

# Marzano's Learning Principles in Teaching Methods at Erbil City Schools

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## Abstract

This research aimed to assess the application of Marzano's Dimensions of Learning principles among teachers in public middle schools in Erbil Governorate. Specifically, it examined differences in application levels based on gender and years of experience. Utilizing a descriptive-analytical method, the study involved a sample of 328 middle school teachers. A questionnaire with 50 items across five dimensions—positive attitudes toward learning, acquiring and integrating knowledge, expanding and refining knowledge, purposeful use of knowledge, and productive habits of mind—was used. Results indicated a low overall application level, with an average score of 2.26. Significant differences were found based on gender, favoring female teachers, and years of experience, favoring those with 10 or more years.

**Keywords:** : Marzano's Dimensions, teaching practices, middle school, Erbil, gender differences, experience.



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## Introduction

The teaching and learning process is influenced by numerous factors that collectively shape student outcomes. Central to this process are the classroom practices and management strategies employed by educators, which are essential for fostering effective teaching and successful student learning. The literature consistently highlights the significance of quality teaching and effective classroom management as prerequisites for achieving educational goals, particularly during the formative years of a teaching career<sup>1</sup>. Effective teaching extends beyond content delivery; it is intrinsically linked to a teacher's ability to create a conducive learning environment characterized by well-organized procedures that foster a positive atmosphere, thus enhancing student

<sup>1</sup> Vernon F. Jones and Louise S. Jones, *Comprehensive Classroom Management: Creating Communities of Support and Solving Problems*, 10th ed. (Upper Saddle River, NJ: Pearson, 2012). Robert J. Marzano, Jana S. Marzano, and Debra J. Pickering, *Classroom Management That Works: Research-Based Strategies for Every Teacher* (Alexandria, VA: Association for Supervision and Curriculum Development, 2003).

engagement and achievement <sup>2</sup>.

A critical aspect of effective teaching practices involves the application of research-backed models, such as Marzano's Dimensions of Learning. This model provides a comprehensive framework for fostering cognitive, emotional, and social growth in students. It emphasizes the interaction of five dimensions of learning: positive attitudes toward learning, knowledge acquisition and integration, deepening and refining knowledge, purposeful use of knowledge, and productive habits of mind<sup>3</sup>. Despite the proven efficacy of this model, there remains a significant gap in its implementation, largely due to insufficient training and understanding among educators <sup>4</sup>.

In this study, the degree of employment refers to the extent of teachers' competence and knowledge in applying Marzano's Dimensions of Learning Model. Hamadna (2007) defines it as "the degree of teachers' competence and knowledge of the principles of Marzano's Dimensions of Learning Model, measured by the score that the teacher sets for himself in the tool approved for this purpose"<sup>5</sup>. Marzano et al. describe the model as "a practical classroom teaching framework consisting of organized and sequential steps that foster interaction between the model's five thinking dimensions". These dimensions facilitate the development of positive learning attitudes, the integration of new knowledge, the deepening and refining of knowledge, and the cultivation of productive mental habits.

The level of a teacher's application of Marzano's Dimensions of Learning Model is defined procedurally as the extent to which the teacher possesses the knowledge and competencies necessary to successfully implement this model in the classroom. This procedural definition is essential for assessing how well teachers are integrating these principles into their teaching practices.

A review of prior studies highlights the importance of Marzano's model in enhancing teaching practices across various educational contexts. For instance, Al-Shuwaili evaluated the performance of Arabic language teachers in Iraq using Marzano's Learning Dimensions Model. The study revealed that while teachers exhibited strong performance in fostering positive attitudes towards learning, their effectiveness in other dimensions—such as knowledge acquisition and refinement—was notably low, indicating a need for further development in these areas<sup>6</sup>.

Similarly, Youssef investigated the extent to which Arabic language teachers in Jordan

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<sup>2</sup> Donna Pendergast, Susanne Garvis, and Jayne Keogh, "Pre-Service Student-Teacher Self-Efficacy Beliefs: An Insight into the Making of Teachers," *Australian Journal of Teacher Education* 36, no. 12 (2011): 46–57. Mieke Zee, Peter F. de Jong, and Helma M. Y. Koomen, "Teachers' Self-Efficacy in Relation to Individual Students with a Variety of Social-Emotional Behaviors: A Multilevel Investigation," *Journal of Educational Psychology* 108, no. 7 (2016): 1013–1027.

