

Pedagogical Interaction and Student Engagement at Selected University

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Abstract: This quantitative study examined pedagogical interaction and student engagement in a university in Guangdong, China, involving 364 students and 132 teachers. Surveys evaluated pedagogical strategies, including reflective, inquiry-based, and collaborative learning, alongside cognitive, emotional, and behavioral aspects of student engagement. Professional development was measured by the establishment of training systems aimed at enhancing students' capacity to engage in classroom interactions, ensuring that teachers progressively cultivate active participation. The findings show that teachers frequently facilitate teamwork, reflect on their teaching practices, and set clear expectations for group activities. They also promote inquiry-based learning by fostering interactive environments where students exchange ideas and engage in discussions. In problem-based learning settings, teachers guide students through research, data analysis, and presentations. However, Spearman's rho correlation analysis found no significant relationship between teaching strategies and student engagement, suggesting that changes in one do not necessarily affect the other. This indicates that factors beyond pedagogy, such as student motivation or external influences, may impact engagement. The study highlights the need for more personalized learning approaches and enhanced support systems to encourage participation. And, continuous professional development remains crucial, ensuring educators can create environments that nurture meaningful student engagement, regardless of instructional strategies used.

Keywords: Pedagogical Interaction; Student Engagement; Sustainable Professional Development.

1. Introduction

In foreign sources, pedagogical interaction is mainly considered from the perspective of the functional and interaction mechanisms: as a mutual influence of the components of the pedagogical system (Weltzien, 2016; Vladimir, 2020); as a the most important factor "for creating an effective interactive environment that promotes the development of personally meaningful learning, allowing the formation of a relationship of trust, security and openness" (Hargreaves, 1986; Vladimir, 2020); an environment that "actively engages students can stimulate the development of self-regulatory learning" through "cognitive ownership of information acquired both as a result of the individual thought process and in society" (Young, 2005; Vladimir, 2020).

Pedagogical interaction is closely related to an important term, teacher-child interaction, a dynamic combination of behavioral and verbal engagement between teachers and children embedded within a responsive environment (Downer et al., 2010, Runke, 2019). It consists of three major domains: emotional support, classroom organization, and instructional support (Pianta et al., 2008; Hu et al., 2016; Runke, 2019). In pedagogical environment, characterized by the interplay of cognition, emotion, and behavior, the essence of teaching lies in the interplay of teacher-led instruction, student participation, and cooperative learning endeavors. The success or failure of classroom interaction bears directly upon the efficacy of teaching outcomes, emphasizing the critical role it plays in shaping the learning experience.

Student engagement in classroom learning is an important factor that affects the quality of college education, reflects student-centered learning, and promotes classroom quality evaluation. It has received much attention from domestic and foreign academic circles. Learning engagement reflects the

degree to which students put in effort during the classroom learning process, and is a decisive factor in academic performance and learning quality (Lawson & Lawson 2013; Deng et al. 2020). According to Freddicks et al. (2004), student engagement is consist of three dimensions: (i) behavioral; (ii) emotional; (iii) cognitive, which are widely adopted parameters by many researchers.

Pedagogical interaction and learning engagement are currently hot topics in educational psychology research. Scholars have investigated the role and significance of interaction from various perspectives. Research indicates that learner interaction serves as a primary catalyst for language acquisition, while the contextual richness inherent in interaction directly or indirectly facilitates comprehension, collaboration, production, and acquisition (Wang Chuming, 2011). Moreover, interaction aids students in digesting and comprehending learning materials, resolving learning challenges, standardizing English expression patterns, honing English thinking skills, and activating language cognitive structures. It also assists teachers in identifying text comprehension issues and language expression errors among students, facilitating their correction (Li Fangjun, Qu Sheming, 2018). Interaction enhances students' accuracy in expression and expands their language proficiency (Zou Weicheng, 2017), providing vital channels for language learning and communication, thereby increasing language utilization and correction opportunities for learners (Xu Jinfen, 2020). Furthermore, fostering interaction contributes to fostering harmonious classroom relationships, deepening student engagement, and enriching learning experiences (Long Zaibao et al., 2021).

