

Determinants Analysis of Student Engagement in Learning

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DOI : <https://doi.org/10.46245/ijorer.v7i5.1419>

Sections Info

Article history:

Submitted: February 17, 2026

Final Revised: April 28, 2026

Accepted: September 09, 2026

Published: September 21, 2026

Keywords:

Intrinsic Motivation; Feedback;

Student Engagement;

Personality; Lecturer

Engagement



ABSTRACT

Objective: This study aimed to analyze the determinants of student engagement in learning, due to the low student engagement in learning. It can be known what factors form student engagement. **Method:** This study focused on students from the Faculty of Economic & Business at Universitas Muhammadiyah Sumatera Utara, with an overall population of 2,452 individuals. Therefore, the researcher determined the sample using the Slovin formula, with an e of 10%, and the total sample was 96 students. Data collection is done by using Google Form. Data analysis method using Structural Equation Modelling, that aimed to test the relationship between variables in the research model. Data processing was carried out with the help of the Smart-PLS 3 program. **Results:** The findings indicate that personality acts as a moderating variable in the relationship between intrinsic motivation and student engagement. Feedback, personality, and lecturer engagement were found to partially influence student engagement; however, feedback does not have a direct significant effect. Additionally, intrinsic motivation mediates the relationship between feedback and student engagement but does not mediate the relationship between lecturer engagement and student engagement. These results suggest that feedback can enhance student engagement indirectly through intrinsic motivation. Higher-quality feedback increases intrinsic motivation, that in turn strengthens student engagement. Therefore, lecturers should actively foster interaction and provide meaningful feedback to enhance students' intrinsic motivation, personality development, and engagement in learning. **Novelty:** This study contributes by identifying intrinsic motivation as a mediator between feedback and student engagement, a relationship rarely explored in prior research.

INTRODUCTION

A good learning process can be indicated by the presence of engagement, both between students and lecturers (Siregar et al., 2023). Engagement is student involvement in the learning process, that includes cognitive, emotional and behavioral aspects (Hazzam & Wilkins, 2023). Higher levels of overall, behavioral, emotional, and cognitive engagement are associated with higher academic achievement (Lei et al., 2018)(Olivier et al., 2019). (Bowden et al., 2021) found that students can engage in one or more dimensions of engagement, will support students in transformative learning, self-esteem, self-efficacy, and personal wellbeing. Student engagement is the glue, or mediator, that connects important contexts such as students' lives at home, university, peers, and community to student success. Students' emotions of joy, pride, excitement, enthusiasm, receptiveness, happiness, elation, and curiosity contributed to the creation of a robust institutional reputation, reflected in favorable referrals and retention rates. Students who are energized, passionate, and emotionally connected to a particular course are more likely to be verbally engaged in class (Mazer, 2012). Student engagement refers to students' active involvement in learning, assignments and activities (Lei et al., 2018). (Leslie, 2020) Present the Trifecta of Student Engagement, that allows faculty to explore tools and strategies that they can instantly implement to enhance student-to-content interaction,

foster student-to-student connections, and improve student-to-instructor involvement, leading to increased engagement and satisfaction after utilizing the Trifecta of Student Engagement.

With student engagement, lecturers know how far the learning outcomes show their effectiveness. Meanwhile, with lecturer engagement, students feel that the lecturer gives full attention to the learning process, and has an interest in learning outcomes (Siregar et al., 2023). Engagement – or lack thereof – can be related to classroom design and ecology, student orientations and actions, teacher orientations and actions, or a combination of these things (Lawson & Lawson, 2013). Because of its huge impact on student education, lecturers need to encourage the emergence and development of student engagement in every learning. It is important to conduct research on factors that are thought to be able to encourage the emergence and development of student engagement. (Quigley et al., 2022) investigated online engagement, and found that conscientiousness positively predicted all forms of online engagement, while neuroticism served as a predictor of skills engagement, emotional engagement and performance, while agreeableness and openness predicted participation and emotional engagement. Conscientiousness, honesty-humility, extraversion and agreeableness were each significantly correlated with engagement (Meskelis & Whittington, 2020). Personality itself can be described as the dynamic organization of an individual's physiological, volitional, emotional, and mental dispositions, and its role is important in depicting internalization and behavioral reactions to situational and environmental stimuli (Morfaki & Skotis, 2023). While, (Ojedokun, 2018) found that traits of openness, conscientiousness, extraversion and agreeableness were more associated with eco-civic engagement.