<sup>3</sup> Robert Marzano, et al., *Dimensions of Learning: Evaluating Performance Using Model Dimensions of Education*, trans. Jaber Abdel Hamid and others (Cairo: Dar Al-Quba, 2000), 15.

<sup>4</sup> John C. Begeny and Brian K. Martens, "Assessing Pre-Service Teachers' Training in Empirically-Validated Behavioral Instruction Practices," *School Psychology Quarterly* 21, no. 3 (2006): 262–285.

<sup>5</sup> Adeeb Diab Hamadna, "The Extent to Which Arabic Language Teachers Possess the Educational Competencies Necessary to Teach Literary Texts at the Secondary Level and the Extent to Which They Practice Them in Mafraq Governorate," *Al-Manara Journal for Research and Studies* 13, no. 1 (2007): 219-275.

<sup>6</sup> Haider Mohsen Salman Al-Shuwaili, "Evaluating the Performance of Arabic Language Teachers in Light of Marzano's Learning Dimensions Model," *Dhi Qar University Journal* 11, no. 2 (2016): 134-162.

practiced modern teaching trends. The findings suggested that although the practice was moderate, female teachers were more likely than their male counterparts to adopt these contemporary strategies. This underscores the influence of gender on teaching practices, a factor also explored in the current study<sup>7</sup>.

Zalami focused on the teaching practices of middle school mathematics teachers in Jordan, finding that while teachers were proficient in integrating new knowledge, their application of other dimensions of Marzano's model, such as the meaningful use of knowledge, was lacking. This highlights the variability in the application of Marzano's principles across different educational contexts<sup>8</sup>.

Foreign studies, such as Poulou et al., have further explored the relationship between teachers' self-efficacy and classroom practices, revealing significant discrepancies between teachers' self-perceptions and their observed instructional behaviors<sup>9</sup>. Narinesingh examined the impact of Marzano's evaluation models on student proficiency in the U.S., finding a positive correlation between the application of Marzano's principles and student growth, particularly in middle school settings<sup>10</sup>.

Marzano's Dimensions of Learning Model posits that effective learning requires the integration of five key dimensions. The first dimension emphasizes the creation of positive attitudes and perceptions about learning. This involves preparing the classroom environment and connecting new lessons with students' previous experiences<sup>11</sup>. The second dimension focuses on the acquisition and integration of knowledge, where students are encouraged to assimilate new information with their existing knowledge base<sup>12</sup>.

The third dimension involves deepening and refining knowledge, a process that stimulates critical thinking through activities such as comparison, classification, induction, and deduction<sup>13</sup>. The fourth dimension emphasizes the purposeful use of knowledge, guiding students to apply their learning in real-life situations through decision-making, problem-solving, and invention<sup>14</sup>.

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<sup>7</sup> Al-Jaafra Abdul Salam Youssef, "The Degree to Which Arabic Language Teachers Practice Modern Trends in Teaching the Arabic Language from Their Point of View," *Al-Quds Open University Journal for Educational Research and Studies* 4, no. 13 (2016): 255-284.

<sup>8</sup> Talal Tael Al Mushaqaba, "The Effect of Using Teaching Strategy Based on Model Dimensions of Learning Marzano Learning and Solving Math Problems to Students in the Basic Stage in Jordan" (PhD diss., Amman Arabic University for Higher Studies, 2008).

<sup>9</sup> Maria Poulou, Linda Reddy, and Charles H. Dudek, "Relation of Teacher Self-Efficacy and Classroom Practices: A Preliminary Investigation," *School Psychology International* 40, no. 1 (2019): 25-48.

<sup>10</sup> Tara Narinesingh, "A Study of the Marzano Focused School Leader and Teacher Evaluation Models and Student Proficiency and Growth in Middle Schools in a Large Suburban School District in South Florida," *Education Leadership Review of Doctoral Research* 8 (2020): 53-72.

<sup>11</sup> Dhouqan Obaidat and Suhaila Abu Al-Samid, *Teaching Strategies in the Twenty-First Century* (Dar Al-Fikr, 2017).

