

# Inspiring Academic Setting and Inventive Educational Practices of Teachers in Maa District, Davao City

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**Abstract:** This study aimed to determine which aspects of an inspiring academic setting significantly influence the inventive educational practices of public elementary school teachers in Maa District, Davao City. Using a non-experimental quantitative design with a descriptive-correlational approach, the researcher surveyed 152 teachers selected through stratified random sampling. Findings revealed that both inspiring academic settings and inventive teaching practices were generally rated as extensive, indicating frequent implementation. Among the inspiring academic indicators, interaction and social connections were most evident, while supervision and collective agreement were moderately extensive. Likewise, realization of teaching concepts and ideation in teaching were often manifested, but technological literacy lagged slightly. A significant positive relationship was found between the overall academic setting and teachers' inventive practices, with collective agreement and social connections showing the strongest correlation. Regression analysis identified social connections, supervision and guidance, and collective agreement process as significant predictors of inventive teaching. However, interaction did not yield a notable influence. The findings highlight the importance of a supportive, collaborative, and inclusive academic climate in promoting innovative teaching strategies.

**Keywords:** *Inspiring Academic Setting, Inventive Educational Practices, Social Connections, Collective Agreement, Teacher Innovation.*

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## I. INTRODUCTION

### ➤ Background of the Study

Teachers today face challenges in applying inventive pedagogical techniques due to rigid curricula, lack of support, and limited training. This often results in reliance on repetitive methods that fail to capture student interest. Studies emphasize that a school's environment—physical, emotional, and professional—affects teachers' ability to innovate, yet not all settings provide sufficient support. Consequently, limited use of inventive practices contributes to low student engagement and poor academic performance, especially in contexts requiring adaptive approaches.

In the United States, rigid curricular demands and standardized testing discourage experimentation, with Anderson et al. (2021) noting that test pressures constrain teachers' creativity. Gao and Hall (2024) further observed that novice teachers lack training in creative instructional design, making them dependent on traditional methods. Similarly, in the United Kingdom, Cramman et al. (2021) highlighted that teachers avoid experimental practices due to fear of failure, while Hargreaves and Porter et al. (2022) emphasized that

compliance-driven school cultures limit autonomy. In China, Wu and Zeng (2025) reported that Confucian traditions promote rote memorization, while Xu et al. (2024) noted that exam-oriented practices discourage student-centered approaches.

In the Philippines, teachers also face barriers. Robosa et al. (2021) found that large class sizes, scarce resources, and outdated training in Metro Manila hinder inventive instruction. Santos and Castro (2021) added that teachers rely heavily on chalk-and-board methods due to time constraints and workloads. In Mindanao, Bayod et al. (2021) observed that rural and conflict-affected areas lack access to modern teaching tools, while Abendaño et al. (2023) noted infrastructural gaps and weak supervision that restrict creative pedagogy.

In Maa District, Davao City, studies revealed that while teachers hold strong literacy beliefs, their practices do not reflect these beliefs due to limited training and lack of support (Bayod et al., 2021; Abendaño et al., 2023). Students' reading proficiency was also found to be minimally influenced by instructional practices, showing a disconnect between

teachers' orientations and classroom realities. This highlights the need for interventions that bridge theory and practice through enhanced training and supportive school environments.

Most existing studies rely on qualitative methods that, while insightful, lack statistical strength. Furthermore, research often overlooks localized contexts like Maa District and is largely pre-pandemic, limiting its relevance to current realities. With evolving educational demands, particularly in diverse and resource-limited schools, quantitative study is needed to measure how academic environments influence inventive practices. Addressing these gaps will inform data-driven policies and interventions that foster creativity and innovation among teachers (Robosa et al., 2021; Santos & Castro, 2021; Bayod et al., 2021; Abendaño et al., 2023).

#### ➤ Theoretical/Conceptual Framework

The present study is anchored on Situativity Theory (Barab & Squire, 2020), which stresses that teaching and learning are shaped by the social and physical environment. This theory highlights how supervision, collaboration, and

social connections in schools directly influence teachers' capacity to innovate. It is supported by the Creativity Investment Theory, which posits that teachers in supportive academic settings are more likely to take creative risks by exploring novel strategies until they gain recognition. Likewise, the Job Characteristics Theory (Hackman & Oldham, 1976) emphasizes that meaningfulness, autonomy, and feedback in one's work enhance motivation and innovation. Taken together, these theories explain how a supportive school environment can nurture teachers' inventive behaviors.

As shown in Figure 1, the study's conceptual framework presents the independent variable, inspiring academic setting, measured through social connections, supervision and guidance, interaction, and collective agreement processes. The dependent variable is teachers' inventive educational practices, measured through ideation in teaching, fostering ideas, realization of teaching concepts, and technological literacy. This framework illustrates how supportive and dynamic academic conditions serve as catalysts for teachers' creativity and innovative classroom practices.