Factors that also influence student engagement are lecturer engagement (Bilal et al., 2021)(Leslie, 2020),(Siregar et al., 2023). It is stated by (Bilal et al., 2021) that lecturer engagement in higher education is actively needed to make students feel satisfied with their pedagogical abilities, and to improve their interactions with students. Teacher support is important for student engagement, with the expectation that teachers show concern, a well-structured learning environment by showing high, clear, and fair expectations (Klem & Connell, 2004). It has been previously studied by (Nguyen et al., 2018), that interaction with other students and teachers can increase engagement. While (Wang & Eccles, 2013) stated that to increase behavioral engagement, modifying school structures or improving teacher-student relationships seemed to be more effective than fostering relevant academic tasks. In addition, with support for relatedness, (Wang & Eccles, 2013) also found that students were more likely to be behaviorally and emotionally engaged in school when teachers and peers created a caring and socially supportive environment.

In another study, (Zepke & Leach, 2010) stated that one of the actions to increase student engagement is to allow students to work independently, enjoy learning relationships with others and feel they are competent to achieve their own goals. It is known as Self-determination, that allows someone to have competence, autonomy and relational motivational needs. Autonomy, competence, and relatedness affect the level of individual intrinsic motivation on the task given (Saeki & Quirk, 2015). Learners who perceive themselves as self-sufficient, capable, and possess a true bond with their school are more inclined to experience favorable academic results. In line with (Skinner et al., 2008), that states teacher support and student self-perception (especially autonomy) contribute to changes in behavioral components: respectively predict increased

engagement and decreased dissatisfaction. Competence makes the strongest contribution to behavioral engagement and dissatisfaction (Skinner et al., 2008). The self-determination can be realized with intrinsic motivation, as motivation that arises because the thing being done is considered enjoyable. It is supported by (Adi Badiozaman et al., 2020), who stated that perceptions of autonomy, competence, and belonging provide an important framework for understanding what is important to student engagement.

For students to sense autonomy, it is crucial that they perceive their involvement in learning as a self-selected activity that mirrors their genuine needs and values. In other words, students who feel free to engage in learning perceive that willingness as unchallenged. Feeling autonomous is not the same as feeling autonomous from others; actions initiated independently can be initiated either independently or in response to a request from a significant other. evidence suggests a positive relationship with student independence, their motivation and engagement (Stroet et al., 2013) concluded that students' perceptions of the need for supportive instruction were positively related to their motivation and engagement.

Students who feel self-directed, capable, and possess a true sense of connection with their school are more inclined to achieve positive educational results. Students who are highly engaged might appear well adjusted socially, emotionally, and behaviorally; however, their underlying self-beliefs (feelings of autonomy, competence, and relatedness) regarding the work that they are being asked to engage in within the classroom context appear to explain more in terms of social-emotional/behavioral functioning than engagement alone (Saeki & Quirk, 2015). Highly engaged students may appear to be well adjusted socially, emotionally, and behaviorally. SDT argues that teacher autonomy support and structures contribute to increased academic engagement by meeting basic psychological needs. Increases in extraversion, agreeableness and conscientiousness are associated with increases in general engagement. Increases in agreeableness and conscientiousness are associated with increases in cognitive engagement. Increases in extraversion, agreeableness, conscientiousness are associated with increases in behavioral engagement (Qureshi et al., 2016) (Zepke & Leach, 2010) put forward one of the actions to increase student engagement, namely allowing students to work independently, enjoy learning relationships with others and feel they are competent to achieve their own goals. Self-determination enables individuals to meet such competence, autonomy and relational motivational needs. conscientiousness, honesty-humility, extraversion and agreeableness were each significantly correlated with engagement. However, when these traits were included together in a regression analysis, only conscientiousness, honesty-humility and extraversion remained significantly related to employee engagement (Meskelis & Whittington, 2020).

