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Integrating Student Self-Assessment as a Key Instrument for Achieving Need-Supportive Learning Outcomes

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Abstract. Promoting effective academic assessment in higher education presents substantial challenges, particularly in aligning assessment practices with need-supportive teaching to enhance student outcomes. This study proposes the strategic integration of student self-assessment (SSA) as a central tool to address these challenges, focusing on its impact on academic performance at STAI Diponegoro Tulungagung, Indonesia. Through a correlational design, the research examines the influence of SSA on the students' learning outcomes, specifically within the "English for Beginner" (EfB) course. A series of tests and an adapted SSA questionnaire were employed to measure the effects of consistent self-evaluation. The findings reveal that SSA practices significantly strengthen the connection between guided instruction and independent student achievement. Engaging instructional methods and structured participation were found to enhance student involvement, leading to improved self-assessment and better academic outcomes. These results underscore SSA's role as a behavioral mechanism that not only clarifies but also empirically supports the link between need-supportive teaching practices and student success. By embedding SSA into routine educational assessments, educators can gain nuanced insights into individual learning needs, allowing for the adaptation of teaching strategies to better support student engagement and achievement. The implications of these findings are profound, suggesting that SSA has the potential to transform academic engagement and success in higher education. Future research should investigate the applicability of SSA across different subjects and educational settings to further explore its capacity to improve learning outcomes on a broader scale.

Keywords: assessment, instrument, learning outcomes, need-supportive, self-assessment

INTRODUCTION

In the realm of education, assessment serves as a cornerstone for evaluating student progress and catalyzing improvements, functioning as a pivotal mechanism for extracting essential "learning insights" that drive the achievement of educational goals (Bayrak, 2022; Slamet & Mukminatien, 2024). This evaluative process entails a thorough analysis of a wide array of data sources, including but not limited to student participation in discussion forums, social interactions, resource utilization, time management, and assessment outcomes, all of which collectively contribute to a sophisticated and nuanced understanding of students' learning trajectories (Seufert et al., 2019; Tempelaar et al., 2015). The advent of learning analytics, with a particular focus on assessment analytics, has emerged as a transformative methodological approach, utilizing data to refine educational practices, content delivery, and overall learning experiences (Ellis, 2017; Wise, 2019). Assessment analytics, deeply rooted in the analysis of assessment data, plays a crucial role in monitoring student progress, identifying learning gaps, and informing the continuous improvement of assessment methodologies (Ellis, 2017). However, despite the considerable advancements in this field, existing studies frequently overlook the comprehensive alignment of assessment analytics with pedagogical strategies, including assessment of learning (AoL), assessment for learning (AfL), and assessment as learning (AaL) (Tormey et al., 2020; Webb et al., 2018). This oversight results in a fragmented understanding of how assessment analytics can be effectively integrated into need-supportive teaching frameworks, thus limiting their capacity to fully empower students and optimize learning outcomes (Dann, 2014; Slamet et al., 2024). The existing gap underscores the necessity for more rigorous and targeted research to explore how assessment analytics can be strategically aligned with educational philosophies and pedagogical approaches, ultimately enhancing student engagement, promoting active learning, and improving overall academic achievement across diverse educational contexts.

Need-supportive teaching involves a range of pedagogical strategies aimed at satisfying students' fundamental psychological needs for relatedness, competence, and autonomy. Relatedness refers to fostering a sense of belonging and active participation in the learning environment, competence involves cultivating feelings of mastery and efficacy, and autonomy emphasizes the importance of decision-making and volition in the learning process (Leenknecht et al., 2017; Vansteenkiste et al., 2012). Within the context of this study, need-supportive teaching is characterized by instruction that is engaged, well-organized, and promotes self-determination, which has been shown to positively impact students' motivation, engagement, self-regulation, and academic performance (Kiefer et al., 2015; Reeve, 2016; Tas, 2016; Burns et al., 2021; Olivier et al., 2021). Despite these established benefits, the relationship between self-assessment (SSA) mechanisms and learning outcomes within the framework of need-supportive teaching remains insufficiently explored. Current research predominantly examines the correlation between need-supportive instruction and academic performance, often overlooking the potential of SSA to serve as a bridge that strengthens this relationship (Aelterman et al., 2013; Occhino et al., 2014). Notably, there are persistent gaps in understanding how SSA can clarify and reinforce the link between need-supportive teaching practices and student achievement, as indicated by recent reviews (Borg & Edmett, 2019; Dhillon & Kaur, 2021; Fatimah et al., 2020; Hidayati et al., 2023; Pang, 2022). This gap highlights the critical need for further research to investigate how SSA can be leveraged as a key mechanism to enhance the effectiveness of need-supportive teaching, thereby maximizing its impact on student motivation, engagement, and academic success.

