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The Position of Seats and its Impact on Anxiety among Students

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Abstract

This study examines how students' seating arrangements affect anxiety levels. For unbalanced groups, this study uses a pre-post test design. The study will be conducted at Universiti Sultan Zainal Abidin (UniSZA), a public university in Gong Badak, Kuala Nerus District, Terengganu. The research question of whether there is a significant difference in anxiety levels associated with sitting positions in post-tests for the control and treatment groups was answered using one-way ANCOVA. The results of the study show that the control and treatment groups had significantly different levels of anxiety at the post-test about where they would sit during the teaching and learning session. In the post-test, the control group (mean = 4.04) expressed more concerns about their seating arrangements during the teaching and learning session than the treatment group (mean = 3.54). To improve the classroom learning experience, educational institutions are encouraged to consider more collaborative and interactive seating arrangements.

Keywords: Seat Position, Anxiety, Ergonomics

Introduction

One of the key factors affecting a student's academic performance and mental health is where they attend school. Physical aspects of the classroom, such as seating arrangements, are essential, as are curriculum, teacher-student interaction, and learning methods (N. Gao et al., 2022a; Hoekstra et al., 2023). Where the student sits can impact several learning-related factors, such as his focus, level of involvement, and psychological well-being (Watson et al., 2018). However, there is not enough research in the scientific literature about how seating arrangements affect students' anxiety. Anxiety among students is a problem that is receiving increasing attention worldwide. Previous research has shown that anxiety can affect academic performance, motivation, and concentration(Al Majali, 2020; Heydarnejad et al., 2022; Tan & Pang, 2023). On the other hand, student seating arrangements are often determined by teacher policies or personal preferences without considering the impact on

students' mental health. To create a supportive learning environment in such circumstances, it is essential to understand how students' seating arrangements impact their anxiety levels.

The most important place for the process is the classroom (PDP). The majority of students devote much time to learning in the classroom. The seating arrangement of students in a lecture hall is crucial as it affects their performance (Jin & Peng, 2022). A classroom is officially defined as a room in which a group of students and a teacher are present to teach. If students are not grouped well, their performance can suffer, especially if weaker students sit at the back of the class. Therefore, the seating arrangement should be carefully planned to ensure the best possible learning environment in the classroom (Norazman et al., 2019a).

Cluster seating supports student-centered learning in the classroom by providing more opportunities for collaborative learning, which is relevant to the 21st-century approach to education. Grouping students improves collaboration with peers, social conversation rates, and compliance with teacher instructions (Julaila Sapari, 2019). Effective classroom management can plan, carry out instructions, maintain order, motivate students, maximize learning, discipline inappropriate behavior, organize physical space, and promote relationships and interactions (Abdul Latip & Tamrin, 2023).

This study is significant because it shows how classrooms can be set up to reduce student anxiety and improve the educational process. Furthermore, this study adds to the knowledge of instructional design and educational psychology that is still missing from a thorough investigation.

According to previous studies, numerous aspects of the student experience can be negatively impacted by anxiety in the classroom (Downing et al., 2020). Decreased motivation, concentration, and ability to fully participate in conversations are often associated with high levels of anxiety (Barnett et al., 2021). This can exacerbate academic inequality, particularly among students who are prone to anxiety. Therefore, it is essential to understand how seating arrangements can impact students' anxiety levels and, ultimately, their academic performance. This study attempts to provide deeper insights into how classroom environments can be optimized to promote student well-being by focusing on how specific seating arrangements impact students' perceptions of interactions with teachers, classmates, and classroom material (Barksdale et al., 2021). To determine whether there are differences in the effect of sitting position on anxiety, the study also considers demographic variables such as age, gender, and education level.

This study aims to fill the knowledge gap regarding the impact of the physical environment on students' well-being, as the importance of mental health in education is increasingly recognized. This study's results should help teachers, classroom designers, and students who benefit from a more encouraging learning environment. Additionally, this study may serve as a foundation for future research into how other aspects of the physical environment impact students' educational experiences and mental well-being.