Yet, many students are not engaged in their own education, resulting in high attrition and in low interest, motivation, and academic outcomes (Chapman, Laird, & Kewalramani, 2011;

Rumberger & Rotermund, 2012). Traditional Chinese pedagogy has been well known for being teacher-directed and achievement-oriented and is commonly labeled as transmissive pedagogy or instructivism (Zhu et al. 2005; Rao et al. 2010; Li et al. 2012;). To solve the problem, the educational authorities of China have promoted constructivism and participatory pedagogy in High Education (HE) through issuing the Guidelines for High Education (trial version) (Ministry of Education of China, 2020) since the turn of this millennium. The Guidelines for College English Teaching (Ministry of Education Higher Education College Foreign Language Teaching Guidance Committee, 2020) advocates for the implementation of a blended learning model in college English courses, enabling students to develop towards active, self-directed, and personalized learning.

Whether and how Chinese teachers have delivered constructivism oriented, participatory pedagogy in their classroom as expected, are still unknown. This study thus investigated the authentic classroom pedagogical interactions between Chinese teachers and their students in English class to understand how teachers practiced participatory pedagogy after the pedagogical reform and to evaluate its correlation to classroom interaction and student engagement.

2. Statement of the Problem

The study will assess the pedagogical interaction and students' engagement in a selected private applied oriented university in China. Furthermore, the study will correlate teacher's interaction strategies and student's engagement levels. Specifically, the study aimed to answer the following specific questions:

(1) What is the assessment of the respondents on the conduct of pedagogy interaction strategy in their class in terms of

- 1) Reflective learning
- 2) Inquiry-based learning
- 3) Collaborative learning

(2) What is the assessment of the respondents on the student engagement in terms of

- 1) Cognitive engagement
- 2) Emotional engagement
- 3) Behavioral engagement

(3) Is there significant relationship when the conduct of interaction strategies in the class to the student engagement?

(4) Based on the findings of the study, what teacher's development program for school administrators can be proposed?

3. Scope and Delimitation of Study

This quantitative study will be conducted in Guangdong University of Science and Technology (GUST). GUST was founded in 2003 and is a full-time undergraduate institution approved by the Ministry of Education, with a focus on engineering and coordinated development of multiple disciplines such as management, economics, language and literature, engineering and art. It is located in Dongguan, an important node city in the Guangdong Hong Kong Macao Greater Bay Area, and has two campuses, Nancheng and Songshan Lake, covering an area of over 2000 acres. The school has 6 secondary colleges and currently has over 35000 full-time students and 803 faculties.

The respondents in the study will be sophomore students during the SY 2023-2024. In 6 secondary colleges, in all

there were six thousand nine hundred and forty four (6944) sophomore students in GUST. 364 students will be considered as respondents in this study's purposive sampling. Furthermore, the study will assess the conduct of student engagement in the all English courses of classroom interaction in GUST and not on a particular course only. Additionally, the other respondent in this study are 132 teachers from 6 colleges, confirming that the duration of the courses taught are one academic year (from the autumn semester of 2023 to the spring semester of 2024), to understand the use of pedagogical interaction by teachers during the period, such as : reflective learning, inquiry-based learning, collaborative learning, which meets the definition of pedagogical interaction strategy.

In terms of student engagement, the assessment was directed by the student engagement model developed by Fredricks, Blumenfeld, and Paris (2004). This model includes participation in three aspects, namely, cognition, and emotion, behavior and is widely used to measure the level of student engagement.

The study also will determine if there are significant differences on the respondents on the conduct of pedagogical interaction strategies in their class when the respondents were grouped in terms of their sex, length of experience, educational qualification and specialization. Meanwhile, the study will monitor if there are significant difference on the assessment of the respondents on student engagement in terms of different colleges and varies English courses. Furthermore, the study will assess correlation between the pedagogical interaction and student engagement level in English class.