A significant research gap exists regarding the reliance on self-assessment (SSA) outcomes within the broader context of education, particularly in studies examining the relationship between need-supportive teaching and academic achievement. While existing research has explored how need-

supportive teaching impacts SSA-related outcomes such as student engagement (Kiefer et al., 2015; Olivier et al., 2021), motivation (Haerens et al., 2015; Leenknecht et al., 2017; Slamet & Fatimah, 2022), or both (Stroet et al., 2013), there is a notable scarcity of studies focusing on objective measures of student achievement. Moreover, while various instructional techniques are known to influence student outcomes differently depending on the subject matter (Chanal & Guay, 2015), there is a lack of research on how these techniques affect objective achievement in specific domains, such as science (Burns et al., 2021; Haw et al., 2021; Slamet & Basthomi, 2024; Widodo et al., 2023). Additionally, the current focus on SSA within teaching practices, including recent studies on SSA-determination, has not sufficiently addressed how SSA can be effectively integrated to enhance teaching outcomes (Baker & Goodboy, 2019; Bureau et al., 2022; Haerens et al., 2015; Wang et al., 2016). This highlights the need for further investigation into how SSA can bridge the gap between need-supportive teaching practices and objective academic achievement, particularly within distinct subject areas.

Responsibility from students should be acknowledged at an early stage in order, even before they attend university, in order to improve retention rates in higher education (Romsi et al., 2024; Slamet, 2024; Slamet & Mukminatien, 2024). SSA is one approach that can be taken in this manner. During this procedure, prospective students are given information regarding their preparedness to meet the academic requirements of higher education (Baker & Goodboy, 2019; Slamet & Mukminatien, 2024). These apparatuses are advisory and informational in nature, and they foster an environment that is conducive to reflection. Eligible students participate in the SSA include subjects that are important for getting off to a good start and maintaining academic success in higher education (Delnoij et al., 2022). For illustrate, the purpose of the SSA matched to those assessments is to encourage self-reflection and keen understanding (Broos et al., 2018; Delnoij et al., 2022; Slamet & Sabat, 2019; Slamet & Sulistyaningsih, 2021). The objective of having prospective students with such information is to assist them in making well-informed study determinations and potentially leads to early restoration, all of which contribute to a successful start and success in higher education (Dann, 2014; Regan & Brown, 2016; Webb et al., 2018). It is without reasonable doubt that retention is a significant problem in this setting, as evidenced by the fact that it has been included on institutional agendas for previous decades (Delnoij et al., 2022; Slamet et al., 2024). We investigated a similar mechanism for gained perspectives students in higher education in light of the fact that SSA leading up to student appears to be an effective option in higher education more generally on students' learning outcomes (Borg & Edmett, 2019; Dhillon & Kaur, 2021). To sum, it would imply that SSA plays an important role in achieving academic achievement; as a consequence, there is significant support for SSA as an effective educational learning process.

In a fact, the results of the current study can be used to promote a recommendation for the creation of a curriculum for SSA, which would allow students to improve their skills in SSA while participating in classroom activities (Brown et al., 2015). Even while it would make sense for there to be an accuracy requirement for improved performance in SSA, it is not entirely apparent that accuracy would immediately correlate into suitable actions that would lead to improved performance. Students have to first become aware of the possibility of inaccuracy in their self-assessments, perhaps through discrepancies between SSA and external evaluations (such as by a teacher or peer) of their performance. This is necessary to ensure that instructional settings adhere to the principles that guide their design and implementation. Students' assumptions that SSA is not a genuine kind of evaluation could be a more significant barrier to the successful use of SSA in educational settings. For instance, the SSA and other engaging assessment procedures were typically not even recognized to constitute "assessment" in the academic (Brown et al., 2015; Eyal, 2020). In addition, it was discovered that defining assessment as informal-interactive procedures, such as SSA, did not assist in any way to increased achievement (Mendoza et al., 2022; Redmond et al., 2021). Therefore, educators will require them to be able to convince students that there is advantage in reflecting on the quality of their

work, even if this does not lead to assessment per se. This is something that teachers will need to be able to achieve. In addition, if high levels of skill in a subject are required for self-assessment, it is not apparent what less able or novice learners should do when they are requested to engage in SSA in the presence of more able students, which is prevalent in classroom situations (Panadero et al., 2016; Rasooli et al., 2022). The risks associated with recognizing deficiencies in one's knowledge or abilities, let alone making inaccurate assessments of oneself, combine to produce a challenging environment for learning that is shared by students and educators (Braun et al., 2020; Mursid, et al., 2023).

