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The Relationship between Assessment, Learning Approaches, and Student Satisfaction

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Abstract

The objective of this research is to assess the appropriateness of lecture assessment and its impact on deep learning approaches, surface learning approaches, and student satisfaction. The study was conducted at the Economics Education Study Program, Faculty of Teaching and Education, University of HKBP Nommensen, with a total sample size of 89 individuals. The research methodology employed in this study was quantitative descriptive with survey techniques. Structural Equation Modeling analysis was utilized to examine the compatibility of the structural model depicting the relationships between variables and the available data. The result of this research found the surface learning approach has a significant negative relationship with appropriate assessment of learning, with a regression coefficient of -0.742. The deep learning approach has a significant positive relationship with appropriate assessment of learning, with a regression coefficient of 0.465. The student's satisfaction also has a significant positive relationship with appropriate assessment of learning, with a regression coefficient of 0.335. The surface learning approach and deep learning approach have significant positive influences on student satisfaction, with regression coefficients of 0.026 and 0.236 respectively. Additionally, we recommend conducting further research in the future to expand on these findings.

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INTRODUCTION

Education stands as a pivotal domain within the framework of a nation's development. In the Indonesian context, the educational system perpetually undergoes evolution and innovation, aimed at equipping young cohorts with the caliber and competitiveness demanded by the era of globalization. However, education transcends the mere dissemination of content and knowledge; it encompasses the profound consideration of student contentment within the teaching and learning milieu.

Student satisfaction, a critical gauge for evaluating the quality of higher education institutions, hinges upon multiple factors, among which the assessments and evaluations conducted by instructors hold paramount importance. By undertaking appropriate and impartial assessments, the learning process can be optimized, thereby fostering enhanced student motivation.

Concurrently, learning approaches assume a pivotal role in determining student satisfaction. Learner-centered methodologies that foster active student involvement act as catalysts for augmented satisfaction levels and the acquisition of indispensable skills. Recent research elucidates the intricate nexus among assessments, learning approaches, and student satisfaction. For instance, Almusharraf & Bailey (2021) unveiled the positive influence of collaborative learning approaches and formative assessments on student satisfaction. Similarly, the study by Dela & Wijaya (2022) posited that problem-based learning approaches and authentic assessments contribute to an enriched sense of satisfaction in students.

Additional investigations conducted by Kanwar & Sanjeeva (2022) substantiated the notion that equitable and objective assessments serve as predictive indicators for student satisfaction with the learning process. Moreover, Bonvin et al. (2022) research affirmed the efficacy of objective and competency-based assessments in enhancing student satisfaction with the learning experience.

These scholarly inquiries underscore the pivotal role of assessments and learning approaches in guaranteeing student contentment and augmenting educational quality. Through the strategic implementation of effective assessment strategies and learner-centered pedagogies, educational institutions can establish an environment conducive to learning, thereby fostering student satisfaction and triumph.

To enhance the caliber of education and augment student satisfaction, further research endeavors are warranted to delve into the intricate interplay among assessment, learning approaches, and student contentment. The present study aims to scrutinize the nexus between assessment, learning approaches, and student satisfaction within the confines of HKBP Nommensen University. Within the realm of education, student satisfaction assumes a pivotal role that demands meticulous consideration to optimize the quality of the learning experience. Both assessment and learning approaches emerge as influential determinants of student satisfaction. An array of empirical investigations has already unveiled the interconnectedness of assessment, learning approaches, and student satisfaction. Consequently, a more comprehensive research endeavor is indispensable for an in-depth comprehension of these dynamics. Such an endeavor holds the potential to substantively contribute to the advancement of higher education in Indonesia.

