UNVEILING THE DYNAMICS OF STUDENTS' ATTENTION: EXPLORING INFLUENTIAL FACTORS IN POLITEKNIK KOTA BHARU CLASSROOM

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ABSTRACT

This research investigates the factors contributing to students losing focus in class within the context of Technical and Vocational Education and Training (TVET) at a Polytechnic institution. With the advent of the Polytechnic Transformation 2023-2030, aimed at enhancing TVET graduates' competency, it becomes crucial to understand and address issues hindering students' concentration during teaching and learning sessions. The study employs a quantitative approach through a descriptive survey method, utilizing a questionnaire distributed among 165 students from various departments. Findings reveal several key factors influencing students' attention, including classroom learning environment, class timing, sleep patterns, breakfast habits, teaching methods, and learning aids. Analysis indicates that an optimal classroom environment, timely meals, adequate sleep, engaging teaching methods, and effective use of teaching aids significantly impact students' concentration levels. The study underscores the importance of addressing these factors to enhance TVET education quality, which is essential for economic growth, individual opportunities, and the nation's development goals.

KEYWORDS: Classroom environment, Teaching methods, Sleep Patterns, Learning Aids, Students' Concentration

1. INTRODUCTION

The Polytechnic is an educational and training institution that has an employment orientation with the main emphasis on industrial practice. It aims to produce a competent workforce in the field of TVET. The scope of TVET education should be based on recognized occupational standards, with emphasis on practical components, psychomotor skills and exposure to industry training.

Polytechnic students need to take the opportunity to enhance their skills and knowledge in the field of TVET as an initial preparation for the supply of skilled labour according to current needs. Students must be trusted to fulfil their responsibilities to the best of their abilities. Therefore, as students, they need to honestly acquire knowledge and carry out the tasks given.

The classroom learning environment significantly impacts students' concentration. Influence of digital devices and social media can lead to constant interruptions, further impeding students' ability to maintain sustained attention during class. Addressing these factors are essential for creating a supportive and distraction-free educational environment. Thus, a well-organized and stimulating environment is important to promote better focus and engagement.

Class time significantly affect students' concentration, aligning closely with students' natural productivity rhythms. Research indicates that students tend to be more alert and focused during mid-morning classes compared to early morning or late afternoon sessions, as cognitive functions peak at different times for different individuals. Understanding these productivity tendencies allows for better scheduling of demanding or complex subjects at optimal times, thereby enhancing students' engagement and learning outcomes.

A more systematic learning technique will make it easier for students to better understand something learned. Moreover, curriculum development for the present and the future should complement students' abilities in the pedagogical dimension, life skills, the ability to collaborate and think critically and creatively. According to Yunus (2022), the need to provide higher education in Malaysia in the future, especially in facing the era of Society 5.0, is very important and in line with national development.

In light of these observations, it becomes clear that understanding the dynamics of students' attention in the classroom is crucial for improving educational outcomes. This research, aims to identify and analyse the various factors affecting students' concentration. Prior studies have highlighted similar issues in different educational contexts. A study by Rahman et al. (2019) found that both internal and external distractions significantly impact students' performance. Another research by Ali and Hassan (2020) emphasized the role of the learning environment in enhancing student engagement. By examining these influential factors in the specific context of Politeknik Kota Bharu, this research seeks to contribute to the broader understanding of educational dynamics and propose strategies for fostering a more conducive learning environment.

2. PROBLEM STATEMENT

This study aims to examine the factors that cause lack of concentration among students in class. This phenomenon is increasingly becoming an important issue in the context of TVET education at the Polytechnic, and this research is conducted to identify the main causes that contribute to the lack of attention of students during the teaching and learning process. Some aspects that will be studied include the learning environment, teaching methods, student motivation, as well as personal issues that may affect students' focus and attention in class. By understanding these factors, this study aims to provide a more in-depth view and provide suggestions to improve the student's learning experience and improve the lack of focus in the context of the classroom environment.

