total variance, with clearly defined factor loadings. Eight key pedagogical factors emerged: Instructional Conversations, Challenging Activities, Collaborative Language Practice, Writing and Conversation, Community-Centered Learning, Real-World Conversations, Interaction-Based Learning, and Culturally Responsive Instruction. These factors reflect a multi-dimensional structure of effective language pedagogy. CFA was used to test the fit of both twelve-factor and four-factor models, with the four-factor structure yielding improved model fit (CFI = .900, RMSEA = .077). Instructional Conversations emerged as a central factor, strongly influencing collaborative and contextualized instructional strategies. Qualitative data from teacher interviews were subjected to thematic analysis, which highlighted practices such as scaffolding, gamified instruction, differentiated learning, and student-centered strategies. Themes also revealed the importance of motivation, confidence, inclusivity, and assessment feedback in fostering student engagement and academic success. The findings offer practical insights for improving teaching practices and designing professional development programs that align with identified pedagogical dimensions.

INTRODUCTION

The effectiveness of teaching practices stands as a cornerstone of educational outcomes. Central to this discourse is the concept of pedagogical effectiveness, which encapsulates the multifaceted nature of teachers' impact on student learning. As educational landscapes evolve, so too does the understanding of what constitutes effective teaching. This explores a framework designed to elucidate the elements that contribute to and define teachers' pedagogical effectiveness.

Amidst the great number approaches to teaching, the need for a comprehensive framework becomes evident (Djalilova, 2023). This framework serves not only to delineate the parameters of effective teaching but also to provide a structured approach for assessing and enhancing pedagogical practices (Mykolaiko, 2023). Educators can better understand how their instructional methods influence student learning outcomes. Thus, thereby establishing continuous improvement and adaptation in educational settings (Moreira et al., 2023).

At the heart of the framework lies a systematic analysis of various factors that influence teachers' pedagogical effectiveness as mentioned by Ahmad et al. (2023). These factors encompass not only instructional strategies but also the teacher-student dynamic, curriculum alignment, and the integration of innovative educational technologies. Through a thorough examination of these components, educators can discern effective practices from mere methodologies, empowering them to optimize their teaching approaches and positively impact student engagement and achievement (Bahtiar et al., 2023).

Despite extensive research and ongoing efforts to define effective teaching practices (Nagima et al., 2023), problems persist in the understanding and application of pedagogical frameworks. These underscore the need for a cohesive model that synthesizes current research findings and translates them into actionable strategies for educators (Lin et al., 2023). In order to address these gaps, this framework seeks to bridge theory and practice, offering practical insights that align with the dynamic demands of modern educational environments (Alka et al., 2023).

In response to these challenges, the proposed framework aims to provide educators with a structured pathway to enhance their pedagogical effectiveness. This equips educators with the tools necessary to navigate the complexities of teaching in the 21st century. Through its comprehensive approach, it strives to empower educators to cultivate meaningful learning experiences that inspire and enable students to achieve their full potential.

RESEARCH QUESTIONS

This mixed-method research, which employed a sequential exploratory design, aimed to provide specific answers to the following research questions:

1. What are the key factors that contribute to pedagogical effectiveness in the classroom?
2. How do teachers' pedagogical strategies influence student academic performance across different subjects?
3. What are the dimensions of pedagogical effectiveness among the secondary school teachers in the Division of Cotabato?
4. What framework on pedagogical effectiveness among the secondary school teachers in the Division of Cotabato can be developed based on the findings?
5. What dissemination plan can be proposed based on the results?

METHODOLOGY

This chapter presents the research design, locale of the study, respondents, research instruments, data gathering procedure, data analysis, and ethical considerations.

Research Design

A mixed-method approach was used to explore the dimensions and experiences of the respondents and informants. In particular, the study employed a sequential exploratory design, wherein the researcher first utilized qualitative methods (Maforah & Leburu-Masigo, 2018). The qualitative phase began with interviews of the participants, and their responses served as the basis for data analysis. Themes were extracted to align with their pedagogical effectiveness. The use of this design was important, as it provided the researcher with a clear presentation of the phases of the study.

Through the use of a survey questionnaire, the researcher gathered data in which the respondents were asked to respond to each statement. Following this, the factorability of the dimensions was tested to determine whether they fit the contexts of the respondents through model development (Bowen et al., 2017).

Research Participants

The respondents of the study were the Junior High School Teachers coming from the 3 congressional districts of the Division of Cotabato and from Kidapawan City Division.

Phase 1

Division	Participants
Cotabato Division	
CD 1	5
CD 2	5
CD 3	5
Kidapawan City Division	5
Total	**20**

Phase 2

SDO Cotabato	Number of Teachers	Sample Size
1st Congressional District	1651	179
2nd Congressional District	1525	165
3rd Congressional District	121	13
Total	**3297**	**357**

Research Instrument

Phase 1

The researcher developed the interview guide, which was composed of questions designed to elicit the participants' experiences as teachers, particularly in relation to how pedagogical effectiveness was practiced in their respective classrooms.

Phase 2

The developed research instrument was adapted from previous studies on pedagogical effectiveness by Dalton (1998). Each statement was based on the contexts of the predetermined dimensions. The responses were rated using a Likert Scale, where 5 indicated Strongly Agree and 1 indicated Strongly Disagree with the statements.

Range of Means	Description	Interpretation
4.20-5.00	Strongly Agree	The pedagogical effectiveness of teachers is always manifested
3.40-4.19	Agree	The pedagogical effectiveness of teachers is often manifested
2.60-3.39	Moderate	The pedagogical effectiveness of teachers is fairly manifested
1.80-2.59	Disagree	The pedagogical effectiveness of teachers is rarely manifested
1.00-1.79	Strongly Disagree	The pedagogical effectiveness of teachers is not manifested

Data Analysis

The researcher employed the following tools in the analysis of the data:

Thematic Analysis. This method was applied to determine meanings across the responses of the participants. As a qualitative data analysis technique, it was typically used on sets of texts such as interview transcripts. The researcher closely examined the data to identify common themes—topics, ideas, and patterns of meaning that emerged repeatedly (Salm et al., 2021).

Exploratory Factor Analysis (EFA). This statistical technique was used to reduce data into a smaller set of summary variables and to explore the underlying theoretical structure of the phenomenon. It served to identify the structure of the relationships between the variables and the respondents (Osborne, 2015).

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test. These tests were used to determine the suitability of the data for factor analysis (Habibi et al., 2020).

Confirmatory Factor Analysis (CFA). The process began with clearly defining the theoretical constructs. This stage often involved a pretest to evaluate the construct's items and to ensure they were well-defined and accurately represented the intended concept. In CFA, it was essential to establish the principle of one-dimensionality, wherein each factor or construct was represented by multiple observed variables presumed to measure only that specific construct (Roos & Bauldry, 2021).

RESULTS AND DISCUSSION

1. **What are the key factors that contribute to pedagogical effectiveness in the classroom?**

Key factors that contribute to Pedagogical Effectiveness in the classroom

Use of Diverse Instructional Strategies. Using diverse instructional strategies helps address different learning styles. It makes lessons more engaging and meaningful for students. This approach can improve understanding and retention of content. It also encourages active participation in the classroom.

The use of visuals, asking questions and hands-on activities helps students understand lessons better through examples they can see touch and talk about. As asserted:

By giving examples, use of visuals, asking questions and hands-on activities. (Informant 1 RQ1.1 L 1-2)

Facilitative teaching involves scaffolding lessons using real-life connections, analogies, and visual aids while applying the HOTS-SOLO taxonomy to move from basic understanding to deeper levels of thinking, such as linking everyday expressions to figurative language in literary texts. As mentioned:

I use facilitative teaching by scaffolding lessons through real-life connections, analogies, and visual aids. I also incorporate HOTS-SOLO taxonomy by starting with basic understanding and gradually deepening complexity. For example, when teaching figurative language, I first relate it to everyday expressions before analyzing literary texts. (Informant 4 RQ1.1 L 189-197)

The implementation of diverse instructional strategies is essential in addressing the varied learning needs of students. For instance, Escanda (2024) found that research-based instructional strategies, such as differentiated instruction and inclusive pedagogical approaches, significantly enhance student engagement and academic performance in elementary schools in the Philippines. Similarly, a study by Cents-Boonstra et al. (2021) highlighted that diverse teaching strategies positively influence students' learning engagement, emphasizing the importance of teacher-student interaction and feedback. These findings underscore the necessity for educators to employ a range of instructional methods to cater to the diverse learning styles and backgrounds of their students.