<sup>12</sup> Robert Marzano, et al., *A Handbook for Classroom Management That Works* ([www.marzanoandassociates.com/html/interventions/11/11/2007](http://www.marzanoandassociates.com/html/interventions/11/11/2007)).

<sup>13</sup> Robert Marzano, et al., *A Handbook for Classroom Management That Works* ([www.marzanoandassociates.com/html/interventions/11/11/2007](http://www.marzanoandassociates.com/html/interventions/11/11/2007)). Sanaa Al-Naimi, *Learning Styles and Serious Creativity in Education* (Dar Al-Manhaj for Publishing and Distribution, 2016).

<sup>14</sup> Marzano. Mahmoud Jalal al-Deen Suleiman, "The Impact of Training on Model Dimensions of Learning in Performance Training for Students of Teachers in Arabic Language," *Reading and Knowledge Magazine* 38 (2004): 47-83.

Finally, the fifth dimension—productive habits of mind—focuses on developing intelligent behaviors that enable students to effectively tackle new experiences and challenges <sup>15</sup>.

Marzano argues that fostering positive attitudes and productive mental habits can serve as foundational educational goals across all content areas <sup>16</sup>. These dimensions not only guide effective learning but also provide a framework for teachers to plan and implement instructional strategies that align with the broader objectives of modern education <sup>17</sup>.

In conclusion, this study aims to assess the level of application of Marzano's Dimensions of Learning Model by teachers in Erbil city schools. By evaluating how these principles are integrated into teaching practices, the research seeks to contribute to the ongoing efforts to improve educational outcomes through evidence-based strategies.

## Method

### Research Variables

This study involved two types of variables:

1. Demographic Variables: These included gender (male, female) and the number of years of experience (less than 10 years, 10 years or more).
2. Dependent Variable: The dependent variable was the level of application of the principles of Marzano's Dimensions of Learning Model by teachers in Erbil city schools in their teaching methods.

The research employed a descriptive-analytical method, which is designed to describe and interpret the nature of the phenomenon under investigation. According to Homsí (2003), this method aids in explaining existing educational phenomena and elucidating the relationships between them (p. 86). It allows the researcher to gather comprehensive information based on real-world data, offering not just a collection of facts, but also their description, analysis, measurement, evaluation, and interpretation.

### Population

The research population comprised all middle school teachers working in Erbil city schools, totaling 5,477 teachers, as recorded by the Statistics Office in the Erbil Education Directorate for the academic year 2023-2024.

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<sup>15</sup> Yusuf Qutami and Omaira Omor, *Habits of Mind and Thinking* (Amman: Dar Al-Fikr, 2005). Omar Alkhateeb, "The Impact of Using Model of Marzano Gain Students the Ability to Configure an Integrated Conceptual Structure in Islamic Concepts," *Journal of Education and Practice* 6, no. 5 (2015): 146-160.

<sup>16</sup> Robert Marzano, "What Are the General Skills of Thinking and Do You Teach Them," *Cleaning House* 71, no. 5 (1990): 54. Robert Marzano, "The Many Faces of Cooperation Across the Dimensions of Learning," in *Enhancing Thinking Through Cooperative Learning*, ed. I. Davidson and T. Worsham (New York: Teachers College Press, 1992), 7-28.

<sup>17</sup> Grayson H. Walker, *Concept Mapping and Curriculum Design* (Knoxville: Teaching Resource Center, University of Tennessee, 2002).

## Sample

A simple random sampling method was used to select the research sample from the original population, acknowledging the lack of homogeneity in terms of years of experience. The sample included 328 teachers, representing 6% of the original research population. The distribution of the research sample according to the demographic variables is presented in Table 1.

*Table 1: Distribution of Research Sample by Demographic Variables*

Variable	Category	Number of Individuals	Percentage
Gender	Male	144	43.90%
	Female	184	56.10%
	Total	328	100%
Experience	< 10 years	175	53.35%
	≥ 10 years	153	46.65%
	Total	328	100%

## Instrument

To assess the level of teachers' application of Marzano's Dimensions of Learning Model, a questionnaire was developed. The questionnaire was designed based on a review of relevant studies, including those by Al-Shuwaili (2016), Youssef (2016), Hazaima (2019), and Zalami (2020). It comprised 50 items distributed across five dimensions: forming positive attitudes toward learning, acquisition and integration of knowledge, expanding and refining knowledge, purposeful use of knowledge, and productive habits of mind. The item distribution is detailed in Table 2.