Therefore, based on this problem, the researcher wants to identify the factors that contribute to the problem of engineering students at Politeknik Kota Bharu lacking concentration in class. These finding will be a reference for polytechnic students and further enable them to concentrate on learning to obtain more outstanding achievements in the field of TVET.

Research Objectives
1. Examine the impact of the classroom learning environment and class time on students' concentration.
2. Investigate the influence of lecturers' teaching methods and the use of learning aids on maintaining students' focus during class.
3. Analyse the effects of students' sleep patterns and breakfast habits on students' attention and overall learning performance.

4. LITERATURE REVIEW

The evaluation system used at the Polytechnic of the Ministry of Higher Education is the Points System, which is based on the quantitative evaluation method of a student's performance on a course. According to this system, points for a module are divided into several groups in the grade system. A performance measure is used to determine the Grade Point Average (PNM) and the Grade Point Average Pool (HPNM). PNM shows the student's performance for the current semester, while HPNM shows the average academic achievement of a student in all the semesters he has gone through. For general modules and modules that do not involve PA, the assessment is made on a 100% PB basis. For modules involving PA, assessment is based on 60% PB and 40% PA. PB can consist of Quizzes, Tutorials, Tests, Assignments/coursework and Labs/workshops/Projects.

4.1 Classroom Learning Environment

The level of teacher classroom management can be divided into 3 main aspects, which are conducive learning environment, relationship and collaboration with students, as well as classroom discipline (Aney, 2019). A conducive physical classroom environment is important to increase the effectiveness of teaching and learning in the classroom. The physical environment in the classroom includes aspects such as the arrangement and physical design in the classroom, learning material resources, learning space or corner, wall space, lighting, ventilation and furniture and cleanliness. In fact, the physical environment of the school grounds also indirectly affects the effectiveness of P&P. Apidah (2023) states that the learning environment will have an impact on the level of academic achievement of students.

A good classroom environment is an open classroom environment that can encourage students to freely interact with students, students and teachers, as well as freely engage in various class activities. Doreen and Shahlan (2021), stated that there are four main factors that affect students' academic achievement, namely teacher factors, student factors, school factors and family factors.

4.2 Class Time

Young people tend to be more productive in the morning, while older people tend to be more productive in the evening. A student's energy level can also affect his ability to concentrate while studying at different times of the day. If a person feels low energy, then he will be less productive than when he is energetic.

4.3 Sleep Pattern

Sleeping time is very important for students because it is the time for the brain to rest after a day of activities and work. Lack of sleep will make it difficult for students to concentrate and study well. If students don't get enough sleep, they will quickly get angry because their minds are tired and unable to think properly. Accordingly, it is important for students not to neglect sleeping time at night too often because of completing lecture assignments or going out to have fun with friends. Students who have a good sleep pattern will give excellent performance results in the subject of Mathematics (Kalliammah, 2023).

4.4 Teaching Methods

According to Halimatus (2020), students' achievement can be influenced by three main factors, namely the lecturer's teaching method, interest and student attitude. Diversity in the medium of knowledge delivery is in line with the development of the country today. Advances in the field of information and communication technology need to be consolidated so that it is in line with the needs of face-to-face learning. The role of the teacher has not disappeared with the improvement of the role of information and communication technology in the world of education today.

Siti (2021) states that, students' academic achievement is not affected by face-to-face or online learning methods. Teachers need to be able to attract students' interest in whatever they want to convey.

4.5 Learning Aids

If the teacher succeeds in creating an active learning atmosphere, then the medium that will complete the learning is the teaching material. The use of appropriate and authentic teaching materials is a priority if you want to create effective learning. Now, teaching materials are often the choice is the use of information and communication technology materials, which are devices and also other applications that teachers often utilize. This fondness for using information and communication technology tools will cause some students and parents to be affected by the lack of facilities and access to the internet. An effective Teaching and Learning Environment is based on the teaching methods and Teaching Aids used by lecturers (Yunus, 2021).

