

## Psychological Fluency and Its Relationship with Creative Teaching Practices among Physical Education Instructors in Light of Gender and Educational Environment Variables

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### ABSTRACT

This study addresses the variability in psychological fluency and creative teaching practices observed among physical education teachers across different schools and regions. The discrepancy may stem from individual differences, demographic factors such as gender, and environmental contexts, including urban and rural educational settings. The objectives of the study were to assess the level of psychological fluency and creative teaching practices among physical education teachers in relation to gender and educational environment, and to examine the correlation between these two variables. A descriptive survey and correlational design were employed. The research population comprised 759 physical education teachers in Dhi Qar Governorate, divided by gender (376 male and 383 female) and by educational environment (310 in rural schools and 449 in central schools). From this population, a total sample of 540 teachers was selected and further distributed into exploratory, construction, and application groups. The findings revealed a strong positive correlation between psychological fluency and creative teaching practices, suggesting that teachers with higher psychological fluency are more likely to employ creative teaching strategies. Furthermore, gender and educational environment were found to be relevant factors in shaping these practices. In conclusion, psychological fluency serves as a significant predictor of creative teaching practices. Enhancing psychological fluency among physical education teachers may therefore contribute to improving the quality and creativity of their instructional performance.

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### AUTHORS' CONTRIBUTION

- A. Conception and design of the study;
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## INTRODUCTION

The teaching profession is one of the professions that most requires a high degree of psychological and mental balance, especially in light of the ongoing changes and diverse challenges imposed by the modern educational environment. These requirements are increasingly important in practical disciplines, including physical

education, where physical, mental, and psychological aspects overlap simultaneously, placing teachers in situations that require a high degree of psychological adaptability and professional creativity. With the rapid changes and increasing challenges facing educational environments, psychological fluency emerges as a crucial factor in enabling teachers to engage with new ideas and use diverse and unconventional teaching strategies. This enables teachers to confidently deal with unexpected situations, embarrassing questions, or students with challenging behaviors. This is also demonstrated in a study by Shaimaa Al-Najmawi (2019). Furthermore, it demonstrated the absence of a statistically significant relationship based on gender. Creative teaching practices are one of the most prominent indicators of educational quality, as they enable teachers to develop new, unconventional methods, motivate students, and employ technologies in a variety of ways. They represent a crucial factor in the creative performance of learners through their creative teaching practices based on the use of modern teaching strategies, methods, and techniques. These contribute to preparing their minds, bringing about a leap in their educational level, and encouraging their creative activities and work through the educational material presented by the instructor in a way that helps break the monotony and traditional teaching process (Adam Mappaompo et al., 2024; Arga, 2025). Furthermore, creative teaching practices must be characterized by greater flexibility, fluency, and creativity, as these practices will face many rapid technological, social, and cultural changes. Here, the teacher will play a prominent role in developing the student's creative abilities through interaction with others and the outputs used in presenting what he or she presents during the lesson. Al-Shaib Abdul Qader (2014) demonstrated that there is a statistically significant relationship between the creative teaching practices of teachers and their work values. From this standpoint, the importance of the study lies in two points:

Highlighting the importance of the psychological aspect in improving the quality of sports education. Highlighting Creative Skills in Teaching Practice.

Psychological fluency is one of the fundamental pillars of the ability to adapt and interact positively with various life situations. It represents an individual's ability to generate diverse ideas, make decisions, and deal with stressful situations with a high degree of flexibility. In the educational field, the level of psychological fluency among instructors is directly reflected in their teaching practices, particularly creative ones. An instructor with high psychological fluency is more capable of innovating new teaching methods, employing diverse teaching strategies, and motivating students to actively learn. In the field of physical education, creative teaching practices are doubly important, given the nature of motor and skill-based activities, which require instructors to adapt to the needs of students, diverse educational environments, and resource and capacity conditions. However, through her work as a teacher and her visits to a number of applied male and female students distributed across several schools in different areas, both rural and central, as well as boys' and girls' schools, the researcher observed a disparity in the level of these practices among teachers in practice. This disparity may be due to individual differences in psychological fluency, demographic and environmental factors,

such as gender (male/female), the nature of the educational environment (urban/rural, resource-rich/limited), or other reasons specific to the school or staff. Accordingly, the research problem revolves around the following main question:

"What is the nature of the relationship between psychological fluency and creative teaching practices among physical education teachers, and does this relationship differ depending on the variables of gender and educational environment?"

