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Research Article

Classroom Behavior as a Predictor of Competency-Based Learning: A Regression Analysis of Senior High School Students

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Abstract

This study examined the influence of classroom behavior on the competency-based learning (CBL) among Senior High School (SHS) students. Anchored on Zimmerman's Self-Regulated Learning Theory and Sweller's Cognitive Load Theory, a quantitative descriptive-correlational design was employed. A total of 70 SHS students participated in the study, selected through stratified random sampling. Two validated instruments assessed the levels of classroom behavior and CBL. Findings revealed a moderate level of classroom behavior and a high level of competency-based learning. Pearson r indicated a significant positive relationship between classroom behavior and CBL. Regression analysis showed that 13.4% of the variance in CBL can be explained by classroom behavior. A single regression model was generated, confirming that classroom behavior substantially influenced competency-based learning outcomes. The findings underscore the importance of promoting behavior-centered strategies to improve CBL.

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1. Introduction

Classroom behavior refers to the observable actions and interactions of students during the learning process, including participation, engagement, and respect for classroom norms (Ansori et al., 2023). Competency-based learning (CBL) is a student-centered approach that focuses on students mastering specific skills and competencies at their own pace, as defined by Sistermans (2025). A major concern in classroom behavior is the lack of engagement, with studies showing that most of the students are feeling disengaged in the classroom (Mystkowska-Wiertelak, 2022). Research also indicates that students who exhibit disruptive behaviors tend to perform poorly in competency-based learning settings, as their lack of focus impedes skill mastery (Pascoe et al., 2020). Additionally, a study by Zheng et al. (2020) found that most of the students in competency-based programs struggle with time management and self-regulation, both of which are influenced by classroom behavior.

This study holds significant social relevance as it addresses critical factors influencing the academic success of students in contemporary educational settings. In academic institutions, understanding the link between classroom behavior and competency-based learning can help educators implement more effective teaching strategies that cater to diverse student needs (Luchavez & Caloc, 2024; Mitchell & Sutherland, 2020). Improving classroom behavior and supporting competency-based learning not only enhances student performance but also promotes a positive learning environment, reducing dropout rates (Kimario & Otieno, 2022). By fostering a culture of responsibility and mastery in the classroom, educational institutions contribute to developing competent, self-directed learners, which is crucial for workforce readiness (Morris, 2019). In the community, these findings can support the creation of educational policies that advocate for personalized learning environments, further bridging the gap between academic and real-world success (Gm et al., 2024).

Despite existing studies on classroom behavior and competency-based learning, there are notable research gaps. In terms of population, the existing research largely focuses on primary and secondary education, with a lack of studies targeting senior high school students in competency-based learning environments (Evans et al., 2020). This study is urgent due to the growing emphasis on personalized learning in higher education.

The purpose of this study was to develop a regression model for the competency-based learning of senior high school (SHS) students. Specifically, it aimed to determine the level of classroom behavior and the level of competency-based learning among SHS students. It also sought to examine whether there is a significant relationship between classroom behavior and competency-based learning. Moreover, the study investigated if the influence of classroom behavior on competency-based learning is significant. Ultimately, it intended to establish an appropriate regression model based on the findings.

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2. Materials and Methods

2.1. Research Design

This study adopted a descriptive correlational design to investigate the relationship between classroom behavior and competency-based learning among senior high school students, aligning with Fraenkel et al. (1993), who highlight its suitability for identifying naturally occurring associations without manipulation. Grounded in quantitative research, which systematically collects and analyzes numerical data to reveal trends and causal links (Creswell & Creswell, 2017), the study examined whether classroom behavior predicts competency-based learning. This approach, supported by Preacher and Hayes (2004), provided insights into how classroom behavior indirectly shapes competency-based learning, thereby uncovering key mechanisms within this educational context.

