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The Impact of Student-Centered Learning on Student Engagement and Academic Performance: Evidence from Malaysian Higher Education

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Abstract

In higher education, student-centered learning has become a more significant pedagogical method in which universities attempt to enhance the learning process and academic performance among students. Student-centered learning encourages active learning, cooperation, and critical thinking as opposed to the traditional teacher centred instruction that focuses on activity, cooperation, and passive learning. Nevertheless, the empirical impact that student-centered learning has on student engagement and academic performance is not well established in most of the higher learning environments especially among students in universities in Malaysia. This paper therefore discusses how student-centered learning affects student engagement and academic performance among students in universities. The research design used in this study was a quantitative cross-sectional research. The questionnaire of online survey was carried out among 152 Malaysian university students. The measure was used to assess student-centered learning, student engagement, and self-reported academic performance on a five-point Likert scale. Analysis of data collected was done by means of descriptive statistics, reliability analysis, Pearson correlation and multiple regression analysis. The results show that student centered learning produces a positive and significant influence on the engagement and performance of the students and student engagement significantly predicts performance. The regression model accounted 27.1 percent and 31 percent of the student engagement and academic performance variance respectively, which showed that the regression model had a moderate power to explain. The implication of these findings is that student-centered learning is significant in improving the learning experiences and perceived academic outcomes among students. The research has added value to the literature as it has merged the student-centered learning, student engagement, and academic performance into a single empirical model. It builds on the literature by offering empirical support of the relationship based on the Malaysian higher education environment where related studies are still under-researched. The results also have some practical implications to the educators and institutions of higher education that aim at enhancing teaching methods and student performances.

Keywords: Student-Centered Learning, Student Engagement, Academic Performance, Higher Education, University Students

Introduction

Higher education worldwide is undergoing a fundamental shift away from transmission-based instruction toward learner-centered pedagogies. The traditional teacher-centered model, which positions students as passive recipients of knowledge, has been increasingly criticized for failing to develop the critical thinking, collaboration, and lifelong learning competencies demanded by the twenty-first century knowledge economy (Biggs and Tang, 2011; Morris, 2023). In response, student-centered learning (SCL)—a pedagogical orientation that places students at the centre of the learning process through active participation, dialogue, inquiry, and collaboration—has been widely promoted as a more effective alternative.

Despite this global pedagogical shift, the implementation of SCL in Malaysian higher education presents a distinctive and underexplored phenomenon. Malaysia's Ministry of Higher Education has explicitly endorsed student-centered approaches in successive national blueprints, most notably the Malaysia Education Blueprint 2015–2025 (Higher Education), positioning SCL as a strategic pillar for producing globally competitive graduates. However, classroom realities often lag behind policy ambitions: lecture-based, examination-driven instruction remains entrenched in many Malaysian universities, and concerns persist about uneven levels of student engagement, surface learning, and graduate employability. This tension between policy aspiration and pedagogical practice raises an urgent empirical question: in a transitional context where SCL is officially mandated but inconsistently practiced, does SCL, when students actually experience it, translate into higher engagement and better academic outcomes? Without local empirical evidence on this question, educators and policymakers lack a clear basis for accelerating SCL adoption in Malaysian higher education.

The existing literature, while extensive, leaves three notable gaps that limit our understanding of this phenomenon. First, SCL, student engagement, and academic performance have largely been studied in isolation, with few empirical models integrating all three constructs into a single framework (Bond et al., 2020; Wong and Liem, 2022). As a result, the direct and joint contributions of SCL and engagement to academic performance remain unclear. Second, the majority of empirical evidence has been generated in Western or East Asian contexts, and very few studies have tested these relationships in Southeast Asian transitional higher education systems such as Malaysia, where teaching cultures, classroom power dynamics, and student expectations may differ substantially. Third, although engagement is widely theorized as the mechanism through which pedagogical practices shape outcomes, its explanatory role between SCL and academic performance remains insufficiently examined (Korhonen et al., 2024; Xu et al., 2023).

To address these gaps, this study examines the relationships among student-centered learning, student engagement, and academic performance in the Malaysian higher education context. Specifically, the study is guided by the following research questions: (RQ1) To what extent does student-centered learning influence student engagement among Malaysian university students? (RQ2) To what extent does student-centered learning influence students'

academic performance? (RQ3) To what extent does student engagement influence academic performance?

This study makes three contributions. Theoretically, it integrates SCL, student engagement, and academic performance into a single empirical model, advancing understanding of how pedagogical practices and learner processes jointly shape educational outcomes. Contextually, it provides one of the first integrated empirical accounts of SCL effects in Malaysian higher education, extending a literature that has been dominated by Western and East Asian contexts. Practically, the findings offer evidence-based guidance for Malaysian educators, university administrators, and policymakers seeking to align everyday teaching practice with national reform agendas.

The remainder of this paper is organized as follows. The next section reviews the literature on student-centered learning, student engagement, and academic performance, and develops the study's hypotheses. This is followed by the methodology, the empirical results, a discussion of the findings together with theoretical and practical implications and limitations, and finally the conclusion.

Literature Review

Student-Centered Learning in Higher Education

One of the main ideas in modern higher education has turned out to be student-centered learning (SCL). Student-centered learning is much more active, autonomous, cooperative, reflective and co-constructive of knowledge compared to traditional teacher-centered instruction. Within this method, students will no longer be considered as passive receivers of information, and they will be motivated to be more active in organizing their learning process with the help of discussion, inquiry, interaction, and problem-solving (Morris, 2023; Grondahl Glavind et al., 2023).

The growing interest in the concept of student-centered learning is strongly associated with the more general changes in higher education. The universities are no longer supposed to pass on knowledge that is disciplinary, but also to equip students with critical thinking, communication, creativity and life long learning ability. Such expectations have prompted educators to challenge the efficacy of the teaching methods that is based on lectures only. Student-centered learning has answered this by advocating as a more effective and responsive pedagogical method of the twenty-first century higher education (Biggs and Tang, 2011; Morris, 2023).

A major strength of student centered learning is that it focuses on meaningful participation. Student-centered learning makes a teaching unit around how students learn, as opposed to organizing teaching based on what is delivered by instructors. This involves collaborative group, case discussions, peer learning, project-based, classroom interaction and inquiry based activities. It is assumed that these strategies are useful to allow students to get more involved in the content, enhance conceptual comprehension, and become more active in their own learning process (Grondahl Glavind et al., 2023).

