Research article

Analysis of student engagement in online learning in Indonesia using a self determination theory approach

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ABSTRACT

The aims to analyze student engagement in online learning in Indonesia using a self-determination theory approach. This research uses a quantitative type of research. The population in this study were undergraduate management students who were or had previously conducted online learning. The sampling technique used random sampling where the total sample was 130 respondents. Data collection was obtained by distributing questionnaires distributed via Google Form. The data analysis method uses SmartPLS 4.0 software to carry out outer model tests (convergent validity, discriminant validity, AVE, composite reliability, and Crobach's alpha), inner model tests (model fit), and hypothesis tests. The results of this research show that social relationships have no effect on cognitive engagement, while other indicators influence each other.

Keywords: Behavioral Engagement, Cognitive Engagement, Emotional Engagement, Self-Autonomy, Social Relations, Self-Competition.

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Abstrak

Tujuan penelitian ini adalah untuk menganalisis keterlibatan mahasiswa dalam pembelajaran online di Indonesia dengan menggunakan pendekatan teori self-determination. Penelitian ini menggunakan jenis penelitian kuantitatif. Populasi dalam penelitian ini adalah mahasiswa manajemen tingkat sarjana yang sedang atau pernah melakukan pembelajaran online. Teknik pengambilan sampel yang digunakan adalah random sampling dengan total sampel sebanyak 130 responden. Pengumpulan data dilakukan dengan menyebarkan kuesioner melalui Google Form. Metode analisis data menggunakan perangkat lunak SmartPLS 4.0 untuk melakukan uji model luar (validitas konvergen, validitas diskriminan, AVE, keandalan komposit, dan alpha Cronbach), uji model dalam (kesesuaian model), dan uji hipotesis. Hasil penelitian ini menunjukkan bahwa hubungan sosial tidak memiliki efek terhadap keterlibatan kognitif, sementara indikator lain saling mempengaruhi.

Kata Kunci: Keterlibatan Perilaku, Keterlibatan Kognitif, Keterlibatan Emosional, Self-Autonomy, Hubungan Sosial, Kompetensi Diri.

1. Introduction

Limited learning space and time during the pandemic can be overcome by implementing online learning, but students still need direct guidance and explanations regarding the material taught by lecturers (Utari et al., 2020). The main solution for students to understand online learning material is to provide clear material, and as students, they must also hear and understand the material taught by the lecturer. The use of technology that does not function well in online learning can hinder the learning and engagement of students and lecturers, where students and lecturers need to spend their time and energy accessing technology, so engagement in learning is not optimal (Dumford & Miller, 2018). Therefore, students and lecturers must work together so that students can understand the material during online learning and not just fulfill curriculum assignments.

Self-determination theory is a psychological concept that discusses how a person can carry out an action based on his own will, carry out a behavior determined by himself, make choices and decisions based on intention, and carry out with consciousness. Self-determination theory can be applied in various areas of a person's life, one of which is the area of education, which most teenagers are currently undertaking (Ntoumanis et al., 2020).

The motivation aspect of lecturers and students greatly influences online learning because self-motivation will guide lecturers and students to take action. From the perspective of self-determination theory, a person will be motivated to grow and change based on three psychological needs, namely: the need for autonomy, for example, feeling supported and regulated by oneself; the need for relatedness, for example feeling loved and related to other people, and the need for competence, for example feeling effective and capable (Chiu, 2021). The need for competence is closely related to personal capacity. Recognizing one's capacity will lead a person to be more motivated to achieve one's goals. In the context of this research, self-capacity (lecturers and students) will motivate the factors needed in online learning, for example, lecturers' pedagogical-digital abilities and determining learning resources effectively. Digital. Therefore, self-determination has been widely applied to motivate involvement and optimize student learning, which is focused on lecturer-student interactions, especially lecturer support, because lecturers play an important role in supporting students' learning needs at school (Chiu, 2021).