2.2. Respondents and Sampling Procedure

This study involved 70 senior high school (SHS) students, equally divided between 35 males and 35 females, selected from the ABM, STEM, Tech-Voc, and GAS strands. Using stratified random sampling, which ensures representation from different subgroups (Etikan & Bala, 2017), students were grouped by academic strand and randomly chosen to maintain balance across the sample. An equal number of male and female respondents allowed for accurate analysis. Participants were officially enrolled SHS students during the data collection period, actively engaged in classroom activities and exposed to competency-based learning approaches. Those not officially enrolled, who declined participation, transferred mid-semester, or had diagnosed cognitive or behavioral conditions were excluded to minimize confounding variables and uphold the study's validity through clear inclusion and exclusion criteria.

2.3. Research Instruments

Two survey instruments were utilized in this study: one adapted from Sullivan et al. (2014) to evaluate classroom behavior, and another from Ryan and Cox (2016) to assess competency-based learning. Both instruments were reviewed and revised by a panel of experts to ensure content validity, which, according to Field (2005), refers to the extent to which a tool accurately measures the intended construct. Reliability was established through pilot testing, in line with Huck's (2015) emphasis on the importance of internal consistency, typically assessed using Cronbach's Alpha, with .70 as the minimum acceptable threshold (Taherdoost, 2016). The original instruments demonstrated strong reliability in previous studies, with reported Cronbach's alpha values of .82 for the classroom behavior scale and .88 for the competency-based learning scale. A five-point Likert scale was employed for both instruments to effectively capture respondents' perceptions, further supporting their appropriateness for the study's objectives.

2.4. Data Collection and Analysis

The data collection process for this study followed a systematic and rigorous approach to ensure the validity and reliability of the gathered information. Initially, consultations with the

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research adviser were conducted to refine the study's methodology and align it with scholarly standards. Following this, the survey questionnaire was modified and subjected to a validation process, wherein a panel of experts evaluated its content, clarity, and relevance to the research objectives. Upon validation, formal approval from institutional authorities was obtained, ensuring that the study adhered to ethical guidelines and academic protocols.

Once approval was secured, the data collection was carried out through face-to-face surveys, allowing for direct interaction with respondents and minimizing potential misinterpretations of questionnaire items. This method ensured accurate responses and enhanced the reliability of the data. After the completion of data collection, statistical analyses were performed to examine relationships between variables and interpret findings effectively. This structured approach ensured that the results were accurate, credible, and meaningful, contributing to a comprehensive understanding of the study's objectives.

2.5. Ethical Considerations

This study followed standard ethical procedures in conducting research involving human participants. Prior to data collection, informed consent was obtained from all respondents, ensuring that participation was voluntary and based on a clear understanding of the study's purpose and procedures. Anonymity and confidentiality were strictly maintained by coding responses and securing data. Although St. John Paul II College of Davao does not have an Institutional Review Board, ethical research practices were observed throughout the study. No risks—physical, psychological, or academic—were posed to participants, and all data were collected and used solely for academic purposes.

3. Results

The data in Table 1 show that the overall level of classroom behavior among the respondents is moderate, with a total mean score of 3.21. Most indicators, such as *not using mobile phones inappropriately*, *not making distracting noises*, and *not disrupting lessons*, all fall within the moderate range. Notably, the highest mean is observed in *not having unfinished schoolwork* (3.44), which reaches a high level, suggesting students are generally diligent in completing tasks. Meanwhile, all other behaviors maintain moderate levels, indicating that while students generally demonstrate appropriate classroom conduct, there remains room for improvement across several areas.

Table 1. Level of Classroom Behavior

	Indicator	SD	Mean	Description
1.	not using mobile phone inappropriately	1.10	2.76	Moderate
2.	not making distracting noises intentionally	1.62	3.36	Moderate
3.	not interfering with other students' or teachers' property	1.52	3.27	Moderate
4.	not disrupting the flow of a lesson deliberately	1.50	3.24	Moderate
5.	not being late for class	1.56	3.30	Moderate
6.	not disengaging from classroom activities	1.28	3.07	Moderate
7.	not spreading rumors	1.56	3.23	Moderate

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8.	not displaying erratic behaviors uncharacteristically	1.51	3.39	Moderate
9.	not having unfinished schoolwork	1.43	3.44	High
10.	not moving around the room unnecessarily	1.51	3.00	Moderate
	Total Mean	**1.17**	**3.21**	**Moderate**

In Table 2, the results indicate that the overall level of competency-based learning among the respondents is high, with a total mean of 3.94. Most indicators, such as *fulfilling graduation requirements*, *completing competencies simultaneously*, *receiving written feedback*, and *taking assessments to show knowledge*, all fall within the high range. Particularly noteworthy are the indicators on *promoting respect for others' emotions and perspectives* (4.51) and *explaining or modeling peer-assisted learning strategies* (4.37), which reached a very high descriptive level, highlighting strong teacher support for collaboration and empathy. These findings suggest that students generally experience robust competency-based learning practices, supported by clear assessment criteria and varied opportunities to demonstrate mastery.