The recent studies also have supported the applicability of student-centered approaches in the university environment. Grondahl Glavind et al. (2023) in a systematic mapping review

found that empirical research has increased the connection between student-centered teaching, positive student experiences, better participation and positive learning environments in higher education. Equally, Morris (2023) made the conceptual overlap between student-centered learning and self-directed learning in the sense that both concepts focus on agency, autonomy, and active engagement of the learner. This implies that student-centered pedagogy can be especially applicable in the setting of higher education where an independent learning can be viewed as a critical academic competence.

Furthermore, active learning is commonly linked to student-centered learning, which is frequent on the list of instructional strategies that are considered effective as well. Even though active learning is not the same concept as student centered learning, the two concepts have a close conceptual association. Active learning means the active involvement of students in productive activities when they have to think, discuss, analyze and implement knowledge but not just to be active listeners. Freeman et al. (2014) demonstrated that active learning is much more effective than lecturing in improving student performance, particularly in science and other related subjects. Although this research was not a very recent one, it is still one of the most powerful sources of evidence which proves participatory and student-centered teaching.

Recent scholarship also suggests that the success of student-centered learning may be dependent on the larger instructional context. As an illustration, the course design, classroom atmosphere, faculty assistance, and technology may play a role in the way students perceive student-centered teaching. De Bruijn-Smolders and Prinsen (2024) stressed that effective engagement of students in blended learning environments is strongly related to how learning activities are designed to encourage active and sustained learning involving student engagement. This suggests that student-centered learning cannot be merely an issue of renaming teaching; it needs to be a deliberate pedagogical process that provides the students with real access to becoming meaningfully involved in the learning process.

Put collectively, the literature indicates that student-centered learning is not just a trendy educational concept. It is an educational change that is in line with modern requirements of quality teaching at higher education. Student-centered learning is one of the strategies that are increasingly considered as important in improving student experiences and outcomes by encouraging participation, interaction, autonomy and greater learning.

Student Engagement

Student engagement is probably among the most often-debated higher education research construct due to its close association with the quality of learning, persistence, satisfaction, and academic achievement. The definitions of student engagement differ across research efforts, but the general response to it is the level of attention, interest, effort, and involvement that the students put towards their studies (Kahu, 2013; Wong and Liem, 2022). This is one of the reasons engagement has now attracted such academic interest because it helps in bridging the gap between practices and student outcomes in teaching. That is, the student engagement is one of the reasons why one learning environment is more efficient than another. Kahu (2013) suggested a theoretical framework according to which engagement is a psychosocial process that can be determined by both the institutional and personal factors. Wong and Liem (2022) more recently contended that student engagement

is a multidimensional concept that is conceptualized in behavioral, emotional, cognitive, and in certain instances social aspects of engagement. The multidimensional perspective is particularly effective in the field of higher education research since academic experience of university students cannot be simply determined by attendance or participation, but also by motivation, emotional investment, and intellectual engagement.

Behavioral engagement often means overt involvement of students in the academic process, including attending classes, providing contributions to the discussion, and fulfilling assignments. Emotional engagement entails the sense of feeling by students about learning like interest, enjoyment, or a sense of belonging. Cognitive engagement involves the mental commitment in the process of learning among students, in terms of critical thinking, deep processing and self-control. Other recent researchers have also highlighted social interaction especially in collaborative and technology-enhanced learning where interaction with peers and teachers influences the learning process (Heilporn et al., 2024; Wong and Liem, 2022).

Particularly, it is significant concerning the relationship between student-centered learning and student engagement. It is presumed that student-centered learning can help to promote engagement because it makes students take learning activities more seriously and to act as more accountable to their learning outcomes. It is most likely that the encouragement of students to share their points of view, pose questions, cooperate with fellow students, and address real problems will make them become interested and committed to academic activities. In their systematic evidence map, Bond et al. (2020) discovered that strategies of teaching interactively and educational technology designs that encourage participation have a strong association with student engagement in higher education.

Further studies, which are more recent, still confirm this relationship. In the study by Heilporn et al. (2024), a multidimensional scale of student engagement in various course modalities within higher education was created, and the authors established that course design and teaching delivery have a significant contribution to the student engagement process. In a three-year follow-up study, Korhonen et al. (2024) also demonstrated that engagement also evolves over time and has a correlation with larger university learning experiences of students. The results indicate that engagement is not a stable characteristic, but it is a dynamic process that is determined by pedagogical activities and educational situation.

The other notable aspect in the literature is that student engagement has also become even more pertinent in digitally mediated and blended learning. The growth of online and blended learning has had issues regarding the way in which one can ensure that the students are engaged and not passive when it comes to learning that is not tied to a physical classroom setting. De Bruijn-Smolders and Prinsen (2024) discovered that the ability of students to be engaged in the blended learning process is highly related to the clarity of the structure, the opportunities of interaction, and the significance of the participation. This is in line with the student-centered learning logic, which gives more importance to active participation as opposed to passive presentation of the contents.

All in all, the literature proposes that student engagement is not just a desirable educational outcome but also a mechanism that is crucial in the manner in which teaching practices affect

student success. In this respect, it is theoretically and practically significant to study the correlation between student-centered learning and engagement.

Academic Performance

Academic performance can still be identified as one of the most common measures of performance in education in higher education studies. It is typically defined as the degree to which students are able to attain desired learning outcomes which can be in the form of grades, GPA, test scores, completion of assignments or self-reported achievement. Even though the academic performance depends on numerous factors, such as previous ability, motivation, learning habits, and socioeconomic background, the teaching and learning environment are also influential and shape academic performance (Richardson et al., 2012; Wong et al., 2024).