During the teaching and learning process, the seating arrangement in the classroom dramatically influences how students interact with their lecturers and fellow students. Proper seating arrangements can influence student motivation and anxiety (Gumasing & Castro,

2023). More interaction and question opportunities often come with seating close to the lecturer, undoubtedly improving students' understanding and motivation to learn. Conversely, students who sit at the back of the classroom or in the corners may feel more alone and less enthusiastically participate in the teaching and learning process. During the teaching and learning process, this circumstance can also cause students' anxiety to increase. To create a more positive and effective learning environment, it is crucial to understand and optimize these seating position factors. An educational facility can help students feel less anxious by providing comfortable seating (Jebril & Chen, 2021). This promotes the long-term psychological well-being of students and improves their academic performance.

The Role of Seating Position in Learning

A comfortable seat is essential for the student's physical well-being and ability to concentrate. According to research, adopting an ergonomic sitting position can reduce the risk of musculoskeletal problems such as shoulder, neck, and back pain, often caused by poor posture during prolonged sitting (Hayashi et al., 2023). With the teacher at the front and students sitting in straight rows facing the whiteboard or screen, it is a classic classroom layout with the seats facing back. This approach often places great emphasis on teacher-centered learning, where there is little interaction between students and more emphasis on the teacher providing information.

Carried out and examined the seating arrangement of students in the lecture hall during their lectures (N. Gao et al., 2022b). This study examined the long-term effects of classroom seating arrangements on students' academic performance and well-being. The study's results suggest that non-ergonomic seating arrangements lead to health and performance problems impacting students' learning comfort. This study provides compelling empirical evidence for appropriate lecture hall seating for learning.

Furthermore, research by (Norazman et al., 2019b) shows that improving students' concentration and academic performance also requires suitable seating arrangements. An ergonomic seating arrangement allows students to concentrate better on their lessons when more comfortable. A comfortable seating arrangement ensures that students have an ideal line of sight to the whiteboard or projector screen, preventing them from turning too much or changing their posture, which can cause them to lose focus.

In addition to the apparent physical aspects, suitable seating arrangements also impact student social interaction and engagement in the classroom. According to a study by (Seet et al., 2022), a flexible seating arrangement that complements educational activities can improve student-teacher and student-student interaction. Positive interactions increase student motivation and engagement, which increases their academic performance.

Methodology

This study uses a nonequivalent pre-post-test control group design (Wiersma & Jurs, 2009). In this quasi-experimental design based on nonequivalent groups, respondents are not randomly selected (Fraenkel & Wallen, 2008). Additionally, this design is often used when studying the effectiveness of a program, module, or instructional strategy in various contexts where a purely experimental design is impractical, especially in actual educational settings (Cresswell, 2022).

Intervention

In this study design, two groups were used: the control and the treatment groups. The control group comprises 63 students, and the respondents are in a typical lecture hall environment. The seating arrangement in this lecture hall is conventional. It compares with the treatment group that received the intervention and as a control. The positions of the 67 members of Group Beta, the treatment group, were changed from the traditional configuration to a circular one. The duration of this study was six weeks. Before the intervention, the treatment group was asked the same questions as in the first week of the study and asked again after the intervention. Instead of the previous long line that stretched to the back, a group format was introduced where each group consisted of six to eight people. The same question was asked in the sixth week of the follow-up study. The study aimed to determine whether respondents were satisfied with the changes and compare the first and sixth weeks.

In the first week of the study, a pre-test-test was conducted on the treatment and control groups. This pre-test consists of a series of questionnaires designed to measure the level of anxiety related to seating arrangements. Before implementing the intervention, this pre-testpre-test is intended to determine how concerned the students in the control and treatment groups are about their classroom placement. The control and treatment groups received a post-test in the last week of class, consisting of a series of questions corresponding to the pre-testpre-test questionnaires. This post-test aims to track how the control and treatment groups' anxiety levels change about their seating arrangements.

Study Location

The study will be conducted at Universiti Sultan Zainal Abidin (UniSZA), a public university in Gong Badak, Kuala Nerus District, Terengganu. To avoid restricting data collection, the study's type and requirements must be considered when choosing the research location. (Cresswell, 2012). Since this has implications for adjustments in teaching placement and funding of other selected educational institutions, the researcher focuses the study at the Sultan Zainal Abidin University level.

Data Analysis

One-way ANCOVA will be used to answer the research question of whether there is a significant difference in anxiety levels based on sitting positions at post-test for the control and treatment groups.