Self-determination is the right tool for analyzing the success of determining an online learning approach because it can identify factors that influence students' learning motivation to be actively involved in learning (Muir, 2021) when students feel that school assignments have a purpose and are interesting as well as the classroom environment and lecturer responses responsiveness will cause students to be independently motivated to engage in independent learning (León et al., 2014); and, lecturer motivational beliefs play an impact on the lecturer's ability to carry out effective learning (Corkin et al., 2018).

Data regarding student engagement can be used to determine the quality of a study program in providing online learning, as well as how students utilize online systems (information and communication technology) to obtain optimal learning. This can be seen through students' condition in the online learning process. This research aims to analyze student engagement in online learning in Indonesia using a self-determination theory approach.

2. Theoretical background and hypothesis

The relationship between the need for self-autonomy and behavioral engagement

Individuals are inclined to engage in activities driven by personal motivations (internal reasons) rather than being compelled by external factors. Previous research has investigated the correlation between the need for autonomy and engagement, suggesting that autonomy correlates with student engagement (Prasetyo et al., 2019). Additionally, findings from research conducted by Rohinsa et al. (2019) indicate that self-autonomy influences student engagement. Hence, it is reasonable to hypothesize that the need for self-autonomy affects behavioral engagement.

H1: The need for self-autonomy influences behavioral engagement in online learning in Indonesia.

The relationship between the need for self-autonomy and cognitive engagement

Autonomy, defined as having choices, support, and willingness, is intricately linked to the initiation, persistence, and termination of behavioral engagement. Empirical evidence supports the notion that autonomy impacts student engagement (Tekeng & Alsa, 2016). Similarly, Gagne's research (2003) corroborates this relationship. Consequently, it is plausible to conjecture that the need for self-autonomy influences cognitive engagement.

H2: The need for self-autonomy influences cognitive engagement in online learning in Indonesia.

The relationship between the need for self-autonomy and emotional engagement

The ability to exercise autonomy in decision-making and problem-solving processes is anticipated to impact emotional engagement. It is characterized by a sense of ownership, accountability for one's choices and decisions, and a willingness to accept their consequences and fulfill associated responsibilities. This assertion is supported by research conducted by Rohinsa et al. (2019) and Tekeng & Alsa (2016). Consequently, it can be inferred that the need for self-autonomy influences emotional engagement.

H3: The need for self-autonomy influences emotional engagement in online learning in Indonesia

The relationship between the need for social relations and behavioral engagement

The necessity for social relationships within one's surroundings, encompassing aspects like forming friendships and engaging in collaborative activities or tasks with peers, is anticipated to

foster positive behaviors towards the environment. Such behaviors may include adhering to established norms and actively participating in environmental initiatives. Empirical evidence from studies by Chiu (2022) supports this assertion. Thus, it is reasonable to infer that the need for social relations influences behavioral engagement.

H4: The need for social relations influences behavioral engagement in online learning in Indonesia

The relationship between the need for social relations and cognitive engagement

Individuals who maintain strong social bonds with peers and prefer collaborative activities over solitary pursuits are inclined towards heightened engagement and participation. This assertion is corroborated by the findings of research conducted by Suci Prasetyo et al. (2019), which posit that students' social relationship requirements significantly impact their learning strategies, attention, and engagement in the learning process. Consequently, it is reasonable to infer that the need for social relations influences cognitive engagement.

H5: The need for social relationships influences cognitive engagement in online learning in Indonesia

The relationship between the need for social relations and emotional engagement

Individuals who foster strong social connections with peers and prefer group activities over solitary endeavors are inclined to manifest positive reactions towards their environment and a heightened sense of belonging. Research undertaken by Chiu (2022) involving school students in Hong Kong highlights the impact of social relationship needs on emotional engagement. Consequently, it is reasonable to postulate that the need for social relations influences emotional engagement.