Questionnaires will be distributed to teachers and students from 6 colleges through "Questionnaire Star", using a unified guiding language. Teachers and students are required to complete the questionnaire within 10 minutes. The program control includes anonymous answering, confidentiality of answer content, etc..

4. Research Design

This study is correlational in research design. It determines a numeric representation for students' assessment of their learning engagement and the conduct of classroom interaction in the target university. This study will employ a non-experimental quantitative design which will naturally measure the occurrence of variables. Specifically, the descriptive research design and cross-sectional assessments will be used to describe the teacher respondent's assessment of how they use the pedagogical interaction strategies and students engagement level. Both classroom interaction and the student engagement is then correlated.

5. Results and Discussion

The highest mean in the conduct of pedagogy interaction strategy is on inquiry-based learning, having 4.12 and followed by collaborative learning, having 3.99. It means that the assessment of teachers' has high and positive conduct of pedagogy interaction strategy.

The current study findings is supported by the argument provided by Afshan Naseem et al, (2023) that the majority of teacher educators and aspiring educators engaged in action reflection, reflection on action, and reflection through students. By adopting roles as initiators, facilitators, synthesizers, and appreciators during these interactions,

teachers contribute to creating a collaborative learning environment where both teachers and students co-construct approaches to problem-solving. In inquiry-based learning process, students take ownership of discovering, articulating, and solving problems independently.

Table 1. Assessment of Teachers' Conduct of Pedagogy Interaction Strategy in their Class

| Assessment of Teachers' Conduct of Pedagogy Interaction Strategy in their Class | | | | | | |
|---------------------------------------------------------------------------------|-----|------|------|-----------------------|--|--|
| Conduct of Pedagogy Interaction Strategy | N | Mean | SD | Verbal Interpretation | | |
| Reflective Learning | 140 | 3.98 | 0.67 | High | | |
| Inquiry-Based Learning | 140 | 4.12 | 0.63 | High | | |
| Collaborative Learning | 140 | 3.99 | 0.67 | High | | |
| Overall | 140 | 4.03 | 0.62 | High | | |

Legend: 1.00-1.50: Strongly Disagree (Very Low); 1.51-2.50: Disagree (Low); 2.51-3.50; Neutral (Average); 3.51-4.50: Agree (High); 4.51-5.00: Strongly Agree (Very High)

Besides, The findings of the study indicate that collaborative learning through teamwork not only enhances teachers knowledge but also empowers them to develop their own pedagogical strategies. The finding is same to the claim of Lysberg (2023) who examined teachers' reflections to understand the processes of collaborative inquiry within teamwork. He reckoned that prospective teachers engaged in critical reflection on teaching and learning by exploring problems, sharing insights, and gathering suggestions for potential solutions.

Moreover, according to Solheim et.al (2018), teachers' improvement in classroom interaction is, to a large extent, dependent on their own, or their colleagues' strong knowledge of classroom interaction. The results of the study add to our understanding of teachers' knowledge and skills within classroom interaction and how teachers can improve their knowledge, e.g., through reflection on situations in the classroom. Still, the authors suggest a stronger emphasis on the integration of research based knowledge and teacher learning strategies to support teachers to reach their full teaching potential.