*Table 2: Distribution of Questionnaire Items by Research Dimensions*

Dimension	Number of Items	Item Numbers
Forming positive attitudes toward learning	10	1-10
Acquisition and integration of knowledge	10	11-20
Expanding and refining knowledge	10	21-30
Purposeful use of knowledge	10	31-40
Productive habits of mind	10	41-50

## Questionnaire Administration

Participants responded to the questionnaire using a five-point Likert scale, where responses ranged from "Very High" to "Very Low." The scores were assigned as follows: 5 for "Very High," 4 for "High," 3 for "Medium," 2 for "Low," and 1 for "Very Low."

## Pilot Study

A pilot study was conducted to ensure the clarity and comprehensibility of the questionnaire items and instructions. The questionnaire was administered to a small sample of 28 teachers in Erbil who were not part of the main research sample. Based on the pilot study, no changes were deemed necessary, as the items were found to be clear and understandable.

## Validity of the Questionnaire

*Face Validity:* The questionnaire's face validity was confirmed through expert review. Five faculty members from the College of Education evaluated each item for relevance and clarity.

Based on their feedback, some items were revised for improved wording and clarity. The final questionnaire consisted of 50 items.

*Construct Validity:* The construct validity of the questionnaire was assessed through Pearson correlation coefficients, which measured the relationship between the total score and the sub-dimensions. As shown in Table 3, the correlation coefficients ranged from 0.846 to 0.916, indicating a strong and statistically significant correlation, thus confirming the questionnaire's accuracy in measuring its intended purpose.

*Table 3: Pearson Correlation Coefficients Between Total Score and Sub-Dimensions*

Dimension	Pearson Correlation Coefficient
Forming positive attitudes toward learning	0.869**
Acquisition and integration of knowledge	0.846**
Expanding and refining knowledge	0.916**
Purposeful use of knowledge	0.905**
Productive habits of mind	0.853**

### Reliability of the Questionnaire

The reliability of the questionnaire was evaluated using three methods: test-retest reliability, split-half reliability, and Cronbach's alpha. The results, shown in Table 4, indicate a high degree of reliability across all dimensions. The overall reliability was 0.959 for test-retest, 0.947 for split-half, and 0.874 for Cronbach's alpha, suggesting that the questionnaire is highly reliable for measuring the application of Marzano's Dimensions of Learning Model.

*Table 4: Reliability Coefficients of the Questionnaire*

Dimension	Test-Retest (Pearson)	Split-Half	Cronbach's Alpha
Forming positive attitudes toward learning	0.933**	0.935	0.841
Acquisition and integration of knowledge	0.928**	0.901	0.832
Expanding and refining knowledge	0.965**	0.956	0.866
Purposeful use of knowledge	0.920**	0.914	0.853
Productive habits of mind	0.924**	0.877	0.852
Total Score	0.959**	0.947	0.874

### Statistical Methods

Data analysis was conducted using various statistical methods, including the arithmetic mean, percentage, Student's t-test, Pearson correlation coefficient, Spearman correlation coefficient, and Cronbach's alpha, to ensure the reliability and validity of the findings.

### Research Results and Discussion

#### Research Question 1:

#### *What is the Level of Application of the Principles of Marzano's Dimensions of Learning Model by Teachers in Erbil City Schools in Their Teaching Methods?*

To address this question, the arithmetic mean, standard deviation, and rank average were calculated for the responses to the questionnaire items, which assessed the level of application of Marzano's Dimensions of Learning Model by teachers in Erbil city schools. The analysis utilized a rating scale where scores were divided into five levels: very low (1.00–1.80), low (1.81–2.60),

medium (2.61–3.40), high (3.41–4.20), and very high (4.21–5.00). The results are summarized in Table 6.