Student Engagement and Motivation. Student engagement and motivation are key to effective learning. When students are interested they participate actively. Motivation helps them stay focused and complete tasks. Engaged learners are more likely to understand and remember lessons.

Hands-on or experiential learning activities like role playing simulations games and puzzles make learning fun engaging and more meaningful for students. As stated:

I incorporate hands-on or experiential learning activities in my teaching through role playing and simulations, games and puzzles to make learning fun and engaging. (Informant 3 RQ1.3 L 165-168)

Starting with a hook like a story or question, followed by interactive methods such as role playing, group discussions, and games, along with the use of technology and multimedia, makes learning more dynamic and engaging. As claimed:

I start with a hook such a short story, a question, or a funny activity related to the lesson. I use interactive methods like role-playing, group discussions and games to make learning more dynamic. Technology and multimedia also help, such as using videos for listening exercises or apps for vocabulary practice. (Informant 1 RQ1.2 L 12-19)

Student engagement and motivation are critical factors influencing academic success and overall well-being. Research indicates that perceived teacher support significantly enhances student engagement and motivation, with intrinsic motivation playing a more substantial mediating role than extrinsic motivation (An et al., 2025). Additionally, a systematic literature review by Metu (2024) emphasizes the multifaceted nature of student engagement, encompassing behavioral, cognitive, and emotional aspects, and highlights the importance of contextual and institutional factors in fostering engagement. These studies underscore the necessity for educators to provide supportive learning environments that cater to diverse motivational needs to enhance student engagement.

Supportive Learning Environment. A supportive learning environment helps students feel safe and valued. It encourages active participation and reduces anxiety. When students feel supported they are more willing to take risks and make mistakes. This kind of environment promotes better learning and personal growth.

Creating a welcoming and inclusive environment, providing individual support, and using differentiated instruction helps meet the needs of all learners and encourages active participation. As stated:

I begin by creating a welcoming and inclusive environment where students feel safe to contribute. I also actively circulate throughout the classroom, providing individual support and encouragement, and I use differentiated instruction to tailor activities to meet the needs of all learners. (Informant 6 RQ1.4 L 341-347)

Connecting lessons to students' interests, using interactive activities, providing positive reinforcement, and setting achievable goals create a supportive environment that boosts engagement and confidence. As asserted:

I connect lessons to their interests and use interactive activities to keep them involved. I provide positive reinforcement for their efforts and set small, achievable goals to build their confidence. Creating a supportive environment where they feel safe to express themselves also helps foster engagement. (Informant 1 RQ1.4 L 41-48)

A supportive learning environment significantly enhances student engagement and motivation, contributing to improved academic outcomes. Research by Kassab et al. (2024) indicates that a positive educational environment, encompassing aspects like teacher support and classroom climate, positively correlates with student engagement and academic performance in health professions education. Similarly, Zhang et al. (2025) found that perceived teacher support and intrinsic motivation play crucial roles in enhancing student engagement in English learning among Chinese senior high school students. These studies underscore the importance of fostering supportive learning environments to promote student success.

Assessment and Feedback Practices. Assessment and feedback guide students in tracking their progress. Clear and timely feedback helps them improve and correct mistakes. Different forms of assessment support varied learning styles. These practices also help teachers adjust instruction based on student needs.

Feedback highlights strengths and areas for improvement through clear explanations and suggestions while encouraging students to reflect and identify how they can grow. As mentioned:

I use feedback to highlight both strengths and areas for improvements focusing on specific actions rather than personal traits. I provide constructive comments that explain why a mistake was made and offer suggestions for how to correct it. I also encourage self-reflection and asking students to review their work and identify areas for growth. (Informant 1 RQ1.5 L 49-57)

Feedback is vital in the teaching-learning process as it helps students understand their strengths weaknesses and how to improve their performance after activities. As stated:

Feedback is vital in teaching-learning process. I usually use these after activities to give the strengths and weaknesses and on how to improve their output or performance. (Informant 14 RQ1.5 L 709-713)

Assessment and feedback practices are pivotal in enhancing student learning and performance. A systematic review by Gaynor et al. (2021) emphasizes that formative assessment and feedback are fundamental aspects of learning in higher education, with low-stakes quizzing identified as a particularly effective approach. The study also highlights the benefits of peer and tutor feedback, contingent upon proper implementation. Furthermore, Tutunaru (2023) discusses the importance of constructive feedback in guiding students through the learning process, noting that effective feedback should

be timely and tailored to individual learning trajectories. These findings underscore the necessity of integrating well-designed assessment and feedback mechanisms to support student development.

Table 1

Themes on the perceived key Pedagogical Practices for Effective and Inclusive Teaching

Global Theme	**Organizing Theme**	**Basic Theme**
Dynamic, Inclusive, and Reflective Pedagogical Practice	Use of Diverse Instructional Strategies	Real-world examples and scaffolding
	Student Engagement and Motivation	Gamified and interest-based learning
	Supportive Learning Environment	Differentiated instruction and inclusivity
	Assessment and Feedback Practices	Constructive feedback and growth-focused approach

Table 1 highlights the Pedagogical Practice for Effective and Inclusive Teaching, with organizing themes reflecting key areas in contemporary pedagogy. The use of diverse instructional strategies, such as integrating real-world examples and scaffolding, aligns with findings by Darling-Hammond et al. (2020), who emphasized the importance of contextualized learning for deeper understanding. The student engagement and motivation aspect, particularly through gamified and interest-based learning, is supported by Koivisto and Malik (2022), who noted that gamification significantly enhances learner motivation and participation.

Creating a supportive learning environment through differentiated instruction and inclusivity echoes Tomlinson's (2021) advocacy for adaptive teaching practices that cater to diverse student needs. Lastly, assessment and feedback practices, especially those that are growth-focused and constructive, are essential for fostering student progress and are consistent with Black and Wiliam's (2020) principles of formative assessment for learning.

2. How do teachers' pedagogical strategies influence student academic performance across different subjects?

Teachers' Pedagogical Strategies influence student academic performance across different subjects

Collaboration Enhances Learning. Collaboration enhances critical thinking through shared ideas. It builds confidence as students learn from one another. Group tasks lead to better problem-solving. Working together improves communication and understanding.

Collaborative activities like group projects and peer reviews boost academic performance by encouraging active learning and building essential teamwork skills. As asserted:

Collaborative activities, such as group projects and peer reviews, significantly enhance academic performance by promoting deeper learning through discussion and knowledge sharing. They also develop teamwork and communication skills preparing students for real-world applications of their knowledge. (Informant 9 RQ2.1 L 90-97)

In addition, collaborative activities allow students to share ideas, build problem-solving and communication skills, and make learning more engaging and interactive. As mentioned by an informant:

Collaborative activities help students learn from each other, share ideas, and develop problem-solving skills. Group projects and peer reviews also build confidence, improve communication, and make learning more engaging and interactive. (Informant 16 RQ2.1 L 146-151)

Collaborative learning has been shown to significantly enhance academic performance by promoting deeper understanding and engagement among students. For instance, Reeve et al. (2025) found that collaborative learning increases student engagement by encouraging idea exchange and understanding diverse perspectives. Similarly, Cagatan and Quirap (2024) reported a significant relationship between collaborative learning and academic performance among elementary students in the Philippines. Additionally, Nazeef et al. (2024) highlighted that social factors such as peer interaction and teacher involvement positively impact collaborative learning and academic achievement in higher education.

