



Original Article

Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda

Siraji Hamimu Onzi¹, Wilson Mugizi^{1*}, Joseph Rwothumio¹ & Disan Kutesa Mugenyi¹

¹ Kyambogo University, P. O. Box 1 Kyambogo, Kampala, Uganda.

* Author for Correspondence ORCID ID: <https://orcid.org/0000-0001-8699-5659>; Email: wmugizi@kyu.ac.ug

Article DOI: <https://doi.org/10.37284/eajes.6.2.1235>

Date Published: ABSTRACT

01 June 2023

Keywords:

Approaches,
Behaviourist,
Constructivist,
Student
Engagement,
Teaching.

This study examined the relationship between teaching approaches and student engagement in secondary schools in Arua City, Uganda. Specifically, the study examined the relationship between constructivist teaching approaches and behaviourist teaching approaches with student engagement. This study adopted a correlation analysis as the basis for determining whether there was a relationship between the study variables. Data were collected from a sample of 341 students using a self-administered questionnaire. Descriptive statistics and structural equation modelling were used to analyse data. Descriptive results revealed that while students' engagement was moderate, teachers' use of the constructivist approach was lower than student-centred approaches. Structural equation modelling using SmartPLS results revealed that constructivist teaching approaches positively and significantly predicted student engagement, while behaviourist teaching approaches negatively significantly predicted student engagement. This study concluded that the constructivist teaching approach promotes student engagement, and behaviourist teaching approaches do not enhance student engagement. It was therefore recommended that teachers should emphasise using constructivist teaching approaches, and teachers have to reduce the use of behaviourist teaching approaches. This article will be of value to both researchers and policymakers in the education sector in Uganda as it identifies appropriate teaching approaches that enhance the effective engagement of students. Therefore, it might inform policy-making on curriculum development and further research.

APA CITATION

Onzi, S. H., Mugizi, W., Rwothumio, J. & Mugenyi, D. K. (2023). Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda *East African Journal of Education Studies*, 6(2), 85-103. <https://doi.org/10.37284/eajes.6.2.1235>.

CHICAGO CITATION

Onzi, Siraji Hamimu, Wilson Mugizi, Joseph Rwothumio and Disan Kutesa Mugenyi. 2023. "Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda". *East African Journal of Education Studies* 6 (2), 85-103. <https://doi.org/10.37284/eajes.6.2.1235>

HARVARD CITATION

Onzi, S. H., Mugizi, W., Rwothumio, J. & Mugenyi, D. K. (2023) "Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda", *East African Journal of Education Studies*, 6(2), pp. 85-103. doi: 10.37284/eajes.6.2.1235.

IEEE CITATION

S. H. Onzi., W. Mugizi., J. Rwothumio. & D. K. Mugenyi. "Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda" *EAJES*, vol. 6, no. 2, pp. 85-103, Jun. 2023.

MLA CITATION

Onzi, Siraji Hamimu, Wilson Mugizi, Joseph Rwothumio & Disan Kutesa Mugenyi. "Teaching Approaches and Student Engagement in Secondary Schools in Arua City, Uganda". *East African Journal of Education Studies*, Vol. 6, no. 2, Jun. 2023, pp. 85-103, doi:10.37284/eajes.6.2.1235

INTRODUCTION

The concept of engagement, from which the term "student engagement" emerged, has existed in social discourse throughout the history of mankind. However, the philosophical debate on engagement emerged around the 19th century but gained momentum in the 20th century as a new paradigm of existence because human beings were confronted with the task of rearranging social reality independently and solely relying on themselves. Initially, life had not been much of a fuss to demand one's total engagement in personal activities, as one could depend on those in social circles (Koprivitsa, 2020). In his ground-breaking article on student involvement, Astin (1984) was the first to refer to student engagement in the context of education. He argued for student engagement in their learning. He explained that the more engaged the student was, the more knowledge and progress he or she realised (Lester, 2013). The concept of student engagement explains students' active participation in tasks and activities related to their learning (Lei et al., 2018). In the 1990s, student engagement gained popularity with studies such as Newman's (1992) study on student involvement and attainment in American secondary schools. At the time, teachers started to use teaching strategies featuring interesting and fun activities to attract students to engage in their work (Goodman, 2016). Student engagement has been linked with higher academic achievement and is considered a predictor of student progress and positive behaviour (Delfino, 2019).