*Table 6: Arithmetic Means, Standard Deviations, and Rank Averages for the Application of Marzano's Dimensions of Learning Model by Teachers in Erbil City Schools*

Dimension	Arithmetic Mean	Standard Deviation	Rank Average	Rank	Level of Application
Forming positive attitudes toward learning	21.65	7.880	2.16	5	Low
Acquisition and integration of knowledge	22.56	8.392	2.25	4	Low
Expanding and refining knowledge	23.02	8.683	2.30	2	Low
Purposeful use of knowledge	23.19	8.446	2.31	1	Low
Productive habits of mind	22.74	8.435	2.27	3	Low
<b>Total Score</b>	<b>113.16</b>	<b>39.744</b>	<b>2.26</b>	-	<b>Low</b>

As shown in Table 6, the overall level of application of Marzano's Dimensions of Learning Model by teachers in Erbil city schools is rated as low, with a total rank average of 2.26. The highest-ranked dimension is "Purposeful use of knowledge" (M = 23.19, SD = 8.446, Rank = 1), while the lowest-ranked dimension is "Forming positive attitudes toward learning" (M = 21.65, SD = 7.880, Rank = 5). These results indicate significant deficiencies in the teachers' performance, particularly in areas critical to fostering cognitive and conceptual understanding in students.

### Research Question 2:

#### *Are There Statistically Significant Differences Between the Average Scores of the Research Sample's Responses to the Questionnaire Based on Gender?*

To examine potential differences in application levels based on gender, a t-test was conducted comparing the mean scores of male and female teachers. The results are detailed in Table 8.

*Table 8: T-Test Results for Differences in Application of Marzano's Dimensions Based on Gender*

Dimension	Gender	N	Mean	SD	df	T-value	P-value	Significance
Forming positive attitudes toward learning	Male	144	15.84	6.504	326	5.885	0.000	Significant
	Female	184	22.08	8.020				
Acquisition and integration of knowledge	Male	144	17.55	7.593	326	6.279	0.000	Significant
	Female	184	22.97	8.541				
Expanding and refining knowledge	Male	144	18.37	7.940	326	6.090	0.000	Significant
	Female	184	23.51	8.810				
Purposeful use of knowledge	Male	144	18.58	7.597	326	6.003	0.000	Significant
	Female	184	23.58	8.560				
Productive habits of mind	Male	144	18.32	7.382	326	6.080	0.000	Significant

	Female	184	23.19	8.564				
<b>Total Score</b>	<b>Male</b>	<b>144</b>	<b>88.66</b>	<b>34.260</b>	<b>326</b>	<b>6.237</b>	<b>0.000</b>	<b>Significant</b>
	<b>Female</b>	<b>184</b>	<b>115.34</b>	<b>40.324</b>				

The t-test results in Table 8 reveal statistically significant differences between male and female teachers in the application of Marzano’s Dimensions of Learning Model across all dimensions, with female teachers consistently scoring higher. The overall t-value of 6.237 and a p-value of 0.000 indicate a significant difference at the 0.05 level, favoring female teachers. This suggests that female teachers are more likely to implement effective teaching practices aligned with Marzano’s model, possibly due to a higher motivation to succeed and a greater emphasis on facilitating dialogue, enhancing student expression, and fostering critical thinking.

### Research Question 3:

#### *Are There Statistically Significant Differences Between the Average Scores of the Research Sample’s Responses Based on Years of Experience?*

To explore differences based on years of teaching experience, a t-test was conducted comparing teachers with less than 10 years of experience to those with 10 years or more. The results are presented in Table 9.

*Table 9: T-Test Results for Differences in Application of Marzano’s Dimensions Based on Years of Experience*