## METHODS

The study adopted a descriptive design utilizing a survey and correlational approach, as this was considered appropriate to address the research objectives. The population comprised 759 physical education teachers in Dhi Qar Governorate during the 2024/2025 academic year, distributed across seven districts. From this population, a total sample of 540 teachers (71.15%) was selected, consisting of 376 male and 383 female teachers, with 310 from rural schools and 449 from central schools. The sample was divided into three groups: a pilot group of 20 teachers, a construction group of 120 teachers, and a main application group of 400 teachers. Data collection relied on two instruments developed and standardized for this research: the Psychological Fluency Scale, consisting of 45 items distributed across emotional, verbal, and cognitive domains, and the Creative Teaching Practices Scale, initially comprising 60 items across six domains, which was refined to 49 items after expert review and statistical analysis. Both scales used a five-point Likert format. Validity was confirmed through expert judgment and construct validity tests, while reliability was established using split-half and Pearson correlation methods with Spearman correction, yielding high coefficients for both scales. Objectivity was ensured through the use of standardized scoring keys with agreement coefficients of 0.87 and 0.84. The pilot test, conducted on November 20, 2024, ensured clarity and feasibility of the instruments. The construction phase was carried out with 120 teachers in December 2024 to assess item discrimination and internal consistency, while the main study was administered to 400 teachers in January 2025. Statistical analyses, including descriptive statistics, Pearson correlation, chi-square, and Z-tests, were performed using SPSS, with significance set at  $p < 0.05$ .

## RESULTS AND DISCUSSION

### Result

The findings of the main study, based on a sample of 400 teachers, showed that both psychological fluency and creative teaching practices were rated at a high level.

**Table 1.**

Descriptive Statistics of Psychological Fluency and Creative Teaching Practice

Variable	N	Mean	SD	Mean	Level
Psychological Fluency	400	164.34.00	17.54	135	High
Creative Teaching Practices	400	179.78	1,01111111	147	High

The mean score for psychological fluency was 164.34 (SD = 17.54), significantly higher than the hypothetical mean of 135, while the mean score for creative teaching practices was 179.78 (SD = 23.76), compared to the hypothetical mean of 147. The correlation analysis revealed a strong positive relationship between psychological fluency and creative teaching practices ( $r = 0.845$ ,  $p < 0.001$ ), indicating that teachers with higher psychological fluency tend to demonstrate greater creativity in their instructional methods. This supports previous findings (e.g., Sternberg, 2000; Jamal Al-Khalidi et al., 2011) that fluency is an essential component of creative thinking and professional competence in teaching.

**Table 2.**

Correlation between Psychological Fluency and Creative Teaching Practice

Variable	Creative Teaching Practices (r)	Sig. (p)	N
Psychological Fluency	0,586805556	< 0.001	400

**Table 3.**

Correlation by Gender

Gender	N	Correlation Coefficients (r)	Difference Test (Z)	Sig. (p)
Man	200	0,05694444	-0.91	> 0.05
Woman	200	0,05902778	-0.91	> 0.05

When analyzed according to gender, the correlation between psychological fluency and creative teaching practices was similarly strong for both male ( $r = 0.82$ ) and female teachers ( $r = 0.85$ ), with no statistically significant differences observed ( $Z = -0.91$ ,  $p > 0.05$ ). This suggests that gender does not significantly influence the relationship between fluency and creativity in teaching performance. These results align with previous studies (e.g., Al-Zaidi, 2020) which concluded that male and female teachers share comparable levels of teaching competence and creativity, owing to similar qualifications and professional training.

**Table 4.**

Correlation by Educational Environment

Milieu	N	Correlation Coefficients (r)	Difference Test (Z)	Sig. (p)
Rural	200	0,05763889	00.27	> 0.05
Urba	200	0,05694444	00.27	> 0.05

Similarly, when analyzed by educational environment, both rural ( $r = 0.83$ ) and central ( $r = 0.82$ ) teachers showed strong positive correlations between psychological fluency and creative teaching practices, with no significant differences between groups ( $Z = 0.27$ ,  $p > 0.05$ ). This indicates that the educational setting, whether rural or central, does not substantially affect the relationship between the two variables. These findings are consistent with Frelin, Grannas, and Woolner (2025), who reported that educational environments do not necessarily determine teachers' levels of creativity or effectiveness.