In a review, Bond et al. (2020) reported that studies done in the United States of America, the United Kingdom, Taiwan, Australia, and China suggested that there was a problem of low learning outcomes because of low student engagement. As a result,

student engagement has been adopted as a measure for enhancing students learning outcomes. Policies geared towards promoting student engagement have been implemented in schools in these countries. These countries also conduct annual national surveys to determine the level of student engagement at different levels of education (Tian et al., 2021). In Africa, there is a lack of evidence of countries' efforts to promote student engagement. However, studies such as Abubakar et al. (2017) and Ohamobi and Ezeaku (2015) in Nigeria, Mugizi et al. (2020), Mugizi et al. (2021a), and Mugizi et al. (2021b) in Uganda, in Nigeria, Schreiber and Yu (2016) in South Africa, and Wara et al. (2018) in Kenya have assessed student engagement in Africa. Nevertheless, except for the studies by Mugizi et al. (2020), Mugizi (2021a), and Mugizi et al. (2021b) that considered antecedents of student engagement in terms of infrastructure quality and teaching strategies in universities, the other studies considered it a predictor of academic performance. This current study considered the predictors of student engagement in secondary schools, looking at the teaching strategies in terms of constructivist and behaviourist teaching approaches. These two approaches were considered because, while teachers were required to employ constructivist approaches in teaching, they largely used the behavioural teaching approach (Muganga & Ssenkusu, 2019). This study thus examined how the two teaching approaches related to student engagement in secondary schools. The study tested the following alternate hypotheses to the effect;

H₁: There is a significant relationship between constructivist teaching approaches and student engagement in secondary schools.

H₂: There is a significant relationship between behaviourist teaching approaches and student engagement in secondary schools.

THEORETICAL REVIEW

The cognitive constructivist theory by Piaget (1936), cognitive constructivist theory and behaviourist theory by Watson (1913) and Skinner (1953) underpinned this study. The cognitive constructivist theory postulates that learners create knowledge when they are actively involved in linking new concepts with previous information (Stapleton & Stefaniak, 2019). Constructivism highlights that knowledge is not a passive flow of information from one individual to another but rather involves the reconstruction of knowledge by learning and unlearning concepts and carrying out a critical analysis of learning (Dagar & Yadav, 2016). Constructivism suggests the use of teaching approaches that include active learning, collaborative learning, teacher support, and contextual learning (Alt, 2015; Mugizi et al., 2021b). This study investigated the use of these teaching methods in secondary schools and how they related to student engagement.

The behaviourist theory posits that the act of behaving is an acquired habit. Therefore, all behaviours can be unlearned and replaced by new ones. When an unpleasant behaviour arises, it might be replaced with a more acceptable one (Zhou & Brown, 2017). Changes in behaviour are a result of stimulus-response linkages (Mugizi et al., 2020). Behaviour is directed by the stimulus-response relationship (Juavinet et al., 2018). The Behaviourist Theory suggests that learning can take place as a result of stimuli such as immediate feedback, continuous practice, and reinforcement (Mugizi et al., 2020). The teaching approaches suggested by the Constructivist Theory (active learning, collaborative learning, teacher support, and contextual learning) and Behaviourist Theory (immediate feedback, continuous practice, and reinforcement) were examined in a direct and moderated relationship with student engagement.

Constructivist Teaching Approaches and Students' Engagement

Constructivist teaching approaches refer to strategies that allow students to actively create their own knowledge by connecting new concepts with what they already know (Aljohani, 2017). Active learning, collaborative learning, teacher support, and contextual learning are all examples of constructivist teaching strategies (Alt, 2015; Mugizi et al., 2021b). Active learning emphasises the creation of knowledge through critical thinking, problem-solving, and meta-cognitive activities that actively engage students in the learning process (Demirci, 2017). Collaborative learning is about students working in small groups (Le et al., 2018). Teacher support concerns offering care, respect, understanding, and help to students (Yu & Singh, 2018). Contextual learning is concerned with teachers relating knowledge taught to real-world situations (Lotulung et al., 2018). For contextual learning, it involves inquiry, questioning, reflection, thinking back, and authentic assessment (Roza et al., 2019). This makes learning an enjoyable activity, most likely promoting learners' engagement (Mugizi et al., 2021).