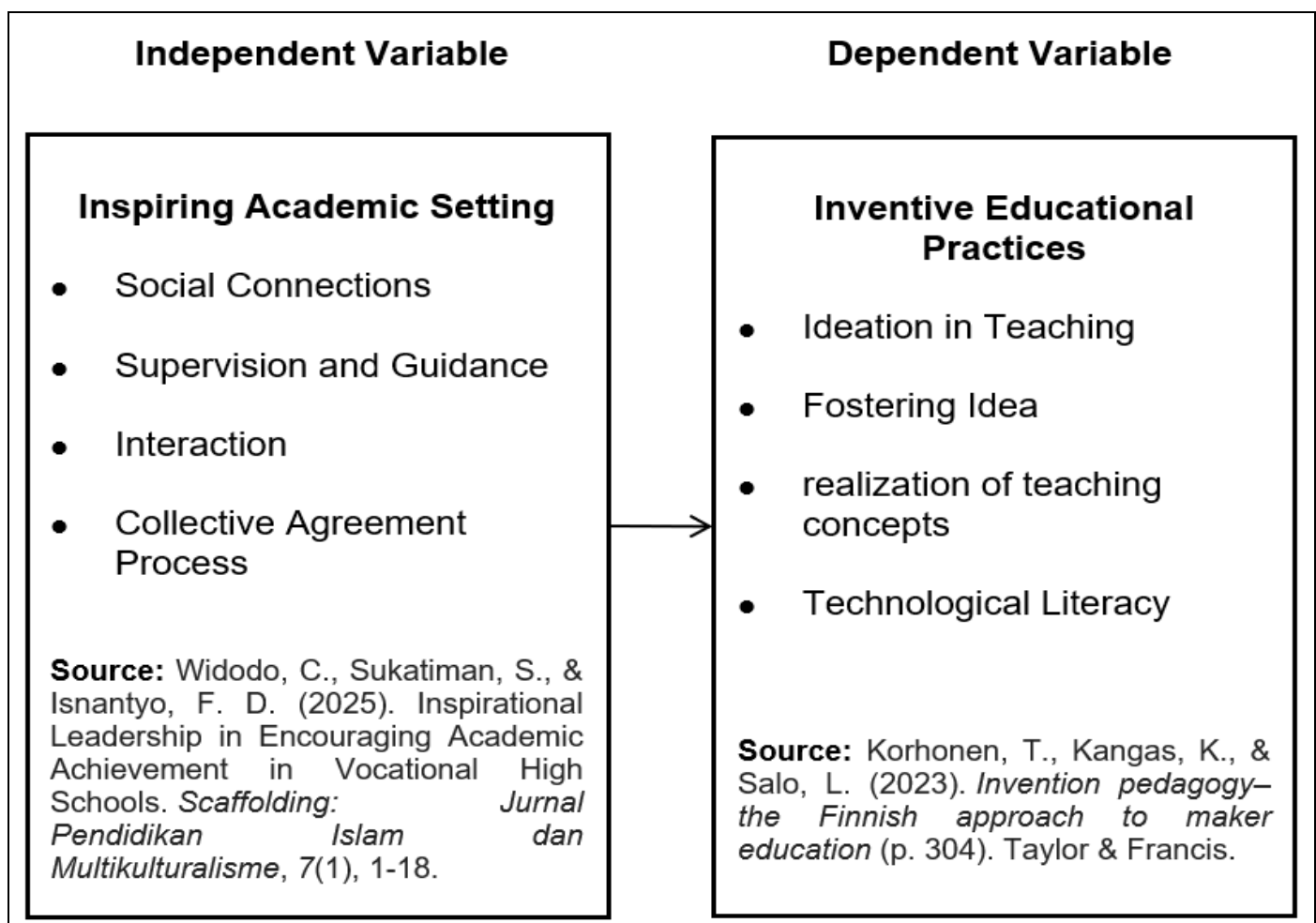


Fig 1 Theoretical/Conceptual Framework of the Study

#### ➤ Statement of the Problem

The primary aimed of this study was to determine which domains of inspiring academic setting significantly influence the inventive educational practices of teachers in Maa District,

Davao City. Specifically, this study seek to answer the following questions:

• *What is the Extent of Inspiring Academic Setting in Terms of:*

- ✓ Social connections;
- ✓ Supervision and guidance;
- ✓ Interaction; and
- ✓ Collective agreement process?

• *What is the Extent of Inventive Educational Practices of Teachers in Terms of:*

- ✓ Ideation in teaching;
- ✓ Fostering idea;
- ✓ Realization of teaching concepts; and
- ✓ Technological literacy?

• *Is there significant relationship between inspiring academic setting and inventive educational practices of teachers in Maa District, Davao City?*

• *Which domains of inspiring academic setting significantly influence the inventive educational practices of teachers in Maa District, Davao City?*

➤ *Hypothesis*

The following null hypotheses were tested at 0.05 level of significance:

- H<sub>01</sub>: There is no significant relationship between inspiring academic setting and inventive educational practices of teachers in Maa District, Davao City.
- H<sub>02</sub>: None of the inspiring academic setting significantly influence the inventive educational practices of teachers in Maa District, Davao City.

The researcher hopes that this study would benefit the Teachers, and Learners.

## II. METHODOLOGY

➤ *Research Design*

The study employed a non-experimental design using the descriptive-correlational method, which systematically gathers data to measure variables and analyze their relationships. Quantitative research, through statistical and numerical data, was appropriate as it enabled the researcher to assess the extent of inspiring academic settings and inventive educational practices among teachers, allowing reliable comparison and evaluation (Watson, 2015).

Descriptive research provided a clear picture of the current state of academic environments and inventive practices in Maa District by identifying characteristics, frequencies, and patterns (Salkind, 2010). Meanwhile, correlational research determined the strength and direction of the relationship between the two variables, showing which domains of the school environment most influence teacher creativity (Lau, 2017). This structured approach offers evidence-based insights for improving educational quality in local schools.

➤ *Research Respondents*

The study selected 152 public elementary school teachers from a total population of 244 in Maa District, Davao City. Using Slovin's formula, the sample size was determined with a margin of error to ensure reliable representation and reduce sampling bias. This number was deemed adequate to capture the diversity of teachers' views and practices, making the findings valid and generalizable within the district context.

To ensure fairness, the study employed Stratified Random Sampling, dividing the population by schools and proportionately selecting respondents from each (Sedgwick, 2013). Only full-time teachers with at least one year of teaching experience were included, while substitutes and administrative staff were excluded. This approach minimized sampling error and ensured balanced representation across different educational settings.

➤ *Research Instrument*

The study employed questionnaires adapted from previous research and modified to fit the respondents' context. The instrument had two parts. The first measured the inspiring academic setting, with indicators on social connections, supervision and guidance, interaction, and the collective agreement process. Using a 5-point Likert scale (1–Not Extensive to 5–Very Extensive), responses were interpreted as follows: 4.20–5.00 (Very Extensive, always observed), 3.40–4.19 (Extensive, oftentimes observed), 2.60–3.39 (Moderately Extensive, sometimes observed), 1.80–2.59 (Less Extensive, rarely observed), and 1.00–1.79 (Not Extensive, never observed). This scale obtained a Cronbach's alpha of 0.936, described as excellent, indicating high internal consistency and reliability.

The second part focused on inventive educational practices of teachers, with indicators on ideation in teaching, fostering ideas, realization of teaching concepts, and technological literacy. It also used the same 5-point Likert scale (1–Not Extensive to 5–Very Extensive), where higher means indicated more frequent practice. The interpretations followed the same range: Very Extensive (always manifested), Extensive (oftentimes manifested), Moderately Extensive (sometimes manifested), Less Extensive (rarely manifested), and Not Extensive (never manifested). This scale yielded a Cronbach's alpha of 0.890, also described as excellent, confirming its reliability and consistency.

➤ *Research Instrument*

The researcher employed specific statistical tools to analyze the data based on the research objectives. The mean was used to describe the inspiring academic setting and the inventive educational practices of teachers in Maa District, Davao City (SOP 1 and 2). The Pearson Product Moment Correlation (r) determined the significant relationship between the two variables (SOP 3), measuring the strength of their linear association. Finally, linear regression identified which domains of the inspiring academic setting significantly influenced teachers' inventive educational practices (SOP 4). These tools provided structured and reliable analyses aligned with the study's purpose.

### III. RESULTS AND DISCUSSION

#### ➤ Inspiring Academic Setting

*Social Connections.* Table 1 shows that the inspiring academic setting in terms of social connections was rated as extensive ( $M = 3.53$ ), indicating that teachers often recognize the role of social interactions in fostering inspiration within

their environment. As Samtani et al. (2022) noted, meaningful interactions encourage idea sharing, collaboration, and sustained motivation. Similarly, Khan et al. (2021) emphasized that social connections provide emotional support and collective problem-solving, enabling teachers to better handle classroom challenges.

Table 1 Inspiring Academic Setting in Terms of Social Connections

Statement	Mean	Descriptive Rating
1. Believing that fostering social connections enhances the overall inspiration within our academic environment.	3.69	Extensive
2. Social connections contribute significantly to the inspiration felt in our academic setting.	3.54	Extensive
3. The consensus among teachers is that social connections are integral to creating an inspiring academic environment.	3.56	Extensive
4. Teachers affirm that the quality of social connections directly influences the level of inspiration in our academic setting.	3.31	Moderately Extensive
<b>Mean</b>	<b>3.53</b>	<b>Extensive</b>
Legend: <i>Very Extensive</i> = Always Observed; <i>Extensive</i> = Oftentimes Observed; <i>Moderately Extensive</i> = Sometimes Observed; <i>Less Extensive</i> = Seldom Observed; & <i>Not Extensive</i> = Never Observed		

On one hand, the highest-rated statement, believing that fostering social connections enhances the overall inspiration within our academic environment ( $M = 3.69$ , Extensive). On the other hand, the statement with the lowest rating was, Teachers affirm that the quality of social connections directly influences the level of inspiration in our academic setting ( $M = 3.31$ , Moderately Extensive). Bull et al. (2024) noted that strong professional networks within schools' help build a culture of continuous improvement where teachers learn from one another. These social ties not only enhance individual performance but also promote collective growth within the school. Therefore, fostering strong social connections is essential for creating an academic setting that supports meaningful teaching and learning experiences.