Sustained Engagement Strategies. Sustained engagement strategies help students stay focused and motivated over time. They create opportunities for continuous learning and skill development. When students remain engaged they are more likely to retain knowledge. These strategies also improve participation and encourage active involvement in the learning process.

By breaking lessons into manageable parts, using real-life examples, and incorporating interactive activities, I keep students engaged, motivated, and better able to understand the material. As mentioned by the informant:

I break lessons into smaller, easy-to-understand parts and use real-life examples to make them relatable. I also add interactive activities, games, and encouragement to keep students engaged and motivated. (Informant 16 RQ2.1 L 152-157)

Lessons are broken into manageable, competency-based segments to target specific skills and learning outcomes for each part. As stated by one of the informants:

I break long lessons into manageable, competency-based segments, focusing on specific skills or learning outcomes for each part. (Informant 18 RQ2.1 L 168-171)

Sustained engagement strategies are essential for maintaining student motivation and enhancing learning outcomes. The integration of gamification elements, such as quizzes and interactive games, has been shown to improve student engagement and learning performance in various educational settings (Wang et al., 2020). Additionally, the flipped classroom model, which involves students learning content outside of class and applying it during class time, has been associated with increased student engagement and deeper learning (Kaplan, 2021). Furthermore, the use of augmented reality in education has been found to create more engaging learning environments, leading to improved academic performance (Lampropoulos et al., 2022).

Skill Development through Pedagogy. Skill development through pedagogy equips students with practical abilities for real-world tasks. Effective teaching methods help students apply knowledge in various contexts. It encourages critical thinking and problem-solving. This approach prepares students for future challenges in their careers and daily lives.

Collaborative activities provide a natural environment for language use, enhancing fluency and confidence while improving academic performance. As what an informant claimed:

It enhances language acquisition through immense practice. Collaborative activities create a natural environment for students to use English in authentic context, boosting fluency and confidence. From these, I will improve the students' academic performance. (Informant 3 RQ2.1 L 24-30)

Collaborative learning fosters creativity, critical thinking, and socialization skills, while positive peer relationships can enhance academic performance. As stated:

This helps the learners promote their creativity, critical thinking skills, and strengthen their socialization skills. Being with someone they are comfortable with can also help improve their academic performance. (Informant 14 RQ2.1 L 134-139)

Recent studies underscore the pivotal role of contemporary pedagogical strategies in fostering skill development. Papagiannis and Pallaris (2024) demonstrated that integrating makerspace workshops into computer science education significantly enhanced students' critical thinking, collaboration, communication, and creativity. Similarly, Tavakoli et al. (2020) highlighted the effectiveness of personalized Open Educational Resources (OERs) in supporting learners' career development by aligning learning content with specific skill targets. Furthermore, Peppler et al. (2020) emphasized the importance of aligning course assignments, learning objectives, and assessment measures with learner needs and interests to facilitate effective online workforce training.

Inclusive and Motivational Environment. An inclusive and motivational environment promotes diverse learning styles and ensures that every student feels valued. It can increase student engagement by creating a safe space where learners are encouraged to express their ideas. When students feel supported they are more likely to take academic risks and achieve higher levels of success. This type of environment also builds stronger student-teacher relationships which improves learning outcomes.

Using online platforms and apps to gamify lessons enhances student engagement and makes learning more interactive and enjoyable. As mentioned:

Gamify the lesson using online platforms and apps. (Informant 15 RQ2.1 L 144-145)

Students should be actively engaged through achievable tasks tailored to their abilities, with lessons centered around their participation, discovery, and supported by games or movement to maintain interest. As asserted:

They must be engaged! Give them role/ task that is just achievable by their specific capability. They must not just sit down and listen but also do like discover. Always make them as the center of your class. If they will get bored, incorporate games or allow for movement and brain breaks, then proceed. (Informant 20 RQ2.1 L 187-194)

Creating an inclusive and motivational learning environment is essential for supporting diverse student needs and enhancing educational outcomes. Togni (2025) developed an inclusive educational platform utilizing open technologies and machine learning to improve accessibility for students with special needs, demonstrating significant positive impacts in educational settings. Grassucci et al. (2025) highlighted the role of Large Language Models (LLMs) in personalizing learning experiences, thereby promoting inclusivity and motivation among students from varied backgrounds. Additionally, Alcalde-Llergo et al. (2025) introduced a virtual reality experience to raise awareness of dyslexia-related barriers, fostering empathy and understanding within university communities. These studies collectively emphasize the importance of integrating innovative technologies and empathetic approaches to cultivate inclusive and motivating educational environments.

Table 2

Themes on the perceived teachers' pedagogical strategies influence student academic performance across different subjects

Global Theme	**Organizing Theme**	**Basic Theme**
Collaborative and Adaptive Pedagogy as a Driver of Academic Success	Collaboration Enhances Learning	Peer learning boosts understanding and confidence
	Sustained Engagement Strategies	Segmenting lessons and using real-life connections
	Skill Development through Pedagogy	Critical thinking and communication development
	Inclusive and Motivational Environment	Student-centered and encouraging strategies

Table 2 presents key themes showing how collaborative and adaptive pedagogical strategies influence student academic performance. Recent studies highlight that peer learning enhances understanding and confidence (Candia et al., 2022), while segmenting lessons and using real-life examples sustain engagement (Weng & Zhang, 2025). Strategies like project-based learning foster critical thinking and communication, and student-centered approaches, including gamified learning, promote motivation and inclusivity. These findings support the idea that well-designed, responsive teaching methods significantly contribute to academic success.

3. What are the dimensions of pedagogical effectiveness among the secondary school teachers in the Division of Cotabato?

Factor Analysis

KMO and Bartlett's Test

The results of the KMO and Bartlett's Test indicate that the data is highly suitable for factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy yielded a value of 0.955**,** which falls in the "marvelous" range according to Kaiser's (1974) classification. A KMO value above 0.90 suggests that the sample size is more than adequate and the correlations among variables are sufficiently compact, which implies that factor analysis is likely to yield distinct and reliable factors. This strong KMO result supports the appropriateness of proceeding with exploratory or confirmatory factor analysis for identifying underlying constructs in the data.

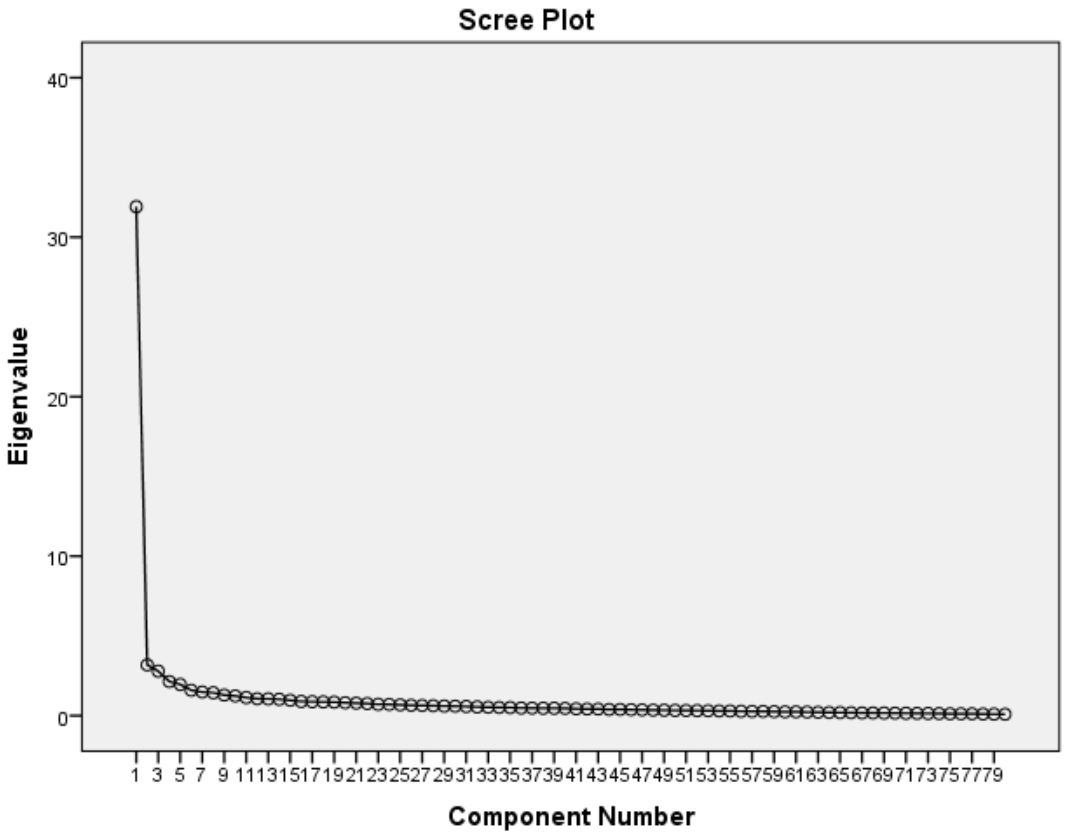
In addition, Bartlett's Test of Sphericity is highly significant ($\chi^2 = 20618.026$, $df = 3160$**,** $p < .001$), indicating that the correlation matrix is not an identity matrix and that variables are significantly correlated with each other. This further validates the use of factor analysis because it confirms that the observed correlations are not due to chance. Taken together, the KMO and Bartlett's results imply that the dataset is statistically sound for multivariate techniques and reinforces the credibility of the factor structure observed in the model

