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Female Students' Motivational Climate in Physical Education by Age and Educational Environment

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Abstract

Objectives. The Problem: The lack of interest of school administration and subject teachers in physical education lessons compared to other lessons, often placing them at the last class of the schedule or abandoning them to complete the curriculum. This contrasts with the joy and eagerness of students during the implementation of the physical education lesson by the instructor, who considers it a motivational climate with a clear impact on the students' psychology. Objectives: To develop and implement a motivational climate scale for secondary school students in physical education lessons. To identify the level of motivational climate for students in traditional and applied lessons based on the variables of age and educational environment. Furthermore, to identify differences in the level of motivational climate for students in physical education lessons between traditional and applied **Methods.** To achieve the objectives, the researchers used a descriptive approach using a survey and correlational approach. The research community was defined as female secondary school students aged 14-17 years, specifically those in the second intermediate and fifth preparatory stages, in the Nasiriyah city center and rural areas (Ur district) for the year 2023-2024. The total number of female students was 7,972, distributed across (49) schools in the center and (38) schools in the countryside **Results.** The four groups under study (rural and central areas) achieved their goal of significant influence in the first two tests (traditional lesson) and the second (practical lesson), with the second test (practical lesson) in favor of the motivational climate scale. **Conclusion and Recommendations.** The motivational climate was higher among urban female students compared to rural female students due to the surrounding environmental conditions. The motivational climate was higher among fifth-grade female students than among second-grade female students due to the customs and traditions adhered to by middle school female students due to their age.

Keywords Motivational Climate, Female Students, Physical Education, Educational Environment.

Introduction

Since education has essential requirements without which it cannot be effective, the teacher is one of the most prominent of these requirements and one of the most important pillars of the educational triangle upon which the educational process is based (Abduh et al., 2024; Teachers Institute, 2023). The process cannot develop and fulfill its desired role, no matter how advanced and developed philosophies are and translated into curricula, methods, and techniques, without relying on the approach of a teacher who is scientifically and professionally prepared to a high level of competence, qualifying and enabling them to fulfill their roles as educators and teachers (Cents-Boonstra et al., 2021; Teachers Institute, 2023). Therefore, it is necessary to create an educational environment that works to improve student

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learning by creating a motivational climate “which is the psychological and social environment created by teachers to increase student participation in the lesson and raise the level of interaction between students. It relies on rewards based on the effort they exert” (Sinha, 2024). This is in addition to the learning achieved and the efforts made to improve it during the physical education lesson by the subject teacher, as the benefits of the lesson extend beyond the lesson itself, as it affects students' attitudes, motivations, and participation (Nunes et al., 2023; Thiagarajan & Others, 1974). In physical activity inside and outside the lesson, in addition to raising morale and the spirit of competition among them and encouraging students to participate in various sports activities inside and outside the school (Ahmed & Al Salim, 2024a; Azlan et al., 2020). Field application is one of the important means of preparing the teacher. (Andika et al., 2024) believes that application is the scientific foundation in the project of linking the theoretical and scientific sciences that students learned during their years of study at college in a practical way, whether at the school or training level. Through application lessons, the teacher is properly prepared and helped in organizing and understanding their work in schools to become qualified for the educational and pedagogical construction process in the future. (Tan et al., 2025)emphasizes that the teacher will not be able to carry out his mission in the most complete manner unless he is properly prepared. Practical application represents one of the basic aspects in preparing the teacher in the field of physical education, as the matter is not limited to merely using technology in the educational process, but rather it is a situation in which appropriate and available resources are employed to enrich the educational process. (Cents-Boonstra et al., 2021; Yang et al., 2024)From the above, the importance of the research lies in identifying the level of motivational climate for female students during the traditional lesson of the school subject on the staff. The application was studied for the university lab due to its importance in raising the morale and psychological spirit of the female students through the interaction of the subject teacher with the female students during the lesson and raising appropriate recommendations to the school administrations regarding the necessity of paying attention to and not marginalizing these lessons.

Problem: Physical education (PE) classes are among the essential fields that contribute to developing students' personalities and honing their physical, psychological, and social skills. However, the success of these classes does not depend solely on the skill or physical aspect, but rather depends to a large extent on the motivational climate prevailing during the class. This climate is reflected in students' motivation to participate and learn, especially during adolescence, when they express their stored energies, whether positive or negative, and release any psychological pressures resulting from the pressure of other academic subjects. As the researchers supervise some university-based female students, they observed a lack of interest from school administration and subject teachers in PE classes compared to other classes. This was often placed at the last class in the schedule, or the subject teachers and administration sometimes waived it for other classes to complete the curriculum and make up for missed classes due to holidays and special occasions. This contrasts with the joy and eagerness of the students during the PE class, which is considered a motivational climate with a clear impact on the students' psychology (Akmal, 2024; Gordon-Gould & Hornby, 2023). Therefore, the researchers decided to develop a motivational climate scale to measure the level of motivational climate for female students in secondary schools between the

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traditional lesson of the subject teacher and the practical lesson. Implemented by fourth-grade (applied) students, taking into account the variables of age and educational environment.