Recent studies have yielded captivating findings in this domain. For instance, Kutlu & Kültür (2021) unearthed the affirmative impact of formative assessment on student satisfaction with learning. Analogously, Andersson & Palm (2017) demonstrated the salutary influence of formative assessment on student motivation and learning outcomes. Moreover, student-centered learning approaches that underscore student engagement and participation have also been found to engender a favorable impact on student satisfaction with learning. Satriaman et al. (2018) conducted a study that corroborated the constructive in-

fluence of a student-centered approach on student satisfaction, attributing this phenomenon to the enhanced opportunities for students to actively partake in the learning process. However, it is noteworthy that numerous other factors, such as the characteristics of students and instructors, pedagogical methodologies employed, and the learning environment, can also exert an impact on the interrelationship among assessment, learning approaches, and student satisfaction. Consequently, a more discerning and all-encompassing research endeavor is warranted to gain a deeper understanding of these multifaceted factors.

The present research endeavors to explore the intricate association among assessment, learning approaches, and student satisfaction within the realm of higher education in Indonesia. This study will encompass students from diverse academic programs across multiple universities in Indonesia. Data will be procured through the utilization of questionnaires, student interviews, and observations of instructional practices. Relevant statistical methodologies will be employed to analyze the gathered data. The anticipated outcomes of this research endeavor hold the promise of offering invaluable contributions to the advancement of higher education in Indonesia, particularly in terms of cultivating more efficacious assessment and learning approaches that can elevate student satisfaction with the learning experience. Furthermore, this research is poised to provide invaluable insights for instructors and educational policymakers, enabling them to augment the quality of teaching and learning within the domain of higher education.

METHODS

This study entails a descriptive quantitative research design that employs survey techniques to procure data from students enrolled in the Faculty of Education, Department of Economics Education, at HKBP Nommensen University, specifically concerning assessment, learning approaches, and student satisfaction. Data collection was executed through the dissemination of an electronic questionnaire among first year to fourth-year students. The respondents accounted for 68.5% of the total 130 registered students, with female students exhibiting greater participation and proactive engagement (88.76%), compared to their male counterparts (11.24%). Among the participants, 29.21% were in their first year, 22.47% in their second year, 34.83% in their third year, and 13.49% in their fourth year.

The collected data will undergo analysis utilizing Structural Equation Modeling (SEM) in conjunction with the SPSS AMOS software. SEM, a multivariate statistical analysis method, is well-suited for testing causal relationships among intricate variables. It proves particularly efficacious in research encompassing multiple independent and dependent variables, enabling the exploration of interrelationships among said variables. In this study, SEM analysis will be employed to assess the model elucidating the interplay between assessment, learning approaches, and student satisfaction. The SEM analysis will be carried out in three sequential stages: evaluating construct validity, scrutinizing the structural model, and assessing predictive validity. Prior research has already employed SEM as a tool to scrutinize the association between assessment, learning approaches, and student satisfaction. The utilized SEM to explore the influence of assessment and learning approaches on student satisfaction with the learning experience. Similarly, the leveraged SEM to examine the impact of assessment and learning approaches on students' academic achievements.

Research Instruments

The research instrument employed in this study encompasses a comprehensive questionnaire divided into three sections: assessment, learning approaches, and student satisfaction. Prior to implementation, the questionnaire underwent a pilot test involving 30 students from the Faculty of Education, Department of Economics at Universitas HKBP Nommensen, establishing its validity and reliability.

To evaluate the quality of teaching and learning, as well as the development of Generic Skills, the researchers utilized the Appropriate Assessment Scale, which was adapted from the Course Experience Questionnaire (CEQ). This formal instrument is commonly employed at the departmental level and serves as an informative and valuable data source for students (Pardede et al., 2022). Notably, the CEQ has been successfully employed in online lecture settings (Warfvinge et al., 2022). Each item within the Appropriate Assessment Scale is rated on a 1 to 5 scale, ranging from "strongly disagree" to "strongly agree." It is important to highlight that Items 1, 3, and 4 within the Appropriate Assessment section bear negative connotations. The internal consistency of the scale, as indicated by Cronbach's alpha coefficient, is highly satisfactory at 0.842. Additionally, confirmatory factor analysis confirmed the construct validity, with loading factors of 0.912, 0.899, and 0.801 for each Appropriate Assessment indicator, respectively.