In order to fill in existing shortcomings, the current research investigated how students' perspectives of participatory, regulated, and necessity instruction are associated to English learning accomplishment through and SSA practices. As a behavioral mechanism, in accordance with the self-assessment practices (see Yan, 2020; Yan & Brown, 2017), respectively. In addition, the topic of "English language learning" in the context of undergraduate students at one of the private universities in Indonesia is the major focus of the investigation that is being conducted in this. In light of recent findings on students' entire learning outcomes after completing a full semester's length of "English for Beginner" (EfB) course, the subject-specific aspect of this study is extremely pertinent. More specifically, we hypothesize that need-supportive teaching techniques, such as engaged, organized, and self-determination instruction, have a positive association with the learning outcomes of their respective student bodies. In addition, we project that student learning outcomes might positively improve English learning achievement both directly and indirectly as a result of SSA practices serving as a behavioral mediator. Need-supportive teaching practices can improve student achievement and other outcomes, according to empirical and experimental research (e.g., student achievement, learning, motivation, and engagement; (Burns et al., 2021; Kiefer et al., 2015; Olivier et al., 2021). Positive outcomes and accomplishment are still studied in learning environments that meet students' requirements. Thus, the mechanisms of instrument that link need-supportive teaching to student accomplishment remain underexamined. As a result, this current study aimed to examine how SSA as an instrument to link need-supportive students' learning outcomes. The current research framework can be seen on the following figure.

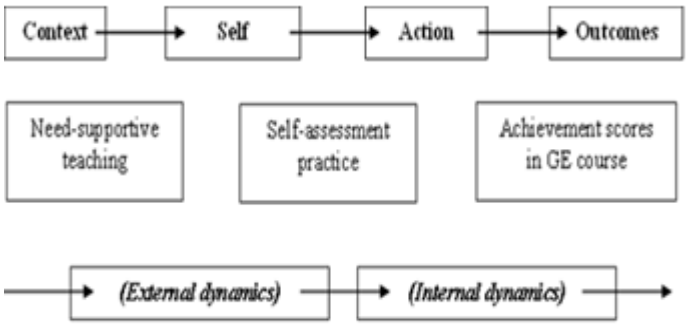

Figure 1. The Model of SSA Practices as a Linking Need-Supportive Teaching and Learning Outcomes *(Adapted from Mendoza et al., 2022)*

REVIEW OF LITERATURE

The existing literature on SSA and its interaction with need-supportive teaching provides a robust framework for understanding the intricate dynamics within educational settings. This body of research extensively examines SSA's role in promoting need-supportive learning outcomes, with a particular emphasis on autonomy support as a pivotal element. Deci and Ryan's (2002) foundational work on autonomy support highlights its essential role in fostering student engagement and facilitating positive learning outcomes. Empirical studies consistently demonstrate that autonomy-supportive teaching practices have a profound impact on students' motivation and academic

achievement, reinforcing the importance of this approach in educational contexts (Baker & Goodboy, 2019; Reeve, 2016; Wang et al., 2016). These studies collectively affirm that when educators effectively implement autonomy support, they create learning environments that foster intrinsic motivation, which in turn leads to significant improvements in students' learning outcomes. However, the influence of autonomy support is not consistent across all subject areas and disciplines, indicating that its impact may be contingent on the specific educational context (Chanal & Guay, 2015). For example, Slamet and Mukminatien (2024) offer valuable insights into how innovative assessment practices, particularly in web-based character assessments, affect learning outcomes, highlighting the nuanced and complex interplay between autonomy support and individual student characteristics. This variability underscores the need for further exploration into how autonomy support can be tailored to meet the diverse needs of students across different educational domains, ensuring that SSA and autonomy-supportive teaching practices are optimally aligned to maximize student engagement and achievement.

Additionally, recent research has delved into the relationship between perceived need-supportive teaching and the development of effective SSA practices (Mendoza & Yan, 2022). This research emphasizes the importance of understanding how pedagogical approaches influence students' self-assessment habits, which in turn affects their learning trajectories. While the benefits of SSA are widely recognized, significant challenges remain. Brown et al. (2015) have raised critical concerns about the accuracy of self-assessment and highlighted the need for more nuanced research to better understand the conditions under which SSA aligns with objective performance metrics. Their call for further investigation into these conditions is crucial for refining SSA practices and ensuring their effectiveness. Moreover, the implementation of SSA tools within educational settings has been explored, revealing their transformative potential in teaching and learning paradigms (Borg & Edmett, 2019; Braun et al., 2020). These studies point to the significant benefits of integrating SSA into educational frameworks, particularly in higher education. However, despite these advances, existing research often lacks a comprehensive analysis of how SSA intersects with need-supportive teaching to improve specific academic outcomes. This gap underscores the necessity for further research to clarify the nuanced relationships between SSA, autonomy support, and academic performance.

In summary, while existing literature underscores the vital roles of autonomy support and motivation in shaping educational outcomes, it also highlights significant gaps in understanding how SSA can be strategically leveraged to enhance need-supportive teaching practices. The current research landscape tends to focus on broad concepts, often neglecting the intricate mechanisms through which SSA interacts with need-supportive teaching and influences tangible academic achievements. Bridging these gaps through focused research is crucial for deepening our understanding of these constructs and refining educational practices. This study seeks to address these gaps by offering a more detailed exploration of the relationship between SSA and need-supportive teaching, ultimately contributing to the development of more effective educational strategies and improved student outcomes.