Research Objectives:

1. To construct, standardize, and implement a motivational climate scale for secondary school students in physical education classes.
2. To identify the level of motivational climate for students in traditional classes, taking into account the variables of age and educational environment.
3. To identify the level of motivational climate for students in applied classes, taking into account the variables of age and educational environment.
4. To identify differences in the level of motivational climate for students in physical education classes between traditional and applied classes.

Materials and Methods

This study employed a descriptive survey approach, as it was deemed most appropriate to address the nature of the research problem. The research community consisted of female high school students aged 14–17 years, specifically those in the second intermediate and fifth preparatory stages, enrolled in schools located in both the city center of Nasiriyah and rural areas (Ur district) during the academic year 2023–2024. In total, 7,972 female students were identified: 1,626 in the second intermediate stage (1,192 in rural schools and 434 in city schools) and 5,154 in the fifth preparatory stage (4,683 in city schools and 471 in rural schools), distributed across 49 schools in the city and 38 in the countryside. From this population, a sample was randomly selected by lottery, including students from four secondary schools (two in rural areas and two in the city). Subsequently, 25% of each stage was drawn, resulting in a final sample comprising 20 students for the survey, 90 for the construction sample, and 60 for the application sample, equally divided between the two academic stages.

To achieve the research objectives, the researchers developed a specific measurement tool the Motivational Climate Scale. The scale initially included 55 items, rated on a five-point Likert scale (always, often, sometimes, rarely, never), with response weights ranging from 5 to 1. These items were presented to a panel of specialists for evaluation. Using the Chi-square test, 40 items were retained and 15 were excluded, with the Chi-square value reaching 3.84. A pilot study was conducted on October 25, 2023, involving 20 students, during which response times ranged between 18–20 minutes. The scale was then administered to a construction sample of 90 students on November 8, 2023. The statistical analysis of items confirmed their discriminative power, with significant t-values ranging between 10.135 and 13.461 ($p < 0.05$).

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The scale was tested for validity, reliability, and objectivity. Content validity was established through expert review, while construct validity was determined using the two extreme groups method and internal consistency. Reliability was assessed via the split-half method, yielding a Pearson correlation coefficient of 0.838; applying the Spearman–Brown formula, the full reliability coefficient was 0.894, indicating high reliability. The scale also demonstrated objectivity, as the items were clear, structured, and supported by a correction key.

Following these preparations, the scale was implemented in two main experiments. The first experiment was conducted during the first semester of the academic year within traditional physical education lessons, applied to the 60-student application sample across both city and rural schools. Returned questionnaires were checked for accuracy and completeness before tabulation and analysis. The second experiment was carried out during the second semester of the same academic year, this time during practical lessons, again using the same 60-student sample across both stages and environments. Data from both experiments were analyzed using SPSS version 20.

Results

1. Results of the Main Experiment Tests

To determine the significance of the differences between the first and second tests of the motivational climate scale for the four groups, a *t*-test for correlated samples was used.

Table 1 shows the means, standard deviations, calculated *t*-test values, and their statistical significance for the first (traditional lesson) and the second (application lesson) tests of the motivational climate scale according to age, academic level, and educational environment.

Table 1. Means, standard deviations, calculated *t*-test values, and statistical significance of the first and second tests of the motivational climate scale.

Tests	Group type	First test (traditional lesson)		Test 2 (Application Lesson)		Calculated T value	Significance level	Type of indication
		X		s		X	s	
1	Countryside – Second Intermediate	76.17		6.08		132.5	5.577	15.558
2	Center – Second Intermediate	74.5		5.577		134.8	4.215	20.762
3	Countryside –Fifth Preparatory	73.67		7.501		148.3	3.724	18.719
4	Center –Fifth Preparatory	76		5.899		156.5	3.332	26.468

From Table (1), it is clear that all calculated *t*-values were statistically significant in favor of the second test, as the significance levels were less than 0.05. This indicates that the

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motivational climate improved significantly in the application lesson compared to the traditional lesson across all four groups.