H6: The need for social relationships influences emotional engagement in online learning in Indonesia

The relationship between the need for self-competence and behavioral engagement

The correlation between the need for self-competence and behavioral engagement revolves around an individual's capacity to demonstrate their capabilities and influence their environment. The intrinsic aspiration of individuals to feel efficacious in their interactions with the environment is anticipated to foster positive behaviors towards their surroundings, as well as active involvement and participation in environmental activities. Studies conducted by Gagné (2003) and Tekeng & Alsa (2016) have established that the need for self-competence significantly impacts student engagement. Consequently, it is reasonable to infer that the need for self-competence influences behavioral engagement.

H7: The need for personal competence influences behavioral engagement in online learning in Indonesia

The relationship between the need for self-competence and cognitive engagement

The capacity of individuals to demonstrate their abilities and exert influence on the environment reflects their inherent desire for effectiveness in environmental interactions, resulting in heightened involvement and attentiveness to their surroundings. Studies conducted by Hamre et al. (2013) and Chen and Jang (2010) have concluded that the need for self-competence significantly impacts cognitive engagement. Therefore, it is reasonable to infer that the need for self-competence influences cognitive engagement.

H8: The need for personal competence influences cognitive engagement in online learning in

Indonesia.

The relationship between the need for self-competence and emotional engagement

The capability of individuals to demonstrate their competencies and influence the environment underscores their innate drive for efficacy in environmental interactions, resulting in individuals who foster positive relationships with the environment and may even develop a profound sense of belonging to their surroundings. Research conducted by Chiu (2022) and Rohinsa et al. (2019) has established that the need for self-competence significantly impacts emotional engagement. Thus, it is reasonable to posit that the need for self-competence influences emotional engagement.

H9: The need for personal competence influences emotional engagement in online learning in Indonesia.
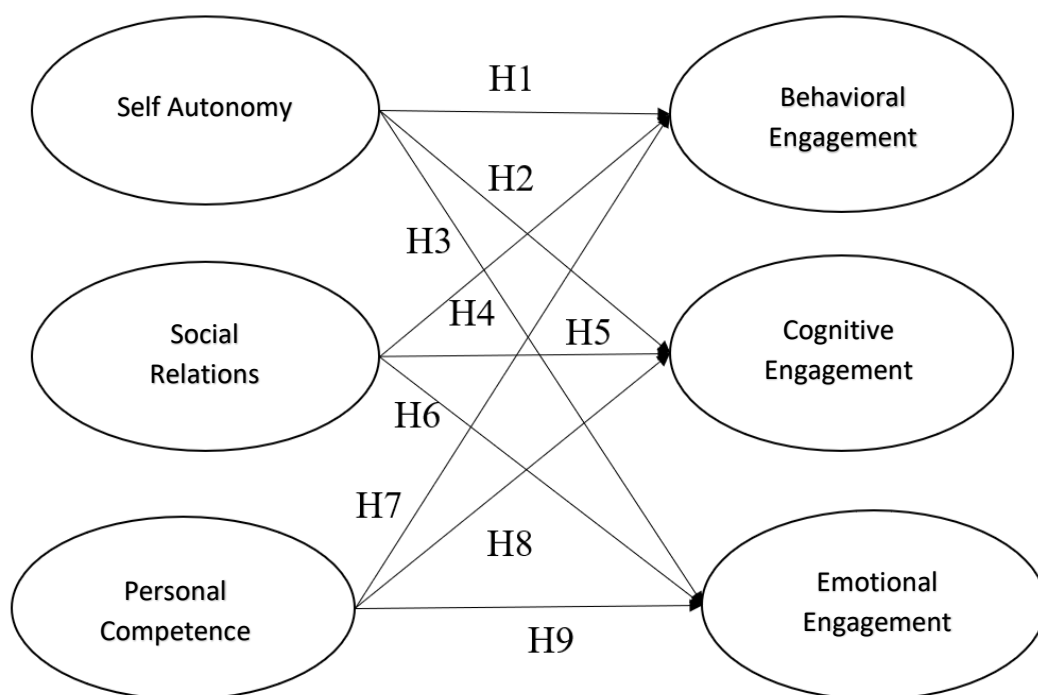