#### • Supervision and Guidance

The findings in Table 2 show that the inspiring academic setting in terms of supervision and guidance was rated as moderately extensive ( $M = 3.39$ ), meaning that supervision and guidance are sometimes observed to inspire the academic environment. As noted by Widodo et al. (2021), instructional leadership through supervision helps create a structured and motivating environment for educators. Supervision that is supportive rather than punitive fosters trust and encourages continuous development. Therefore, when supervision is grounded in guidance, it becomes a key factor in inspiring teachers to perform effectively and creatively.

Table 2 Inspiring Academic Setting in Terms of Supervision and Guidance

Statement	Mean	Descriptive Rating
1. Effective supervision and guidance significantly contribute to creating an inspiring academic setting.	3.61	Extensive
2. Supervision and guidance directly impact the inspiration felt within our academic environment.	3.59	Extensive
3. Effective supervision and guidance significantly elevate the inspiration levels within our academic setting.	3.21	Moderately Extensive
4. Believing that proper supervision and guidance play a pivotal role in shaping an inspiring academic atmosphere	3.16	Moderately Extensive
<b>Mean</b>	<b>3.39</b>	<b>Moderately Extensive</b>
Legend: <i>Very Extensive</i> = Always Observed; <i>Extensive</i> = Oftentimes Observed; <i>Moderately Extensive</i> = Sometimes Observed; <i>Less Extensive</i> = Seldom Observed; & <i>Not Extensive</i> = Never Observed		



Among the statements, the highest-rated was Effective supervision and guidance significantly contributed to creating an inspiring academic setting ( $M = 3.61$ , Extensive). In contrast, the statement Believing that proper supervision and guidance play a pivotal role in shaping an inspiring academic atmosphere received the lowest rating ( $M = 3.16$ , Moderately Extensive). As pointed out by Haryono (2024), the quality of supervision must be continuous and collaborative to make a meaningful impact. In practice, this highlights the need for school administrators to strengthen supportive supervisory practices by offering regular feedback, conducting classroom observations, and engaging in mentoring activities (Abujaber et al., 2022). Enhancing these efforts may elevate the inspirational quality of the academic setting and contribute to sustained teacher development.

#### • Interaction

The results in Table 3 indicate that the inspiring academic setting in terms of interaction among teachers was rated as extensive ( $M = 3.55$ ), signifying that positive and meaningful interactions are often observed within the school setting. Schürer et al. (2025) emphasized that positive teacher interactions promote shared learning, trust, and a sense of professional community. According to An et al. (2021), when interaction is respectful, open, and supportive, it cultivates an environment where innovative ideas can flourish. Thus, interaction plays a vital role in shaping a motivating and dynamic academic atmosphere.

Table 3 Inspiring Academic Setting in Terms of Interaction

Statement	Mean	Descriptive Rating
1. Believing that positive interactions among teachers significantly contribute to fostering inspiration in our academic environment.	3.68	Extensive
2. Meaningful interactions play a crucial role in shaping an inspiring academic atmosphere.	3.39	Moderately Extensive
3. Interactions significantly influence teamwork and communication, contributing to the overall effectiveness of our school.	3.71	Extensive
4. Effective interactions not only enhance teacher morale but also positively impact the overall effectiveness of the school.	3.43	Extensive
<b>Mean</b>	<b>3.55</b>	<b>Extensive</b>
Legend: <i>Very Extensive</i> = Always Observed; <i>Extensive</i> = Oftentimes Observed; <i>Moderately Extensive</i> = Sometimes Observed; <i>Less Extensive</i> = Seldom Observed; & <i>Not Extensive</i> = Never Observed		

On one hand, the highest-rated statement, Interactions significantly influence teamwork and communication, contributing to the overall effectiveness of our school ( $M = 3.71$ , Extensive). On the other hand, the statement Meaningful interactions play a crucial role in shaping an inspiring academic atmosphere obtained the lowest mean score ( $M = 3.39$ , Moderately Extensive). As noted by An et al. (2021), sustained interaction must go beyond casual exchanges and evolve into professional learning communities to truly impact teacher motivation and school improvement. Therefore, fostering structures that support dialogue, mentorship, and teamwork is necessary to further enhance inspiration and professional engagement within the academic environment.

#### • Collective Agreement Process

The data in Table 4 indicate that the inspiring academic setting in terms of collective agreement process was rated as moderately extensive ( $M = 3.35$ ), suggesting that teachers sometimes observe the positive impact of collaborative decision-making on their academic environment. Mwani (2023) emphasized that inclusive decision-making processes create a positive school culture where innovation can thrive. When teachers feel that their voices are heard and valued, they are more likely to contribute meaningfully to institutional goals. Therefore, a functional collective agreement process is key to establishing an academic setting that encourages cooperation and creativity.

Table 4 Inspiring Academic Setting in Terms of Collective Agreement Process

Statement	Mean	Descriptive Rating
1. An effective collective agreement process elevates the inspiration levels within our academic setting.	3.43	Extensive
2. Believing that an inclusive and collaborative agreement process is fundamental in creating a positive educational climate.	3.35	Moderately Extensive
3. Collective agreement promote autonomy among teachers.	3.42	Extensive
4. Collective agreement encourages educators to explore new teaching methodologies that enhance the inspiring nature of our academic setting.	3.21	Moderately Extensive
<b>Mean</b>	<b>3.35</b>	<b>Moderately Extensive</b>
Legend: <i>Very Extensive</i> = Always Observed; <i>Extensive</i> = Oftentimes Observed; <i>Moderately Extensive</i> = Sometimes Observed; <i>Less Extensive</i> = Seldom Observed; & <i>Not Extensive</i> = Never Observed		

The statement rated highest, an effective collective agreement process elevates the inspiration levels within our academic setting (M = 3.43, Extensive). Conversely, the lowest-rated item, Collective agreement encourages educators to explore new teaching methodologies that enhance the inspiring nature of our academic setting (M = 3.21,

Moderately Extensive). As Matiang'I et al. (2024) emphasized, institutional structures must be paired with a culture of innovation for systemic improvement to take root. Therefore, while collective agreements are present, further efforts may be needed to ensure they translate into creative and inspiring instructional practices (Meyer et al., 2022).