METHOD

Research Design

This study employed a correlational research design to explore the relationship between SSA and need-supportive learning outcomes. Correlational research is designed to analyze data and determine whether and to what extent variables are related. In this investigation, the primary variables of interest were SSA, conceptualized as an instrumental variable (X variable), and students' academic achievement (Y variable). To assess the impact of SSA on student performance, a pre-test and post-

test design was utilized within a single group, allowing for the measurement of changes over time attributable to the SSA intervention. However, this approach did not include a separate control group, which is a notable limitation. All participants were exposed to identical conditions for assessments and treatments, which may limit the ability to isolate the specific effects of SSA from other potential influencing factors. The use of correlation analysis allowed for the exploration of how variations in SSA might correlate with changes in academic achievement, providing insights into the potential impact of SSA practices on educational outcomes. This approach aimed to contribute to a deeper understanding of the effectiveness of SSA as a tool for enhancing learning and achievement within the specified educational context.

Participants

The participants in this study were selected with careful consideration of ethical and methodological standards. Authorization for the research was secured from STAI Diponegoro Tulungagung, Indonesia, and ethical approval was obtained from the English Language Education Study Program, ensuring that the study adhered to institutional guidelines and ethical norms. Informed consent was meticulously acquired from each participant, with comprehensive briefings provided to ensure that all students fully understood the study's purpose, procedures, and their rights, including the option to withdraw at any time without penalty. The participant consisted of 25 undergraduate students enrolled in their fourth semester at STAI Diponegoro during the 2022/2023 academic year. The selection of this specific cohort was not arbitrary; it was guided by the need for a consistent educational context to enhance the reliability and validity of the study's findings. A purposive sampling method was employed to target this intact group, which was chosen due to their uniform academic background and exposure to the same instructional environment. This approach minimized extraneous variables that could have affected the study's outcomes, allowing for a more accurate assessment of the impact of SSA on learning outcomes within a need-supportive teaching framework. By focusing on this particular group, the study aimed to draw conclusions that are more contextually relevant and applicable to similar educational settings, thereby contributing to the broader understanding of SSA's role in enhancing need-supportive teaching practices.

Data Collection Procedure

The data collection procedure for this study was meticulously designed to assess the impact of SSA on learning outcomes. A pre-test-post-test design was employed, where a pre-test was administered at the beginning of the semester to establish a baseline for students' existing knowledge and skills. This initial assessment was crucial for understanding each student's starting point before the SSA intervention was implemented. At the semester's conclusion, a post-test was conducted to measure students' progress and evaluate the effectiveness of the SSA intervention on their academic performance. To gain deeper insights into the relationship between SSA and learning outcomes, the study utilized a combination of research instruments, including SSA-related evaluations and a specifically designed questionnaire. The pre-test and post-test were integral in quantifying academic progress, while the questionnaire was designed to explore how SSA practices influenced the students' learning outcomes throughout the EfB course. The questionnaire underwent a rigorous validation process to ensure its reliability and validity. Using SPSS 26 statistical software, the research team conducted a thorough analysis, resulting in a Cronbach Alpha coefficient of 0.865 for the 21 questionnaire items. This high coefficient indicates excellent internal consistency, confirming that the questionnaire was both a reliable and valid tool for measuring the variables of interest. The meticulous design and validation of these instruments were essential for producing robust and credible data, which underpin the study's findings on the effectiveness of SSA in enhancing academic achievement within a need-supportive teaching framework.

Data Analysis

Data analysis involved examining the results from the pre-test, post-test, and questionnaire to understand the relationship between SSA and students' learning outcomes in the EfB course. Statistical techniques, including correlation analysis, were applied to determine the strength and direction of the relationship between SSA and academic performance. Two primary hypotheses were tested:

Ho: SSA has no positive correlation with students' learning outcomes in the EfB course.

Ha: SSA has a positive correlation with students' learning outcomes in the EfB course.