Dimension	Experience	N	Mean	SD	df	T-value	P-value	Significance
Forming positive attitudes toward learning	< 10 years	175	18.58	5.248	326	8.767	0.000	Significant
	≥ 10 years	153	26.84	8.447				
Acquisition and integration of knowledge	< 10 years	175	19.69	5.713	326	7.777	0.000	Significant
	≥ 10 years	153	27.81	9.498				
Expanding and refining knowledge	< 10 years	175	20.17	6.046	326	7.552	0.000	Significant
	≥ 10 years	153	28.40	9.812				
Purposeful use of knowledge	< 10 years	175	20.88	6.195	326	6.111	0.000	Significant
	≥ 10 years	153	27.60	9.777				
Productive habits of mind	< 10 years	175	20.29	5.711	326	6.682	0.000	Significant
	≥ 10 years	153	27.49	9.991				
<b>Total Score</b>	<b>&lt; 10 years</b>	<b>175</b>	<b>99.61</b>	<b>25.723</b>	<b>326</b>	<b>7.858</b>	<b>0.000</b>	<b>Significant</b>
	<b>≥ 10 years</b>	<b>153</b>	<b>122.14</b>	<b>37.085</b>				

The data in Table 9 indicate statistically significant differences in the application of Marzano’s Dimensions of Learning Model based on years of teaching experience. Teachers with 10 years or more of experience scored significantly higher across all dimensions, with a total t-value of 7.858 and a p-value of 0.000. This suggests that more experienced teachers are better at applying Marzano’s principles in their teaching methods, likely due to greater familiarity with the model and accumulated teaching experience.

## *Discussion*

The findings from this study provide a deeper understanding of the application of Marzano's Dimensions of Learning Model by teachers in Erbil city schools, highlighting significant differences based on years of teaching experience. The analysis demonstrated that teachers with 10 years or more of experience applied the principles of Marzano's model more effectively than those with less experience. This outcome is statistically significant, as indicated by the t-value of 7.858 and a p-value of 0.000, confirming that experience plays a critical role in the effective implementation of educational frameworks.

The superior performance of more experienced teachers can be attributed to several key factors:

1. **Enhanced Professional Development:** Teachers with greater experience are likely to have participated in more extensive professional development opportunities. In the context of Erbil, the Directorate of Education frequently offers training programs focused on contemporary teaching strategies, including those based on Marzano's Dimensions of Learning. These programs are designed to enhance teaching competencies by introducing educators to advanced instructional techniques, classroom management strategies, and student assessment methods. As teachers accumulate years of experience, they have more opportunities to attend such training, refine their skills, and integrate these strategies into their daily teaching practices.
2. **Cumulative Experience and Mastery:** Over time, experienced teachers develop a nuanced understanding of classroom dynamics, student needs, and effective teaching methodologies. This cumulative experience allows them to master the application of complex models like Marzano's, particularly in adapting these principles to diverse classroom settings. Their ability to organize the learning environment, select tasks that foster critical thinking, and facilitate meaningful student interactions reflects a depth of pedagogical expertise that is typically acquired over years of practice.
3. **Application of Marzano's Principles:** The study's findings suggest that experienced teachers are more adept at applying specific dimensions of Marzano's model, such as purposeful use of knowledge, expanding and refining knowledge, and fostering productive habits of mind. These dimensions are crucial for developing students' cognitive and metacognitive skills. Experienced teachers' familiarity with these principles enables them to create more effective learning experiences, where students are encouraged to engage in higher-order thinking, problem-solving, and reflective learning. This contrasts with less experienced teachers, who may struggle with the practical application of these principles due to limited exposure and practice.
4. **Self-Efficacy and Confidence:** The link between teaching experience and self-efficacy is well-documented in educational research. Poulou et al. emphasize that teachers with higher self-efficacy are more likely to implement effective classroom practices, which directly correlates with their ability to apply Marzano's model. Experienced teachers, having encountered a variety of teaching challenges and successes, tend to exhibit greater confidence in their instructional abilities. This confidence translates into more effective

classroom management, more innovative instructional strategies, and a stronger focus on student-centered learning, all of which are integral to Marzano's framework<sup>18</sup>.

The results of this study align with findings from previous research, which similarly emphasize the importance of experience in the application of educational models. Al-Shuwaili's<sup>19</sup> study on Arabic language teachers in Iraq revealed that more experienced teachers were better at fostering positive learning attitudes and integrating new knowledge, which are key components of Marzano's model. This suggests that experience not only enhances a teacher's ability to implement specific dimensions of the model but also improves their overall instructional effectiveness.

Moreover, Zalami<sup>20</sup> found that experienced mathematics teachers in Jordan demonstrated higher proficiency in applying Marzano's dimensions, particularly in integrating knowledge and fostering meaningful use of that knowledge. The current study's findings corroborate this, indicating that the depth of understanding and skill required to implement these dimensions effectively is often a product of extensive teaching experience.