Table 2. Level of Competency-Based Learning

	Indicator	SD	Mean	Description
1.	fulfilling graduation requirements at school to support preparation for post-secondary pathways	1.06	3.94	High
2.	completing the same competency simultaneously by students enrolled in the same course	1.03	3.59	High
3.	providing clear criteria for how work will be assessed or graded for each competency by teachers	1.02	4.09	High
4.	accessing and completing part or all of the course requirements through online platforms	1.05	3.91	High
5.	engaging in identical assignments at the same time by students in the same courses	1.07	3.59	High
6.	receiving written feedback on academic tasks from the teacher	0.98	3.64	High
7.	taking assessments such as tests or quizzes to demonstrate acquired knowledge	0.99	4.13	High
8.	demonstrating mastery of course competencies through multiple methods of learning evidence	0.92	3.60	High
9.	promoting respect for others' emotions and perspectives through teacher encouragement	0.99	4.51	Very High
10.	explaining or modeling peer-assisted learning strategies by teachers to enhance collaboration	0.73	4.37	Very High
	Total Mean	**0.68**	**3.94**	**High**

Table 3 presents the correlation results showing the relationship between classroom behavior and competency-based learning. The findings reveal a significant moderate positive correlation between the two variables ($r = .366$, $p = .002$), indicating that students who exhibit more appropriate classroom behavior tend to perform better in competency-based learning environments. This result highlights the important role of behavioral engagement in fostering students' mastery of competencies, supporting theories that emphasize self-regulation and active participation as key contributors to academic success.

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Table 3. Correlation between Variables

Pair of Variables		r-value	p-value
Independent Variable	Dependent Variable		
Classroom Behavior	Competency-Based Learning	.366*	.002

Table 4 presents the regression analysis examining classroom behavior as a predictor of competency-based learning. The results show that classroom behavior has a significant positive effect on competency-based learning (β = .194, p = .004), indicating that students who demonstrate better classroom behavior tend to perform more effectively in competency-based learning environments. The regression model is statistically significant, with an R^2 value of 0.134, meaning that 13.4% of the variance in competency-based learning can be explained by classroom behavior alone. The remaining 86.6% of the variance may be attributed to other unexamined factors such as instructional strategies, learner motivation, or cognitive abilities. These findings support the rejection of the null hypothesis and affirm that classroom behavior is a meaningful predictor of competency-based learning outcomes.

Table 4. Regression Analysis on Classroom Behavior as a Predictor of Competency-Based Learning

	Coefficients	Standard Error	t stat	p-value	
Intercept	3.371	.233	14.459	.000	sig
Classroom Behavior	.194	.066	2.947	.004	sig

R square = .134
F value = 6.513
p value = 0.003 (significant)

3.1. The Regression Model

The regression analysis demonstrated that classroom behavior is a significant predictor of competency-based learning among senior high school students. The unstandardized regression coefficient for classroom behavior was B = 0.194, with a standard error of 0.066 and a 95% confidence interval ranging from 0.063 to 0.325, confirming the precision and reliability of the estimate. The model yielded an R^2 value of .134, indicating that classroom behavior explains 13.4% of the variance in competency-based learning outcomes. This measure of model fit reflects the degree of statistical association between the predictor and outcome variable and should be interpreted separately from theoretical implications.