Measurement

The instruments that were utilized were chosen with consideration given to their theoretical foundations as well as their current utility in pertinent research that were centered on need-supportive teaching and self-assessment practice. Despite having been developed within the recent decades, the instruments that measure need-supportive teaching and SSA to link students learning outcomes continue to be applicable to investigation conducted. This is because both learning outcomes and need-supportive teaching are fundamental educational conceptions (e.g., Leenknecht et al., 2017; Olivier et al., 2021). The instrument that was used for the purpose of self-assessment was chosen because it is theoretically driven, is based on the concept of self-regulated development (Yan & Brown, 2017), and has been empirically validated among the population that was being studied (Mendoza & Yan, 2021). All of the instruments have been modified so that they can refer back to the English lecturer on the functioning of the course that has been held, as well as the students who have responded to the SSA and the EfB course. The Self-assessment Practices Scale (SaPS), which was used in this current study and was adapted from previous work done by Yan (2018), was a 21-item instrument that is based on a responsible for the condition of the self-assessment process (Yan & Brown, 2017). In this study (Mendoza & Yan, 2021), the subject-specific version of the scale was utilized to measure participants' SSA activities while taking the EfB course. It is made up of four subdimensions, all of which have adequate internal reliability in this study. These subscales are seeking external feedback by monitoring *(SEFM = 0.76)*, seeking external feedback by inquiry *(SEFI = 0.72)*, seeking internal feedback *(SIF = 0.70)*, and self-reflection *(SR = 0.81)*. The whole SaPS scale was found to have an internal reliability of = 0.89 in this current study. A standard-based and competency-based grading system is used for EfB course achievement scores based on the academic result report (known as *"Kartu Hasil Studi"* or KHS) of a full-semester (2 credits, 16 a-course-meetings). Grades are determined by the graded rating scale of the students' summative assessments at STAI Diponegoro Tulungagung. This study made use of the students' grades from their EfB course during the fourth semester 2021/2022. The mean score gained of the students is 77.78 *(Min = 68.5; Max = 88.5)*.

The Context of the Current Study

This study aims to bridge significant gaps in the existing literature regarding the relationship between SSA and need-supportive learning outcomes. While prior research has extensively examined the impact of SSA on various educational dimensions such as student motivation, engagement, and academic performance, there is a clear and pressing need for a deeper, more comprehensive investigation into how SSA interacts specifically with need-supportive learning environments. Most studies have focused on the broader effects of SSA, leaving a critical void in understanding the nuanced relationship between SSA and the principles of need-supportive teaching, which emphasize

fostering students' autonomy, competence, and relatedness. Need-supportive learning outcomes involve creating a classroom atmosphere that actively supports students' psychological needs. This approach is crucial in contemporary education, where fostering an environment that nurtures students' intrinsic motivation and self-efficacy is essential for effective learning. Despite the acknowledged importance of these elements, few studies have rigorously explored how SSA aligns with and enhances need-supportive learning outcomes. This gap in the research underscores the necessity for a targeted investigation into whether and how SSA can be effectively integrated to support these pedagogical goals. Moreover, this study addresses the call for empirical research employing rigorous methodologies to assess the real-world applicability and effectiveness of SSA. By adopting a correlational design, this research provides a systematic evaluation of SSA's impact on academic achievement within a specific educational setting. The study is situated at STAI Diponegoro Tulungagung, Indonesia, an institution that provides a unique context for exploring SSA's role in need-supportive learning environments. This setting allows for an in-depth examination of SSA's effectiveness in enhancing students' learning experiences in a real-world context, adding a layer of practical relevance to the theoretical discourse. This research aims to offer new insights into how SSA can be optimized to improve educational outcomes and foster more effective learning environments.

RESULTS

This study aimed to assess the utility of SSA as a tool for establishing a connection between need-supportive teaching in EfB course and the academic achievements of undergraduate students at STAI Diponegoro Tulungagung. Subsequently, the collected data from the students' performance was subjected to rigorous analysis using SPSS Statistics 26 software. The descriptive analysis encompassed key parameters such as pre-test and post-test mean scores, standard deviation, minimum and maximum scores. Additionally, an inferential statistical analysis was conducted to investigate the outcomes of correlation testing. The outcomes of the descriptive statistical analysis are presented and summarized in the table below for clarity and reference.

Table 1. The Descriptive Statistics Test' Scores and SSA

	N	Min.	Max.	Mean	Std. Deviation
Students' learning outcomes	25	68.50	88.50	77.7920	5.83759
SSA	25	20	40	29.28	5.335
Valid N (listwise)	25				

The findings shown on the table 1 reveal the mean score of students' learning outcome (LOs) is 77.79 *(Std. dev = 5.83759; Min = 68.50; Max = 88.50).* Meanwhile, statistics result of SSA shows a gained mean is 29.28 *(Std. dev = 5.335; Min = 20; Max = 40)*. The findings, as summarized in the accompanying table 1, indicate a significant improvement in undergraduate the students' achievements as a direct outcome of implementing strategies based on SSA in the EfB course. The use of paired sample tests was instrumental in evaluating these improvements, providing insights into whether the data from the pre-test and post-test were normally distributed and met the conditions necessary for hypothesis testing. Following the verification that the data adhered to the assumptions required for hypothesis testing, a paired sample test was conducted to collect inferential information. This analysis aimed to determine whether there was a statistically significant influence of SSA as a tool in linking need-supportive teaching with learning outcomes in the EfB course. The hypothesis testing assessed whether SSA effectively mediated the connection between need-supportive teaching practices and students' learning outcomes. The results of this inferential analysis, detailed in the provided table, confirm that SSA significantly contributes to bridging the gap between need-supportive teaching and improved learning outcomes. This suggests that SSA can be effectively used as an instrument to enhance the alignment between pedagogical strategies and student achievement, supporting the efficacy of need-supportive teaching methods in promoting academic success.