4.6 Breakfast Habits

Lakmali et al. (2022) mention that skipping breakfast was associated with feeling tired, having trouble concentrating, and experiencing headaches. The researchers concluded that eating a healthy breakfast is important for teenagers' energy levels, concentration, academic performance, and overall health. In

a similar vein, Rekha et al. (2021) reported that skipping breakfast was linked to negative outcomes such as increased obesity risk, poorer diet quality, and reduced cognitive performance. These findings collectively underscore the critical role of a healthy breakfast in maintaining not only physical health but also cognitive functioning. Furthermore, a study by Martin et al. (2024) highlights the importance of regular healthy breakfast for students' academic motivation and performance. These studies collectively illustrate the multifaceted benefits of eating a healthy breakfast, emphasizing its positive impact on both physical health and academic outcomes.

5. RESEARCH METHODOLOGY

This study used a quantitative approach and focused on descriptive survey research method. The selection of a quantitative approach coincides with the use of a number of questionnaire instruments and the involvement of a large number of respondents. Researchers have used purposive sampling to obtain study samples, whereby the researchers purposefully selected the students from Politeknik Kota Bharu. The researcher identified 4 main departments in the study sample of Politeknik Kota Bharu. The departments are Department of Civil Engineering, Department of Electrical Engineering, Department of Mechanical Engineering and the Department of Commerce. There was a total of 165 respondents for this study. The main instrument used in this study was a questionnaire. The questionnaire used is based on a Likert scale. The data from Part A was analyzed descriptively involving the demographics of the respondents. While the data of Sections B, C, D, E, and F were analyzed to obtain the mean score and standard deviation. A pilot study was conducted to obtain the reliability index of the questionnaire items. The reliability coefficient obtained is very good, namely Cronbach Alpha = 0.820.

6. RESEARCH FINDINGS

The results of the findings are according to the demographic distribution of 164 students; 97 students (59.1%) were male students and 67 (40.9%) were female students.

Based on the department, 71 students (43.3%) are from the Civil Engineering Department, 36 students (22%) from the Electrical Engineering Department, 32 students (19.5%) from the Mechanical Engineering Department, while 25 students (15.2%) are from the Commerce Department.

The findings also show the results based on the average score, a total of 16 students obtained a grade of 3.68 - 4.00 (9.8%), followed by 92 students obtaining a grade of 3.00 - 3.67 (56.1%) and 54 students obtained a grade of 2.00 - 2.99 (32.9 %).

Table 1: Students' achievement according to the Grade Point Average Collection (HPNM)

Students' Achievement		N	Percentage (%)	Category
HPNM	3.68-4.00	16	9.8	Excellent
	3.00-3.67	92	56.1	Honours
	2.00-2.99	54	32.9	Pass

*N =162

These statistics state that students can follow the study program at Politeknik Kota Bharu with achievement at a good level. Therefore, the relationship between students' academic achievement is studied based on the factors that influence it.

Table 2: Reliability Coefficient Values of Questionnaire Items

Factors	Total Item	Alpha Cronbach
Classroom Environment	5	0.817
Breakfast	4	0.821
Bedtime	7	0.814
Lecturer	3	0.812
Learning Aid	7	0.809
Overall Min	26	0.820

The overall result obtained from the reliability test (Cronbach's Alpha) is 0.820 for all 26 items of the research instrument. All 5 factors of the study instrument also showed a reliability test (Cronbach's Alpha) above 0.800 to allow a research instrument to be adopted. A good alpha coefficient value should exceed 0.8.