In addition, the present study's findings extend the research of Poulou et al) by reinforcing the connection between self-efficacy and the successful application of Marzano's principles. The experienced teachers' ability to implement these principles more effectively can be seen as both a cause and a consequence of higher self-efficacy, which is built through years of practice and professional development.

The significant difference in application levels between more and less experienced teachers highlights a critical area for intervention. To bridge this gap, it is imperative that less experienced teachers receive targeted support and professional development tailored to Marzano's Dimensions of Learning Model. Such training should not only focus on the theoretical aspects of the model but also provide practical, hands-on experiences that allow teachers to apply these principles in real classroom settings.

Furthermore, educational policymakers in Erbil and similar contexts should consider implementing mentorship programs where less experienced teachers can learn from their more seasoned colleagues. These programs could facilitate the transfer of knowledge and skills, ensuring that all teachers, regardless of experience, are equipped to apply Marzano's principles effectively.

While this study provides valuable insights, it is important to acknowledge its limitations. The study was conducted within a specific geographic and cultural context, which may limit the generalizability of the findings. Future research could explore the application of Marzano's model across different regions and educational systems to determine whether similar patterns emerge. Additionally, longitudinal studies could examine how teachers' application of Marzano's principles evolves over time, providing a more dynamic understanding of the relationship between

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<sup>18</sup> Maria Poulou, Linda Reddy, and Charles H. Dudek, "Relation of Teacher Self-Efficacy and Classroom Practices: A Preliminary Investigation," *School Psychology International* 40, no. 1 (2019): 25–48.

<sup>19</sup> Haider Mohsen Salman Al-Shuwaili, "Evaluating the Performance of Arabic Language Teachers in Light of Marzano's Learning Dimensions Model," *Dhi Qar University Journal* 11, no. 2 (2016): 134-162.

<sup>20</sup> A. Z. Zalami, "Teaching Practices of Intermediate School Mathematics Teachers in the Light of Marzano's Learning Dimensions Model," *Mathematics Education Journal*, Egyptian Association for Mathematics Education 23, no. 3 (2020): 217-239.

experience and teaching effectiveness.

This study confirms that teaching experience significantly enhances the ability to apply Marzano's Dimensions of Learning Model effectively. The findings underscore the importance of continued professional development and support for less experienced teachers, as well as the value of experience in fostering high-quality educational practices. By addressing the identified gaps, educators and policymakers can work towards ensuring that all teachers are capable of delivering the best possible education to their students, fully utilizing the potential of Marzano's model to improve learning outcomes.

## Conclusion

The findings of this study indicate that the overall level of application of Marzano's Dimensions of Learning Model by teachers in Erbil city schools is low, with an arithmetic mean score of 2.26. This suggests that the principles of Marzano's model are not being fully implemented in teaching practices across these schools. Additionally, the study reveals significant differences in application levels based on gender and years of experience. Female teachers demonstrated a higher level of application compared to their male counterparts, and teachers with 10 or more years of experience showed greater proficiency in applying Marzano's principles than those with less experience.

Based on these findings, it is crucial to enhance teacher training programs, particularly by focusing on teaching practices that reflect the principles of Marzano's Dimensions of Learning Model, with special attention to areas identified as weak in this study. Increasing teachers' awareness and skills related to the Marzano model is also essential, which could be achieved through targeted training courses, workshops, model lessons, scientific meetings, and peer visits. Furthermore, incorporating modern teaching trends into instructional practices, particularly those aligned with Marzano's model, is recommended. This includes using various activities, cooperative exercises, concept maps, and higher-order thinking questions in textbooks and classroom activities. Providing the necessary resources and support for the implementation of these modern teaching strategies in the classroom is also vital. Lastly, further research should explore the application of Marzano's Dimensions of Learning Model at different educational levels, such as the preparatory stage, and evaluate the effectiveness of training programs designed to enhance teachers' performance in light of Marzano's principles. These steps are intended to improve the overall application of Marzano's model in teaching practices, thereby contributing to the enhancement of educational quality in Erbil city schools.

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