Table 2. Paired Sample T-test

		Paired Differences					t	df.	Sig. (2-tailed)
		Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-& post-test	19.38824	7.012	1.700	-22.993	-15.782	-11.400	24	0.000

Table 2 shows that the Sig. value (Sig. (2-tailed)) is .000, which is significantly lower than the .05. In light of this, it was decided that the alternative hypothesis (Ha), which stated that *"SSA has a positive correlation with students' learning outcomes in the EfB course"* has indeed be "accepted". In all other respects, the mean score was 19.288 (pair 1 pre- and post-tests). According to these data, the successes of undergraduate students enhanced when SSA was used as an instrument to link supportive-need on the students' learning outcomes. It is possible to automatically state that the SSA result on the students' learning outcomes has a statistically significant effect on the achievements of the undergraduate students at STAI Diponegoro Tulungagung because of this correlation. As was said earlier, the purpose of this study was to investigate the correlation between SSA as an instrument to correlate supportive-need and the learning outcomes of participants. The students' scores were used to represent the student performance (the dependent variable) in this section of the study, while the SSA was obtained through the results of a questionnaire (independent variable). With regard to its correlation, the students' scores were utilized to depict the under-graduate student performance. After that, we looked into them using a technique called linear regression. The findings of the statistical analysis performed by SPSS 26 are detailed in the table that may be found below.

Table 3. Model Summary of Correlation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.258[a]	.067	.026	5.76124

a. Predictors: (Constant), SSA

As shown in Table 3, it is argued the correlation (R) value is 0.258. A coefficient of determination (R^2) of 0.067 was generated from the output findings, indicating that the independent variable (SSA) influences the dependent variable (the under-graduate students' achievement) by 67%, with the remaining 33% influenced by other variables outside the variable X. As a result, an ANOVA test was conducted to see whether there was a statistically significant correlation between variable X (SSA) and variable Y (the under-graduate students' achievement). The following table summarizes the findings of the ANOVA study.

Table 4. The ANOVA[a]

Model		Sum of Squares	df.	Mean Square	F	Sig.
1	Regression	54.446	1	54.446	1.640	.213[b]
	Residual	763.412	23	33.192		
	Total	817.858	24			

a. Dependent Variable: Students' Achievement
b. Predictors: (Constant), SSA

The ANOVA test results from SPSS 26 show that F count = 1.640 with a significance level/probability of 0.213 > 0.05, which indicates that the regression model may be utilized to predict

variable Y (the achievement of under-graduate students). Based on these findings, it can be concluded that there is a correlation between variable X and variable Y. Lastly, the coefficients result from SPSS 26 was presented on the following table.

Table 5. The Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	86.059	6.557		13.126	.000
	SSA	.282	.220	.258	-1.281	.213

In the coefficients table, we find essential information for understanding the relationship between the variables in our regression model. Starting with the Constant (a) value of 86.059, this represents the expected value of under-graduate students' achievement (Y) when all other variables, in this case, SSA, are held at zero. However, it is crucial to note that SSA being precisely zero in the real educational context is highly improbable, as it encompasses various support activities. Therefore, while statistically significant, the practical interpretation of this constant may be limited due to the theoretical nature of SSA being zero. Then, focusing on the SSA coefficient (b) with a value of 0.282, it holds significant implications. This coefficient signifies the rate of change in under-graduate students' achievement (Y) for each one-unit increase in SSA (X). The positive sign of this coefficient is crucial, indicating a direct and positive relationship between SSA and student achievement. In simpler terms, for every one-unit increase in student support activities (X), we can anticipate an increase of 0.282 units in under-graduate students' achievement (Y). This robustly confirms the pivotal role played by student support activities in enhancing academic performance. It is also important to examine the statistical significance of these coefficients, which is indicated by the t-statistic and the associated p-values. In the case of the SSA coefficient, the t-statistic is -1.281, and the p-value is 0.213. While the t-statistic doesn't indicate a statistically significant effect (typically if the absolute value of the t-statistic is greater than 2 in absolute value, it is considered significant), the p-value is above the conventional threshold of 0.05. This suggests that the relationship between SSA and under-graduate students' achievement may not attain the necessary level of statistical significance. To summarize, this detailed interpretation highlights the role of the constant and SSA coefficient in the model and emphasizes the importance of assessing statistical significance when drawing conclusions about the impact of SSA on student achievement.