Scholars (Arjomandi et al., 2018; Backer et al., 2018; Darnell & Krieg, 2019; Gillies, 2016; Havik & Westergard, 2020; Knudson, 2020; Mentari & Syarifuddin, 2020; Mugizi et al., 2021b; Qudsyi et al., 2018; Xerri et al., 2018; Venton & Pompano, 2021; Wang & BrckaLorenz, 2018) have related constructivist teaching approaches and students' engagement. However, some studies raised empirical gaps. For instance, unlike the other studies, Darnell and Krieg (2019) found that the constructivist approach of active learning did not improve student learning among university students. Relatedly, Wang and BrckaLorenz (2018) found an insignificant relationship between the constructivist approach of collaborative learning and student engagement. Further, Qudsyi et al. (2018) indicated that the constructivist approach of contextual learning lowly impacted student

engagement. These empirical gaps suggested a lack of a concrete position on the relationship between the variables, hence the need for further research in different contexts.

Behavioural Teaching Approaches and Students' Engagement

Behaviourist teaching approaches refer to strategies that emphasise eliciting changes in behaviour as a result of stimulus-response associations (Rogiti, 2021). Behaviourist teaching approaches include immediate feedback, continuous practice, and reinforcement (Mugizi et al., 2020). Immediate feedback is a timely response from a teacher to enable mistakes correction (Omer & Abdularhim, 2017). Continuous practice is repeat learning, involving students' learning new content by repeatedly revising it and doing tests on it (Ludigo et al., 2019). For reinforcement, it is an increase in the likelihood of an individual conducting himself or herself in a specified way as a result of the consequences of his or her behaviour in that situation (Mugizi et al., 2020). This can be positive or negative reinforcement. Positive reinforcement involves an action that elicits a desirable consequence or response, resulting in an increase in the future probability of that behaviour occurring. Negative reinforcement involves a teacher taking an action that prevents an undesirable consequence or response from increasing or occurring again (Akpan, 2020).

Scholars (e.g., Cooper et al., 2018; Esposito & Weaver, 2011; Gage & MacSuga-Gage, 2017; Hapsari & Anni, 2017; Holmes, 2018; Kang, 2016; Markelz & Taylor, 2016; Mugizi et al., 2020; Sancho-Vinuesa et al., 2013; Tian & Zhou, 2020; Wong & Yang, 2017; Zhang & Hyland, 2018) have related behavioural teaching approaches and student engagement. However, the studies raised contextual and empirical gaps. Contextually, except for the study by Mugizi et al. (2020) in Uganda, every other study was done outside Uganda and the African context. Still, the study by Mugizi et al. (2020) involved university students; hence, it did not

capture the situation in secondary schools and revealed empirical gaps by indicating that the behaviourist approach of continuous practice had an insignificant relationship with students' engagement, unlike the other studies. The contextual gap suggested that little had been explored on behaviourist teaching and student engagement in the context of secondary schools in Uganda, yet teaching environments are different because of university and country peculiarities. With the empirical gap, it implied that there was no harmonised position on the relationship between the variables. These contextual and empirical gaps attracted the attention of this study involving secondary schools in Uganda.

METHODS

The study employed the correlational research design to determine whether teaching approaches related to student engagement. Therefore, the study adopted the quantitative approach to produce inferential results for generalisation. The sample comprised 341 students from a population of 3487 ordinary-level students drawn from seven government-aided secondary schools. The sample size was determined using the table for determining the sample size for a given population by Krejcie and Morgan (1970). The sample was obtained using simple random sampling, providing the random sample required for generalising the findings. A self-administered questionnaire was used to collect the data.

Measurement of the Variables

Student engagement (dependent variable) measures were behavioural, affective, cognitive, and agentic engagement (Lam et al., 2014; Mameli & Passini, 2018). The measures of independent variables (teaching approaches) were constructivist and behaviourist teaching. The measures of constructivist teaching approaches were active learning, collaborative learning, teacher support, and contextual learning (Metheny et al., 2008; Mugizi et al., 2021b). The measures for behaviourist

teaching approaches were immediate feedback, continuous practice, and reinforcement (Mugizi et al., 2020). The indicators for the different measures were based on a Likert scale of five anchors (1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree). The ordinal scale used produced the data necessary for quantitative analysis.