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.955
Bartlett's Test of Sphericity	Approx. Chi-Square	20618.026
	df	3160
	Sig.	.000

Scree Plot

The scree plot presented below shows the distribution of eigenvalues across components and is used to determine the number of meaningful factors to retain in an exploratory factor analysis. The steep drop from the first component to the second, followed by a clear "elbow" and a gradual leveling off, indicates that only the first few components have eigenvalues significantly greater than 1. Specifically, the first component stands out with a very high eigenvalue (over 30), while the subsequent components show a sharp decline, suggesting that most of the variance in the dataset is explained by the first few components.



Rotated Component Matrix

The Rotated Component Matrix shown above reveals how each item loads onto specific components after performing Principal Component Analysis with Varimax rotation. Varimax rotation enhances interpretability by maximizing the loadings of each variable on a single factor while minimizing the loadings on others. Items with loadings greater than 0.40 are typically considered significant, and in this matrix, multiple clusters of items load distinctly onto different components—indicating a clear factor structure. For example, items jp8 to jp12 load strongly onto Component 4, suggesting they collectively measure a unique dimension (likely related to job performance), while items ic1 to ic15 load heavily on Component 1, showing a strong and cohesive underlying construct (perhaps instructional competence or instructional leadership).

The implications of these results are substantial for validating the constructs in your instrument. The distinct clustering of items around separate components demonstrates construct validity, meaning that the instrument successfully captures multiple dimensions of instructional leadership or teacher development as intended. This factor structure supports the theoretical framework underpinning your research, confirming that different domains (such as incentives, collaboration, competence, support, etc.) are empirically distinguishable. Moreover, it allows for refinement of the instrument—items with low or cross-loadings can be reconsidered or revised for future assessments. Overall, the matrix supports a multi-dimensional structure, validating the complexity of the instructional leadership model you are analyzing.

Rotated Component Matrix[a]

	Component													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
jp1										.623				
jp2										.580				
jp3													.651	
jp4													.551	
jp5											.630			
jp6											.444			
jp7										.437				

jp8				.606											
jp9				.733											
jp10				.618											
jp11				.581											
jp12				.716											
jp13															
ld1							.539								
ld2		.507					.508								
ld3					.409		.430								
ld4							.539								
ld5															
ld6							.497								
ld7							.636								
ld8							.567								
ld9								.552							
ld10								.610							
ld11								.662							
ld12					.411			.470							
ld13					.438										
ld14								.476							
ld15					.487										
ld16					.516										
ld17					.691										
ld18					.592										
ld19					.605										
c1															
c2						.459									
c3						.416									
c4						.562									
c5						.727									
c6						.544									
c7						.553									
c8		.591													
c9		.605													
c10															
c11		.544													
c12															
c13												.497			

c14									.490						
c15		.533													
c16									.570						
c17		.507							.476						
c18		.510							.480						
c19									.640						
c20									.465						
ca1		.631													
ca2		.666													
ca3		.627	.418												
ca4			.575												
ca5			.589												
ca6			.551												
ca7			.569												
ca8		.561													
ca9			.507												
ca10	.441		.564												
ca11	.428		.500												
ca12	.411		.476												
ca13	.534		.509												
ic1	.401	.585													
ic2	.437	.613													
ic3	.498														
ic4	.596														
ic5	.621														
ic6	.677														
ic7	.659														
ic8	.669														
ic9	.737														
ic10	.737														
ic11	.763														
ic12	.728														
ic13	.624														
ic14	.591														
ic15	.568														

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 25 iterations.

Total Variance Explained

The table presents the output of a Principal Component Analysis, specifically showing the variance accounted for by each of the extracted components. The first component explains 12.736% of the total variance, with the next several components contributing progressively smaller percentages. Collectively, the first 14 components account for 66.606% of the total variance. This cumulative percentage suggests that a substantial amount of the original information is retained in the reduced set of components, which supports the adequacy of dimensionality reduction and confirms the multi-dimensional nature of the data.

The implication of this result is that the 14 components represent meaningful constructs within the data and are statistically justified for further analysis, such as factor interpretation or confirmatory factor modeling. Since more than 66% of the variance is captured, it indicates a robust underlying factor structure, which validates the use of PCA for exploring instructional leadership or related domains in your study. Moreover, this level of variance retention aligns well with social science standards, where capturing 60–70% of variance is considered sufficient to ensure construct validity.

Total Variance Explained

Component	Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %
1	10.189	12.736	12.736
2	6.605	8.256	20.993
3	4.779	5.974	26.967
4	4.549	5.687	32.654
5	4.459	5.573	38.227
6	3.875	4.844	43.071
7	3.740	4.675	47.746
8	3.322	4.153	51.899
9	2.990	3.737	55.636
10	2.343	2.929	58.565
11	1.983	2.479	61.044
12	1.649	2.061	63.105
13	1.629	2.036	65.141
14	1.171	1.464	66.606

Extraction Method: Principal Component Analysis.

Dimensions of Teachers' Pedagogical Effectiveness

Based on the thematic analysis, it turned out that there are 8 unique factors of pedagogical effectiveness among teachers in the Division of Cotabato. The factor on Instructional Conversations is composed of several indicators that emphasize interactive dialogue between teachers and students. Statements such as allowing students to engage in follow-up discussions (CA15 = .763), using conversations as a means of assessment (IC14 = .737), and soliciting feedback for future improvement (IC13 = .737) obtained the highest loadings. Other indicators also show strong values, like encouraging questions for deeper understanding (IC11 = .659), refining ideas for critical thinking (IC12 = .669), and using student input to guide discussion (IC10 = .677). Lower values like IC5 = .401 and IC3 = .411 still reflect acceptable contribution. These results indicate that instructional conversations serve not only to deliver content but to build student agency, promote deeper thinking, and strengthen teacher-student interaction.

Such findings suggest that promoting effective instructional conversations can enhance students' cognitive engagement and confidence. Teachers who integrate student feedback and encourage elaborative talk are more likely to build meaningful learning relationships. It is important to train educators in conversational strategies that stimulate student thinking, promote equity of voice, and support individualized learning needs.