DISCUSSION

Previous research has consistently demonstrated that tailoring teaching strategies to meet individual students' needs can significantly enhance learning outcomes. Despite this, there remains a notable gap in understanding how student SSA mechanisms bridge the connection between need-supportive teaching and improved student performance. This study, grounded in the self-system model of SSA development, explores the pathways through which participatory, organized, and self-determined instructional practices influence student achievement, focusing specifically on English language learning within the EfB course at STAI Diponegoro Tulungagung. The findings substantiate the hypothesis that students' perceptions of need-supportive teaching practices, such as engaging and structured instruction, play a crucial role in fostering motivation and enhancing SSA activities. Interactive teaching and well-regulated instruction were notably linked to higher levels of student engagement and more frequent SSA practices. Prior studies have highlighted the profound impact of classroom environments on students' enthusiasm and their capacity for self-regulated learning and self-assessment (Tas, 2016; Wang et al., 2016; Burns et al., 2021; Vansteenkiste et al., 2012).

It is a legitimate concern that by focusing students' attention on meeting specific, sometimes narrowly defined, criteria within general education programs, we may inadvertently restrict their access to a broader range of learning experiences. This issue extends beyond mere lecturer authority or program constraints, as highlighted by Tas (2016). Tas's research underscores that each assessment serves as a sample of the broader subject matter being evaluated, with the assessment reflecting only a portion of the content (Kiefer et al., 2015; Slamet & Mukminatien, 2024). Given that a single evaluation method—whether a test, examination, or coursework—cannot encompass the entirety of a subject area, the integration of pedagogical support for self-assessment (such as scripting relevant to teaching objectives) can assist novices in content areas but may also inadvertently restrict their learning scope (Panadero et al., 2016, 2017). Students have the potential to surpass the expectations set by their courses and lecturers; however, incorporating self-assessment into grading may limit their capacity to exceed these requirements (Brown et al., 2015; Dann, 2014). Nevertheless, students might acquire additional knowledge beyond the course objectives, and identifying these extra learning gains is challenging unless students engage in self-directed self-assessment, reflecting on and articulating these outcomes. Thus, self-evaluation that goes beyond official course expectations could be seen as a valuable aspect of the self-assessment process (Eyal, 2020; Tormey et al., 2020).

An approach to SSA like this one, which is focused on more individual objectives and anticipations, is unnecessary to the explicit comprehensive overview. As a result, we are faced with the challenge of determining how academics can best encourage this kind of self-assessment. We think it would be beneficial to the students if we asked them to reflect on what else they are learning. However, if students are asked to submit these kinds of reflections to their lecturer(s), the substance of such judgments can be rendered meaningless. Students could wonder, *"Will my lecturer be able to deal with it if SSA demonstrates that I am studying or thinking things that are irrelevant to the course?"* It is probable that students would assume this. The act of disclosing confidential one's additional learning outcomes may pose a threat to the students' ability to apply realism and honesty to the activity they are being asked to do (Delnoij et al., 2022; Widodo et al., 2023). Relationships with lecturers, instructors, or teachers make for a social and interpersonal setting within the classrooms, which is a setting in which students may find it more comfortable to guard their sense of self-worth (Brown et al., 2015; Mendoza & Yan, 2021).

Two areas of how the SSA impacts different students appear to have been thoroughly researched. To begin, the structure of the SSA does not cater to everyone's needs, and the situations with the most cause for concern are those with lower levels of achievement (Aelterman et al., 2013; Burns et al., 2021). Second, aside from research that looks into SSA in terms of its precision or realism, this topic has been generally ignored by researchers in their investigations (Dann, 2014; Seufert et al., 2019; Wise, 2019). In line with the research (Brown et al., 2015; Panadero et al., 2016), students that participate in SSA and have varying levels of academic achievement (such as below average, average, or above average) have various experiences with the learning impacts that result from their participation. However, further research is needed because of contradictory results; for example, (Tas, 2016) discovered that students who started out performing poorly on SSA ended up benefiting more from using the strategy than students who started out scoring about average (Eyal, 2020). The contention made by Mendoza et al. (2022) that learners, regardless of ability, are better at appraising the quality of their performance at a generalized level rather than at a task- or item-specific level may provide a solution to the discrepancies in these data. However, the second option is preferred for instructional purposes since it enables students to better define a plan for improving their skills and generate precise goals against which to measure their progress, which may enhance the motivation of students. This disparity in grain size could be the reason why SSA does not have a consistent influence on students. However, these effects have not been investigated in sufficient depth, which means that further study is required to determine the proper grain size of effectiveness that is being appraised (Redmond et al., 2021; Slamet & Fatimah, 2022).