Table 3: Mean and Standard Deviation for Classroom Learning Environment during Teaching and Learning

No.	Item	N	Mean	Std. Deviation
1	I was able to focus more in TnL while sitting in the front row in class.	164	4.09	1.018
2	The hot temperature in the classroom interfered with my concentration in the lesson.	164	4.33	1.022
3	My friend that sits next to me helps a lot in my studies.	164	4.20	.935
4	I always faced noisy class atmosphere (no class control).	164	2.44	1.131
5	The large number of students in the class affected my concentration in the lesson.	164	2.93	1.316

Referring to table 3, the result of the mean value shows 4.09 with a standard deviation of 1.018 i.e., representing good and acceptable value. Most students are able to concentrate more in Teaching and Learning when sitting in the front row of the class than in the other rows. This finding shows that students sitting in the front row suggests that this position significantly enhances their ability to concentrate. This aligns with existing literature that emphasizes the benefits of proximity to the instructor for engagement and focus (Hattie, 2020). Research indicates that students seated closer to the teacher often report higher levels of engagement and understanding (Fisher & Frey, 2019). The temperature in the room also has an effect on students' concentration which is a mean of 4.33 and a standard deviation of 1.022. The mean score of 4.20 indicates that having a supportive peer nearby

positively influences students' studies. Collaborative learning has been linked to improved academic outcomes, as peers can provide motivation and assistance (Johnson & Johnson, 2021). This implies that social dynamics in the classroom play a critical role in learning.

Meanwhile, the low mean of 2.44 indicates that students do not frequently experience issues with noise, suggesting effective classroom management by instructors. Effective classroom management strategies are essential for minimizing distractions and fostering a conducive learning environment (Emmer & Evertson, 2019). Moreover, the large number of students in the class did not affect students' concentration in Teaching and Learning with a mean of 2.93 and a standard deviation of 1.316.

Table 4: Mean and Standard Deviation for Breakfast Habits and Class Time

No	Item	N	Mean	Std. Deviation
1	I always have breakfast before attending class.	164	2.65	1.337
2	I always can't concentrate in class when I'm hungry.	164	3.57	1.152
3	I always couldn't concentrate in theory classes scheduled in the evening.	164	3.76	1.187

Referring to table 4, the research findings show that a significant number of students do not consume breakfast before attending morning classes, as evidenced by the mean score of 2.65 with a standard deviation of 1.337). This lack of breakfast is correlated with difficulties in concentration during class, reflected in a mean score of 3.57. Research has consistently shown that breakfast plays a vital role in cognitive function and academic performance. For instance, a study by Masoomi et al. (2019) found that breakfast meal had a significant effect on academic performance. The findings suggest that missing breakfast may hinder students' ability to focus, thereby impacting their learning experience.

Additionally, students were also unable to concentrate in theory classes held in the evening (mean=3.76). This highlights the detrimental effects of class timing on students' attention span. Evening classes, which are typically scheduled after a long day of activities, may find students already fatigued, thereby diminishing their concentration levels. These findings underscore the need for strategic scheduling of classes to align with students' natural productivity rhythms, potentially improving overall academic performance. A study by Nasim et al. (2020) supports this notion, indicating that the students' performance decline later in the day.

Table 5: Mean and Standard Deviation for Sleep Patterns

No.	Item	N	Mean	Std. Deviation
1	I always sleep late.	164	3.07	1.189
2	I always use social media until late at night.	164	3.02	1.110
3	I use social media a lot in my studies.	164	3.73	1.041
4	I use social media a lot to connect with friends.	164	4.18	.908
5	I always finish assignments until late at night.	164	3.78	1.016
6	I always go out or chat with friends until late at night.	164	2.76	1.218
7	I always do "online gaming" until late at night.	164	2.34	1.331

Referring to Table 5, the findings reveal significant insights into students' sleep patterns and their engagement with social media. The mean scores indicate that students use social media for both academic purposes and also for connecting with friends (mean=3.73 and 4.18). This implies that social media is becoming more and more ingrained in their study habits in addition to being a tool for communication. Nonetheless, the mean score of 3.07 for students who report staying up late suggests that a dependency on social media may lead to bad sleep patterns.