In the first test (traditional lesson), motivational climate levels were weak to moderate. Traditional PE lessons often lacked innovation, proper equipment, and administrative support, reducing their effectiveness. Consequently, PE was often treated as a secondary subject or used as a replacement for missed classes in other disciplines. These findings are consistent with Wiium (2021), who noted that PE is frequently marginalized in school curricula due to limited allocated time.

In contrast, the second test (application lesson) showed significantly higher levels of motivational climate. This improvement was attributed to the administration's commitment to the PE schedule and the trainee teacher's approach, which included age proximity to students, wearing sports attire, and active participation in games and exercises. These factors contributed to a more dynamic and engaging classroom atmosphere, aligning with Bailey (2001), who emphasized the teacher's role in creating a positive motivational climate for learning.

2. Results of the Analysis of Variance (ANOVA)

Table 2 presents the results of the analysis of variance (ANOVA) in the second test (application lesson) of the motivational climate scale for the four research groups.

Table (2). Results of the ANOVA in the second test of the motivational climate scale.

Variables	Source of Variance	Sum of Squares	f	Mean Squares	F-value	Sig.	Significance
Motivational Climate Scale	Between Groups	2325.8		775.3	42.001	0.000	Significant
	Within Groups	369.2	6	18.5			

*Significant at $p < 0.05$

The results in Table (2) show that there were statistically significant differences between the four groups on the motivational climate scale in the application lesson (F = 42.001, $p < 0.05$). To determine the source of these differences, an LSD post hoc test was conducted.

Table 3. Results of the LSD post hoc test for differences between the four groups on the motivational climate scale.

Variables	Groups	Mean Difference	LSD Value	Sig.	Significance	Group Advantage
M1 - M2	Countryside Second Intermediate – Center Second Intermediate	2.333	5.183	0.358	Not significant	In favor of Center

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M1 - M3	Countryside Second Intermediate – Countryside Fifth Preparatory	15.833	0.000	Significant	In favor of Fifth Preparatory
M1 - M4	Countryside Second Intermediate – Center Fifth Preparatory	24.000	0.000	Significant	In favor of Fifth Preparatory
M2 - M3	Center Second Intermediate – Countryside Fifth Preparatory	13.500	0.000	Significant	In favor of Fifth Preparatory
M2 - M4	Center Second Intermediate – Center Fifth Preparatory	21.666	0.000	Significant	In favor of Fifth Preparatory
M3 - M4	Countryside Fifth Preparatory – Center Fifth Preparatory	8.166	0.004	Significant	In favor of Center Fifth Preparatory

Discusiion

The LSD post hoc test results (Table 3) show clear and significant differences between the four groups. The highest motivational climate was recorded among the center fifth preparatory group, followed by countryside fifth preparatory students, center second intermediate students, and finally countryside second intermediate students.

The superiority of fifth preparatory students over second intermediate students is attributed to age differences. Fifth preparatory (Ahmed & Al Salim, 2024b; Bessa et al., 2021), in late adolescence, are more constrained by cultural norms and traditions, limiting their opportunities for recreation outside of school. Thus, PE lessons serve as a vital outlet for physical activity and stress relief. By contrast, second intermediate students, being younger, enjoy more freedom to engage in play across multiple settings (home, schoolyard, or neighborhood).

Urban students' slightly higher motivational climate compared to rural students can be explained by environmental conditions. Urban environments, characterized by crowded living spaces, lack of recreational areas, and rigid daily routines, increase the importance of PE as an opportunity for recreation. Conversely, rural students have access to orchards, open fields, and traditional games that serve as alternative outlets for physical activity. These findings are supported by (Azlan et al., 2020; Gipit et al., 2017; Zhang et al., 2020) who highlighted that rural environments provide more natural opportunities for physical

engagement, such as walking, running, and traditional play, which are less available in urban settings.

Conclusion And Recommendations

The study confirmed the validity of the motivational climate scale, which was constructed and standardized by the researchers to assess the research sample. Findings revealed that the motivational climate was significantly higher among urban female students compared to their rural counterparts, largely due to environmental conditions, and that fifth-grade female students demonstrated higher motivational climate levels than second-grade students, a difference attributed to age-related customs and traditions among middle school students. Based on these results, it is recommended to adopt the newly developed motivational climate scale as a reliable tool for measuring readiness and identifying learners' surrounding circumstances across various specializations. Furthermore, physical education teachers and school administrators are encouraged to reconsider the value of PE lessons and to prioritize them within the school curriculum, given the positive impact demonstrated in comparison with traditional teaching approaches.

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