Pedagogically, academic performance is usually associated with the quality of learning among the students. When students feel more engaged, supported and cognitively engaged into learning activities, they have higher chances of comprehending course contents effectively and have improved academic performance. This is the reason why student-centered learning has gained mounting reputation as a potential source of academic success. Student-centered learning can potentially improve the knowledge acquisition, retention and usage by the students because of the shift of active participation and passive reception of the information. According to the literature, there are a number of reasons, which explain why academic performance can be increased by student-centered learning. First, conceptual understanding can be promoted through active participation. Students learn more by engaging in mode when they discuss, reflect, explain to peers, and solve problems, as compared to when they are in passive lecture classes (Freeman et al., 2014; Prince, 2004). Second, responsibility and ownership may be enhanced by student-centered learning. By making students believe that they are collaborative participants in the learning process, students will be able to put in extra hours and energies in academic activity. Third, interactive and cooperative learning conditions can be able to give social and cognitive assistance to enable students to address learning challenges more efficiently.

The correlation between engagement and academic performance is also backed by recent studies. In a systematic review and meta-analysis, Wong et al. (2024) concluded that academic achievement and subjective well-being have a positive correlation with student engagement. This is particularly significant to the current study since it indicates that not only can engagement be a result of effective teaching; it can also be a process in which academic performance can enhance. Likewise, Laranjeira and Teixeira (2025) have found significant interactions between engagement, achievement, and well-being in higher education, which again serves as a valid justification that engaged students, have elevated chances of achieving well in school.

Besides that, Xu et al. (2023) determined that student engagement is positively linked to learning outcomes when considered in the framework of multidimensionality. This implies that the academic performance cannot be considered only as a single output but rather as a product of more extensive processes of learning through participation, interaction and psychological investment. These results justify the need to analyze the direct impact of

student-centered learning on academic achievements and the indirect impact of engagement.

Meanwhile, it should be noted that academic performance could be evaluated in more than one way. In some of the researchers, objective measures are taken into consideration like GPA or the examination scores, whereas in others, it is self-reported, and performance is perceived. Whereas it is possible that self-reported academic performance has a subjective bias, this instrument is significantly used in educational studies since it represents the perceived successful learning performance and confidence of students regarding their academic achievement. In the case of the study dedicated to the perceptions of teaching and learning experience, this type of measures is quite acceptable, particularly, when objective records are not easily available (Richardson et al., 2012).

In short, the literature demonstrates that academic performance is not influenced by student characteristics only, but also by pedagogical conditions. The student engagement and student based learning is therefore very much relevant as a variable to explain variation in academic outcomes among students of a university.

Research Gap

Although the literature on student-centered learning and student engagement in higher education is on the rise, there are still a number of significant gaps. To begin with, the current research has frequently analyzed the constructs of student-centered learning, student engagement, and academic performance on their own and done little to combine them into one empirical study (Bond et al., 2020; Wong and Liem, 2022). Therefore, synergies between the effects of these variables are not known fully. Second, the bulk of the available empirical data has been produced in western education settings and a comparatively little research has been done to establish these relations within the Malaysian higher education setting whereby the practices of teaching, the institutional settings and the learning cultures of the students could vary considerably. Third, despite the fact that the student engagement is a widely acknowledged predictor of academic success, the role of student engagement as a possible explanatory factor between student-centered learning and academic performance is understudied (Korhonen et al., 2024; Xu et al., 2023).

Thus, this paper focuses on filling these gaps through the analysis of the connections between student-centered learning, student engagement, and academic performance in the framework of the single empirical model. In that way, the study will allow a more in-depth insight into how student-centered teaching practices affect student outcomes in higher education.

Hypotheses Development

The above review indicates that student centered learning is highly related to active participation, autonomy and interactive teaching practice which are likely to make students more involved in learning activities. The literature review indicates that once the teaching methods promote discussion, teamwork, and active involvement, students are more likely to be engaged in the process of learning (Bond et al., 2020; Heilporn et al., 2024; Kahu and Nelson, 2018). Riding on this argument, the following is the hypothesis:

H1: Student-centered learning has a significant and positive impact on student engagement. According to the literature, student-centered learning can also have a direct positive effect on academic performance through promoting deeper understanding, responsibility of learners and constructive learning of knowledge. As it is widely believed, participatory and student-centered instruction methods are linked to improved learning and enhanced academic performance (Freeman et al., 2014; Grondahl Glavind et al., 2023; Xu et al., 2023). Thus, the second hypothesis will be the following:

H2: Student centred learning has a positive and significant impact on academic performance. Lastly, student engagement has also been found to be one of the most significant predictors of student success in higher education. Behaviorally, emotionally, and cognitively engaged students tend to put effort into studies and put up improved academic results (Korhonen et al., 2024; Wong and Liem, 2022; Wong et al., 2024). The third hypothesis will be posed accordingly:

H3: Engagement among students is positively and significantly related to academic performance.

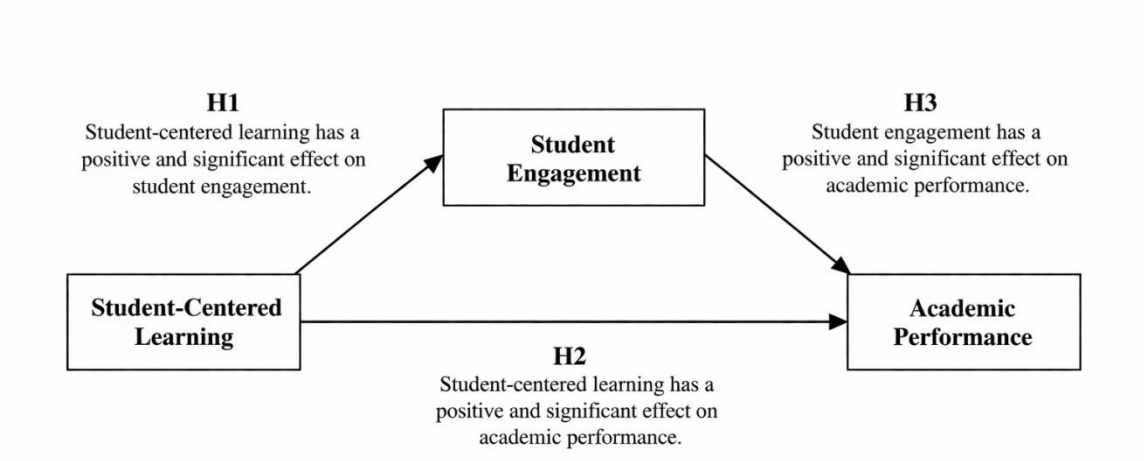

Figure 1: Research Model

Methodology

Research Design

In this research, the quantitative design was a cross-sectional survey that was used to determine the relationship that exist between student-centered learning, student engagement, and student performance in higher education institutions. The quantitative approach was deemed suitable since the study was supposed to test hypothesized relationships among measurably defined constructs by means of statistical methods. The cross-sectional survey research design is also common in research of higher education to obtain the perceptions of students and their learning experience at a given time.