Data Analysis

The data were analysed by constructing models in terms of measurement and structure. The measurement models determined whether the indicators for the various constructs were relevant and consistent. The structural models established causal linkages between the independent and outcome variables. The measurement and structural models were constructed using SmartPLS 4, which helps in carrying out partial least squares structural equation modelling (PLS-SEM). PLS-SEM was chosen because of its capacity to spontaneously produce higher-order constructs and calculate complex models with multiple latent variables. SmartPLS identifies predictive links between variables, establishing causal relationships based on

strong theoretical ground (Sarstedt et al., 2021). SmartPLS was the basis for identifying the indicators for the various constructs and developing measurement models that revealed path links between the variables. PLS-SEM facilitated revealing causal-effect linkages in the conjectured model. Using SmartPLS, the relationship between teaching strategies and student engagement was established.

RESEARCH FINDINGS

The results of the study were on demographic characteristics of students, measurement models, and structural equation models. The results were the basis for making descriptive and inferential analyses.

Study Participants Demographic Characteristics

Study participants' demographic characteristics results were on sex, age, and class. This helped to establish categories of various students in the schools that participated in the study to enhance the generalisation of the findings.

Table 1: Students' demographic characteristics

Item	Categories	Frequency	Percent
Sex	Male	153	44.9
	Female	188	55.1
	Total	341	100.0
Age Group	Below 14 years	77	22.6
	14 - 18 years	222	65.1
	Above 18 years	42	12.3
	Total	341	100.0
Class Level	Senior One	84	24.6
	Senior Two	85	24.9
	Senior Three	85	24.9
	Senior Four	87	25.5
	Total	341	100.0

Table 1 reveals that the larger percentage (55.1%) of students were female, and the males were 44.9%. The majority percentage (65.1%) was aged 14–18

years, while 22.6% were below 14 years, and the remaining 12.3% were above 18 years. The larger percentage (25.5%) was in senior four, followed by

24.9% in senior three and two, and those in senior one constituted 24.6% of the sample size. The results showed that different categories of ordinary-level students participated in the study. Therefore, the results were representative of students from different classes.

Measurement Models

To ascertain if the data collected was fit for structural modelling, an assessment of convergent

validity (Average variance extracted [AVE]) and Heterotrait-Monotrait (HTMT) ratio correlations for discriminant validity was carried out. Reliability was also assessed by carrying out Cronbach’s alpha and composite reliability tests. Further, the variance inflation factor (VIF) the standard metric for assessing Collinearity or the existence of a correlation between variables, was also calculated. The results are presented in *Tables 2 and 3.*

Table 2: Means, AVE and Heterotrait Monotrait (HTMT) Discriminant Validity Assessment

Measures	AVE	SE	AE	BE	CE	AGE
SE						
AE	0.755	0.695				
BE	-	0.428	0.693			
CE	0.804	0.775	0.710	0.637		
AGE	0.893	0.886	0.782	0.379	0.637	
CT		CT	CL	AL	COL	TS
CL	0.787	0.311				
AL	0.808	0.563	0.457			
COL	0.886	0.116	0.097	0.606		
TS	0.571	0.406	0.227	0.532	0.074	
BT		BT	CP	IF	RI	
CP	0.856	0.337				
IF	0.890	0.624	0.078			
RI	0.889	0.564	0.544	0.282		

Key: AE = Affective Engagement, AL = Active Learning, AGE = Agentic Learning, BE = Behavioural Engagement, BT= Behavioural Teaching, LC = Cognitive Learning, CL = Collaborative Learning, Col = Contextual Learning, CT = Constructivist Teaching, CP = Continuous Practice, IF = Immediate Feedback, RI= Reinforcement, SE= Student Engagement, TS =Teacher Support

Table 2 reveals that for convergent validity (AVE), all the constructs produced values above 0.5, which is the minimum, except for behavioural engagement, whose values were high and hence were dropped and were not included in subsequent analyses. This meant that all the indicators for the constructs whose AVE was appropriate were accurate measures of the constructs describing the variables (Hair Jr et al., 2021). The heterotrait-monotrait (HTMT) ratio of correlations for

discriminant validity measuring whether the constructs were independent measures of the variables satisfied the condition for the same because all the values were below 0.90, which is the maximum (Franke & Sarstedt, 2019). Hence, the constructs of the determinant variables, which are constructivist and behavioural teaching approaches, independently predicted the dependent variable of student engagement.