3.3.1 The General Model:

The model below means that for every unit increase in classroom behavior, there is a .194 unit increase in competency-based learning. Y stands for Competency-Based Learning.

$$Y = 3.371 + .194 \text{ (Classroom Behavior)}$$

Model 1: Y = 3.371 + .194 (CB)

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4. Discussion

4.1. Classroom Behavior

The overall level of classroom behavior was found to be moderate. This suggests that while most students generally follow rules, there are still instances of inappropriate phone use, distracting noises, and unfinished schoolwork. Hwang and Domina (2021) reported that frequent classroom disruptions negatively affect academic performance. Similarly, Anderson et al. (2019) found that inconsistent discipline often leads to disengagement and increased behavioral issues. These behaviors, including unnecessary movement and spreading rumors, can disrupt the learning environment. Bouderbane (2020) emphasized that teacher expectations can influence student conduct through a self-fulfilling prophecy. Therefore, consistent discipline and clear behavioral expectations are essential to improving classroom behavior and fostering a focused learning environment. This can be achieved if the teachers are passionate and happy with their career (Raymunde & Caballo, 2023).

The highest mean rating was observed in the item *not having unfinished schoolwork*, indicating that most students consistently complete academic tasks. Billingsley et al. (2020) noted that structured classroom management, such as clear rules and regular feedback, reduces disruptive behavior and promotes task completion. This is supported by Lojdová (2019), who emphasized the effectiveness of teacher-centered strategies in maintaining order and productivity. Caloc and Baradillo (2023) also found that students who feel supported by their teachers are more likely to stay engaged and meet academic expectations. Conversely, the lowest mean rating was recorded in *not using mobile phone inappropriately,* implying frequent off-task mobile phone use among students. Day (2020) attributed this to the influence of individualistic cultures, where students may assert independence by challenging authority. Peer influence (Schuler et al., 2019) and socio-economic factors (Aute et al., 2020; Ghosh, 2024) also contribute to this behavior, underscoring the need for culturally responsive and supportive classroom management strategies.

4.2. Competency-Based Learning

The overall high rating in competency-based learning (CBL) suggests that students perceive their academic environment as structured, supportive, and outcome-driven. Anderson-Levitt and Gardinier (2023) emphasize that CBL allows students to progress at their own pace, provided they demonstrate mastery of well-defined competencies. This flexible approach fosters deeper learning and personalized instruction. Bliven and Jungbauer (2021) found that institutions implementing CBL often experience improved retention and academic performance, indicating its success in enhancing student outcomes. Bingham et al. (2021) further noted that effective CBL relies on teachers establishing clear criteria and offering continuous feedback to help students meet expectations (Obenza et al., 2024). The high overall rating reflects a well-implemented system where students understand what is required and feel adequately supported in their academic growth. This affirms the promise of CBL in promoting meaningful, learner-centered education.

The highest-rated item—*promoting respect for others' emotions and perspectives through teacher encouragement*—highlights the strength of competency-based learning (CBL) in fostering inclusive and emotionally supportive classroom environments. Garraway (2022) found that students engaged in CBL assessments performed better in hands-on, real-life tasks, where empathy and collaboration are critical.

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Hao (2024) also noted that CBL learners excel in cooperative activities, as the model encourages group engagement to master key skills. In contrast, the lowest-rated items—*completing the same competency simultaneously and engaging in identical assignments*—reflect students' resistance to rigid, uniform instructional methods. According to Page and Davis (2023), such approaches may hinder learning by not aligning with individual pacing needs, a concern addressed by Tarmo and Kimaro (2021), who advocate for CBL's personalized progression. Malhotra et al. (2023) and Lee and Pant (2020) also support flexible, skill-specific learning over standardized tasks, especially in preparing students for real-world challenges. This contrast reveals that while CBL thrives on emotional support and collaboration, strict uniformity in task delivery may undermine its effectiveness.

4.3. Correlation

The findings of the study led to the rejection of the null hypothesis that there is no significant relationship between classroom behavior and competency-based learning, as a statistically significant correlation was observed, supported by a Pearson r p-value below the .05 threshold. This confirms a meaningful association, consistent with Han's (2021) view that behavioral engagement enhances the development of competencies through deeper involvement in learning tasks. Similarly, Brenner (2022) emphasized that students who actively participate in class tend to exhibit stronger self-regulation and intrinsic motivation—key traits for success in competency-based systems—while Siddiq et al. (2020) and Ngware et al. (2019) also found that adherence to classroom norms supports higher academic performance in structured learning environments.