The theoretical framework of this research paper places student centered learning as the independent and student engagement and academic performance as dependent variable. Also, the student engagement was discussed as an indicator of academic performance. According to this model, the research had three direct hypotheses on the impact of student-

centered learning on student engagement and student performance and the impact of student engagement on student performance.

The data collection tool applied was a structured questionnaire since it enabled the researcher to obtain standardized responses, at a relatively large scale, among many respondents. The approach is especially appropriate when the topic of the research is the perception of the students towards teaching practices and the correlation between them and learning outcomes.

Research Context, Sample, and Data Collection

The research involved students of chosen Malaysian universities that were of both types: the public and the private, and the responses were concentrated mostly in those institutions that were situated in Selangor and Kuala Lumpur. The reason behind selecting these universities is that they are typical examples of higher learning environments where the concept of student-based teaching methods are being fostered. The target population was the undergraduate and postgraduate students who had recent experience in learning and teaching activities in the university.

The data was collected in the period of December 2025 and January 2026 using online questionnaire conducted with the help of Google Forms. The survey link was sent via the representatives of the classes, WhatsApp groups of students, and peer academic networks. This was the distribution method which was adopted in getting to the students of other programmes and various year levels within a small time duration.

The study applied a non-probability convenience sampling technique. This method was deemed suitable since the study aimed at eliciting answers to the available students in the university within a feasible data gathering time. Convenience sampling can restrict the generalization of the study, but it is very popular in the research of higher education, in particular, the survey-based study which investigates the perception and experience of students.

One hundred and sixty-five responses were received in the first place. The data were filtered to exclude blank questionnaires, duplicate data and data with large number of missing values. Subsequently, 152 valid responses were saved to be analyzed after the process of data cleaning. This was acceptable size of a sample to be analyzed by regression because the conceptual model was relatively simple, and the number of predictors used in the research was limited.

The study was done on a voluntary basis. The respondents were told about the study purpose, anonymity, and confidentiality of their answers at the very first stage of the questionnaire. They were also informed that no personally identifiable data would be collected and that the data would not be used in any other way apart from academic use. Participants received informed consent electronically and went on to respond to the questionnaire.

Instrument Development and Measurement of Variables

The questionnaire was divided into four parts, namely demographic information, student-centered learning, student engagement, and academic performance. Each of the

measurement items was taken out of previous research and modified a bit to reflect the environment of higher education in Malaysia.

The initial section contained demographic data, such as gender, age, and year of study. These variables were incorporated in order to offer a descriptive profile of the respondents.
The second section utilized five items derived out of previous sources on student-centered learning (SCL) in higher education, which measure student-centered learning (SCL) (Biggs and Tang, 2011; Morris, 2023; Grondahl Glavind et al., 2023). The items reflected perceptions of students on whether there was a teaching practice that fostered participation, discussion, collaborative learning and independent thinking.

The third part measured student engagement on the basis of five items based on the already developed research on engagement in higher education (Kahu, 2013; Wong and Liem, 2022; Heilporn et al., 2024). These items primarily targeted the behavioral and emotional participation of students such as the extent to which they participate in classroom activities, attention during learning activities, and the interest to participate in coursework.

The fourth part was a measure of academic performance with four self-reported questions that were modified versions of prior research that tested the perceived academic performance and learning outcomes in higher education (Richardson et al., 2012; Xu et al., 2023). These tools were employed to record the view of students regarding their academic achievement, sense of the course materials and their capability to perform academic related tasks with success.

Each of the items was measured on a five-point Likert scale, where 1 meant strongly disagree and 5 strongly agree. It was deemed appropriate to use five-point scale as it gives enough variability in responses as well as is simple and well understood by student respondents.

Self-reported indicators were also used to measure academic performance, as opposed to the official GPA records due to practical and methodological reasons. To begin with, the institutional constraint and privacy impeded access to formal academic records. Second, self-reported academic performance in higher education has been a common practice as a pragmatic proxy of perceived academic success among students as a research tool particularly in surveys conducted to examine learning experiences and teaching practice. Though this kind of measures can be prone to a personal bias, they are still good when the purpose of the research is to analyze the perceived academic outcomes of the students with regard to the teaching and engagement variables.

Pilot Test and Instrument Refinement
Prior to the actual data collection, pilot test was done among 30 university students to determine the clarity and wording of the questionnaire items as well as internal consistency. These pilot respondents were selected among a similar group of students as the main study and did not make it to be included in the eventual sample.

The pilot test findings were also satisfactory with regard to reliability. The student-centered learning, student engagement, and academic performance values of Cronbach alpha were 0.81, 0.79, and 0.77 respectively, which were all more than the recommended value of 0.70.

These findings meant that the instrument had satisfactory internal consistency during the pilot stage.

Minor adjustments to the words were introduced, based on the pilot feedback in the way to enhance clarity and relevance to its context. Specifically, some of the items were simplified to make sure that the text was easily digestible by the respondents belonging to various academic programmes and study levels. None of the items were dropped due to the fact that all constructs were acceptable in terms of their reliability and conceptual consistency to the study objectives.

Data Analysis Procedures

IBM SPSS statistics version 29 was used to analyze the data. To meet the research objectives and test the hypotheses put across, several statistical procedures were used.

The descriptive statistics were first applied in summarizing the demographic data of the respondents and to show the mean and standard deviation values of each construct. This described the perception of respondents towards student-centered learning, student engagement, and academic performance.

Second, the reliability analysis was performed with the help of Cronbach alpha evaluating internal consistency of the scale items. An acceptable level of reliability was 0.70.

Third, Pearson correlation analysis was done to determine the strength and direction of relationship among the variables of study.