Table 3: Reliability and Collinearity Tests Results

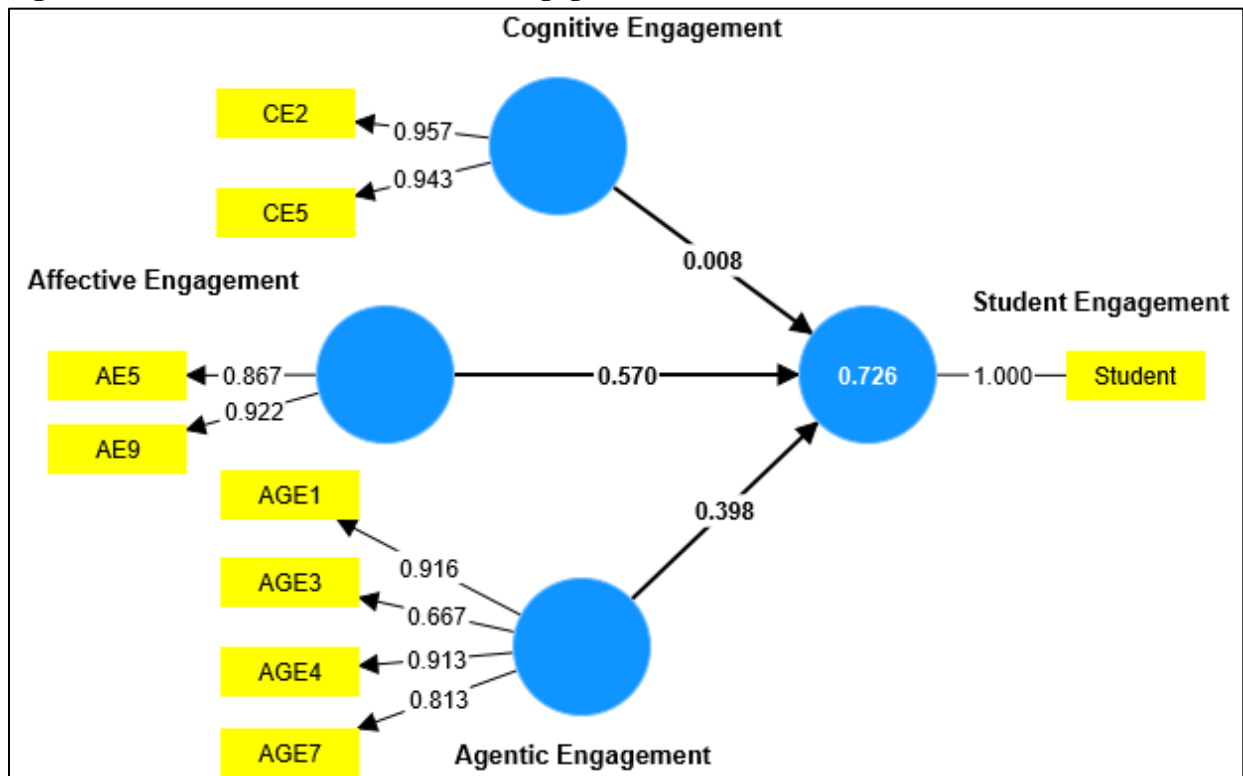
Variables	Measures	α	CR	VIF
Student Engagement	Affective Engagement	0.755	0.889	1.938
	Agentic Engagement	0.804	0.887	2.092
	Cognitive Engagement	0.893	0.949	2.440
Constructivist Teaching	Active Learning	0.808	0.863	1.079
	Collaborative Learning	0.787	0.850	1.008
	Contextual Learning	0.886	0.911	1.005
	Teacher Support	0.571	0.772	1.078
Behaviourist Teaching	Continuous Practice	0.856	0.907	1.321
	Immediate Feedback	0.890	0.919	1.115
	Reinforcement	0.889	0.945	1.413

Key: CR = Composite Reliability =, α = Chronbach's alpha

The reliability test results (Table 3) reveal that except for the construct of teacher support ($\alpha = 0.571$), the rest of the constructs' values were above the minimum level of 0.70. Therefore, the study considered all the constructs as accurate measures based on construct validity. Construct validity is largely preferred because, unlike Chronbach's

alpha, which is very sensitive to outer traits within the indicators, construct validity is liberal and tolerates outer traits, increasing the likelihood of more indicators becoming reliable (Hair Jr et al., 2021). Therefore, the indicators of the different constructs were reliable.