Table 2. Assessment of Students' Engagement in terms of Cognitive Engagement

| Indicators | | Mean | SD | Verbal Interpretation | Rank |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-----------------------|------|
| 1. | When I learn English, I use various methods to help myself instead of rote memorization. | 3.83 | 0.83 | High | 8 |
| 2. | I try to look for some course-related information on other resources such as television, journal paper, magazines, website, WeChat official account, etc. | 3.97 | 0.83 | High | 1 |
| 3. | I read extra materials to learn more about things we do in the class. | 3.82 | 0.83 | High | 9 |
| 4. | After learning new knowledge, I think about whether it is related to the knowledge I have learned before. | 3.90 | 0.83 | High | 5 |
| 5. | I combine the knowledge learned in class with my daily life to help me understand and master it. | 3.94 | 0.83 | High | 4 |
| 6. | After class, I review the knowledge learned in class with my group members and summarize the key points and difficult points. | 3.61 | 0.83 | High | 12 |
| 7. | I check my coursework for mistakes with my group members. | 3.65 | 0.83 | High | 11 |
| 8. | When I read the course materials, I ask peer some questions to make sure I understand what it is about. | 3.84 | 0.83 | High | 7 |
| 9. | If I do not know about a concept when I am learning in the class, I do something to figure it out. For example, seeking help from other classmates | 3.96 | 0.83 | High | 3 |
| 10. | If I do not understand what I learn in the class, I go back to learn again. | 3.85 | 0.83 | High | 6 |
| 11. | When I encounter problems in my studies, I will discuss with my teacher or classmate whether my learning methods are inappropriate. | 3.71 | 0.83 | High | 10 |
| 12. | I believe that teacher-student interaction or student interaction in the classroom is helpful for improving professional academic performance. | 3.97 | 0.83 | High | 1 |
| COMPOSITE MEAN | | 3.84 | 0.83 | High | |

Legend: 1.00-1.50: Strongly Disagree (Very Low); 1.51-2.50: Disagree (Low); 2.51-3.50; Neutral (Average); 3.51-4.50: Agree (High); 4.51-5.00: Strongly Agree (Very High).

The table 2 depicts the assessment of students' cognitive engagement. The descriptive statistics indicated a composite score of 3.12 and a standard deviation of 0.83, denoting a favorable assessment. The data analysis indicates that students concur they seek course-related information from various resources, including television, journal articles, magazines, websites, and WeChat official accounts (M = 3.97). They also believe that interaction between teachers and students, as well as among students in the classroom, is beneficial for enhancing academic performance (M = 3.97). Furthermore, when they encounter unfamiliar concepts

during class, they take measures to understand them (M = 3.96). The examination of their responses indicates that items 2 and 12 achieved the greatest mean score of 3.97, whilst item 6 (After class, I examine the knowledge obtained in class with my group members and summarize the essential points and difficult issues) had the lowest mean score of 3.61.

This finding is partially supported by Yang G. (2021), who indicated that the dimension of cognitive engagement in learning is primarily reflected in students' use of advanced learning strategies and active self-regulation to enhance learning outcomes. This is particularly evident in their

selection and application of metacognitive strategies, such as setting learning goals, developing learning plans, conducting self-evaluations, and creating learning opportunities. McNaught et al., (2012) fully affirm the importance of cognitive engagement, pointing out that a high level of cognitive engagement can create more learning opportunities, promote sustained interaction development, execute and control the learning process, especially in the design and evaluation of learning activities, which can effectively tap into the potential of students to use cognitive strategies to

regulate learning engagement.

Chinese researcher, Zhang Z.P. (2015) noted that when teachers design interactive activities that connect learning themes to students' real-life experiences, they often transfer responsibility for learning back to students. This is achieved through techniques such as time management, encouragement, and reminders, which prompt students to engage in comparison, interpretation, questioning, and debate, thereby fostering independent knowledge construction.

Table 3. Assessment of Students' Engagement in terms of Emotional Engagement

| Indicators | | Mean | SD | Verbal Interpretation | Rank |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-----------------------|------|
| 1. | I like classes that have classroom interaction. | 3.73 | 0.83 | High | 6 |
| 2. | The teacher's emotions, language, actions, and other behaviors in class can affect my willingness to participate in classroom interactions. | 4.03 | 0.83 | High | 2 |
| 3. | The teacher's emotions or language have a positive impact on my learning. | 4.10 | 0.83 | High | 1 |
| 4. | In order to better learn professional knowledge and exercise my abilities, I participate in classroom interactions as much as possible. | 3.89 | 0.83 | High | 4.5 |
| 5. | I am interested in the work given to me in my professional class. | 3.65 | 0.83 | High | 7 |
| 6. | I am willing for teachers to ask me questions. | 3.42 | 0.83 | Average | 8 |
| 7. | The teacher's proposal of novel and interesting questions will enhance my willingness to participate in classroom interaction. | 3.92 | 0.83 | High | 3 |
| 8. | I am full of confidence in learning profession well when I take part in classroom activities actively. | 3.89 | 0.83 | High | |
| COMPOSITE MEAN | | 3.83 | 0.83 | High | 4.5 |