Additionally, the data reveals that students typically finish their assignments until late at night, with a mean of 3.78, drawing attention to the widespread practice of students in procrastinating their assignments. The findings of the study also show that students do not go out or chat with friends until late at night (mean =2.76) and for engaging in online gaming (mean =2.34). This imply that students might put their academic obligations ahead of their social obligations, possibly at the price of their quality of sleep.

A study by Maheshwari and Shaukat (2019) found that poor sleep quality has negative impact on students' academic performance. In order to help students to acquire and digest information, they need to get enough sleep each night. These findings underscore the importance of promoting balanced time management and healthy sleep habits among students to enhance both their academic performance and quality of life.

Table 6: Mean and Standard Deviation for Lecturers' Teaching Methods

No	Item	N	Mean	Std. Deviation
1	The strictness of the lecturer affected my concentration in the lesson.	164	4.04	.801
2	The tone of the lecturer's voice affects my concentration in the lesson	164	3.81	1.159
3	Theory classes cause me to lack concentration in my studies.	164	3.18	1.135

Referring to Table 6, the findings of the study show that the lecturer's assertiveness and tone of voice have a major effect on students' ability to focus during class. The average score of 4.04 on the lecturer's strictness item indicates that students believe a lecturer's assertiveness and their concentration go hand in hand. A study by Kien (2023) highlights that while authoritarian teaching style can ensure discipline and timely completion of tasks, it generally has negative effects on students' creativity, engagement, and long-term learning outcomes. Furthermore, the lecturer's tone of voice, which received a mean score of 3.81, highlights the importance of the lecturer in keeping students' attention. The clarity, modulation, and enthusiasm of a lecturer's voice can have a big impact on how well students understand the content they are being taught. On the other hand, students believe theory classes contribute to a lack of concentration, as indicated by their mean score of 3.18 on the item about theory classes. This research raises the possibility that more interactive or practical methods may be more helpful in helping students understand the material covered in theory classes.

Table 7: Mean and Standard Deviation of Teaching Aids

No	Item	N	Mean	Std. Deviation
1	The lecturer's interesting slides can influence my concentration in the lesson.	164	4.15	.988
2	Lecturers use a lot of slide display and explanations.	164	3.64	1.073
3	Lecturers always conduct activities in groups.	164	3.94	.931
4	The use of learning videos can affect my concentration in lessons.	164	3.73	1.082
5	The lecturer using the white board allows me to better remember the learning facts.	164	3.97	1.024
6	The method of using social media can attract my interest to learn.	164	3.81	1.013
7	I always learn through YouTube videos that are related to my studies.	164	3.37	1.069

With reference to Table 7, the results show that using interesting lecture materials greatly improves students' ability to focus throughout class. With a mean score of 4.15, the data indicates that engaging lecture slides are essential for drawing in students and promoting deeper comprehension of the material. Furthermore, the average score of 3.97 emphasizes how well whiteboard instruction works by helping students retain important learning data. By enabling dynamic interaction between the lecturer and the students, whiteboards provide a more engaged learning environment. In addition, the results also indicate that students have a good perception of group activities (mean score of 3.94), indicating that collaborative learning improves their educational experience. Additionally, the results show that students are also interested in learning when using social media (mean = 3.81) and learning videos (mean = 3.73).

7. CONCLUSION

Factors that affect students' concentration in learning at the Polytechnic must be carefully considered by both students and lecturers to enhance the quality of national TVET education. Excellence in TVET

education is crucial not only for individual student success but also for fostering economic growth and development.

The study emphasizes the critical role of an optimal learning environment, strategic class scheduling, and effective teaching methods, complemented by the use of appropriate learning aids, in enhancing students' concentration. Adequate sleep and a nutritious breakfast are also vital for sustaining cognitive function and attention. Addressing these factors comprehensively will enable educators, parents, and policymakers to foster a more conducive learning atmosphere, significantly improving academic performance and equipping students with the necessary skills to excel in the competitive job market.

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