Table 5 Summary on Inspiring Academic Setting in Maa District, Davao City

Indicators	Mean	Descriptive Equivalent
Social Connections	3.53	Extensive
Supervision and Guidance	3.39	Moderately Extensive
Interaction	3.55	Extensive
Collective Agreement Process	3.35	Moderately Extensive
<b>Overall</b>	<b>3.46</b>	<b>Extensive</b>
Legend: <i>Very Extensive</i> = Always Observed; <i>Extensive</i> = Oftentimes Observed; <i>Moderately Extensive</i> = Sometimes Observed; <i>Less Extensive</i> = Seldom Observed; & <i>Not Extensive</i> = Never Observed		

The results in Table 5 reveal that the overall inspiring academic setting in Maa District, Davao City was rated as extensive (M = 3.46), meaning that the elements contributing to a positive academic environment are oftentimes observed. The result indicates that the educational environment that cultivates a sense of motivation, enthusiasm, and a passion for learning among students and educators is oftentimes observed. McDonald and Gibson (2021) emphasized that a positive academic setting supports reflective practice, allowing teachers to make meaningful connections with their work and their students. These conditions lead to increased teacher satisfaction, higher instructional quality, and improved student learning outcomes

Among the indicators, interaction received the highest rating (M = 3.55, Extensive). In contrast, collective agreement process emerged as the lowest-rated indicator (M = 3.35,

Moderately Extensive). As highlighted by Maqbool et al. (2024), effective leadership practices and inclusive policy development are essential for inspiring school environments and improving teacher performance. These results suggest that while strong interpersonal dynamics exist, strengthening institutional structures and leadership practices can further elevate the inspiration and effectiveness of academic settings in the district. According to Mareque et al. (2022), when teachers operate in a collaborative and supportive environment, their motivation to improve teaching strategies increases significantly.

#### ➤ *Inventive Educational Practices of Teachers*

##### • *Ideation in Teaching*

The data in Table 6 reveals that the overall level of inventive educational practices of teachers in terms of ideation

in teaching was rated as extensive ( $M = 3.46$ ), indicating that these practices are oftentimes manifested. This indicates that the creative process through which educators generate, develop, and implement innovative ideas in their instructional practices is oftentimes manifested. According to Worsley (2021), when teachers generate and apply new ideas, they

help students develop higher-order thinking skills and the confidence to explore novel concepts. According to Buphate and Esteban (2022), this inventive approach promotes deeper understanding, as it enables learners to make meaningful connections between academic content and real-life contexts.

Table 6 Inventive Educational Practices of Teachers in Terms of Ideation in Teaching

Statement	Mean	Descriptive Rating
1. Creating new ideas to address difficult issues.	3.24	Moderately Extensive
2. Searching out for new teaching methods techniques or instruments to enhance teaching-learning processes.	3.39	Moderately Extensive
3. Generating original solutions for problems related to my class.	3.58	Extensive
4. Securing resources to make new ideas happen.	3.63	Extensive
<b>Mean</b>	<b>3.46</b>	<b>Extensive</b>
<b>Legend: Very Extensive= Always Manifested; Extensive= Oftentimes Manifested; Moderately Extensive= Sometimes Manifested; Less Extensive= Seldom Manifested; &amp; Not Extensive= Never Manifested</b>		

On one hand, the statement with the highest mean was Securing resources to make new ideas happen with a score of 3.63 (Extensive). On the other hand, the lowest-rated item was Creating new ideas to address difficult issues with a mean of 3.24 (Moderately Extensive). According to Shively (2021), teachers who regularly engage in ideation are more likely to foster active learning environments that stimulate student curiosity and motivation. Ideation plays a crucial role in enabling teachers to innovate beyond traditional methods, encouraging experimentation and flexibility in pedagogy.

#### • *Fostering Ideas*

The findings in Table 7 reveal that teachers' inventive educational practices in terms of fostering ideas were rated as extensive ( $M = 3.47$ ), which indicates that such practices are oftentimes manifested. This means that the extent of creating an environment that encourages educators to generate, share, and implement creative and novel teaching approaches is oftentimes manifested. According to Barat (2024), fostering ideas is essential in maintaining an environment that values innovation, risk-taking, and ongoing professional growth. Also, Vincent-Lancrin (2021) asserted that when teachers actively promote idea-sharing and collaboration, they contribute to a more dynamic and engaging educational atmosphere.

Table 7 Inventive Educational Practices of Teachers in Terms of Fostering Idea

Statement	Mean	Descriptive Rating
1. Mobilizing support to different individuals in the organization for innovative ideas.	3.59	Moderately Extensive
2. Encouraging other staffs/colleagues in the school to be enthusiastic for innovative ideas.	3.46	Extensive
3. Sharing my thought to co-teachers that innovation is the most important decision incentive not only for entrepreneurs but also for teachers.	3.28	Moderately Extensive
4. Helping co-teacher in building a strategy of action for classroom activities.	3.55	Extensive
<b>Mean</b>	<b>3.47</b>	<b>Extensive</b>
<b>Legend: Very Extensive= Always Manifested; Extensive= Oftentimes Manifested; Moderately Extensive= Sometimes Manifested; Less Extensive= Seldom Manifested; &amp; Not Extensive= Never Manifested</b>		



Among the statements, the highest mean was observed in Mobilizing support to different individuals in the organization for innovative ideas with a rating of 3.59 (Moderately Extensive). Conversely, the lowest mean was recorded in the statement Sharing my thought to co-teachers that innovation is the most important decision incentive not only for entrepreneurs but also for teachers, which received a score of 3.28 (Moderately Extensive). Ammar et al. (2024) suggested that when teachers consistently support the development of new ideas, students are more likely to engage deeply in the learning process. This encouragement helps learners become more independent and confident in their thinking.

#### • *Realization of Teaching Concepts*

The results presented in Table 8 indicate that teachers' inventive educational practices in terms of Realization of Teaching Concepts were rated as extensive (M = 3.49), signifying that these practices are oftentimes manifested in the classroom. This shows that the practical implementation and execution of innovative pedagogical ideas, strategies, and approaches within the teaching and learning environment is oftentimes manifested. Losyeva et al. (2021) asserted that the practical application of creative teaching concepts leads to deeper student engagement and better retention of knowledge. This ability allows educators to move beyond traditional teaching and respond to the evolving needs of learners.

Table 8 Inventive Educational Practices of Teachers in Terms of Realization of Teaching Concepts

Statement	Mean	Descriptive Rating
1. Observing a connection between teachers' exploration of new teaching concepts and an increase in student interest and motivation.	3.55	Extensive
2. Believing that the realization of teaching concepts aligns with the goal of fostering creativity and critical thinking among students.	3.34	Moderately Extensive
3. Thinking teachers apply novel teaching concepts to enhance student engagement and learning outcomes.	3.44	Extensive
4. Believing that teachers successfully translate innovative teaching concepts into practice in the classroom.	3.64	Extensive
<b>Mean</b>	<b>3.49</b>	<b>Extensive</b>
<b>Legend: Very Extensive= Always Manifested; Extensive= Oftentimes Manifested; Moderately Extensive= Sometimes Manifested; Less Extensive= Seldom Manifested; &amp; Not Extensive= Never Manifested</b>		

On one hand, the highest mean is observed in the statement Believing that teachers successfully translate innovative teaching concepts into practice in the classroom with a rating of 3.64 (Extensive). On the other hand, the lowest mean was recorded in the statement Believing that the realization of teaching concepts aligns with the goal of fostering creativity and critical thinking among students, which received a 3.34 (Moderately Extensive) rating. According to Zaky (2024), realizing teaching concepts enhances the quality of instruction and allows for a more student-centered approach. As such, it becomes essential for fostering critical thinking and creativity among learners. According to Rybalko et al. (2021), when teachers bring new concepts to life in the classroom, it enhances students' motivation and understanding.