Result

The researcher conducts a normality test for each study variable before beginning the inferential analysis. The requirement that the data for each variable be customarily distributed is one of the basic assumptions in multivariate analysis (Morgan, 2019). The data is subjected to a normality test to determine whether there are confounding variables or residuals with a normal distribution. (F. Hair Jr et al., 2014) recommend using the skewness and kurtosis test methods for normality testing. The statistical techniques of skewness and kurtosis were used in this study because visual tests require close inspection; otherwise, assumptions could be misinterpreted. The skewness and kurtosis values for each variable in the pre-and post-test are shown in Table 1.

Table 1
Results of the Normality Test

Variable	*Skewness*	*Kurtosis*
Tpreffectpost test post-test post-test Position of Postgraduate Students	-0.193	-0.519

According to the above table, the distribution of study variable data in the post-test met the normality assumption. One-way ANCOVA was used to analyze the difference in anxiety levels between the control and treatment groups during the pre-and post-test arrangement during the teaching and learning sessions. Before conducting the one-way ANCOVA analysis, the researcher used Box's M test to determine whether the variance-covariance matrix was homogeneous. To determine whether the variance-covariance between the dependent variables is the same for all independent variables, the Box M test is crucial. This is a crucial requirement for the ANCOVA test, according to Hair et al. The ANCOVA test assumes that the covariances between the dependent and independent variables are equal. The M test results of the box are shown in Table 2.

Table 2
Box am Test

Box's M	Value-F	df1	df2	Sig.
10.746	1.745	6	117475.241	0.106

Table 2 showed no significant covariate differences between the dependent variables for all levels of the independent variables (F = 1.745, p = 0.106). Then, the differences in anxiety levels of the control and treatment groups in the pre-testpre-test and post-testpost-testpost-test regarding the seating arrangement during the teaching and learning sessions were examined using ANCOVA analysis. The Bonferroni test was used to control for Type I errors in this multiple testing, and each ANCOVA was examined at a significance level of 0.025. The results of the ANCOVA analysis of the difference in anxiety levels between the control and treatment groups concerning the seating arrangement during the teaching and learning session are presented in Table 3.

Table 3
ANCOVA Analysis

Group	N	Mean	S.P	Type III Sum of Squares	D.K	Min Kuasa Dua	Value-F	Sig.
Control	63	04.04	0,673	3.286	1	3.268	26.757	0.000*
Treatment	67	03.54	0,653					

*Sig at p<0.05

Table 3 shows that the control and treatment groups had significantly different anxiety levels at the post-test regarding seating arrangements during the PdP session (F(1,125) = 26.757, p = 0.000). The post-test (mean = 4.04) reported higher levels of anxiety regarding their seating arrangements during the PdP session than the treatment group (mean = 3.54).

In contrast to the traditional arrangement of long rows extending backward, this shows that group seating arrangements, where each group consists of six to eight people, effectively reduce students' anxiety about seating positions in the classroom.

Discussion

In contrast to the traditional row-based seating arrangement, the experimental group that used a seating arrangement of six to eight students reported lower anxiety levels. Changing seating arrangements promotes improved interaction and successfully alleviates feelings of loneliness that often occur in a traditional classroom environment. Studies by (Norazman et al., 2019a) highlight how important seating arrangements are to student comfort and behavior. According to their findings, flexible seating arrangements can promote a more stimulating learning environment where students feel closer to the teacher and each other.

Additionally, research by (Bolden et al., 2019) shows that students typically show higher levels of engagement when they sit closer to the teacher or are in a more interactive environment. This is significant because improved learning outcomes are often the result of increased engagement. Students who are less nervous and more engaged students are more likely to actively participate actively in class discussions and group projects, improving their overall educational experience. (Braun et al., 2020) adds to this conversation by pointing out that students who sit closer to the board typically perform better and feel less anxious. According to this correlation, students' confidence and performance can be significantly influenced by their proximity to the teacher and classroom materials.

According to some scientists, students should be allowed to choose their seating arrangement according to their preferences. It relieves anxiety and improves psychological well-being (Lattie et al., 2019). However, those who argue that a structured classroom with assigned seating can promote a more inclusive and equitable learning environment disagree with this viewpoint.

The question of whether sitting posture has a short-term or long-term influence on anxiety is the subject of further discussion. Longitudinal studies are needed to determine whether seating arrangements can influence students' future development of social and academic skills.