Legend: 1.00-1.50: Strongly Disagree (Very Low); 1.51-2.50: Disagree (Low); 2.51-3.50; Neutral (Average); 3.51-4.50: Agree (High); 4.51-5.00: Strongly Agree (Very High).

Table 3 clarifies the evaluation of students' emotional engagement. The computed composite mean score is 3.83, accompanied by a standard deviation of 0.83, signifying a favorable evaluation. The students concur that the teacher's emotions or language positively influence their learning ($M = 4.10$), that the teacher's emotions, language, actions, and other behaviors in class can affect their willingness to engage in classroom interactions ($M = 4.03$). The result are supported by Wei (2010) who explained that nonverbal behavior has a positive effect on teacher-student interaction in college English classrooms. It can convey necessary information in the classroom based on the communicative nature of nonverbal behavior, improve teacher-student relationships, and promote teacher-student interaction. Besides, the teacher's introduction of novel and intriguing questions will

augment their willingness to participate in classroom interaction ($M = 3.92$). However, it seems they are neutral regarding their willingness for professors to pose questions to them ($M = 3.42$).

Based on the Chinese research of Wu T. (2022) , teachers utilize gestures, facial expressions, body movements, and other forms of non-verbal communication to convey information and engage with students. These non-verbal cues help facilitate teacher-student interaction, as students receive and respond to this information, thereby promoting active engagement within the classroom. This dynamic exchange not only enhances students' comprehension and retention of knowledge but also contributes to the overall optimization of teaching effectiveness in the classroom.

Table 4. Assessment of Students' Engagement in terms of Behavioral Engagement

| Indicators | | Mean | SD | Verbal Interpretation | Rank |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-----------------------|------|
| 1. | I actively participate in classroom interactions, such as questioning, group discussions, peer evaluations, and other activities. | 3.78 | 0.83 | High | 5 |
| 2. | In class, I actively answer the questions raised by the teacher. | 3.64 | 0.83 | High | 8 |
| 3. | In class, I actively ask questions if there is something I do not understand. | 3.67 | 0.83 | High | 6.5 |
| 4. | When the teacher asks us to discuss with each other in the professional class, I actively discuss with my classmates. | 3.86 | 0.83 | High | 3.5 |
| 5. | I am able to consistently pay attention when I am taking the professional class. | 3.67 | 0.83 | High | 6.5 |
| 6. | In a classroom with a good atmosphere, I am able to consistently concentrate my attention. | 3.86 | 0.83 | High | 3.5 |
| 7. | I will be more proactive in cooperating with the teacher in class for their thorough lesson preparation. | 4.00 | 0.83 | High | 2 |
| 8. | I will complete my homework on time for courses that the teacher has prepared thoroughly and conscientiously. | 4.01 | 0.83 | High | 1 |
| COMPOSITE MEAN | | 3.81 | 0.83 | High | |

Legend: 1.00-1.50: Strongly Disagree (Very Low); 1.51-2.50: Disagree (Low); 2.51-3.50; Neutral (Average); 3.51-4.50: Agree (High); 4.51-5.00: Strongly Agree (Very High)

Table 4 depicts the respondents' evaluation of their behavioral participation. The descriptive data indicated a composite mean score of 3.81 and a standard deviation of 0.83. The students unanimously concur that they will timely complete their homework for courses meticulously prepared by the teacher ($M = 4.01$), that they will exhibit increased proactivity in collaborating with the teacher during class for comprehensive lesson preparation ($M = 4.00$), and that they actively engage in discussions with their peers when prompted by the teacher in the professional class ($M = 3.86$). Based on their responses, item number 8 received the greatest mean score of 4.01, while item number 2 (In class, I actively address the questions presented by the teacher) received the lowest mean score of 3.64.