Figure 1: Structural Model for Student Engagement

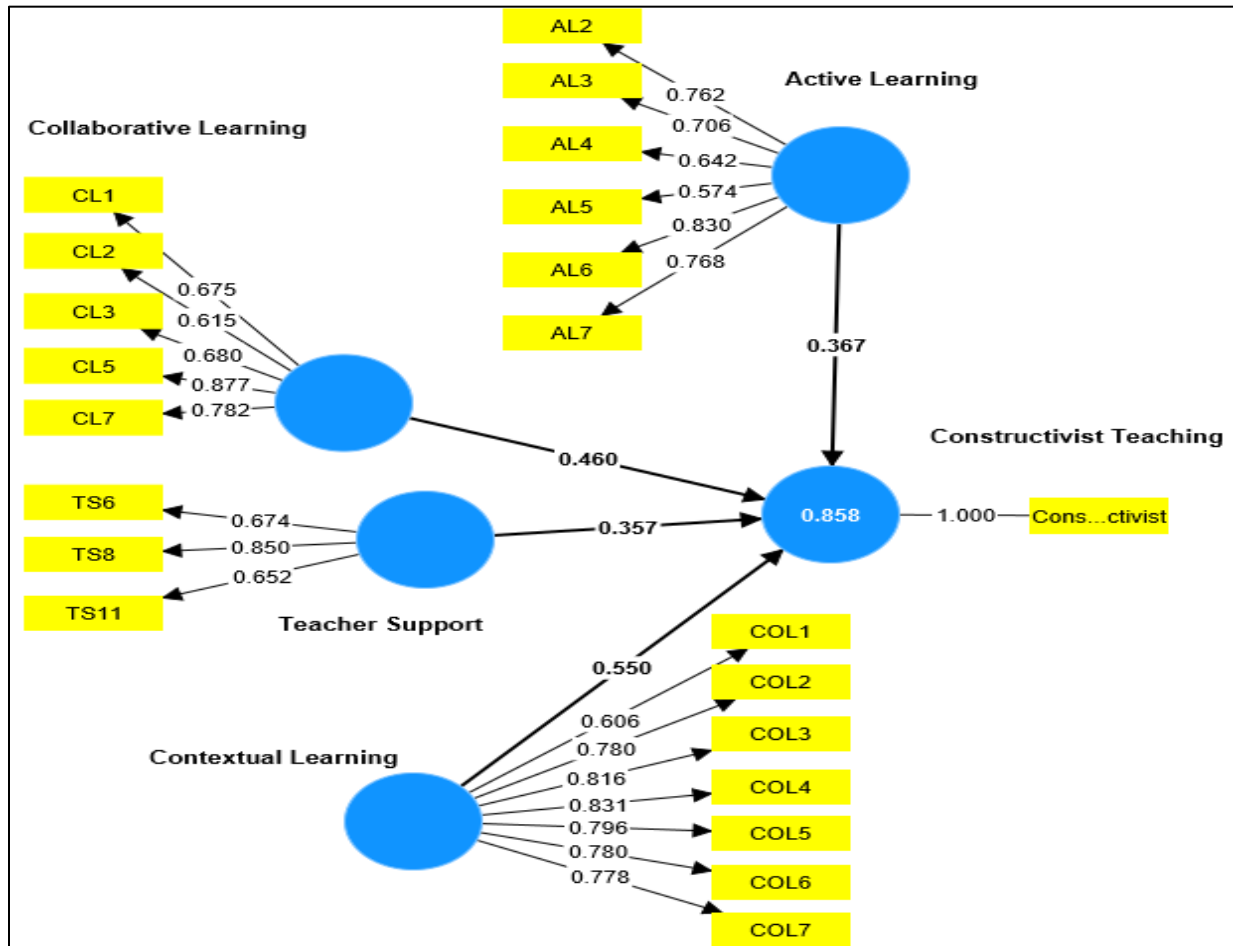


Source: Primary Data

Initially, while student engagement was conceived as covering behavioural, cognitive, affective, and agentic engagement (see *Appendix 1*), validity and reliability tests led to the dropping of behavioural engagement. Therefore, the structural model (*Figure 1*) for student engagement reveals that the appropriate measures of student engagement in the

context of the current study were cognitive, affective, and agentic engagement. For cognitive engagement, out of nine indicators, two were retained for affective engagement out of six, also only two were retained and for agentic out of seven, four were retained. The indicators retained were considered correct measures of student engagement.