#### • *Technological Literacy*

The results from Table 9 reveal that the inventive educational practices of teachers in terms of Technological Literacy were rated as moderately extensive (M = 3.34), suggesting that the application of technology in fostering innovation is sometimes manifested in the teaching process. Teane (2024) emphasized that technological literacy, when combined with pedagogical and content knowledge, enhances a teacher's capacity to innovate, leading to more effective and engaging instructional practices. Also, Nes et al. (2021) noted that technological literacy is a key factor in promoting creativity and adaptability in 21st-century teaching, enabling both teachers and students to effectively navigate and utilize digital tools for enhanced learning experiences.



Table 9 Inventive Educational Practices of Teachers in Terms of Technological Literacy

Statement	Mean	Descriptive Rating
1. Observing that teachers effectively apply their technology literacy to introduce innovative teaching methods in the classroom.	3.48	Extensive
2. Believing that technology literacy influences teachers in fostering creativity and critical thinking among students.	3.18	Moderately Extensive
3. The utilization of technology literacy has significantly impacted the overall quality of instruction in our school.	3.19	Moderately Extensive
4. Teachers can translate their technology literacy into the implementation of innovative teaching strategies.	3.50	Extensive
<b>Mean</b>	<b>3.34</b>	<b>Moderately Extensive</b>
<b>Legend: Very Extensive= Always Manifested; Extensive= Oftentimes Manifested; Moderately Extensive= Sometimes Manifested; Less Extensive= Seldom Manifested; &amp; Not Extensive= Never Manifested</b>		

Meanwhile, the highest mean was recorded in the statement Teachers can translate their technology literacy into the implementation of innovative teaching strategies with a mean of 3.50 (Extensive). Conversely, the lowest mean was observed in the statement Believing that technology literacy influences teachers in fostering creativity and critical thinking

among students with a mean of 3.18 (Moderately Extensive). Ivanchuk et al. (2021) noted that limited technological skills can hinder the creation of dynamic and student-centered learning environments. Therefore, moderate technological literacy highlights the need for continuous training and support to fully realize its role in effective teaching.

Table 10 Summary on Inventive Educational Practices of Teachers in Maa District, Davao City

Indicators	Mean	Descriptive Equivalent
Ideation in Teaching	3.46	Extensive
Fostering Idea	3.47	Extensive
Realization of Teaching Concepts	3.49	Extensive
Technological Literacy	3.34	Moderately Extensive
<b>Overall</b>	<b>3.44</b>	<b>Extensive</b>
<b>Legend: Very Extensive= Always Manifested; Extensive= Oftentimes Manifested; Moderately Extensive= Sometimes Manifested; Less Extensive= Seldom Manifested; &amp; Not Extensive= Never Manifested</b>		

The findings from Table 10 reveal that the overall level of inventive educational practices among teachers in Maa District, Davao City was rated as extensive (M = 3.44), indicating that these practices are oftentimes manifested in the teaching-learning process. This means that the innovative and creative approaches that educators employ in their teaching methods, strategies, and classroom activities is oftentimes manifested. According to Hakkarainen and Seitamaa-Hakkarainen (2022), inventive teaching practices encourage student creativity and deeper understanding by breaking away from traditional, rigid classroom methods. Additionally, Seitamaa-Hakkarainen (2022) asserted that inventive teachers are not only content experts but also adaptors who reshape learning environments to suit diverse learners.

Among the indicators, the realization of teaching concepts received the highest rating (M = 3.49, Extensive). On the contrary, technological literacy recorded the lowest mean score (M = 3.34, Moderately Extensive), implying that the integration of digital tools and platforms in teaching is only sometimes observed. Sigurðardóttir and Hjartarson (2020) emphasized that creativity in teaching leads to higher student performance because learners connect better with real-world applications. Inventive practices encourage critical thinking and problem-solving, which are essential in 21st-century education. Thus, maintaining a high level of inventive teaching ensures a more engaging and effective educational experience.

➤ *Relationship Between Inspiring Academic Setting and Inventive Educational Practices of Teachers*

Table 11 Relationship Between Inspiring Academic Setting and Inventive Educational Practices of Teachers in Maa District, Davao City

<b>Inspiring Academic Setting</b>	<b>Inventive Educational Practices of Teachers</b>		
	<b>r-value</b>	<b>p-value</b>	<b>Decision</b>
Social Connections	0.410*	0.000	Reject $H_0$
Supervision and Guidance	0.276*	0.001	Reject $H_0$
Interaction	0.209	0.010	Reject $H_0$
Collective Agreement Process	0.604	0.000	Reject $H_0$
<b>Overall Inspiring Academic Setting</b>	<b>0.621*</b>	<b>0.000</b>	<b>Reject <math>H_0</math></b>
<b>*Significant @ <math>p &lt; 0.05</math></b>			
<b>Legend: Perfect Correlation for <math>r=1.00</math>; Strong Correlation for <math>0.7 \leq r &lt; 1.00</math>; Moderate Correlation for <math>0.3 \leq r &lt; 0.7</math>; Weak Correlation for <math>0.3 &gt; r &gt; 0.00</math>; No Correlation for <math>r=0.00</math></b>			

The data in Table 11 reveal a significant and positive relationship between an inspiring academic setting and the inventive educational practices of teachers in Maa District, Davao City. The overall correlation coefficient of  $r = 0.621$  ( $p = 0.000$ ) indicates a moderate yet meaningful relationship, signifying that teachers who perceive their academic environment as inspiring are more likely to demonstrate inventive practices in teaching. This relationship emphasizes the role of a motivating environment in fostering creativity and innovation among educators, as teachers tend to mirror the culture and atmosphere of their workplace in their instructional approach.

Among the specific dimensions, collective agreement process showed the strongest correlation with inventive educational practices ( $r = 0.604$ ,  $p = 0.000$ ), followed by social connections ( $r = 0.410$ ,  $p = 0.000$ ) and supervision and guidance ( $r = 0.276$ ,  $p = 0.001$ ). Meanwhile, interaction also demonstrated a positive but weaker relationship ( $r = 0.209$ ,  $p$

$= 0.010$ ). These results suggest that when teachers experience shared decision-making, collegial relationships, and supportive supervision, they are more inclined to innovate in their teaching strategies.

These findings align with the works of Bonk and Zhu (2022), who argued that a strong professional culture and collaboration within the school community inspire innovation in pedagogical practice. Moreover, Khan (2022) emphasized that supportive leadership and shared school goals significantly shape teachers' motivation to explore inventive approaches. Thus, cultivating an inspiring school culture, through meaningful interactions, shared goals, and guidance, can serve as a critical foundation for developing inventive teaching practices that benefit both teachers and learners.

➤ *Influence of Inspiring Academic Setting on Inventive Educational Practices of Teachers*

Table 12 Influence of Inspiring Academic Setting on the Inventive Educational Practices of Teachers in Maa District, Davao City

<b>Inspiring Academic Setting</b>	<b>Inventive Educational Practices of Teachers</b>				
	<b>B</b>	<b>Beta</b>	<b>S.E</b>	<b>p-value</b>	<b>Decisions</b>
Social Connections	.233**	.297	.052	.000	Reject $H_0$
Supervision and Guidance	.096*	.149	.039	.016	Reject $H_0$
Interaction	-.001	-.002	.055	.981	Accept $H_0$
Collective Agreement Process	.352**	.533	.040	.000	Reject $H_0$
Adjusted $R^2 = 0.471$					
F-value = 34.577**					
p-value = 0.000					

The regression analysis reveals that the inspiring academic setting significantly influences the inventive educational practices of teachers in Maa District, Davao City.