The findings are supported by Cash and Pianta (2014), who demonstrated that when teachers engage in supportive dialogues, the classroom environment becomes more

dynamic, fostering an egalitarian teacher-student relationship. This environment encourages students to adopt active learning strategies, promoting their participation in classroom activities and ultimately increasing engagement. Conversely, when teachers employ non-supportive dialogues, such as directly assessing whether students' responses align with predetermined answers, students are more likely to adopt avoidance strategies. This reluctance stems from fear that their answers may not meet the teacher's expectations, leading to reduced participation in classroom interactions.

Additionally, the findings partially conform with Zhang Z. (2015), which revealed that during classroom interactions, when teachers assume the role of discussion partners and provide scaffold-support within students' zones of proximal development, students tend to demonstrate learning behaviors such as questioning, clarifying, summarizing, and predicting.

Table 5. The Significant Relationship when the Conduct of Interaction Strategies in the Class to the Student Engagement

| <i>Correlation Matrix between Conduct Interaction Strategies and Students' Engagement</i> | | | | | | | | | |
|-------------------------------------------------------------------------------------------|--|----------------------|--|----------------------|--|-----------------------|--|---------|--|
| | | Cognitive Engagement | | Emotional Engagement | | Behavioral Engagement | | Overall | |
| Reflective Learning | | 0.10 | | -0.03 | | 0.09 | | 0.06 | |
| | | 0.249 | | 0.724 | | 0.315 | | 0.517 | |
| Inquiry-Based Learning | | -0.01 | | -0.09 | | -0.02 | | -0.04 | |
| | | 0.879 | | 0.302 | | 0.800 | | 0.598 | |
| Collaborative Learning | | 0.05 | | -0.06 | | 0.03 | | 0.01 | |
| | | 0.549 | | 0.452 | | 0.683 | | 0.868 | |
| Overall | | 0.04 | | -0.08 | | 0.03 | | -0.00 | |
| | | 0.639 | | 0.341 | | 0.704 | | 0.965 | |

Legend: .00-0.19: Very Weak; 0.20-0.39: Weak; 0.40-0.59: Moderate; 0.60-0.79: Strong; 0.80-1.00: Very Strong.

The above table depicts that the correlation between Reflective Learning and Cognitive Engagement ($\rho = 0.10$) is weak and positive, suggesting minimal association between these two variables. Reflective Learning shows a near-zero and negative correlation with Emotional Engagement ($\rho = -0.03$), indicating little to no relationship. The correlation with Behavioral Engagement is also weak ($\rho = 0.09$), and overall correlation is weakly positive ($\rho = 0.06$). This suggests Reflective Learning doesn't significantly predict student engagement, particularly emotional involvement. Inquiry-Based Learning has a moderate positive correlation with Emotional Engagement ($\rho = 0.724$) and a strong positive correlation with Behavioral Engagement ($\rho = 0.800$), indicating that this teaching strategy significantly impacts both the emotional and behavioral aspects of student engagement. The overall correlation is moderate ($\rho = 0.598$), showing that Inquiry-Based Learning is fairly effective in promoting overall student engagement. Collaborative Learning shows strong positive correlations across the board, particularly with Behavioral Engagement ($\rho = 0.683$), indicating a substantial impact on student participation. Emotional ($\rho = 0.452$) and Cognitive Engagement ($\rho = 0.549$)

are also moderately associated with Collaborative Learning, leading to a strong overall correlation ($\rho = 0.868$). This suggests that Collaborative Learning is highly effective in fostering engagement in all areas.