The Study Process Questionnaire (SPQ) was employed as a widely used instrument to measure surface and deep learning approaches. The conceptual framework for the SPQ is based on the surface and deep learning constructs identified by F. Marton & R. Saljo (1997), which were further developed by Biggs (1979) to incorporate congruent motivation and appropriate learning strategies. The SPQ utilized in this study is a shortened version comprising 12 items adapted from the instrument (Fox et al., 2001). Each item within the SPQ is rated on a 5-point scale, ranging from "rarely true" to "usually true." The surface approach encompasses 3 items for surface motive (Cronbach's alpha coefficient $\alpha = 0.889$) and 3 items for surface strategy ($\alpha = 0.770$). The deep approach comprises 3 items for deep motive ($\alpha = 0.828$) and 3 items for deep strategy ($\alpha = 0.858$). The internal consistency of the scale, as evidenced by Cronbach's alpha coefficients, is highly satisfactory. Confirmatory factor analysis confirmed the construct validity, with loading factors of 0.833, 0.844, and 0.886 for each surface motive indicator, and 0.764, 0.849, and 0.574 for each surface strategy indicator. Despite the lower loading factor for the 3rd item of surface strategy (0.574), it was retained. The factor matrix values for each deep motive indicator are 0.761, 0.793, and 0.802, while for deep strategy they are 0.871, 0.724, and 0.860. Thus, the SPQ instrument is deemed valid for the purposes of this study.

Regarding the measurement of student satisfaction, a single general question was employed: "How satisfied are you with the course you are taking?" This question was rated on a 5-point scale, ranging from "strongly disagree" to "strongly agree." This approach aligns with the study conducted by (Alyoussef (2020), who likewise utilized a single general question to gauge student satisfaction with learning. The researchers found that employing a single question yielded results similar to those obtained from multiple-question surveys.

Structural Model Fit Test

This study undertook an assessment of the adequacy of fit for the structural model through the utilization of Goodness-Of-Fit (GOF) criteria. The findings substantiate that the model aligns well with the observed data. By adhering to the predetermined criteria for model fit, specifically an RMSEA value of $\leq$ 0.06 and TLI and CFI values of $\geq$ 0.90 (Hu & Bentler, 1999), the test outcomes demonstrate a favorable compliance with these standards. The RMSEA analysis culminated in a result of 0.057, which falls below the maximum threshold of 0.06, thus signifying a robust fit of the model to the data. Moreover, other indicators such as TLI and CFI yield satisfactory values of 0.957 and 0.966, respectively. Consequently, it can be inferred that the conducted testing effectively elucidated the interrelationships among the presented research variables.

Description of Statistics

Figure 1 provides an overview of the average scores pertaining to the Surface Learning Approach across various academic years. Notably, first-year students exhibited an average score of 3.01, while second year and third-year students recorded averages of 2.98 and 3.13, respectively. The highest average was observed among fourth-year students, amounting to 3.2. In contrast, the Deep Learning Approach registered an average score of 3.46 for first-year students and 3.08 for fourth-year students. Notably, second-year students attained the highest average in this regard, reaching 3.68, whereas third-year students attained an average of 3.32.

As for the Appropriate Assessment variable, the highest average score was obtained by first-year students, amounting to 3.52. Subsequently, the averages for second-year, third-year, and fourth-year students decreased to 3.36, 2.95, and 2.74, respectively. Finally, in terms of Student Satisfaction, second-year students exhibited the highest average score of 4.1, whereas the subsequent years maintained relatively stable averages ranging between 3.83 and 3.88.

Overall, the descriptive statistics of the data reveal variations in average values across variables and academic years. Notably, the Surface Learning Approach and Student Satisfaction variables exhibit relatively consistent averages, whereas the Deep Learning Approach and Appropriate Assessment variables demonstrate fluctuations in average values across academic years.