Among the indicators, collective agreement process ( $\beta = .533$ ,  $p = .000$ ) exerts the strongest effect, suggesting that collaborative decision-making fosters creativity in classroom

instruction. Social connections ( $\beta = .297$ ,  $p = .000$ ) and supervision and guidance ( $\beta = .149$ ,  $p = .016$ ) also have positive impacts, while interaction ( $\beta = -0.002$ ,  $p = .981$ ) shows no significant influence. This indicates that not all forms of academic engagement equally promote teacher innovation.

Overall, the model accounts for 47.1% of the variance (Adjusted  $R^2 = 0.471$ ) in inventive educational practices, with a highly significant F-value of 34.577 ( $p = 0.000$ ). These results highlight the importance of fostering collective agreements, supportive relationships, and constructive guidance in enhancing teacher innovation. Meanwhile, the non-significance of interaction implies that mere communication, without deeper collaborative intent, may not inspire inventive behaviors—underscoring the need for quality rather than frequency of engagement. Supporting studies reinforce these findings, such as Maker (2021) who emphasized collaborative professionalism, Maqbool et al. (2024) who stressed the role of aligned instructional leadership, and other works highlighting the role of professional trust and social capital in encouraging creative strategies.

The results further validate relevant theories. Situativity Theory underscores the influence of social and physical contexts on learning and behavior, with the significant role of collective agreements illustrating the situated nature of teacher innovation (Barab & Squire, 2020). Likewise, Creativity Investment Theory suggests that supportive environments empower individuals to invest in novel ideas (Mohammed Toha & Hamid Mahdi, 2022). Taken together, the evidence demonstrates that a strategically designed academic environment is crucial for inspiring inventive teaching practices through collaboration, empowerment, and contextual support.

#### IV. CONCLUSIONS AND RECOMMENDATIONS

##### ➤ *Conclusions*

The study concludes that the inspiring academic setting in Maa District, Davao City was generally rated as extensive, with social connections and interaction perceived as strongly practiced, reflecting emphasis on collegiality and communication. However, supervision and guidance, along with collective agreement processes, were only moderately extensive, suggesting the need for stronger leadership support and inclusive decision-making. Teachers were also found to frequently demonstrate inventive educational practices, particularly in ideation and realization of teaching concepts, though their moderately extensive rating in technological literacy highlights the need for further training in technology integration.

Furthermore, results confirm a significant relationship between inspiring academic settings and inventive educational practices. Collective agreement processes and social connections were most strongly correlated with teacher innovation, indicating that collaboration, communication, and supportive environments enhance creative instructional strategies. The findings reveal that social connections,

supervision and guidance, and collective agreements significantly influence inventive practices, aligning with Situativity Theory, which stresses the role of social and physical context in learning (Barab & Squire, 2020), and Creativity Investment Theory, which posits that supportive environments empower individuals to invest in novel ideas (Mohammed Toha & Hamid Mahdi, 2022).

##### ➤ *Recommendations*

The study recommends that the Department of Education (DepEd) strengthen supervisory structures by implementing mentoring-focused training, refining policies, and ensuring regular monitoring aligned with teacher development. School heads should adopt supportive supervisory practices, establish structured feedback mechanisms, and foster collaboration across departments, while teachers are encouraged to proactively engage with supervisors, participate in peer mentoring, and practice reflection to adapt to challenges. Students should be given avenues for feedback and collaboration to enhance classroom innovation. Finally, future researchers are urged to investigate the weaker influence of interaction and supervision on teacher innovation, employing mixed-method and longitudinal approaches to uncover contextual barriers and the impact of leadership styles over time.

#### REFERENCES

- [1]. Abendaño, M., Arellano, M. A. G., Allawan, J. M., Lemindog, R. B., & Cagape, W. E. (2023). Multivariate analysis on curriculum viability, teaching competence, and effective instruction: davao region teachers in focus. *Multivariate Analysis on Curriculum Viability, Teaching Competence, and Effective Instruction: Davao Region Teachers in Focus*, 127(1), 25-25.
- [2]. Abujaber, N., Vallieres, F., McBride, K. A., Sheaf, G., Blum, P. T., Wiedemann, N., & Travers, A. (2022). Examining the evidence for best practice guidelines in supportive supervision of lay health care providers in humanitarian emergencies: a systematic scoping review. *Journal of global health*, 12, 04017. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8876157/>
- [3]. Alsoud, A. R., Shukri, S. M., Balhareth, H., Al-masaed, S., Abd Hamid, J., & Tham, J. (2021). Educational disruption and innovative teaching during the pandemic: An empirical study. *Kuram ve Uygulamada Egitim Bilimleri*, 21(4), 1-16. <https://www.proquest.com/openview/3985c504103eca8e4d39588e00db19fd/1?cbl=28575&pq-origsite=gscholar>
- [4]. Álvarez-Guerrero, G., López de Aguilera, A., Racionero-Plaza, S., & Flores-Moncada, L. G. (2021). Beyond the school walls: Keeping interactive learning environments alive in confinement for students in special education. *Frontiers in Psychology*, 12, 662646.
- [5]. Ammar, M., Al-Thani, N. J., & Ahmad, Z. (2024). Role of pedagogical approaches in fostering innovation among K-12 students in STEM education.