4.4. Influence

This study's findings confirm that classroom behavior has a significant impact on competency-based learning, consistent with Zimmerman's (1986) Self-Regulated Learning Theory, which highlights how behavioral regulation, motivation, and self-monitoring contribute to academic success. In competency-based systems, students who exhibit positive behaviors—like attentiveness, persistence, and adherence to rules—are better positioned to take charge of their learning and achieve mastery, a point also emphasized by Chattaraman et al. (2019), who found such traits often more evident among female students. In contrast, disruptive behaviors, as noted by Fung et al. (2019), can hinder self-regulation and competency attainment.

4.5. The Regression Model

A single regression model was created to examine how classroom behavior predicts competency-based learning, resulting in the rejection of the null hypothesis that no predictive model exists. In the model, classroom behavior proved to be a significant positive predictor, with each unit increase linked to higher competency-based learning. These findings align with Zimmerman's (1986) Self-Regulated Learning Theory, emphasizing that behaviors like attentiveness and persistence drive learning success. Supported by Sweller's (2019) Cognitive Load Theory, these results highlight that fostering positive classroom behavior is critical in enhancing competency-based learning.

From a theoretical perspective, these findings are consistent with Zimmerman's (1986) Self-Regulated Learning Theory, which posits that behavior such as attentiveness, persistence, and rule-following contributes meaningfully to student mastery. However, since 86.6% of the variance remains unexplained, it is likely that other influential factors were not included in the

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model. Future studies may consider incorporating additional predictors such as academic motivation (Brenner, 2022), instructional quality (Bingham et al., 2021), cognitive engagement (Siddiq et al., 2020), and formative assessment feedback (Garraway, 2022), all of which have been linked to enhanced outcomes in competency-based learning environments. Other potential factors such as teacher-student rapport and peer collaboration may also moderate the influence of classroom behavior on learning outcomes.

5. Conclusions and Recommendations

This study concludes that classroom behavior significantly predicts competency-based learning (CBL) among senior high school students. The findings highlight the critical role of students' behavioral engagement—such as attentiveness, task completion, and rule adherence—in fostering academic success within competency-based education systems. The regression model, although statistically significant, explains only a portion of the variance in CBL outcomes, suggesting the presence of additional influencing factors.

To translate these findings into practice, educators are encouraged to implement behavior-focused strategies such as clear classroom routines, consistent feedback, and proactive behavior monitoring to enhance student learning. Policy makers may consider integrating behavioral development programs into teacher training and curriculum design to ensure that classroom management practices support competency mastery. Furthermore, future research may explore additional predictors of CBL using larger and more diverse samples, and incorporate qualitative approaches such as interviews or classroom observations to capture the contextual and experiential dimensions of student learning behavior. Doing so will help develop a more holistic understanding of the factors that drive success in competency-based learning environments.

6. Limitations

This study is subject to several limitations. First, the sample size (n = 70) may limit the statistical power and precision of the findings, making it difficult to detect smaller effects or interactions. Second, since the participants were drawn from a specific group of senior high school students, the generalizability of the results across different academic strands and geographic regions may be restricted. Third, the use of self-reported questionnaires introduces the possibility of response bias, as participants may have over- or under-reported their actual behaviors and learning experiences. These limitations suggest caution in interpreting the findings and highlight the need for more robust and diversified data in future research.

Author Contributions:
This paper was collaboratively authored by four researchers, each contributing according to their expertise: Prof. Caloc led the development of the introduction, interpretation of results, and discussion of findings; Prof. Imperial was responsible for critical editing and refinement of the manuscript; Dr. Matalam undertook the comprehensive review and provided scholarly feedback on the writing; and Dr. Diamante ensured the rigor of the study through validation of the methodology and results.

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Institutional Review Board Statement:

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This study did not require ethical approval, as St. John Paul II College of Davao does not have an Institutional Review Board. Thus, no protocol number or formal approval was applicable to this research.

Informed Consent Statement:
Informed consent was obtained from all subjects involved in the study.

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