The findings lend credence to the notion that students' views of particular need-supportive teaching practices-such as involved teaching and organized teaching-play an important role in the development of student self-assessment behaviour. More specifically, interactive teaching as well as structured instruction was found to have a favourable association with higher levels of student motivation as well as more frequent instances of self-assessment. Several research, including Brown et al. (2015; Mendoza and Yan (2021); Wang et al. (2016), have provided evidence for the role of learning settings in encouraging student motivation and self-regulated learning processes (e.g., self-assessment practice; Wang et al., 2016). Furthermore, teachers who are involved and warm contribute to the creation of a learning environment that can assist help students satisfy their relatedness needs (Broos et al., 2018; Regan & Brown, 2016; Vansteenkiste et al., 2012) by presenting their enjoyment of being and interacting with their students. This helps create a learning atmosphere that can assist create a learning environment that can help satisfy students' relatedness needs (see Occhino et al., 2014; Stroet et al., 2013). There is considerable evidence that suggests that when a teacher's passion for their subject area grows, so too does the motivation of their students (Hidayati et al., 2023; Slamet, 2024; Olivier et al., 2021). Mendoza and Yan (2021) found that previous research has demonstrated that students' perceptions of involved teaching techniques motivate them to perform self-assessment. This may be because involved teaching fosters a safe and caring learning environment (see Mendoza et al., 2022; Slamet et al., 2024).

In relation to the outcomes of this current study, regulated instructional strategies can have an impact on the motivation of students. It lays forth in a straightforward and specific manner the instructions and expectations that must be met by students in order for them to attain their desired educational objectives (Borg & Edmett, 2019; Braun et al., 2020; Rasooli et al., 2022). Following a plethora of studies, a successful teaching organization can boost students' interest by catering to the students' need for competence (Bayrak, 2022; Panadero et al., 2016; Slamet & Sabat, 2019; Slamet & Sulistyaningsih, 2021). Students gradually develop their sense of competence and skills when teachers provide the right support at each step along the way in the classroom (Hidayati, 2023; Mursid, et al., 2023; Pang, 2022). This notion of being able to accomplish something can, in turn, inspire determination. On the other hand, organized instruction was not shown to be connected with self-assessment practices, which runs counter to the findings of other studies that show how structured learning environments can lead to an increase in the use of self-regulated learning procedures (Eyal, 2020). It is possible that students will have less opportunities to engage in self-evaluation practice if they are exposed to structured teaching because structured teaching communicates particular directions. Therefore, if self-assessment practice is not included in the curriculum for the subject, it is likely that students would therefore simply follow the arrangement that teachers provide and will not engage in self-assessment practice. This can be avoided by including self-assessment practice in the curriculum for the subject (Delnoij et al., 2022).

Researchers have urged for a long time to investigate the possibly leading that can explain the link between engagement and accomplishment, despite the fact that the correlation between SSA and student achievement seems to make intuitive sense (see Ellis, 2017; Mendoza & Yan, 2021). We came to the conclusion that regular practice in conducting self-evaluations not only directly predicted achievement but also acted as a mediator between controlled and independent forms of motivation and accomplishment. Specifically, engaging in regular self-evaluation serves as a behavioural mechanism that operates as a link between motivation and achievement. In line with the findings of our research, certain approaches of self-regulated learning have the potential to function as a behavioural mechanism that can relate motivation to achievement. It serves as a formative evaluation to further influence student progress because of the recursive nature of self-assessment practice (Brown et al., 2015; Mendoza et al., 2022; Mendoza & Yan, 2021). Per the Aelterman et al. (2013) and Baker and Goodboy (2019), there is a linkage between student growth and self-development that runs in both orientations. This means that higher levels of student determination can encourage self-

assessment practice, and higher levels of self-assessment practice can also lead to higher levels of student engagement. In general, the findings imply that improving student motivation would entail the implementation of behavioural approaches that can further increase student accomplishment. This is especially true in the case when quality teaching is controlled to a greater extent than it is autonomously.

CONCLUSION

The research findings offer robust evidence of the significant potential of SSA as a transformative tool for bridging the gap between need-supportive teaching and enhanced student learning outcomes, particularly through behavioral pathways. By incorporating engaging and well-structured teaching methods that leverage SSA, we observed a notable improvement in student achievement across specific subject areas. This finding carries substantial implications for educators, especially within the STAI Diponegoro Tulungagung context, highlighting the critical role of need-supportive teaching practices in fostering student engagement and academic success. Promoting self-assessment strategies and providing opportunities for both external and internal evaluations can act as pivotal mechanisms for converting motivation into measurable improvements in learning outcomes. Nevertheless, it is important to recognize the study's limitations, including its focus on a single class and its specific application to English language learning. To enhance the generalizability of these findings, future research should extend its scope to include a diverse range of student populations and academic disciplines, thereby capturing a broader spectrum of educational contexts and enhancing the applicability of the results across different settings. Investigating the impact of SSA in distance learning environments would be particularly valuable, as it would provide insights into SSA's effectiveness in virtual and non-traditional educational formats. Furthermore, incorporating longitudinal and experimental research designs could significantly bolster the robustness of the findings by examining the long-term effects of SSA on student outcomes and establishing causal relationships through controlled interventions. Such comprehensive research approaches would not only validate the current results but also refine and expand our understanding of SSA's role in optimizing educational practices. Overall, this study contributes crucial theoretical and practical insights into the adoption of need-supportive teaching methods, advocating for their use to enhance student engagement and achievement across various educational contexts.

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