- Social Sciences & Humanities Open, 9, 100839. <https://www.sciencedirect.com/science/article/pii/S2590291124000366>
- [6]. An, J., Macaro, E., & Childs, A. (2021). Classroom interaction in EMI high schools: Do teachers who are native speakers of English make a difference?. *System*, 98, 102482.
- [7]. Anderson, R. C., Bousset, T., Katz-Buoincontro, J., & Todd, J. (2021). Generating buoyancy in a sea of uncertainty: Teachers creativity and well-being during the COVID-19 pandemic. *Frontiers in psychology*, 11, 614774. <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2020.614774/full>
- [8]. Baggay, C. T., Bautista, B. J. D., Celestino, C. F., Corral, E. G., Delos Santos Ana Ruth, A., Francisco, K. A. B., ... & Seciban, D. A. (2021). School Heads' Instructional Supervisions and Its Impact on Teachers' Job Satisfaction. *Online Submission*, 6(3), 1-16. <https://eric.ed.gov/?id=ED618682>
- [9]. Barat, S. (2024). A micro-level perspective to fostering IDEAs in the classroom and beyond. *Journal of Global Scholars of Marketing Science*, 34(1), 108-122.
- [10]. Bayod, R. P., Forosuelo, E. J. D., Arnosa, D. A., Orion, H. C., & Cavallida, J. M. (2021). Choosing positivity in the midst of difficulties: The case of public school teachers in Mindanao. *Eubios Journal of Asian and International Bioethics*, 31(2), 109.
- [11]. Bonk, C., & Zhu, M. (2022). Transformative teaching around the world: Stories of cultural impact, technology integration, and innovative pedagogy. Routledge.
- [12]. Bull, S., Terry, R., Rice, N., Carrieri, D., Tarrant, M., & Curnow, G. (2024). Social connections and social identity as a basis for learning and support: Experiences of medical students with minoritised and non-minoritised ethnic identities. *Medical Education*, 58(9), 1126-1135. <https://asmepublications.onlinelibrary.wiley.com/doi/full/10.1111/medu.15367>
- [13]. Buphate, T., & Esteban, R. H. (2022). Using ideation discussion activities in Design Thinking to develop EFL students' speaking and critical thinking abilities. *LEARN Journal: Language Education and Acquisition Research Network*, 15(1), 682-708. <https://so04.tci-thaijo.org/index.php/LEARN/article/view/256743>
- [14]. Chen, H. H., & Yuan, Y. H. (2021). The study of the relationships of teacher's creative teaching, imagination, and principal's visionary leadership. *Sage Open*, 11(3), 21582440211029932. <https://journals.sagepub.com/doi/full/10.1177/21582440211029932>
- [15]. Christopoulos, A., & Sprangers, P. (2021). Integration of educational technology during the Covid-19 pandemic: An analysis of teacher and student receptions. *Cogent Education*, 8(1), 1964690. <https://www.tandfonline.com/doi/full/10.1080/2331186X.2021.1964690>
- [16]. Cramman, H., Moger, P., & Menzies, V. (2021). The impact of Covid-19 on the English education teaching and learning environment and how this relates to sustaining and developing creativity, creative thinking and teaching for creativity-A literature review. <https://durham-repository.worktribe.com/output/1628349>
- [17]. Davies, S., Seitamaa-Hakkarainen, P., & Hakkarainen, K. (2024). Knowledge creation through maker practices and the role of teacher and peer support in collaborative invention projects. *International Journal of Computer-Supported Collaborative Learning*, 19(3), 283-310. <https://link.springer.com/article/10.1007/s11412-024-09427-2>
- [18]. Dederer, K., & Pietsch, M. (2025). School leader trust and collective teacher innovativeness: On individual and organisational ambidexterity's mediating role. *Educational Review*, 77(2), 351-380. <https://www.tandfonline.com/doi/full/10.1080/00131911.2023.2195593>
- [19]. Eli, T. (2021). Students perspectives on the use of innovative and interactive teaching methods at the University of Nouakchott Al Aasriya, Mauritania: English department as a case study. *international Journal of Technology innovation and Management (Ijtim)*, 1(2), 90-104. <https://www.journals.gaftim.com/index.php/ijtim/article/view/21>
- [20]. Gao, Q., & Hall, A. (2024). Early Childhood Teachers' Beliefs About Creativity and Practices for Fostering Creativity: A Review of Recent Literature. *Early Childhood Education Journal*, 1-10. <https://link.springer.com/article/10.1007/s10643-024-01816-4>
- [21]. Garner, J., Matheny, E., Rutledge, A., & Kuhn, M. (2021). Invention education as a context for children's identity exploration. *Journal of STEM Outreach*, 4(1), 1-14.
- [22]. Hakkarainen, K., & Seitamaa-Hakkarainen, P. (2022). Learning by inventing: Theoretical foundations. In *Invention pedagogy-The Finnish approach to Maker education* (pp. 15-27). Routledge. <https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781003287360-3/learning-inventing-kai-hakkarainen-pirita-seitamaa-hakkarainen>
- [23]. Haryono, N. (2024). Innovative Approach: The Role Of Counseling Guidance Teachers Through Zoom Meetings In Improving Learning Guidance And Learning Supervision For Vocational School Students In Jember. *Journal of Education Technology and Inovation*, 7(1), 71-78. <https://jurnal.unipar.ac.id/index.php/jeti/article/view/1865>
- [24]. Holley, D., Goldsmith, B., & Fevryer, D. (2021). Inspiring learning through technology. <https://eprints.bournemouth.ac.uk/36607/>
- [25]. Impact of Collective Agreement Process on the inventive educational practices of teachers (2 authors)
- [26]. Ivanchuk, A., Zuziak, T., Marushchak, O., Matviichuk, A., & Solovei, V. (2021).



- Training pre-service technology teachers to develop schoolchildren's technical literacy. *Problems of Education in the 21st Century*, 79(4), 554. <https://www.ceeol.com/search/article-detail?id=972935>
- [27]. Khan, M. N., Ashraf, M. A., Seinen, D., Khan, K. U., & Laar, R. A. (2021). Social media for knowledge acquisition and dissemination: The impact of the COVID-19 pandemic on collaborative learning driven social media adoption. *Frontiers in Psychology*, 12, 648253. <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2021.648253/full>
- [28]. Khan, N. Inspiring Excellence: Fostering Prospective Teachers' Professional Development through Innovative Technological Practices. As the editors of *Transforming Learning: The Power of Educational Technology*, 205. [https://www.researchgate.net/profile/Ravindra-Kushwaha-2/publication/381408076\\_Transforming\\_Learning\\_The\\_Power\\_of\\_Educational\\_Technology/links/666c0a12b769e7691933ab54/Transforming-Learning-The-Power-of-Educational-Technology.pdf#page=219](https://www.researchgate.net/profile/Ravindra-Kushwaha-2/publication/381408076_Transforming_Learning_The_Power_of_Educational_Technology/links/666c0a12b769e7691933ab54/Transforming-Learning-The-Power-of-Educational-Technology.pdf#page=219)
- [29]. Korhonen, T., Kangas, K., & Salo, L. (2023). Invention pedagogy—the Finnish approach to maker education (p. 304). Taylor & Francis. <https://library.oapen.org/handle/20.500.12657/58602>
- [30]. Lau, F. (2017). Methods for correlational studies. In *Handbook of ehealth evaluation: An evidence-based approach* [internet]. University of Victoria.
- [31]. Losyeva, N. M., Kyrylenko, N. M., Kyrylenko, V. V., & Kryzhanovskiy, A. I. (2021). INFORMATION COMPETENCE AS A BASIS FOR STUDENTS' SELF-REALIZATION: PRACTICAL EXPERIENCE. <http://lib.ndu.edu.ua:8080/jspui/handle/123456789/2212>
- [32]. Maker, C. J. (2021). From leading to guiding, facilitating, and inspiring: A needed shift for the 21st Century. *Education Sciences*, 12(1), 18. <https://www.mdpi.com/2227-7102/12/1/18>
- [33]. Maqbool, S., Zafeer, H. M. I., Zeng, P., Maqbool, S., Draissi, Z., & Javed, S. (2024). Inventive leadership styles and their impact for achieving sustainable development goals in education at secondary schools: a case study from Multan, Pakistan. *Humanities and Social Sciences Communications*, 11(1), 1-11. <https://www.nature.com/articles/s41599-024-03086-2>
- [34]. Mareque, M., de Prada, E., & Pino Juste, M. (2022). Aspiring and inspiring: the role of women in educational leadership. *Gender in Management: An International Journal*, 37(8), 1009-1025. <https://www.emerald.com/insight/content/doi/10.1108/gm-07-2021-0221/full/html>
- [35]. Matiang'i, J. O., Kalai, J. M., & Akala, W. J. (2024). Influence of Teachers Service Commission Implementation of 2017-2021 Collective Bargaining Agreement on Professional Development and Teachers' Job Satisfaction in Public Primary Schools in Kenya. *Cradle of Knowledge: African Journal of Educational and Social Science Research (The)*, 12(2), 85-94.
- [36]. McDonald, R., & Gibson, P. (Eds.). (2021). *Inspiring Primary Learners: Insights and Inspiration Across the Curriculum*. Routledge. [https://books.google.com.ph/books?hl=en&lr=&id=zHsSEAAAQBAJ&oi=fnd&pg=PP1&dq=Inspiring+Academic+Setting++2021+and+up&ots=v2uFvPlkYp&sig=T83orl7aZ80GcefmIwNd\\_3keU4k&redir\\_esc=y#v=onepage&q=Inspiring%20Academic%20Setting%20%202021%20and%20up&f=false](https://books.google.com.ph/books?hl=en&lr=&id=zHsSEAAAQBAJ&oi=fnd&pg=PP1&dq=Inspiring+Academic+Setting++2021+and+up&ots=v2uFvPlkYp&sig=T83orl7aZ80GcefmIwNd_3keU4k&redir_esc=y#v=onepage&q=Inspiring%20Academic%20Setting%20%202021%20and%20up&f=false)
- [37]. Meyer, A., Richter, D., & Hartung-Beck, V. (2022). The relationship between principal leadership and teacher collaboration: Investigating the mediating effect of teachers' collective efficacy. *Educational management administration & leadership*, 50(4), 593-612. <https://journals.sagepub.com/doi/abs/10.1177/1741143220945698>
- [38]. Mwani, L., Ejakait, E., & Ogenga, P. A. (2023). Collective Bargaining Agreements Implementation Approaches and Equity in Grade Promotion of Post-Primary Teachers in Kakamega County, Kenya. *Cradle of Knowledge: African Journal of Educational and Social Science Research (The)*, 11(3), 146-153.
- [39]. Nes, A. A. G., Steindal, S. A., Larsen, M. H., Heer, H. C., Lærum-Onsager, E., & Gjevjon, E. R. (2021). Technological literacy in nursing education: A scoping review. *Journal of Professional Nursing*, 37(2), 320-334. <https://www.sciencedirect.com/science/article/pii/S8755722321000089>
- [40]. Porter, A., Graham, S., Myles, F., & Holmes, B. (2022). Creativity, challenge and culture in the languages classroom: a response to the Ofsted Curriculum Research Review. *The Language Learning Journal*, 50(2), 208-217.
- [41]. Robosa, J., Paras, N., Perante, L., Alvez, T., & Tus, J. (2021). The experiences and challenges faced of the public school teachers amidst the COVID-19 pandemic: A phenomenological study in the Philippines. *International Journal of Advance Research and Innovative Ideas in Education*, 7(1), 1342-1361.
- [42]. Rybalko, L., Chernovol-Tkachenko, R., Chornovol-Tkachenko, R., & Tverdokhlib, H. (2021). Intellectual capital is the foundation of innovative development: Foreign languages teachers' professional self-realization in the modern educational dimensions.
- [43]. Salkind, N. J. (Ed.). (2010). *Encyclopedia of research design* (Vol. 1). sage.
- [44]. Samtani, S., Mahalingam, G., Lam, B. C. P., Lipnicki, D. M., Lima-Costa, M. F., Blay, S. L., & Brodaty, H. (2022). Associations between social connections and cognition: a global collaborative individual participant data meta-analysis. *The Lancet Healthy Longevity*, 3(11), e740-e753.
- [45]. Santos, J. M., & Castro, R. D. (2021). Technological Pedagogical content knowledge (TPACK) in action: Application of learning in the classroom by