Lastly, the direct effects advised in the hypotheses were tested on multiple regression analysis. The regression analysis has been chosen over structural equation modeling (SEM) or partial least squares structural equation modeling (PLS-SEM), which are based on three reasons. To begin with, the conceptual model in this research is relatively easy, having three constructs and three direct hypotheses. Second, the 152 number of respondents is sufficient to perform regression analysis but is comparably small to conduct more complicated covariance-based modeling. Third, the study was aimed at testing predictive relationships instead of testing a complex measurement model or testing multiple mediating and moderating effects. Thus, multiple regression was deemed as a more parsimonious as well as suitable analytical tool to suit learning goals of the study.

Also, hypothesis testing was conducted prior to the evaluation of regression assumptions. The calculation of the multicollinearity was performed in terms of the values of the variance inflation factor (VIF) where no acute problem of multicollinearity was observed. The analysis also considered the overall significance and explanatory power of the regression models through F-statistics, R^2, and adjusted R^2 values.

It is through these processes that the study sought to offer an empirical evidence related to the association of student centered learning to student engagement and academic performance among the university students in a Malaysian higher education setting.

Table
Measurement of Constructs

Construct	Items	Source	Example Item
Student-Centered Learning	5	Biggs & Tang (2011); Morris (2023); Grøndahl Glavind et al. (2023)	My instructors encourage active participation during class activities.
Student Engagement	5	Kahu (2013); Wong & Liem (2022); Heilporn et al. (2024)	I actively participate in classroom discussions.
Academic Performance	4	Richardson et al. (2012); Xu et al. (2023)	I am satisfied with my academic performance.

Besides this, the construct validity of the measurement model was also demonstrated by the factor loading and the reliability indicators being consistent and this implies that the items sufficiently captured their constructs.
Moreover, the internal consistency levels of all the constructs were acceptable, which also confirms the reliability and validity of the measurement model.

Results

Demographic Profile of Respondents

One hundred and fifty-two valid responses were used in the final analysis. Before analysis, they were filtered against missing values and extreme values and no severe data concern was identified.

The sample was comprised of 56.6 percent women and 43.4 percent men respondents. The majority of the participants were between 21-25 years (61.2%), then 18-20 years (25.0%) and older than 25 years (13.8%). As regards year of study, most of the students were Year 2 (30.3) and Year 3 (28.9) students. Generally, the respondents are students of one of the universities who have had recent experience learning in higher education.

Table 1
Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	66	43.4
	Female	86	56.6
Age	18–20	38	25.0
	21–25	93	61.2
	Above 25	21	13.8
Year of Study	Year 1	28	18.4
	Year 2	46	30.3
	Year 3	44	28.9
	Year 4	34	22.4

Descriptive Statistics and Reliability Analysis

The descriptive statistics were calculated to address the perception of respondents on student-centered learning, student engagement, and academic performance. Table 2 demonstrates that every construct shows the mean value above 3.80, which refers to the overall positive perceptions.

The mean of student-centered learning was 3.88 (SD = 0.67) whereas the mean of student engagement was 3.92 (SD = 0.60). The academic performance had a means of 3.89 (SD = 0.63). The reliability analysis indicated good internal consistency with Cronbachs alpha ranging between 0.81 and 0.86 which is higher than the recommended value of 0.70.

Table 2
Descriptive Statistics and Reliability Analysis

Construct	Items	Mean	SD	Cronbach's α
Student-Centered Learning	5	3.88	0.67	0.86
Student Engagement	5	3.92	0.60	0.83
Academic Performance	4	3.89	0.63	0.81

Correlation Analysis

To test the study variables, Pearson correlation analysis was done to test the relationship between the variables. Table 3 shows that the correlation was positive and statistically significant in all the cases.

Student engagement (r = 0.51, p under 0.01) and academic performance (r = 0.45, p under 0.01) had a positive correlation with student-centered learning. Moreover, the academic performance was positively related to student engagement (r = 0.48, p < 0.01).

These findings suggest moderate correlations between the variables, which is the preliminary support of the hypotheses made.

Table 3
Correlation Matrix

Variables	1	2	3
1.Student-Centered Learning	1.00		
2. Student Engagement	0.51**	1.00	
3. Academic Performance	0.45**	0.48**	1.00

Note. p < 0.01.

Regression Analysis

Prior to regression analysis, multicollinearity was assessed using variance inflation factor (VIF). All VIF values were below 3.0, indicating that multicollinearity was not a serious concern.

Effect of Student-Centered Learning on Student Engagement

To test Hypothesis 1, student engagement was regressed on student-centered learning. As shown in Table 4, student-centered learning has a significant positive effect on student engagement (B = 0.46, β = 0.51, t = 7.21, p < 0.001).

The regression model was statistically significant, F(1,150) = 52.04, p < 0.001, and explained 27.1% of the variance in student engagement (R^2 = 0.271, Adjusted R^2 = 0.266), indicating a moderate level of explanatory power. Therefore, Hypothesis 1 was supported.

Table 4
Regression Results for Student Engagement

Predictor	B	SE	β	t	p	VIF
Student-Centered Learning	0.46	0.06	0.51	7.21	<0.001	1.00

Model statistics:
R^2 = 0.271, Adjusted R^2 = 0.266, F(1,150) = 52.04, p < 0.001

Effects of Student-Centered Learning and Student Engagement on Academic Performance

To test Hypotheses 2 and 3, academic performance was regressed on student-centered learning and student engagement. As presented in Table 5, both predictors were statistically significant.

Student-centered learning had a positive and significant effect on academic performance (B = 0.23, β = 0.26, t = 2.98, p < 0.01), supporting Hypothesis 2. Student engagement also had a positive and significant effect on academic performance (B = 0.31, β = 0.34, t = 4.15, p < 0.001), supporting Hypothesis 3.

The regression model was statistically significant, F(2,149) = 33.12, p < 0.001, explaining 31.0% of the variance in academic performance (R^2 = 0.310, Adjusted R^2 = 0.301).
Although the model explains a moderate proportion of variance, a substantial amount of unexplained variance remains, suggesting that other factors may also influence academic performance.

Table 5
Regression Results for Academic Performance

Predictor	B	SE	β	t	p	VIF
Student-Centered Learning	0.23	0.08	0.26	2.98	<0.01	1.42
Student Engagement	0.31	0.07	0.34	4.15	<0.001	1.42

Model statistics:
R^2 = 0.310, Adjusted R^2 = 0.301, F(2,149) = 33.12, p < 0.001

Common Method Bias

Since the data collection was carried out through a self-reported questionnaire, the possible instance of common method bias was taken into account. A number of procedural solutions

were employed such as anonymity of the respondents and clear and concise questionnaire items.