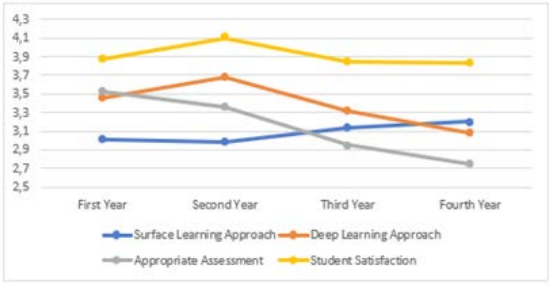

Figure 1. Average of Variable per Student Attended Year

RESULT AND DISCUSSION

Table 1 shows the results of structural coefficients and p-values of path analysis in this study. In path analysis, structural coefficients measure the strength and direction of the relationship between two variables. Meanwhile, p-values indicate the significance in those coefficients, with smaller p-values indicating a more significant relationship.

From the Table 1, there are five relationships between the variables measured in this study, namely learning approaches (in this case, surface learning and deep learning), appropriate assessment, and student satisfaction. The analysis results show that appropriate assessment has a significant positive influence on deep learning (0.364), while it has a significant negative influence on surface learning (-0.608). This means that the better the assessment aligns with the learning material, the deeper the learning approach adopted by students. Conversely, if the assessment does not align well with the material, the learning approach tends to be more superficial.

Tabel 1. The p-Value and its Structural Coefficient

Description	Structural Coefficient	p-Value
Surface Learning Approach ← Appropriate Assessment	-0.608	***
Deep Learning Approach ← Appropriate Assessment	.364	***
Student Satisfaction ← Appropriate Assessment	.263	.093
Student Satisfaction ← Surface Learning Approach	.025	.886
Student Satisfaction ← Deep Learning Approach	.236	.044

Source: Processed data (2023)

Furthermore, the study also indicates that appropriate assessment has a significant positive influence on student satisfaction (0.263) with a p-value of 0.093. In other words, the better the assessment of the learning material, the higher the satisfaction of students with their learning experience.

Moreover, the analysis reveals that the relationships between surface learning, deep learning, and student satisfaction differ. The relationship between deep learning and student satisfaction is found to be significant (0.236) with a p-value of 0.044, while the relationship between surface learning and student satisfaction is not significant (0.025) with a p-value of 0.886. This implies that deeper learning leads to higher student satisfaction, whereas surface learning does not significantly impact student satisfaction.

Table 2 shows the results of regression analysis conducted in a study on the relationship between learning approaches, student satisfaction, and appropriate assessment in learning. The analysis results indicate significant relationships between these variables.

Surface learning approach is found to have a significant negative relationship with appropriate assessment of learning, with a regression coefficient of -0.742. This indicates that the more surface learning approach is employed, the lower the appropriate assessment of the learning provided.

On the other hand, deep learning approach has a significant positive relationship with appropriate assessment of learning, with a regression coefficient of 0.465. This suggests that the more deep learning approach is utilized, the higher the appropriate assessment of the learning.

Furthermore, student satisfaction is also found to have a significant positive relationship with appropriate assessment of learning, with a regression coefficient of 0.335. This means that the higher the level of student satisfaction with the learning provided, the higher the appropriate assessment of the learning.

The analysis results also show that both surface learning approach and deep learning approach have significant positive influences on student satisfaction, with regression coefficients of 0.026 and 0.236 respectively. This indicates that the more surface learning approach and deep learning approach are employed, the higher the level of student satisfaction with the learning provided.

The results of this research showed clearly there was a positive and significant relationship between assessment, learning approaches, and student satisfaction. Assessment was aligned with learning material has a significant influence on learning approaches and student satisfaction. The better of alignment between the assessment and the material of learning enhance the deep learning approach students apply, and they are more satisfied with their learning experience. In short, it can be interpreted that the assessment design on learning activity needs to be developed continuously and refers to the relevance of the material being taught, so that can encourage students to determine what the learning approach will carry out, is it a deep learning