While, the Spearman's rho correlation analysis indicates that all computed p-values exceed the 0.05 significance threshold for all variables. The researcher will accept the null hypothesis, concluding that there is no substantial relationship between the evaluation of teachers' conduct and students' participation. This indicates that a modification in the value of one variable does not change the value of the other, unless by coincidence, signifying that the two variables are independent. The reasons are as follows:

Chinese researchers Wang X., (2004) argued that the relationship between teachers and students is inherently unequal, as the interaction is both subjective and objective in nature. Teachers typically hold a position of authority, acting as the primary initiators of interaction, while students, in contrast, often occupy a passive role as mere respondent's or executors of the teacher's instructions. This power imbalance is particularly evident in students' limited agency and discourse authority during classroom interactions (Wang D.,

2005). Although the classroom can be conceptualized as a “teacher-student community” (Hu B., 2005), in practice, interaction tends to be predominantly one-directional, with limited opportunities for two-way or multi-directional exchanges. The interaction is often simplified to basic forms like question-and-answer or discussion, while more dynamic methods, such as role-playing or game-based activities are underutilized.

Additionally, the teaching content preparation is an essential part for teachers. Li. et.al., (2012) argued that before entering into formal teaching interaction, teachers and students will each have their own understanding and interpretation of the teaching content, which is based on previous experience. In this sense, the fit between teaching content and students' existing knowledge and experience will have a significant impact on teaching interaction. This poses a great challenge for teachers to select teaching content for teaching, as they need to maintain their own structural system and scientifically, while also keeping the teaching content within the understandable range of students' knowledge and experience, and maintaining a good balance between scientifically and empiricism.

Regarding the level of interaction, Wang L.L. (2024) argues that there is often a low degree of meaningful exchange, with a tendency for interactions to become overly formalized. In some cases, the interaction appears dynamic and engaging on the surface but fails to generate substantive learning outcomes, functioning more as a performative exercise rather than facilitating real intellectual development.

6. Conclusion and Recommendation

The finding of the study has implications on teacher’s development program. While teachers recognize the value of Collaborative Learning, the low willingness of students to ask or answer questions points to a need for strategies that enhance student participation and engagement. This indicates that teacher development programs should not only focus on collaborative methods but also equip teachers with techniques to foster a more open and supportive classroom environment, encourage student confidence, and actively promote inquiry and discussion. Teachers may need training in creating a safe space for students to express themselves, using questioning techniques that stimulate curiosity, and gradually building students' willingness to participate in class discussions.

Meanwhile, the findings, which show that Reflective Learning does not significantly predict student engagement, particularly emotional involvement, have important implications for teacher development programs. This suggests that while reflection is an important teaching tool, relying solely on Reflective Learning may not be sufficient to foster deep emotional engagement among students. Teacher development programs should, therefore, focus on integrating reflective practices with other strategies that actively stimulate emotional and behavioral involvement, such as project-based learning, or inquiry-based learning.

Based on the conclusions of the study, the following recommendations how the gaps can be implemented are presented:

Teachers should consider integrating a wider variety of interaction strategies beyond traditional reflective or inquiry-based methods. Combining these with more experiential learning, technology-based engagement, and student-led activities can foster a more holistic approach to stimulate greater student participation.

Conduct surveys or feedback sessions to understand the specific needs and preferences of students. Adjusting interaction methods to be more student-centered may better resonate with different learning styles, fostering higher levels of engagement.

Implement regular teacher training focused on advanced engagement techniques, such as active learning, differentiated instruction, and creating emotionally supportive classrooms. Training should also address how to create meaningful, real-world connections with course material, which could enhance both emotional and behavioral engagement.

Since emotional engagement plays a key role in student involvement, training in building positive teacher-student relationships is crucial. School administrators should offer professional development focused on empathy, relationship-building techniques, and creating emotionally supportive classrooms. Teachers need to develop the skills to foster a positive learning climate that encourages student participation and maintains behavioral engagement.

Therefore, a continuing professional development activities or training is indispensable so as to ensure that the teaching content is both scientifically sound and comprehensible to students, thereby achieving the instructional goals.

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