Moreover, a single factor test was conducted by Harman. The outcome showed that none of the factors explained most of the variance meaning that there was no probability of common method bias being a serious concern in the study.

Summary of Hypotheses Testing

Table 6 summarizes the findings of hypotheses testing. All the three hypotheses were accepted. Student-centered learning greatly anticipated student engagement and academic performance, whereas student engagement also was a meaningful anticipator of academic performance.

Table 6
Summary of Hypotheses Testing

Hypothesis	Relationship	Result
H1	Student-Centered Learning → Student Engagement	Supported
H2	Student-Centered Learning → Academic Performance	Supported
H3	Student Engagement → Academic Performance	Supported

Discussion

The research analyzed how student-centered learning contributes to student engagement and academic achievement among students in universities. The results offer a practical evidence to the proposed research model and they show that student-centered learning is significant in enhancing students learning experience and success in higher learning institutions. Particularly, the findings suggest that student-centered learning is positively significant to student engagement and student academic performance, and student engagement is also positively signified on academic performance. The results are also consistent with the previous research proposing that interactive and participatory instructions might help to establish more effective learning conditions in higher education and promote student engagement and perception of academic performance (Bond et al., 2020; Freeman et al., 2014; Kahu and Nelson, 2018).In the Malaysian higher education setting, where the instructional practice can still be teacher-centered, the given results indicate that student-centered instruction could be of specific significance to increase student engagement and academic performance. This brings out the contextual applicability of student-centered learning in transitional learning settings.

To begin with, the findings indicate that learning that focuses on students has a good and significant influence on the engagement of students. This observation confirms Hypothesis 1 and indicates a possibility that in case instructors would employ teaching techniques that stimulate participation, collaboration, discussion, and independent thinking, students would be more apt to engage actively in the learning process. This finding is in line with the argument that student-focused pedagogy changes students into passive recipients of information to active participants in knowledge building (Biggs and Tang, 2011; Morris, 2023). The amount

of active participation in the classroom by students in conventional teacher-centered classrooms is comparatively low and consists of listening to lectures and memorising the information. On the contrary, student-centered learning allows students to share ideas, problem-solving opportunities, and peer interactions, as well as, students become more responsible to themselves in relation to learning. Consequently, students can be motivated, interested, and emotionally engaged in classroom activities.

Such an observation is congruent with the previous studies that point out the strong connection between teaching practice and student engagement. Kahu and Nelson (2018) defended the idea that the educational interface, such as the teaching environment and interactions of the students with learning activities, is a strong determinant of engagement. In the same spirit, Bond et al. (2020) concluded that learning conditions based on interaction, participation, and collaboration have a higher chance of enhancing deeper engagement among students. In more recent times, Heilporn et al. (2024) also argued that the participation in higher education is also multidimensional and determined by the way the students feel about the course design and its delivery. Hence, the current study supports the perception that student-centered learning is not a teaching choice, but rather a significant pedagogical technique of encouraging the active engagement of students in higher education. Second, findings indicate that student-centered learning produces a positive impact on student academic performance, which confirms Hypothesis 2. This indicates that the academic results are reported to be higher with the students who are exposed to student-based learning activities. One of them could be that student centered learning improves learning with active involvement. Students might consider the concepts, practice knowledge and find solutions, which makes them more likely to gain more in-depth understanding of course material. Students do not have to memorize on the surface; they can gain a deeper meaning of what they study. Such learning at a deeper level can be converted into a high academic achievement (Freeman et al., 2014; Prince, 2004).

The other reason is that student-centered learning could enhance academic performance by enhancing the ownership of learning to students. Increase in chances of making choices, discussing and cooperating with other students might help students to feel more responsible about their academic achievements. Such responsibility may result in increased efforts, improved preparation, and regular engagement in academic activities. Such behavior changes can eventually lead to greater academic performance. Grondahl Glavind et al. (2023) also confirm such interpretation and discovered that, in higher education, student-centered teaching practices are progressively linked with students positively learning and achieving. Equally, Xu et al. (2023) showed that active student engagement in the learning process has a positive correlation with learning outcomes in various learning institutions.

Third, the results indicate that engagement in students can positively affect academic performance significantly, which confirms Hypothesis 3. This finding implies that the more the students are involved in their academic tasks, the higher the likelihood of attaining positive academic outcomes. The reason behind engagement is significant as it shows willingness of the students to invest attention, effort and time in the learning process. Interested students would be able to engage more in classroom discussions, prepare academic work, do assignments responsibly, and persist when faced with academic

challenges. Such behaviors are inherent results of higher academic performance (Kahu, 2013; Wong et al., 2024).

This observation is as well aligned with the past literature which has suggested that student engagement is among the most significant anticipators of scholastic achievement. Wong and Liem (2022) reasoned student engagement was one of the key constructs to explain difference in academic achievement and Korhonen et al. (2024) indicated that engagement growth over the course of time was linked to positive learning experiences in higher education. The prominent connection between engagement and academic performance in this research also indicates that engagement can also be a valuable explanatory mechanism by which student-centered learning can affect student performance. That is, student-centered learning can not only enhance academic performance directly, but indirectly through the elevated student engagement.

Theoretical Contribution

This study makes three theoretical contributions to the literature on teaching and learning in higher education. First, it integrates student-centered learning, student engagement, and academic performance into a single empirical model, rather than examining these constructs in isolation as much of the prior literature has done (Bond et al., 2020; Wong and Liem, 2022). The combined explanatory power of SCL and engagement on academic performance (R^2 = 0.31) demonstrates that pedagogical practice and learner process operate jointly, not independently. Second, the study extends the evidence base on SCL into the Malaysian higher education context, contributing to a literature that has been dominated by Western and East Asian settings. By showing that the SCL–engagement–performance relationships hold in a Southeast Asian transitional system, the study supports the broader generalisability of student-centered pedagogy while also signalling the need for further cross-cultural replication. Third, the findings provide empirical support for the theorised role of engagement as a process variable linking pedagogy to outcomes (Kahu and Nelson, 2018), and suggest a productive direction for future mediation analyses.