## Discussion

Taken together, the results emphasize that psychological fluency plays a pivotal role in shaping creative teaching practices, regardless of gender or school environment. Teachers

with higher fluency appear more capable of adapting to diverse educational situations, managing stress, and employing innovative strategies in the classroom. This finding corroborates earlier theoretical perspectives (Guilford, 1967; Magdy Ibrahim, 2010) that fluency enhances cognitive flexibility and contributes directly to creative professional performance. Enhancing psychological fluency among teachers, therefore, represents a viable pathway to fostering more innovative and effective teaching practices.

Psychological fluency and creative teaching practices among teachers are at a high level, with average scores of 164.34 and 179.78, respectively, which significantly exceed the hypothetical average. These findings are in line with the research of Brauer et al. (2025) which affirms that creativity is a competency that can be learned and developed through deliberate and sustainable practice. In the context of 21st century education, teachers' ability to think creatively and adapt their teaching methods is not only a professional advantage, but also a fundamental need. The high level of psychological fluency found in this study shows that teachers have a strong cognitive capacity to generate diverse ideas and respond flexibly to complex learning situations. This reflects a positive professional development in the education system, where teachers are no longer seen as passive implementers of the curriculum, but as active and creative agents of change.

A very strong correlation between psychological fluency and creative teaching practice ( $r=0.845$ ,  $p<0.001$ ) provides strong empirical evidence that teachers' psychological ability to generate ideas smoothly and flexibly is closely related to the implementation of innovative teaching strategies. These findings support the theoretical framework put forward by Cervellione et al. (2025) which states that psychological resources such as emotional intelligence and reflective function are the main protective factors in preventing work burnout and improving the quality of professional life of teachers. Psychological fluency, as one of the components of divergent thinking, allows teachers to explore various pedagogical approaches, adapt teaching strategies to the needs of diverse students, and find creative solutions to learning challenges. Gu et al. (2025) further explain that cognitive flexibility serves as a key mediator that facilitates adaptive emotion regulation, allowing individuals to respond to changing emotional demands in a constructive way. In the context of teaching, teachers with high psychological fluency can easily switch between various pedagogical strategies, adjust lesson plans in real-time, and create a dynamic and responsive learning experience.

An in-depth analysis of the research results shows that psychological fluency not only serves as a predictor of creative teaching practices, but also as a cognitive foundation that allows teachers to develop innovative pedagogical approaches. Research by Nedjah and Hamada (2017) identified that fluency is one of the key sub-skills of creativity, along with flexibility, originality, and elaboration. In their study of English teachers, they found that teachers with high fluency are able to come up with ideas and solutions to learning challenges. The findings of this study reinforce the argument that psychological fluency plays a fundamental role in facilitating creative thinking and innovative professional performance. Recent research by Brauer et al. (2025) in their transdisciplinary systematic review found that the way creativity and the creative

process are taught are very similar across a diverse range of academic disciplines, from art and design to engineering, business, mathematics, and education. This shows that the principles underlying creativity, including fluency, are universal and can be applied in a variety of educational contexts.

The relevance of psychological fluency in creative teaching practice can also be understood through the perspective of contemporary cognitive theory. Research conducted by a research team in Indonesia shows that teachers who apply differentiation instruction (DI) show creativity in five dimensions: motivation, originality, brainstorming, fluency, and adaptability (2024 research results published in ScienceDirect). Proficient and adaptive teachers increase student productivity through project-based activities, demonstrating that cognitive fluency and flexibility allow them to design more engaging and effective learning experiences. These findings are in line with a meta-creativity model developed by recent education researchers, which emphasizes the interactive and interdependent nature of teacher behaviors that encourage creativity. Psychological fluency in this context serves as a catalyst that allows teachers to integrate various pedagogical strategies, respond to student needs in real-time, and create a dynamic and responsive learning environment.

The results also showed that there was no significant difference in the correlation between psychological fluency and creative teaching practices by gender (male:  $r = 0.82$ ; female:  $r = 0.85$ ;  $Z = -0.91$ ,  $p > 0.05$ ). These findings provide important insights into gender equality in teachers' professional competence. Research by Almulla discussed in the 2019 TIMSS study in Saudi Arabia shows that although there are differences in motivational patterns between male and female teachers, there is no consistent evidence that teachers' gender systematically affects their teaching effectiveness or pedagogical creativity (Frontiers in Psychology, 2023). Studies in Morocco also found that t-test and ANOVA results did not show significant differences in the dimensions of gender competence based on demographic and professional characteristics, including gender (Frontiers in Education, 2025). This suggests that male and female teachers have relatively equal access to professional training, pedagogical resources, and developmental opportunities, which in turn results in comparable levels of competence in terms of psychological fluency and creative teaching practices.