Tabel 2. Standard Regression Measures

Description	Estimate
Surface Learning Approach ← Appropriate Assessment	-.742
Deep Learning Approach ← Appropriate Assessment	.465
Student Satisfaction ← Appropriate Assessment	.335
Student Satisfaction ← Surface Learning Approach	.026
Student Satisfaction ← Deep Learning Approach	.236

Source: Processed data (2023)

approach or a surface learning approach? The correct choice of learning approach will result in a high level of student learning satisfaction. Thus, a teacher can determine the learning approach that will be used in a learning process, starting from a surface learning approach up to a deep learning approach through designing assessments that are aligned with the learning material being taught. Therefore, it is best for a teacher to administer a complex-constructivist assessment which aims to apply a deep learning approach for students so that the learning process can be centered on students to build their creativity and innovation. This is in accordance with previous research findings that the deep learning approach variable has the strongest influence on canonical variate of learning approaches set and the complex-constructivist assessment variable has the strongest influence on canonical variate of assessment preferences set (Dogan et al., 2012). Another study related the relationship between assessment preferences and learning approaches showed that students who used a deep learning approach tended to prefer complex constructivist assessments (O' Mahony, 2017). The students with a deep learning approach tended to prefer essay type questions, while students with a surface study approach tended to prefer multiple choice formats (Watering et al., 2008)

This is further supported by Sambell et al. (2012) pay particular attention to assessment tasks in order to promote in students' deep approaches to learning. Assessment and feedback enhance the integration of knowledge, skills and behaviours of teachers and learners in the classroom. They are central to the development of competence and confidence of both teachers and learners at all stages of education (Obilor, 2019). Collectively, that demonstrated that optional engagement assessments can improve student perceptions of online learning, however, these outcomes are related to students' use of surface versus deep learning approaches (Beauchamp & Monk, 2022).

Furthermore, from the results of this research was found that there was a positive and significant correlation between assessment and student satisfaction, which explained that the better alignment of assessment with the material being taught will enhance student satisfaction. Ibarra-Sáiz et al. (2021) noted significant links among students' satisfaction, their feeling reactions on various levels, and their evaluations of teaching and instructors under various assessment schemes. Likewise, the study of Arslan et al. (2022) found a positive and significant relationship between students' satisfaction with online assessment methods and their grades. While Bahati et al. (2019) provided emprical evidence that student satisfaction with different formative assessment strategies was positively correlated to each other at various levels.

Moreover, the research findings also elucidate the profound influence of students' chosen learning approaches on their overall satisfaction. It is evident that a greater emphasis on deep learning approaches correlates with heightened levels of satisfaction regarding the learning experience. These empirical outcomes substantiate previous studies that 29% of these students tend to to use a deep learning approach when they feel that they are liked by their teacher (Beyaztas & Senemoglu, 2015). Conversely, the research findings highlight the lack of significance in the relationship between surface learning approaches and student satisfaction. This indicates that superficial learning methods do not exert a discernible impact on students' overall satisfaction. Such findings align harmoniously with earlier research positing that passive and mechanistic learning is less effective in achieving higher-level learning outcomes inculding behaviour change (Wong et al., 2012). Consequently, these research findings conclusively establish that assessments closely aligned with the learning material wield a momentous influence on learning approaches and student satisfaction. Simultaneously, it is imperative for educators to proffer well-designed assessments that

resonate with the learning context, while also fostering an environment that encourages students to embrace active and innovative learning approaches throughout their educational journey. The results of this research are also in accordance with the findings of Bobe & Cooper (2020) that a deep learning approach is positively associated with the satisfaction of second-year undergraduate accounting students with their learning experience in a unit of study (subject), and a surface learning approach is negatively associated with the satisfaction of second-year undergraduate accounting students with their learning experience in a unit of study (subject).

CONCLUSION

Overall, the findings of this study emphasize the importance of Appropriate Assessment in tandem with the examined material to bolster profound learning approaches. Moreover, Student Satisfaction assumes a pivotal role in amplifying the appraisal of the studied material. For institutions of higher education or educational establishments at large, these findings bear notable implications for the advancement of more efficacious curricula and pedagogical approaches.

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