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Challenging Activities. This dimension emphasizes pushing learners beyond basic tasks to complex and critical thinking activities. The top statements include presenting challenging standards (CA2 = .666), designing complex tasks (CA3 = .627), and setting high expectations through difficult activities (CA9 = .507). Statements such as assigning critical problem-solving tasks (CA6 = .551), providing feedback based on standards (CA5 = .589), and supporting higher-order thinking (CA10 = .564) also recorded strong values. The lowest indicator (CA12 = .476) still reflects meaningful inclusion through differentiated strategies.

These findings indicate that students benefit from intellectually stimulating tasks that promote problem-solving and independent thinking. Teachers must balance challenge with support, ensuring that activities are differentiated but still rigorous. Professional development should address how to design tasks that promote deep learning and critical thinking while maintaining accessibility for all learners.

Collaborative Language Practice. This factor includes tasks that enhance language use through peer and teacher collaboration. The most influential item was encouraging use of both first and second languages (JP9 = .733), followed by promoting vocabulary application (JP12 = .716), and providing integrated practice in speaking, listening, reading, and writing (JP10 = .618). Additional items like structured student interaction (JP8 = .606) and encouraging complete sentences (JP11 = .581) reinforce the importance of structured collaborative communication.

The data emphasize the importance of building a learning environment where collaboration supports both academic and linguistic growth. Integrating multilingual practices, encouraging structured conversations, and supporting peer collaboration can improve fluency and comprehension. Teachers should be supported with tools to build routines and dialogue structures that promote both interaction and academic rigor.

Language Development through Writing and Conversation. This factor highlights integrating speaking and writing activities for deeper language development. The highest contributing item is providing feedback on written work (LD17 = .691), followed by offering writing tasks for multiple purposes (LD18 = .592) and giving feedback during classroom activities (LD19 = .605). Statements like developing reading comprehension (LD16 = .516), using games for vocabulary (LD13 = .438), and promoting vocabulary in speech and writing (LD12 = .411) round out this factor.

The findings stress the importance of formative feedback and varied communication tasks to support students' expressive and receptive language skills. Teachers should balance structured writing opportunities with spoken discourse to help learners express ideas clearly. Emphasis must be placed on the purposeful integration of reading, writing, and speaking in lesson planning and instructional design.

Community-Centered Learning. This factor represents instructional alignment with community knowledge, values, and engagement. Co-designing activities with students (C5 = .727) and linking lessons to home and community (C4 = .562) were strongly represented. Involving families in instruction (C6 = .544), varying tasks by student preference (C7 = .553), and using local norms in planning (C2 = .459) further solidify the construct. The item related to gathering local knowledge from stakeholders (C3 = .416) also supports the dimension.

These results suggest that connecting learning to real-life community contexts enriches student engagement and relevance. Teachers benefit from forging stronger ties with parents, local traditions, and cultural values. This approach promotes culturally relevant pedagogy and a sense of ownership among learners, especially in diverse or indigenous communities.

Interactive Language through Real World Conversations. The focus here is on purposeful, real-world interaction to develop language proficiency. Notable items include encouraging vocabulary use to show understanding (LD7 = .636), frequent interaction opportunities (LD8 = .567), and support for first and second language use (LD9 = .552). Modeling and scaffolding language development through conversation and writing (LD4 = .539) and listening to student talk (LD1 = .539) round out the factor.

The data underscore the need for real-world communicative competence. Teachers should emphasize authentic dialogue, peer interaction, and contextualized language use to strengthen both fluency and content mastery. Instruction should prioritize relevance and authenticity in classroom talk to enhance language confidence and application.

Language Learning through Interaction. This factor includes integration of core language skills within interactive, scaffolded learning. Encouraging full-sentence responses (LD11 = .662), providing speaking-listening-reading-writing opportunities (LD10 = .610), and reinforcing vocabulary application (LD12 = .470) were prominent. The use of language games (LD14 = .476) and feedback mechanisms contribute as well.

These results affirm the centrality of interaction in supporting language acquisition. Language is best learned when students are engaged in meaningful, connected activities that reinforce both form and function. Classrooms should be designed to support continuous language use and feedback across multiple modalities.

Dimensions of Teachers' Pedagogical Effectiveness

Item	Item Statement	Score	Construct
CA 10	provide tasks that push students to go beyond basic memorization and develop higher-order thinking skills.	.441	Instructional Conversations

CA 11	offer regular feedback on students' progress with challenging activities to help them improve.	.428	
CA 12	use differentiated strategies to ensure all students are adequately challenged based on their individual abilities.	.411	
CA 13	encourage students to ask questions and seek clarification when faced with difficult tasks.	.534	
ic1	arrange the classroom to accommodate conversation between the teacher and a small group of students on a regular and frequent basis.	.441	
ic2	have a clear academic goal that guides conversation with students.	.428	
ic3	ensure that student talk occurs at higher rates than teacher talk.	.411	
ic4	guide conversation to include students' views, judgments, and rationales using text evidence and other substantive support.	.534	
ic5	ensure that all students are included in the conversation according to their preferences.	.401	
ic6	listen carefully to assess levels of students' understanding.	.437	
ic7	assist students' learning throughout the conversation by questioning, restating, praising, encouraging, etc.	.498	
ic8	guide the students to prepare a product that indicates the Instructional Conversation's goal was achieved.	.596	
ic9	create an environment where students feel comfortable expressing their ideas and opinions during discussions.	.621	
ic10	listen to student responses and uses their input to guide the conversation.	.677	
ic11	encourage students to ask questions that deepen their understanding of the topic.	.659	
ic12	allow students to refine their ideas and improve their critical thinking abilities.	.669	
ic13	solicit student feedback to improve the quality of future instructional conversations.	.737	
ic14	use instructional conversations as a primary method for assessing student understanding of the material.	.737	
ic15	encourage students to engage in follow-up discussions to reinforce learning after instructional conversations.	.763	
Ld2	respond to students' talk and questions, making 'in-flight' changes during conversation that directly relate to students' comments.	.507	Dynamic Language Exploration
C8	provide frequent opportunity for students to interact with each other and the teacher during instructional activities.	.591	
C9	encourage students' use of first and second languages in instructional activities.	.605	
C11	provide opportunities for students to practice speaking, listening, reading, and writing in every lesson.	.544	
C15	help students build reading comprehension skills through questioning, summarizing, and discussion activities.	.533	
C17	provide students with opportunities to write for various purposes (e.g., narrative, descriptive, persuasive).	.507	

C18	give immediate feedback on students' language use during classroom activities.	.510	
Ca1	assure that students — for each instructional topic — see the whole picture as a basis for understanding the parts.	.631	
Ca2	present challenging standards for student performance.	.666	
Ca3	design instructional tasks that advance student understanding to more complex levels.	.627	
Ca8	incorporate open-ended questions that promote deep thinking and exploration.	.561	
Ic1	arrange the classroom to accommodate conversation between the teacher and a small group of students on a regular and frequent basis.	.585	
Ic2	have a clear academic goal that guides conversation with students.	.613	
ca3	design instructional tasks that advance student understanding to more complex levels.	.418	Challenging Activities
ca4	assist students to accomplish more complex understanding by building from their previous success.	.575	
ca5	give clear, direct feedback about how student performance compares with the challenging standards.	.589	
ca6	assign tasks that require students to think critically and solve complex problems.	.551	
ca7	design activities that encourage students to apply their knowledge in new and unfamiliar contexts.	.569	
ca9	set high but achievable expectations for students through challenging tasks.	.507	
ca10	provide tasks that push students to go beyond basic memorization and develop higher-order thinking skills.	.564	
ca11	offer regular feedback on students' progress with challenging activities to help them improve.	.500	
ca12	use differentiated strategies to ensure all students are adequately challenged based on their individual abilities.	.476	
ca13	encourage students to ask questions and seek clarification when faced with difficult tasks.	.509	
jp8	provide frequent opportunity for students to interact with each other and the teacher during instructional activities.	.606	Collaborative Language Practice
jp9	encourage students' use of first and second languages in instructional activities.	.733	
jp10	provide opportunities for students to practice speaking, listening, reading, and writing in every lesson.	.618	
jp11	Encourage students to speak in full sentences during class discussions and activities.	.581	
jp12	encourage students to use new vocabulary and expressions in their speaking and writing.	.716	
Ld3	assist written development through modeling, eliciting, probing, restating, clarifying, questioning, praising, etc., in purposeful conversation and writing.	.409	Language Development through writing and conversation