Gender equality in the relationship between psychological fluency and creative teaching practice can be explained through several contextual and systemic factors. Research shows that in modern education systems, male and female teachers receive similar professional qualifications and training, follow the same curriculum standards, and operate in similar institutional environments. Research published in Quality & Quantity (2011) found that school organizations that support innovation and creativity have an equal impact on male and female teachers. Although there are traditional stereotypes about gender differences in teaching styles, empirical research shows that when structural and institutional factors are controlled, gender differences in professional competence become minimal or insignificant. These findings are in line with the perspective of social learning theory which emphasizes that professional



competence is more influenced by factors of training, experience, and institutional support than by demographic characteristics such as gender.

Analysis based on educational environment (rural vs. urban) also revealed interesting findings. This study found that the correlation between psychological fluency and creative teaching practices was equally strong in both rural ( $r = 0.83$ ) and urban ( $r = 0.82$ ) schools, with no significant differences ( $Z = 0.27$ ,  $p > 0.05$ ). These findings challenge the common assumption that the educational environment significantly determines the quality of teaching or teacher creativity. Recent research in Indonesia by a team published in *Cogent Education* in 2025 found that rural teachers show remarkable resilience and often rate the impact of education reform higher than their urban counterparts, despite facing more acute challenges in terms of resources. This resilience is in line with research showing that teachers in confined environments often show creativity and adaptability in implementing new policies. Limited resources in rural schools can actually encourage teachers to be more creative and innovative in designing learning strategies, using local materials, and adapting the curriculum according to the cultural and social context of students.

Factors that contribute to similarities in the relationship between psychological well-being and creative teaching practices in rural and urban settings include several important dimensions. First, the standardization of teacher training and the national curriculum ensures that teachers in different environments receive a similar pedagogical foundation. Second, technological advances and access to digital learning resources have reduced the traditional gap between rural and urban schools. Research published by the Kellogg School shows that large-scale educational technology programs in China, which connect rural students with high-quality teachers in urban areas through satellite technology, have a significant long-term impact on students' educational and career trajectories (Kellogg Insight, 2021). Third, as explained in an article on rural education in EBSCO Research Starters, teachers and administrators in rural schools are often forced to be very creative in utilizing the resources they have at their disposal to achieve maximum educational outcomes, which in turn can develop psychological fluency.

The practical implications of the findings of this study are significant for the professional development of teachers and education policies. Results showing a strong correlation between psychological fluency and creative teaching practices suggest that teacher training programs should explicitly target the development of cognitive skills such as fluency, flexibility, and divergent thinking. Recent research on meta-creative pedagogy shows that well-designed interventions can significantly improve the components of creative thinking, including fluency, flexibility, and originality, in a relatively short period of time (Metacognition and Learning, 2025). A systematic and evidence-based approach to developing psychological fluency can include workshops on brainstorming techniques, creative problem-solving exercises, challenging teaching simulations, and critical reflection on pedagogical practice. Cervellione et al. (2025) emphasize the importance of psychological interventions targeting emotional

intelligence and reflective functioning, including mindfulness-based stress reduction (MBSR) programs, cognitive-behavioral therapy (CBT), and emotion regulation training, which have shown promising results in reducing stress and fatigue among teachers.

## CONCLUSION

The findings of this study confirm a strong positive correlation between psychological fluency and creative teaching practices, indicating that teachers with higher levels of fluency demonstrate more innovative performance in physical education. Psychological fluency emerged as a consistent predictor of teaching creativity, independent of gender or educational environment, suggesting that it is a stable factor influencing instructional quality across contexts. These results highlight the importance of developing teachers' psychological fluency as a pathway to enhancing creativity in classroom practices, which requires emotional, cognitive, and professional interaction. Accordingly, it is recommended that teacher training programs incorporate workshops and seminars aimed at fostering psychological fluency through skills in emotional expression, positive thinking, and stress management. Furthermore, concepts of psychological fluency should be integrated into teacher education curricula in faculties of education and physical education, and the psychological fluency scale may serve as a valuable tool in assessing teacher performance in situations demanding adaptability and flexibility. School administrations are also encouraged to create supportive learning environments that strengthen teachers' psychological well-being and, in turn, their creative practices. Finally, future research is recommended to expand the investigation of psychological fluency into other educational domains such as classroom management, problem-solving, and pedagogical innovation across different disciplines.

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