Figure 1. conceptual framework

3. Methodology

This research adopts a quantitative approach, specifically an objective research methodology involving the collection and analysis of quantitative data. Descriptive statistical testing methods are employed in this study. The sample selection process involves identifying and selecting a subset of the population based on specific characteristics and techniques. It is imperative for the sample to accurately represent the population's characteristics to ensure the validity of the findings. Given the constraints of a large population size, limited time, and research costs, the sampling process is constrained. Random sampling, where samples are selected randomly from a predefined population, is utilized in this research. With 18 indicators in the study, a minimum sample size of (18 x 5) = 90 samples or a maximum sample size of (18 x 10) = 180 samples is necessary. In this study, the sample size is determined to be an average of 130 respondents.

The data analysis was conducted utilizing the Partial Least Squares (PLS) method through the application of SmartPLS version 3 software. PLS, known as Partial Least Squares, constitutes a variant-based structural equation analysis (SEM) capable of concurrently examining both the measurement and structural models. The measurement model serves to evaluate validity and reliability, whereas the structural model facilitates causality testing, involving hypothesis testing through prediction models.

4. Results and discussion

Characteristics of Respondents

According to data obtained from PDikti, the projected number of Bachelor of Management students in 2022 is 956,563, making it the department with the highest enrollment. Consequently, the Bachelor of Management program becomes an attractive choice for the researcher to focus on as a research subject. The information on student engagement can serve as a valuable tool to assess the efficacy of a study program in delivering online education and to understand how students utilize online systems, such as information and communication technology, to optimize their learning experience. This analysis will shed light on the dynamics of student engagement within the online learning environment. Therefore, the objective of this research is to examine student engagement in online learning in Indonesia by employing a self-determination theory approach.

Table 1. Characteristics of Respondents Based on Gender

No	Gender	Respondent	Percentage
1	Man	79	60.8%
2	Woman	51	39.2%
Total		130	100%

Source: Processed research data, 2023

From the data collection process involving 130 respondents, it is evident that the questionnaire was predominantly filled out by male students, comprising 60.8% of the total respondents, whereas female students accounted for 39.2% of the total respondents. This discrepancy is attributed to the higher willingness of male students to participate in filling out the research questionnaire.

Table 2. Characteristics of Respondents Based on Age

No	Age	Respondent	Percentage
1	< 21 years	2	1.5%
2	21 – 35 Years	126	96.9%
3	36 – 50 years	1	0.8%
4	< 50 years	1	0.8%
Total		130	100%

Source: Processed research data, 2023

From the data collection process involving 130 respondents regarding the age demographics, it is evident that the majority of respondents fell within the age range of 21 to

35 years, accounting for 96.9% of the total. This distribution is attributed to the predominant representation of students within this age bracket.

Results and discussion

Table 3. Hypothesis testing

	T Statistics (|O/STDEV|)	P Values	INFORMATION
Self-Autonomy -> Behavioral Engagement	9.104	0,000	Significant
Self-Autonomy -> Cognitive Engagement	7,303	0,000	Significant
Self-Autonomy -> Emotional Engagement	7,063	0,000	Significant
Social Relations -> Behavioral Engagement	3,786	0,000	Significant
Social Relations -> Cognitive Engagement	0.488	0.625	Not significant
Social Relations -> Emotional Engagement	3,812	0,000	Significant
Personal Competence -> Behavioral Engagement	13,151	0,000	Significant
Personal Competence -> Cognitive Engagement	9,604	0,000	Significant
Personal Competence -> Emotional Engagement	8,377	0,000	Significant

Based on the data presented in the table above, the first hypothesis test examined the influence of Self-Autonomy on Behavioral Engagement. The T-statistic value of 9.104 and a P-value of 0.000 indicate that the research significance is accepted, thus confirming the acceptance of this research hypothesis. The interpretation suggests that heightened levels of Self-Autonomy correspond to increased Behavioral Engagement and vice versa, establishing a positive and significant relationship between Self-Autonomy and Behavioral Engagement.