Ld12	encourage students to use new vocabulary and expressions in their speaking and writing.	.411	
Ld13	integrate language games, activities, or exercises that support vocabulary acquisition.	.438	
ld15	provide regular opportunities for students to engage in reading activities, such as reading aloud or reading in pairs.	.487	
ld16	help students build reading comprehension skills through questioning, summarizing, and discussion activities.	.516	
ld17	give constructive feedback on students' written work, focusing on both content and language use.	.691	
ld18	provide students with opportunities to write for various purposes (e.g., narrative, descriptive, persuasive).	.592	
ld19	give immediate feedback on students' language use during classroom activities.	.605	
c2	design instructional activities that are meaningful to students in terms of local community norms and knowledge.	.459	Community-Centered Learning
c3	acquire knowledge of local norms and knowledge by talking to students, parents or family members, community members, and by reading pertinent documents.	.416	
c4	assist students to connect and apply their learning to home and community.	.562	
c5	plan jointly with students to design community-based learning activities	.727	
c6	provide opportunities for parents or families to participate in classroom instructional activities.	.544	
c7	vary activities to include students' preferences, from collective and cooperative to individual and competitive.	.553	
ld1	listen to student talk about familiar topics such as home and community.	.539	Interactive Language through Real World Conversations
ld2	respond to students' talk and questions, making 'in-flight' changes during conversation that directly relate to students' comments.	.508	
ld3	assist written development through modeling, eliciting, probing, restating, clarifying, questioning, praising, etc., in purposeful conversation and writing.	.430	
ld4	assist oral language development through modeling, eliciting, probing, restating, clarifying, questioning, praising, etc., in purposeful conversation and writing.	.539	
ld6	connect student language with literacy and content area knowledge through speaking, listening, reading, and writing activities.	.497	
ld7	encourage students to use content vocabulary to express their understanding.	.636	
ld8	provide frequent opportunity for students to interact with each other and the teacher during instructional activities.	.567	
ld9	encourage students' use of first and second languages in instructional activities.	.552	Language Learning through Interaction
ld10	provide opportunities for students to practice speaking, listening, reading, and writing in every lesson.	.610	

ld11	Encourage students to speak in full sentences during class discussions and activities.	.662	
ld12	encourage students to use new vocabulary and expressions in their speaking and writing.	.470	
ld14	integrate language games, activities, or exercises that support vocabulary acquisition.	.476	

4. **What framework on pedagogical effectiveness among the secondary school teachers in the Division of Cotabato can be developed based on the findings?**

Fit Indices of Twelve-factor Model of Teachers' Pedagogical Effectiveness

The full structural model of pedagogical effectiveness among teachers presented the following fit indices: CMIN = 2.236, CFI = 0.822, TLI = 0.807, NFI = 0.721, RMSEA = 0.059, and AIC = 613.071. The RMSEA value falls within the acceptable threshold (below 0.06), suggesting a good fit between the hypothesized model and the observed data. While the CFI and TLI are slightly below the ideal 0.90 benchmark, they still indicate reasonable model performance. The AIC value, being relatively low, also indicates a better balance between model complexity and fit.

These findings suggest that the proposed twelve-factor structure is a plausible representation of the constructs that define pedagogical effectiveness. The acceptable RMSEA indicates that the model captures the underlying data structure with minimal error. While the CFI and TLI values hint at areas for refinement—such as revisiting overlapping paths or improving item clarity—the model is already a strong foundation for understanding how instructional conversations, challenging activities, and collaborative practices interrelate in language instruction. Strengthening teacher competencies across these dimensions can support deeper learning and more adaptive, responsive instruction.

Fit Indices of Twelve-factor Model of Teachers' Pedagogical Effectiveness

Fit Indices	Obtained Value
CMIN	2.236
Comparative Fit Index (CFI)	.822
Tucker-Lewis Index (TLI)	.807
Normed Fit Index (NFI)	.721
Root Mean Square Error of Approximation (RMSEA)	0.59
Akaike Information Criterion (AIC)	613.071

Twelve-factor Model of Teachers' Pedagogical Effectiveness

The path diagram illustrates the complex relationships among twelve latent factors (F1–F12) relating to language instruction strategies. Each factor represents a conceptual area, measured by observed variables, and the arrows reflect the strength and direction of relationships. The diagram shows strong interrelations among F1 (Instructional Conversations), F2 (Dynamic Language Exploration), and F3 (Challenging Activities). These factors form a foundational triad. Instructional conversations (F1) naturally lead into dynamic exploration (F2), where learners decode meaning through active inquiry, which is further reinforced by challenging activities (F3) that deepen cognitive engagement. Arrows among these factors suggest reciprocal influence, indicating that teachers who promote open dialogue often integrate hands-on language exploration and demand high-level tasks, which collectively enhance learner motivation and retention.

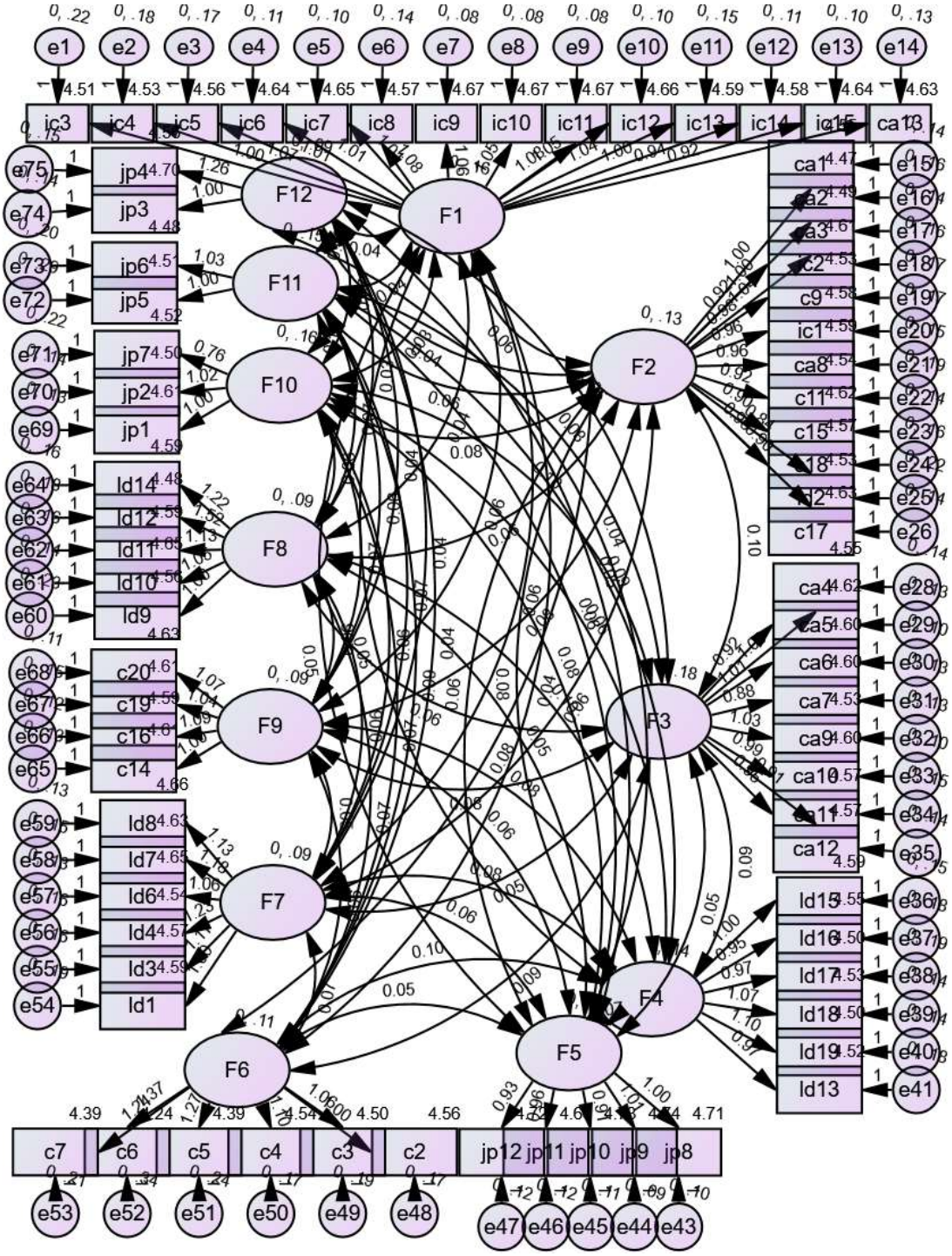
F4 (Language Development through Writing and Conversation) and F5 (Collaborative Language Practice) are closely linked, often serving as vehicles for one another. Writing tasks are more meaningful when discussed collaboratively, while conversation benefits from written scaffolding. The connection to F1 (Instructional Conversations) and F8 (Language Learning through Interaction) implies a dynamic system where formal instruction blends with peer-led learning. These interactions suggest a learning environment where students not only absorb content from teachers but also co-construct knowledge with peers, reinforcing fluency and accuracy.