Practical Contribution

Practically, the findings carry implications for three groups of stakeholders in Malaysian higher education. For instructors, the results suggest that incorporating interactive teaching strategies—group discussions, collaborative projects, problem-based learning, peer interaction, and inquiry-based activities—can meaningfully enhance both student engagement and perceived academic performance. Instructors are also encouraged to design classroom environments that invite questioning, opinion-sharing, and active participation, in line with the constructive alignment principles articulated by Biggs and Tang (2011) and the engagement-environment perspective of Kahu and Nelson (2018). For university administrators, the findings indicate the value of institutional investment in faculty development, curriculum redesign, and policy frameworks that operationalise the student-centered orientation already articulated in national documents such as the Malaysia Education Blueprint 2015–··25 (Higher Education). Without such institutional support, individual instructor initiative is unlikely to translate into systemic change. For policymakers, the study offers empirical justification for continuing to prioritise SCL within national higher education reform agendas, and underscores the importance of monitoring not only adoption

of SCL in policy documents but also its actual implementation and student-experienced impact in everyday classrooms.

The results also have implications with practical implications on higher learning institutions. To the teachers, the findings indicate that they need to abandon the one-way teaching techniques and incorporate interactive learning techniques. Group discussions, collaborative projects, problem-based learning, presentations, and peer interaction, which can be done in the classroom, could make students more active and academic achievers. Instructors are also expected to establish learning environments that help students have the desire to ask questions, give opinions and be involved in the learning process. This coincides with Biggs and Tang (2011), who had noted that it is essential to align teaching with the desired learning outcomes, and with Kahu and Nelson (2018), who mentioned the significance of positive learning environments to create student engagement.

To academic administrators and universities, the findings indicate that there is the need to assist faculty members to adopt student-focused teaching methods. This can be the form of professional development workshops, curriculum redesigning and institutional policies that ensure active classroom learning. It is important to note that universities must acknowledge that not only is the ability of the students a determining factor in improving student outcomes but also the design and quality of instructional programs. There is a possibility that investment in student-centered instruction can consequently result in more engagement, higher educational performance, and a positive educational experience in general (Morris, 2023; Xu et al., 2023).

Limitations

The findings of this study should be interpreted with several important limitations in mind. First, academic performance was measured using self-reported items rather than objective records such as GPA or examination scores. Although self-report measures are widely used in higher education survey research and capture students' perceived academic experience in ways that objective metrics cannot (Richardson et al., 2012), they are vulnerable to social-desirability bias, recall bias, and the tendency for respondents to over-estimate their own achievement. This means that the present findings should be read as evidence about students' perceptions of academic performance, not about objectively verified achievement. Future studies should triangulate self-report measures with institutional records of GPA, course grades, or standardised assessments to strengthen construct validity.

Second, because both the predictor and outcome variables were collected from the same respondents through the same instrument, common method bias is a potential concern. Although Harman's single-factor test indicated no dominant factor, this procedural diagnostic does not fully rule out method-induced inflation of observed relationships. Future research should adopt multi-source or time-lagged designs, in which SCL is rated by students at one time point and performance is captured from institutional records at a later time point.

Third, the cross-sectional design permits only the identification of associations rather than causal relationships. Although the regression results are consistent with the theorised direction of effects (SCL → engagement → performance), reverse causation cannot be ruled out—engaged students may, for instance, perceive their instructors' teaching as more

student-centered. Longitudinal or quasi-experimental designs, including pre-post intervention studies of SCL implementation, would provide stronger causal inference.

Fourth, the explanatory power of the regression models is moderate (R^2 = 0.271 for student engagement and R^2 = 0.310 for academic performance), indicating that a substantial portion of the variance in these outcomes remains unexplained. This is consistent with the broader literature, which recognises that academic performance is shaped by a wide range of individual, motivational, social, and contextual factors beyond instructional practice (Richardson et al., 2012; Wong et al., 2024). The present model should therefore be understood as identifying one important pedagogical pathway, not as a comprehensive account of academic outcomes. Future studies should incorporate additional explanatory variables such as learning motivation, self-efficacy, prior academic ability, socio-economic background, and digital learning conditions.

Fifth, the use of a non-probability convenience sample (n = 152), drawn primarily from universities in Selangor and Kuala Lumpur, limits the generalisability of the findings. The sample may not be fully representative of the broader Malaysian university population, particularly students in East Malaysia, in vocational or technical institutions, or in disciplines and year levels that were under-represented. Replication with larger, stratified, and multi-institution samples is needed before broader claims can be made.

The current study can be also extended in future research on a number of ways. The scholars might also consider other variables like learning motivation, self-efficacy, teaching effectiveness, or digital learning environments to understand the effects of student-centered learning to the student outcomes better. Comparative research between various universities, fields, or nations can also give a further insight as to whether the results of student-centered learning differs in various settings. Moreover, future research can investigate the mediating or moderating effect of student engagement in more detail to clarify how academic performance mechanisms take place (Bond et al., 2020; Wong et al., 2024).

On the whole, this paper has shown that student-centered learning is a powerful pedagogical model that can be used to improve student engagement and academic achievement in a higher educational facility. The findings support the significance of creating learning settings that engage the learners in the learning process. Student-centered learning must be discussed as a useful tool to help universities to enhance the quality and success of the learning process and facilitate much more meaningful and constructive learning process as universities go on searching the means to enhance the quality of the learning process and the student success (Biggs & Tang, 2011; Kahu and Nelson, 2018).

Conclusion

This paper has analyzed the effects of student-centered learning on student engagement and academic performance among higher education students in the case of the Malaysian higher education system. The results show that student centered learning positively impacts student engagement and academic performance significantly with a strong predictive value of academic performance also being of student engagement. These findings imply that student-centered teaching methods are relevant in improving the learning process and perceived learning outcomes among students in higher learning institutions.

The research adds to the literature by incorporating the student-centered learning, student engagement and academic performance into one empirical model. It builds on previous studies by demonstrating that student centered learning is not merely related to increased student participation in learning processes but it is also correlated with better academic performance. On a more practical note, the results are that the institutions of higher learning ought to promote the use of more participatory and interactive approaches to teaching. Instructors can use activities like discussion, collaboration and active classroom learning to improve the performance of students.