Seating arrangements can affect technologically advanced classrooms differently than traditional ones, such as hybrid systems or group-based environments. Some researchers claim that technology can reduce the importance of physical location by promoting more equal opportunities in virtual participation (Z. Gao & Lee, 2019; Zallio & Clarkson, 2022).

According to certain studies, personality type and sitting position are closely related. For example, students who suffer from severe social anxiety typically sit in places further away from the center of attention. These decisions can perpetuate avoidance behavior patterns that ultimately lead to anxiety, even though they provide a temporary sense of safety.

Conclusion

This study shows the importance of seating arrangements in reducing student anxiety and improving classroom instruction. The results show that group seating with six to eight students produces lower levels of anxiety compared to traditional row seating. This study shows how changing seating arrangements can improve the learning environment and increase students' academic performance and well-being. Therefore, to improve the learning experience in the classroom, educational institutions are encouraged to think about more collaborative and interactive seating strategies.

References

Abdul Latip, S. N. N., & Tamrin, M. (2023). The Relationship Between Physical Ergonomic and Students Academic Performance: A Conceptual Paper. *International Journal of Academic Research in Progressive Education and Development*, *12*(3). https://doi.org/10.6007/IJARPED/v12-i3/18246

Al Majali, S. (2020). Positive anxiety and its role in motivation and achievements among university students. *International Journal of Instruction*, *13*(4), 975–986. https://doi.org/10.29333/iji.2020.13459a

Barksdale, C., Peters, M. L., & Corrales, A. (2021). Middle school students' perceptions of classroom climate and its relationship to achievement. *Educational Studies*, *47*(1), 84–107. https://doi.org/10.1080/03055698.2019.1664411

Barnett, M. D., Maciel, I. V., Johnson, D. M., & Ciepluch, I. (2021). Social Anxiety and Perceived Social Support: Gender Differences and the Mediating Role of Communication Styles. *Psychological Reports*, *124*(1), 70–87. https://doi.org/10.1177/0033294119900975

Bolden, E. C., Oestreich, T. M., Kenney, M. J., & Yuhnke, B. T. (2019). Location, location, location: A comparison of student experience in a lecture hall to a small classroom using similar techniques. *Active Learning in Higher Education*, *20*(2), 139–152. https://doi.org/10.1177/1469787417742018

Braun, S. S., van den Berg, Y. H. M., & Cillessen, A. H. N. (2020). Effects of a seating chart intervention for target and nontarget students. *Journal of Experimental Child Psychology*, *191*, 104742. https://doi.org/10.1016/j.jecp.2019.104742

Creswell, J.W. (2012). Qualitative Inquiry & Research Design. Sage Publication.

Downing, V. R., Cooper, K. M., Cala, J. M., Gin, L. E., & Brownell, S. E. (2020). Fear of Negative Evaluation and Student Anxiety in Community College Active-Learning Science Courses. *CBE—Life Sciences Education*, *19*(2), ar20. https://doi.org/10.1187/cbe.19-09-0186

Gao, N., Rahaman, M. S., Shao, W., Ji, K., & Salim, F. D. (2022a). Individual and Group-wise Classroom Seating Experience. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, *6*(3), 1–23. https://doi.org/10.1145/3550335

Gao, N., Rahaman, M. S., Shao, W., Ji, K., & Salim, F. D. (2022b). Individual and Group-wise Classroom Seating Experience. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, *6*(3), 1–23. https://doi.org/10.1145/3550335

Gao, Z., & Lee, J. E. (2019). Emerging Technology in Promoting Physical Activity and Health: Challenges and Opportunities. *Journal of Clinical Medicine*, *8*(11), 1830. https://doi.org/10.3390/jcm8111830

Gumasing, Ma. J. J., & Castro, F. M. F. (2023). Determining Ergonomic Appraisal Factors Affecting the Learning Motivation and Academic Performance of Students during Online Classes. *Sustainability*, *15*(3), 1970. https://doi.org/10.3390/su15031970

Hayashi, K., Mochizuki, T., & Yamauchi, Y. (2023). A case study of process performances during a small-group activity: comparison between round-shaped and crescent-shaped seating arrangements in studio-style learning spaces. *Learning Environments Research*, *26*(2), 401–425. https://doi.org/10.1007/s10984-022-09436-8