A distinct cluster appears with F6 (Community-Centered Learning), F7 (Real-World Conversations), and F9 (Culturally Responsive Instruction). These factors emphasize authentic learning experiences grounded in cultural context. Arrows between F6 and F9 suggest that understanding learners' cultural backgrounds enhances community-based practices. Likewise, F7 bridges interactional practice and cultural authenticity, showing that real-world language use thrives when it respects learners' lived experiences. These connections underscore the importance of socio-cultural relevance in language instruction, promoting both respect and engagement.

The trio of F10 (Collaborative and Productive Learning), F11 (Culturally Sensitive Communication), and F12 (Inclusive Environments) represents the ethical and inclusive side of instruction. F11 and F12 are shown to connect with nearly all other factors, indicating their foundational role in shaping the entire learning climate. Sensitivity to language and culture (F11) ensures that diverse learners feel represented, while inclusivity (F12) guarantees

participation. Their strong links with F5 and F6 suggest that collaborative and community-based strategies are most effective when implemented in environments that value all voices.

The web of arrows among all twelve factors reveals a deeply interconnected model. Notably, F1 (Instructional Conversations) and F2 (Language Exploration) seem to play central roles, feeding into nearly all others. This suggests that student-centered dialogue and inquiry-based learning are catalysts for broader instructional goals—such as inclusion, cultural responsiveness, and interaction. The model shows that effective language teaching does not rely on isolated practices; rather, it's the synergy of collaboration, culture, and challenge that enables transformative learning.



F1- Instructional Conversations

F2- Dynamic Language Exploration

F3- Challenging Activities

F4- Language Development through writing and conversation

F5- Collaborative Language Practice

F6- Community-Centered Learning

F7- Interactive Language through Real World Conversations

F8- Language Learning through Interaction

F9- Culturally Responsive and Contextualized Instruction

F10- Collaborative and Productive Learning

F11- Culturally Sensitive Communication and Language Integration

F12- Facilitating Interactive and Inclusive Learning Environments

Fit Indices of Four-Factor Model of Pedagogical Effectiveness

The four-factor model of pedagogical effectiveness yielded the following fit indices: CMIN = 3.112, CFI = 0.900, TLI = 0.888, NFI = 0.860, RMSEA = 0.077, and AIC = 921.643. These values indicate that the model demonstrates an acceptable to good fit. The CFI reaches the benchmark of 0.90, suggesting strong model performance, while the TLI and NFI are slightly below the ideal but still within reasonable limits. The RMSEA, although approaching the threshold, remains under 0.08, supporting model adequacy. AIC suggests reasonable parsimony in model complexity.

This model structure captures essential dimensions of pedagogical effectiveness with improved clarity and coherence. With relatively strong inter-factor relationships and high item loadings, the model highlights well-defined constructs that support instructional dialogue, feedback-driven learning, and collaborative engagement. It provides a reliable foundation for designing teacher training focused on sustained instructional quality, emphasizing reflection, interaction, and student support.

Fit Indices of Four-Factor Model of Pedagogical Effectiveness

Fit Indices	Obtained Value
CMIN	3.112
Comparative Fit Index (CFI)	.900
Tucker-Lewis Index (TLI)	.888
Normed Fit Index (NFI)	.860
Root Mean Square Error of Approximation (RMSEA)	.077
Akaike Information Criterion (AIC)	921.643

Four-Factor Model of Pedagogical Effectiveness

This path diagram illustrates the structural relationships among four latent factors: F1 (Instructional Conversations), F4 (Language Development through Writing and Conversation), F6 (Community-Centered Learning), and F10 (Collaborative and Productive Learning). Each factor is connected to specific indicators (observed variables), and the strength of each path is represented by standardized regression weights. The connections between the factors show how these instructional strategies are interrelated in promoting language learning.

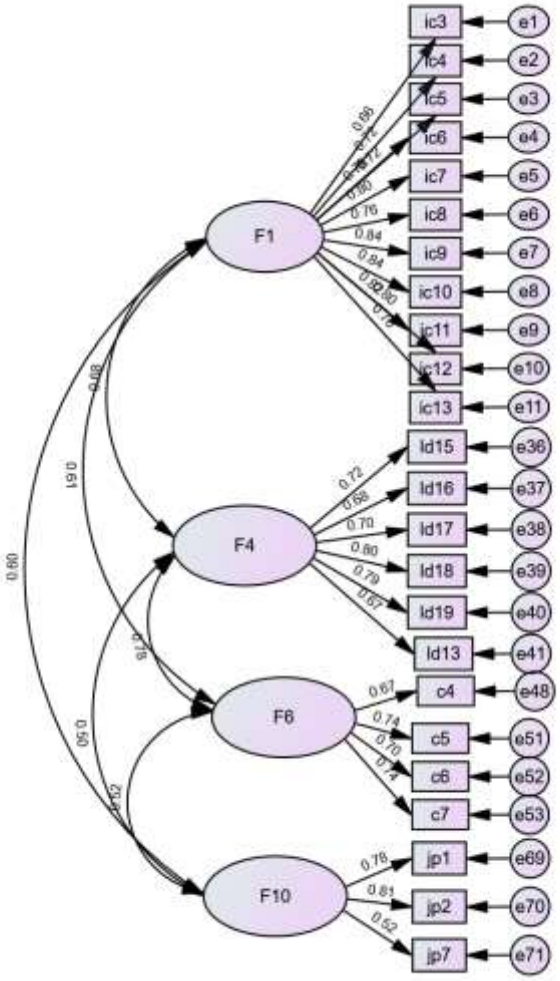
Instructional Conversations, shows strong loading values from its observed indicators (ranging from 0.68 to 0.84), signifying its foundational role in the instructional process. It has notable direct paths to F4 (0.60), F6 (0.68), and F10 (0.52), indicating that meaningful dialogue between teachers and students significantly contributes to the development of writing and speaking skills, encourages community-based learning experiences, and fosters collaboration. Instructional conversations support a student-centered learning environment where learners are active participants, making this factor a core component of integrated language instruction.

Meanwhile, Language Development through Writing and Conversation, is strongly predicted by F1 (0.60), showing that sustained instructional conversations translate into richer speaking and writing experiences. The high loadings (0.80 for ld18 and 0.79 for ld19) suggest that students' abilities to articulate ideas in written and spoken form are strengthened when they are regularly engaged in guided discussions. Furthermore, F4 links to F6 (0.82) and F10 (0.50), emphasizing that students' language development is further enriched when contextualized within community issues and collaborative tasks. This factor is a bridge between dialogue and real-world expression.