- pre-service teachers (PST). *Social Sciences & Humanities Open*, 3(1), 100110. <https://www.sciencedirect.com/science/article/pii/S2590291121000061>
- [46]. Schürer, S., van Ophuysen, S., & Marticke, S. (2025). Social participation in secondary school: The relation to teacher-student interaction, student characteristics and class-related variables. *Social Psychology of Education*, 28(1), 1-24. <https://link.springer.com/article/10.1007/s11218-024-09992-2>
- [47]. Sedgwick, P. (2013). Stratified cluster sampling. *Bmj*, 347.
- [48]. Shively, K., Stith, K., & DaVia Rubenstein, L. (2021). Ideation to implementation: A 4-year exploration of innovating education through maker pedagogy. *The Journal of Educational Research*, 114(2), 155-170. <https://www.tandfonline.com/doi/abs/10.1080/00220671.2021.1872472>
- [49]. Sigurðardóttir, A. K., & Hjartarson, T. (2020). The idea and reality of an innovative school: From inventive design to established practice in a new school building. *Improving schools*, 19(1), 62-79. <https://journals.sagepub.com/doi/abs/10.1177/1365480215612173>
- [50]. Suragarn, U., Hain, D., & Pfaff, G. (2021). Approaches to enhance social connection in older adults: An integrative review of literature. *Aging and Health Research*, 1(3), 100029. <https://www.sciencedirect.com/science/article/pii/S2667032121000275>
- [51]. Teane, F. M. (2024). Technological literacy and its influence on teachers' adoption of a blended learning approach. *Reading & Writing-Journal of the Reading Association of South Africa*, 15(1), 426. <https://journals.co.za/doi/abs/10.4102/rw.v15i1.426>
- [52]. Vincent-Lancrin, S. (2021). Skills for Life: Fostering Creativity. <https://publications.iadb.org/en/skills-life-fostering-creativity>
- [53]. Watson, R. (2015). Quantitative research. *Nursing standard*, 29(31). <https://hull-repository.worktribe.com/output/374637/quantitative-research>
- [54]. Widodo, C., Sukatiman, S., & Isnantyo, F. D. (2025). Inspirational Leadership in Encouraging Academic Achievement in Vocational High Schools. Scaffolding: Jurnal Pendidikan Islam dan Multikulturalisme, 7(1), 1-18. <https://ejournal.insuriponorogo.ac.id/index.php/scaffolding/article/view/6569>
- [55]. Widodo, J., Handoyo, E., & Masyhar, A. (2021, November). Informal Guidance Academic Supervision in Integrated Learning Improvement. In 6th International Conference on Science, Education and Technology (ISET 2020) (pp. 549-555). Atlantis Press. <https://www.atlantispress.com/proceedings/iset-20/125964435>
- [56]. Worsley, M. (2021). Exploring ideation strategies as an opportunity to support and evaluate making. *Information and Learning Sciences*, 122(3/4), 127-146. <https://www.emerald.com/insight/content/doi/10.1108/ils-08-2020-0194/full/html>
- [57]. Wu, H., & Zeng, Y. (2025). A mixed-methods investigation into the interplay between supportive work environment, achievement emotions, and teaching for creativity as perceived by Chinese EFL teachers. *Perceptual and Motor Skills*, 132(1), 16-39. <https://journals.sagepub.com/doi/abs/10.1177/00315125241272593>
- [58]. Xu, Y., Liu, Y., Huang, M., & Fang, H. (2024). Influence of kindergarten principals' contingent rewards on teachers' creative teaching performance: Testing a moderated-mediated model. *Work*, 78(2), 461-476.
- [59]. Yani, A., Henjilito, R., Noviardila, I., Hasan, B., Setyawan, H., Shidiq, A. A. P., ... & HB, G. (2024). The Role of School Supervisors in the Quality Assurance of Physical Education Learning: A Systematic Review. *Retos: nuevas tendencias en educación física, deporte y recreación*, (57), 589-597. <https://dialnet.unirioja.es/servlet/articulo?codigo=9598159>
- [60]. Zaky, H. (2024). Understanding Online Power Dynamics in Higher Education: Teachers' Conceptual Realization and Students' Perceptions of Teaching Effectiveness. *Journal of Global Research in Education and Social Science*, 18(4), 214-232.