Instructors ought to be motivated to offer genuine feedback to learners and convey clearly how to identify their objectives, appreciate their skills, and coach them to focus mainly on their advantages. Moreover, instructors ought to implement measures to foster a relaxed, supportive, engaging, and non-critical educational atmosphere (Azila-Gbettor & Abiemo, 2021). Among the many factors that determine student engagement, this study focuses on lecturer engagement and feedback mediated by intrinsic motivation and moderated by personality. (Nkhoma et al., 2018) Indicates that feedback, specifically through out-of-class communication technology, fosters a social connection between students and lecturers, enabling students to resolve uncertainties in concepts discussed in class and fostering a feeling of closeness with their lecturers, that enhances student

involvement and consequently improves learning results. Lecturers must be able to improvise in teaching, in the context of teaching in a more systematic way, to develop student engagement (Brown et al., 2023). Found that lecturer engagement (i.e. passion, dedication, and absorption) is necessary to create their willingness and motivation to invest in effective pedagogical decisions and instill student satisfaction (Bilal et al., 2021). Therefore, the objective of this study is to analyze the variables that influence student engagement, that consist of feedback, personality, lecturer engagement and intrinsic student motivation. It is very important so that in learning, teachers can stimulate the emergence of student engagement, so that learning objectives can be achieved.

RESEARCH METHOD

This study research adopts a quantitative method, utilizing Structural Equation Modelling for data analysis to examine the connections between variables in the study model. The variables used are: lecturer engagement, student engagement, feedback, mediated by intrinsic motivation, and moderated by personality.

Student engagement refers to how students participate in their learning, assessed through dimensions such as psychological motivation, collaboration with peers, cognitive problem-solving, interaction with teachers, and learning management, evaluated via 14 questions. Lecturer engagement refers to the involvement of lecturers in their classes, assessed through the dimensions of vigor, dedication, and absorption, evaluated using 6 questions. Feedback consists of information students gain regarding their learning journey and the outcomes of their accomplishments, that encompasses giving feedback to peers, responding to colleagues' feedback, and receiving input from instructors, addressing areas such as the content of the feedback, how it is delivered, and the timing, all evaluated through 10 questions. Intrinsic motivation refers to the drive to engage in an activity because it is naturally fulfilling, interesting, or pleasurable, encompassing aspects of competence, autonomy, and relatedness, assessed through 6 questions. Personality can be characterized as a dynamic arrangement of an individual's physiological, volitional, emotional, and mental traits, playing a crucial role in illustrating internalization and behavioral responses to situational and environmental stimuli, with dimensions of Conscientiousness, agreeableness, extraversion, openness to experience, and neuroticism, assessed through 7 questions.

The subjects of this study were students from the Faculty of Economics and Business at Universitas Muhammadiyah Sumatera Utara, with a total population of 2,452 students. Sample design inherently involves trade-offs, aiming to achieve maximum efficiency by optimizing precision while considering existing limitations (Paskota, 2016). Consequently, the researcher calculated the sample size using the Slovin formula, with an error margin of 10%, resulting in a total sample of 96 students. Data gathering is performed utilizing Google Form. From the entire sample, the number of respondents who filled out the questionnaire was 96 respondents, so the response rate was 100%.

RESULTS AND DISCUSSION

Results

Respondent characteristics are presented in Table 1. below:

Table 1. Respondent characteristics

Age	Number	Frequency
19	9	9%
20	70	73%
21	15	16%
23	2	2%
Total	96	100%
Gender		
Male	32	32%
Female	64	68%
Total	96	100%

All instruments have a loading factor value of more than 0.5, means all instruments can be declared valid, and this AVE value of all larger than 0.5, this value indicates sufficient convergent validity, suggesting that a latent variable can account for over half of the variance of its indicators on average. It is known that the AVE value of all variables is greater than 0.5, meaning that all variables have adequate convergent validity. Hypothesis testing is conducted to answer the previously proposed research hypothesis. By the help of the SmartPLS3 program, the researcher performed bootstrapping to obtain the results presented as follow:

Table 2. Summary of Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Decision
Feedback→Intrinsic Motivation	0.503	0.514	0.100	5.023	0.000	Accepted
Feedback→Student Engagement	0.241	0.231	0.115	2,095	0.037	Accepted
Intrinsic Motivation→Student Engagement	0.445	0.444	0.105	4.242	0.000	Accepted
Lecturer Engagement→Intrinsic Motivation	0.201	0.205	0.097	2,061	0.040	Accepted
Lecturer Engagement→Student Engagement	0.174	0.177	0.091	1,915	0.056	Rejected
Press-Mot→Student Engagement	0.017	0.029	0.050	0.334	0.738	Rejected
Personality→Student Engagement	0.141	0.142	0.058	2,437	0.015	Accepted
Lecturer Engagement→Intrinsic Motivation	0.201	0.203	0.103	1,944	0.052	Rejected
Lecturer Engagement→Student Engagement	0.174	0.165	0.089	1,954	0.051	Rejected
PRESS-MOT→STUDENT ENGAGEMENT	0.017	0.029	0.050	0.330	0.742	Rejected
Personality→student engagement	0.141	0.148	0.059	2.404	0.017	Accepted
Feedback -> Intrinsic Motivation -> Student Engagement	0.224	0.224	0.066	3.404	0.001	Accepted
Lecturer Engagement → Intrinsic Motivation→ Student Engagement	0.073	0.072	0.044	1.672	0.095	rejected

The findings suggest that personality significantly influences student engagement and serves as a moderating variable in the relationship between intrinsic motivation and student engagement. Lecturer engagement is reflected in the ability to create an enjoyable and interactive learning atmosphere in the classroom. When lecturers are actively engaged, students are more likely to perceive the learning process as enjoyable, that can foster their own engagement. Two-way interaction between lecturers and students further enhances the quality of learning by promoting a dynamic and pleasant classroom environment.

However, the findings of this study indicate that lecturer engagement does not have a significant effect on student engagement, and feedback also does not directly influence student engagement. This may be due to the presence of other unexamined factors that play a more substantial role in promoting student engagement.

Nevertheless, feedback is found to influence student engagement when mediated by intrinsic motivation. Therefore, instructional design should focus on fostering students' intrinsic motivation, enabling them to perceive learning as enjoyable, challenging, and meaningful, that in turn encourages active engagement. In contrast, lecturer engagement remains non-significant in influencing student engagement, even when mediated by intrinsic motivation.

Discussion

Lecturers provide feedback with the expectation that students will better understand the material and that the classroom environment will become more interactive. Interactive classes reflect higher levels of student engagement in the learning process. Consequently, lecturers strongly expect active student participation in every class. Intrinsic motivation plays a crucial role, as it enables students to engage in learning because they find it enjoyable and meaningful, rather than due to external pressure. However, the findings indicate that lecturer engagement does not significantly influence intrinsic motivation, suggesting that students may not perceive lecturer engagement as intrinsically motivating. Although feedback is found to influence student engagement, lecturer engagement does not have a significant effect on student engagement. This may indicate that students differentiate between lecturer engagement and feedback, and may not perceive feedback as a component of lecturer engagement. Therefore, lecturers need to identify other factors that can effectively foster student engagement and utilize these factors to enhance the overall learning experience.

CONCLUSION

Higher levels of overall, behavioral, emotional, and cognitive engagement are associated with improved academic achievement. Students are more likely to be behaviorally and emotionally engaged when lecturers and peers foster a caring and socially supportive learning environment. Therefore, the role of the lecturer is crucial in demonstrating active engagement and providing meaningful feedback that supports student learning. In addition, students need to develop strong intrinsic motivation by perceiving learning as enjoyable and meaningful, driven by internal satisfaction rather than external rewards or social exchange. Student engagement is influenced by multiple factors, both internal (such as personality and motivation) and external (such as teaching practices and classroom environment), that collectively encourage active participation in learning. Lecturers should prioritize the learning process rather than solely focusing on outcomes,

ensuring that student engagement becomes an integral part of achieving academic success. Lecturers should actively stimulate and engage students to enhance intrinsic motivation, provide effective feedback, and support personality development, particularly in fostering curiosity and openness to new experiences. Future studies should examine the influence of the Big Five personality traits on student engagement, enabling the development of curricula that strengthen these personality dimensions to support more effective learning.

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