Correspondingly, Community-Centered Learning, receives strong predictive paths from both F1 (0.68) and F4 (0.82), suggesting that instructional conversations and language use in writing and speaking are most impactful when grounded in learners' local and cultural contexts. Its observed indicators (c4–c7) have loadings around 0.67 to 0.74, reflecting consistent implementation. This demonstrates that when students engage with community-relevant content and real-life issues, their language learning becomes more meaningful and retained. It also serves as a context in which collaborative learning (F10) can naturally thrive.

As well, Collaborative and Productive Learning, is influenced by F1 (0.52), F4 (0.50), and F6 (0.52), forming a triangular relationship where meaningful dialogue, contextualized language use, and community relevance culminate in productive group work. Its indicators (jp1–jp7) show moderate to high loadings (0.52 to 0.81), suggesting that learners engage deeply in collaborative tasks when earlier instructional strategies are effectively applied. This factor reflects the outcome of an instructional model that values interaction, co-construction of knowledge, and joint problem-solving.

The results imply that the interconnectedness among these four factors presents a holistic view of language instruction. Instructional conversations serve as the catalyst, enriching both expressive language skills (F4) and contextual understanding (F6), which in turn scaffold meaningful collaboration (F10). This structure supports a cycle where learners are engaged in dialogic learning, apply language meaningfully in community contexts, and produce tangible outputs through collaboration. It shows that effective language teaching is not linear but cyclical and interdependent, promoting engagement, authenticity, and co-ownership of learning among students.



5. What dissemination plan can be proposed based on the results?

Dissemination Plan: Enhancing Teachers' Pedagogical Effectiveness through Research-Based Insights in the Division of Cotabato

Purpose of Dissemination

The primary goal of this dissemination plan is to share the findings on the twelve-factor and four-factor models of pedagogical effectiveness among public school teachers in the Division of Cotabato. It aims to provide stakeholders—such as school leaders, teachers, curriculum developers, and policy-makers—with evidence-based insights to improve teaching strategies, language instruction, student engagement, and overall academic performance.

Target Audiences

- Department of Education (DepEd) – Division and Regional Offices
- School Heads and Master Teachers
- Teacher-Researchers and Learning Action Cell (LAC) Coordinators
- Curriculum Planners and Education Supervisors

- Teacher Education Institutions (TEIs)
- Local Government Units (LGUs) and School Governing Councils
- Parent-Teacher Associations (PTAs)

Key Messages

- A validated twelve-factor model reflects diverse yet interconnected aspects of pedagogical effectiveness, including instructional conversations, collaborative learning, contextualized instruction, and inclusive classroom practices.
- The refined four-factor model demonstrates stronger model fit indices and focuses on instructional dialogue, language development, community integration, and collaborative learning.
- Key strategies such as differentiated instruction, feedback-driven teaching, inclusive environments, and gamified learning significantly improve student engagement and academic performance.
- Teachers benefit from structured support in facilitating interaction, fostering higher-order thinking, and aligning instruction with students' community and cultural contexts.

Dissemination Strategies

A. Division-Wide Presentations and Forums

- Conduct a **Research Colloquium** in partnership with DepEd Division of Cotabato to present findings to school administrators, teacher leaders, and supervisors.
- Organize **Policy Dialogue Sessions** to translate findings into actionable programs or guidelines for improving classroom practice.

B. Professional Development and Capacity Building

- Facilitate **CPD-accredited workshops** focusing on the 12 validated pedagogical dimensions and their application in language and content instruction.
- Embed findings into **LAC session modules** for continuous teacher professional learning.

C. Resource Production and Communication

- Develop **research briefs**, **infographics**, and **teaching toolkits** summarizing each factor with practical examples and classroom strategies.
- Publish findings in education-focused journals and submit policy briefs to DepEd Central Office.

D. Digital and Community Outreach

- Host **webinars** and **interactive forums** through DepEd social media pages and YouTube for teachers unable to attend in person.
- Share findings through **DepEd newsletters**, official memos, and community bulletins to reach PTAs and LGUs.

E. Integration in Teacher Education Curriculum

- Collaborate with local TEIs (e.g., SUCs) to revise education syllabi by incorporating insights from the pedagogical effectiveness models into pre-service training.

5. Monitoring and Evaluation

- Implement **post-training feedback forms**, **focus group discussions**, and **classroom observation checklists** to assess the integration of findings into teaching practice.
- Conduct a **follow-up evaluation** 3–6 months post-dissemination to monitor the impact on student engagement and instructional improvements.

This dissemination plan aims to ensure that the study's empirical results not only inform academic discussions but also lead to practical, scalable improvements in instructional effectiveness across public schools in Cotabato.

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

This chapter presents the final section of the study, summarizing the significant findings derived from the data analysis, drawing conclusions based on the results, and offering practical and research-based recommendations. The summary highlights the core outcomes from both the quantitative and qualitative strands of the study, while the conclusions reflect the overall insights gained regarding pedagogical effectiveness. Finally, the recommendations aim to guide educational stakeholders in enhancing instructional practices, curriculum planning, and teacher development in the Division of Cotabato.

Summary of Findings

This section presents the key findings derived from the quantitative and qualitative analyses conducted in the study. It outlines the statistical results from the factor analysis and model fit indices, as well as the emergent themes from the thematic analysis. The findings highlight the significant dimensions of pedagogical effectiveness and instructional strategies among teachers, offering insights into the interrelationships between teaching practices, classroom engagement, and student learning outcomes. These results provide a comprehensive understanding of effective pedagogy within the context of language instruction in the Division of Cotabato.

1. The KMO (.955) and Bartlett's Test confirmed data adequacy. Fourteen components explained 66.606% of variance with distinct loadings, validating the instrument's structure.
2. Eight pedagogical factors emerged: Instructional Conversations, Challenging Activities, Collaborative Language Practice, Writing and Conversation, Community-Centered Learning, Real-World Conversations, Interaction-Based Learning, and Culturally Responsive Instruction.
3. The twelve-factor model had acceptable fit (RMSEA = .059), while the four-factor model showed improved fit (CFI = .900). Instructional Conversations linked strongly with collaboration, writing, and community-based practices.
4. Effective teaching included scaffolding, differentiated instruction, gamified learning, and hooks. Strategies promoted higher-order thinking, fluency, and real-world application.
5. Motivation, confidence, inclusivity, and collaboration were fostered by supportive environments, assessment feedback, and sustained engagement, all of which enhanced student academic performance.

Conclusions

Based on the results and findings of the study, the following conclusions were drawn.

1. The high KMO and significant Bartlett's Test confirmed that the dataset was valid and reliable for identifying pedagogical constructs through factor analysis.
2. The emergence of eight distinct pedagogical dimensions highlighted the multi-faceted nature of effective teaching practices in language instruction.
3. The confirmatory models validated the theoretical structure, with Instructional Conversations playing a pivotal role in linking collaborative and contextual learning.
4. The integration of varied instructional strategies enhanced both the depth and relevance of learning experiences for students.
5. Supportive and engaging environments were essential in developing learner motivation, confidence, and academic achievement.

Recommendations

Based on the conclusions drawn from the analysis, the following recommendations are proposed to enhance pedagogical effectiveness and instructional practices among teachers, particularly in the context of language teaching:

1. It is recommended that school leaders and teachers continuously utilize validated assessment tools and data analytics to guide pedagogical decisions and evaluate instructional effectiveness.
2. Training programs should focus on deepening teachers' competencies in the eight identified pedagogical areas, especially in fostering meaningful classroom dialogue and culturally responsive practices.
3. Schools should adopt frameworks that institutionalize instructional conversations as core strategies for collaborative, writing-based, and community-contextualized language learning.
4. Teachers should be equipped with resources and techniques in scaffolding, gamification, and interest-driven instruction to enhance learning outcomes across diverse learners.
5. Policies and practices should be designed to cultivate a classroom culture of emotional safety, positive reinforcement, and active engagement to boost learner confidence and performance.

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