Similarly, the second hypothesis test scrutinized the influence of Self-Autonomy on Cognitive Engagement. With a T-statistic value of 7.303 and a P-value of 0.000, the research significance is accepted, affirming the acceptance of this research hypothesis. The analysis indicates that greater levels of Self-Autonomy correlate with enhanced Cognitive Engagement, establishing a positive and significant association between Self-Autonomy and Cognitive Engagement.

The third hypothesis test explored the influence of Self-Autonomy on Emotional Engagement. A T-statistic value of 7.063 and a P-value of 0.000 indicate the acceptance of research significance, validating the acceptance of this research hypothesis. The findings suggest that heightened Self-Autonomy corresponds to increased Emotional Engagement, establishing a positive and significant relationship between Self-Autonomy and Emotional Engagement.

The fourth hypothesis test delved into the influence of Social Relations on Behavioral Engagement. With a T-statistic value of 3.786 and a P-value of 0.000, the significance of the research is accepted, thus confirming the acceptance of this research hypothesis. The analysis highlights a positive and significant relationship between Social Relations and Behavioral Engagement, indicating that stronger Social Relations correspond to heightened Behavioral Engagement.

However, the fifth hypothesis test regarding the influence of Social Relations on Cognitive Engagement yielded a T-statistic value of 0.488 and a P-value of 0.625, leading to the rejection of research significance and, consequently, the rejection of this research hypothesis. The interpretation suggests that heightened levels of Social Relations do not positively influence Cognitive Engagement.

Similarly, the sixth hypothesis test regarding the influence of social relations on emotional engagement yielded a T-statistic value of 3.812 and a P-value of 0.000, leading to the

acceptance of the research's significance and this research hypothesis. The findings reveal a positive and significant relationship between Social Relations and Emotional Engagement, indicating that stronger Social Relations correspond to heightened Emotional Engagement.

Proceeding to the seventh hypothesis test, which examined the influence of Personal Competence on Behavioral Engagement, a T-statistic value of 13.151 and a P-value of 0.000 indicated the acceptance of research significance and the acceptance of this research hypothesis. The analysis underscores a positive and significant relationship between Personal Competence and Behavioral Engagement, suggesting that heightened Personal Competence corresponds to increased Behavioral Engagement.

Similarly, the eighth hypothesis test scrutinized the influence of Personal Competence on Cognitive Engagement. With a T-statistic value of 9.604 and a P-value of 0.000, the research significance is accepted, confirming the acceptance of this research hypothesis. The findings suggest a positive and significant association between Personal Competence and Cognitive Engagement, indicating that heightened Personal Competence correlates with enhanced Cognitive Engagement.

Lastly, the ninth hypothesis test explored the influence of Personal Competence on Emotional Engagement. A T-statistic value of 8.377 and a P-value of 0.000 indicate the acceptance of research significance and, consequently, the acceptance of this research hypothesis. The analysis suggests a positive and significant relationship between Personal Competence and Emotional Engagement, indicating that heightened Personal Competence corresponds to increased Emotional Engagement.

5. Conclussion

Several conclusions can be drawn Based on data analysis and research findings concerning student engagement in online learning in Indonesia. Firstly, self-autonomy significantly influences behavioral, cognitive, and emotional engagement in online learning. Secondly, social relationships play a significant role in behavioral and emotional engagement but not cognitive engagement. Lastly, self-competence significantly affects the behavioral, cognitive, and emotional engagement of online learning. These findings underscore the importance of fostering self-autonomy, social relationships, and self-competence in enhancing student engagement in online learning environments in Indonesia.

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Declarations

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