Even with these contributions, there are a number of limitations to be considered. The research also used convenience sampling and self-reported academic performance that can lead to a decrease in the generalizability and objectivity of the results. Moreover, the cross-sectional design does not allow causal interpretation. Future studies can involve bigger and more heterogeneous samples, consider other objective academic indicators, like GPA, and investigate other variables, including learning motivation, self-efficacy, or digital learning environments, to obtain a more detailed insight into the impact of student-centered learning on student outcomes.

References

Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education, 18*(1), 50. https://doi.org/10.1186/s41239-021-00282-x

Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: A systematic evidence map. *International Journal of Educational Technology in Higher Education, 17*, Article 2. https://doi.org/10.1186/s41239-019-0176-8

Bond, M., Khosravi, H., de Laat, M., Bergdahl, N., Negrea, V., Oxley, E., Pham, P., Chong, S. W., & Siemens, G. (2024). A meta systematic review of artificial intelligence in higher education: A call for increased ethics, collaboration, and rigour. *International Journal of Educational Technology in Higher Education, 21*, Article 4. https://doi.org/10.1186/s41239-023-00436-z

De Bruijn-Smolders, M., & Prinsen, F. R. (2024). Effective student engagement with blended learning: A systematic review. *Heliyon, 10*(23), e39439. https://doi.org/10.1016/j.heliyon.2024.e39439

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences, 111*(23), 8410–8415. https://doi.org/10.1073/pnas.1319030111

Godsk, M., & Møller, K. L. (2025). Engaging students in higher education with educational technology. *Education and Information Technologies, 30*(3), 2941–2976. https://doi.org/10.1007/s10639-024-12901-x

Grøndahl Glavind, J., Montes De Oca, L., Pechmann, P., Brauner Sejersen, D., & Iskov, T. (2023). Student-centred learning and teaching: A systematic mapping review of empirical research. *Journal of Further and Higher Education, 47*(9), 1247–1261. https://doi.org/10.1080/0309877X.2023.2241391

Heilporn, G., Raynault, A., & Frenette, É. (2024). Student engagement in a higher education course: A multidimensional scale for different course modalities. *Social Sciences & Humanities Open, 9*, 100794. https://doi.org/10.1016/j.ssaho.2023.100794

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758–773. https://doi.org/10.1080/03075079.2011.598505

Kahu, E. R., & Nelson, K. (2018). Student engagement in the educational interface: Understanding the mechanisms of student success. *Higher Education Research & Development, 37*(1), 58–71. https://doi.org/10.1080/07294360.2017.1344197

Kok, X.-F. K., Pua, C. Y., & Puah, S. (2025). The mediating role of student engagement in the relationship between teacher and digital support and learner satisfaction in blended learning environments at higher education. *British Educational Research Journal, 51*(3), 1313–1341. https://doi.org/10.1002/berj.4123

Korhonen, V., Ketonen, E. E., & Toom, A. (2024). Student engagement and its development in university education: A three-year follow-up study. *Learning and Individual Differences, 113*, 102465. https://doi.org/10.1016/j.lindif.2024.102465

Kong, S.-C., & Lin, T. (2023). Developing self-regulated learning as a pedagogy in higher education: An institutional survey and case study in Hong Kong. *Heliyon, 9*(11), e22115. https://doi.org/10.1016/j.heliyon.2023.e22115

Li, J., & Xue, E. (2023). Dynamic interaction between student learning behaviour and learning environment: Meta-analysis of student engagement and its influencing factors. *Behavioral Sciences, 13*(1), 59. https://doi.org/10.3390/bs13010059

Morris, T. H. (2023). Self-directed learning and student-centred learning: A conceptual comparison. *Pedagogy, Culture & Society*. Advance online publication. https://doi.org/10.1080/14681366.2023.2282439

Panigrahi, R., Srivastava, P. R., & Panigrahi, P. K. (2021). Effectiveness of e-learning: The mediating role of student engagement on perceived learning effectiveness. *Information Technology & People, 34*(7), 1840–1862. https://doi.org/10.1108/ITP-07-2019-0380

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education, 93*(3), 223–231. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin, 138*(2), 353–387. https://doi.org/10.1037/a0026838

Tran, T. T., & Nagirikandalage, P. (2025). Insights into enhancing student engagement: A practical application of blended learning. *The International Journal of Management Education, 23*(2), 101167. https://doi.org/10.1016/j.ijme.2025.101167

Walsh, J. N., O'Brien, M. P., & Costin, Y. (2021). Investigating student engagement with intentional content: An exploratory study of instructional videos. *The International Journal of Management Education, 19*(2), 100505. https://doi.org/10.1016/j.ijme.2021.100505

Wong, Z. Y., & Liem, G. A. D. (2022). Student engagement: Current state of the construct, conceptual refinement, and future research directions. *Educational Psychology Review, 34*(1), 107–138. https://doi.org/10.1007/s10648-021-09628-3

Wong, Z. Y., Liem, G. A. D., Chan, M., & Datu, J. A. D. (2024). Student engagement and its association with academic achievement and subjective well-being: A systematic review and meta-analysis. *Journal of Educational Psychology, 116*(1), 48–75. https://doi.org/10.1037/edu0000833

Xiong, X. (2025). Influence of teaching styles of higher education teachers on students' engagement in learning: The mediating role of learning motivation. *Education for Chemical Engineers, 51*, 87–102. https://doi.org/10.1016/j.ece.2025.02.005

Xu, X., Shi, Z., Bos, N. A., & Wu, H. (2023). Student engagement and learning outcomes: An empirical study applying a four-dimensional framework. *Medical Education Online, 28*(1), 2268347. https://doi.org/10.1080/10872981.2023.2268347

Zepke, N. (2014). Student engagement research in higher education: Questioning an academic orthodoxy. *Teaching in Higher Education, 19*(6), 697–708. https://doi.org/10.1080/13562517.2014.901956

Dahleez, K. A., El-Saleh, A. A., Al Alawi, A. M., & Abdelfattah, F. (2021). Higher education student engagement in times of pandemic: The role of e-learning system usability and teacher behavior. *International Journal of Educational Management, 35*(6), 1312–1329. https://doi.org/10.1108/IJEM-04-2021-0120