Heydarnejad, T., Tagavipour, F., Patra, I., & Farid Khafaga, A. (2022). The impacts of performance-based assessment on reading comprehension achievement, academic motivation, foreign language anxiety, and students' self-efficacy. *Language Testing in Asia*, *12*(1), 51. https://doi.org/10.1186/s40468-022-00202-4

Hoekstra, N. A. H., van den Berg, Y. H. M., Lansu, T. A. M., Mainhard, M. T., & Cillessen, A. H. N. (2023). Teachers' goals and strategies for classroom seating arrangements: A qualitative study. *Teaching and Teacher Education*, *124*, 104016. https://doi.org/10.1016/j.tate.2023.104016

Jebril, T., & Chen, Y. (2021). The architectural strategies of classrooms for intellectually disabled students in primary schools regarding space and environment. *Ain Shams Engineering Journal*, *12*(1), 821–835. https://doi.org/10.1016/j.asej.2020.09.005

Jin, S., & Peng, L. (2022). Classroom perception in higher education: The impact of spatial factors on student satisfaction in lecture versus active learning classrooms. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.941285

Julaila Sapari, A. H. A. (2019). Faktor-Faktor Yang Mempengaruhi Pencapaian Kursus Matematik Kejuruteraan 1 Dalam Kalangan Pelajar Politeknik di Johor. *Sekolah Pendidikan Fakulti Sains Sosial Dan Kemanusiaan Universiti Teknologi Malaysia 81310 Johor Bahru Johor, Malaysia*, *1*(1), 1–21.

Lattie, E. G., Adkins, E. C., Winquist, N., Stiles-Shields, C., Wafford, Q. E., & Graham, A. K. (2019). Digital Mental Health Interventions for Depression, Anxiety, and Enhancement of Psychological Well-Being Among College Students: Systematic Review. *Journal of Medical Internet Research*, *21*(7), e12869. https://doi.org/10.2196/12869

Morgan, G. A., B. K. C., L. N. L., & G. G. W. (2019). *IBM SPSS for introductory statistics: Use and interpretation*. Routledge.

Norazman, N., Ismail, A. H., Ja'afar, N. H., Khoury, M. A., & Che Ani, A. I. (2019a). A REVIEW OF SEATING ARRANGEMENTS TOWARDS THE 21st CENTURY CLASSROOM APPROACH IN SCHOOLS. *Malaysian Journal of Sustainable Environment*, *6*(2), 21. https://doi.org/10.24191/myse.v6i2.8684

Norazman, N., Ismail, A. H., Ja'afar, N. H., Khoury, M. A., & Che Ani, A. I. (2019b). A REVIEW OF SEATING ARRANGEMENTS TOWARDS THE 21st CENTURY CLASSROOM APPROACH IN SCHOOLS. *Malaysian Journal of Sustainable Environment*, *6*(2), 21. https://doi.org/10.24191/myse.v6i2.8684

Seet, H. A. A., Tan, E., & Rajalingam, P. (2022). Effect of Seating Arrangement on Class Engagement in Team-based Learning: a Quasi-Experimental Study. *Medical Science Educator*, *32*(1), 229–237. https://doi.org/10.1007/s40670-021-01469-7

Tan, S. H., & Pang, J. S. (2023). Test Anxiety: Integrating the Test Anxiety and Achievement Motivation Research Traditions. *Educational Psychology Review*, *35*(1), 13. https://doi.org/10.1007/s10648-023-09737-1

Watson, D., Tregaskis, O., Gedikli, C., Vaughn, O., & Semkina, A. (2018). Well-being through learning: a systematic review of learning interventions in the workplace and their impact on well-being. *European Journal of Work and Organizational Psychology*, *27*(2), 247–268. https://doi.org/10.1080/1359432X.2018.1435529

Zallio, M., & Clarkson, P. J. (2022). Designing the metaverse: A study on inclusion, diversity, equity, accessibility and safety for digital immersive environments. *Telematics and Informatics*, *75*, 101909. https://doi.org/10.1016/j.tele.2022.101909

Wiersma, W., & Jurs, S. G. (2009). Research Methods in Education: An Introduction. Edisi ke-9. eBook.