Figure 2: Structural Model for Constructivist Teaching Approaches



Source: Primary Data

Figure 2 shows that all the constructs (active learning, collaborative learning, teacher support, and contextual learning) measuring constructivist teaching (see *Appendix 1*) were retained, hence appropriate measures of the variable. However, the model shows that for active learning, seven out of eight indicators were retained with indicator one (AL1) dropped; for collaborative learning, five out

of eight indicators were retained with indicator eight (CL8) dropped; for teacher support, three (TS6, T8 and TS11) out of eleven indicators were retained; and for contextual learning, seven out of eight indicators were retained. The retained indicators were deemed correct measures of constructivist teaching.

Figure 3: Structural Model for Behaviourist Teaching

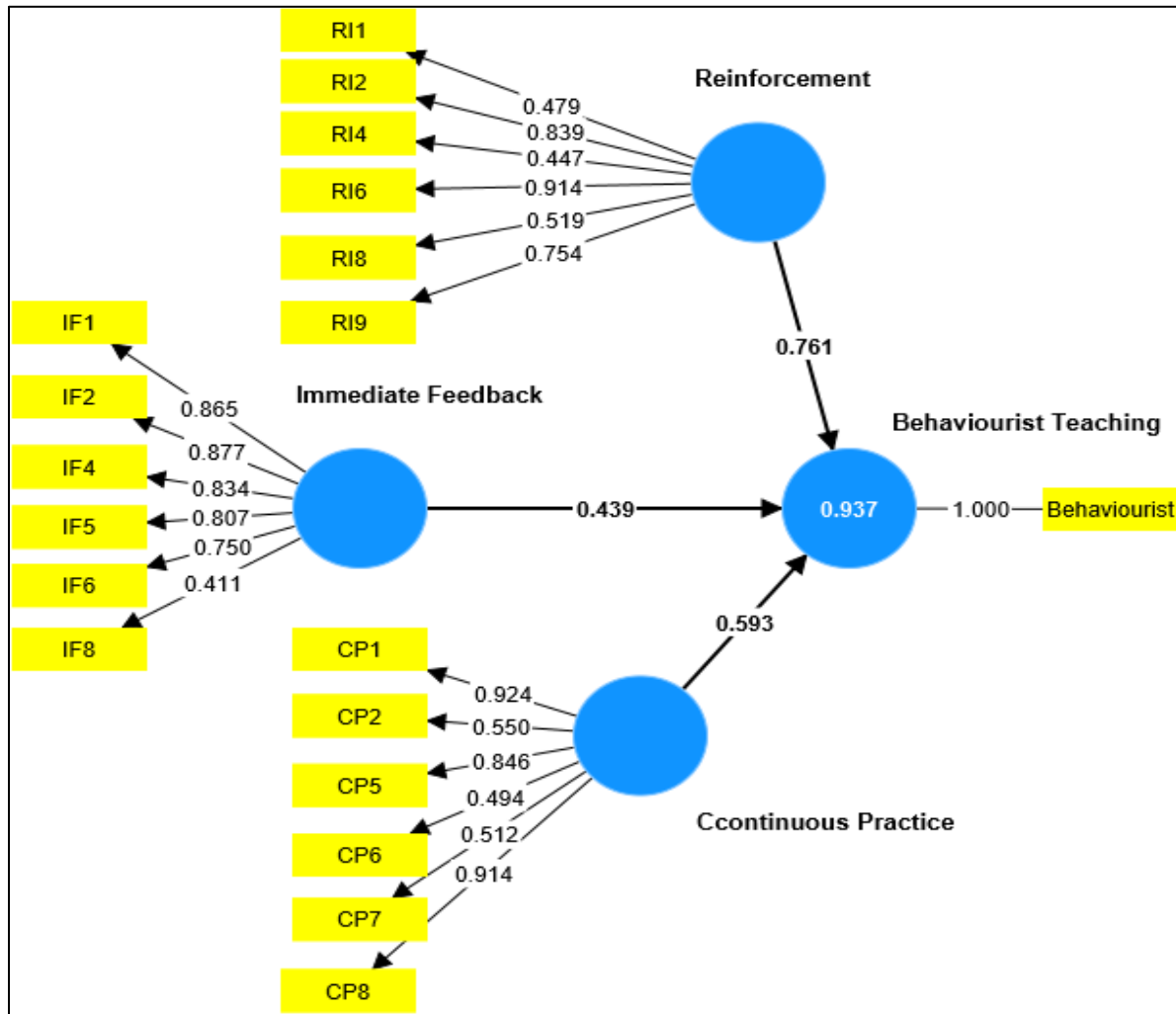


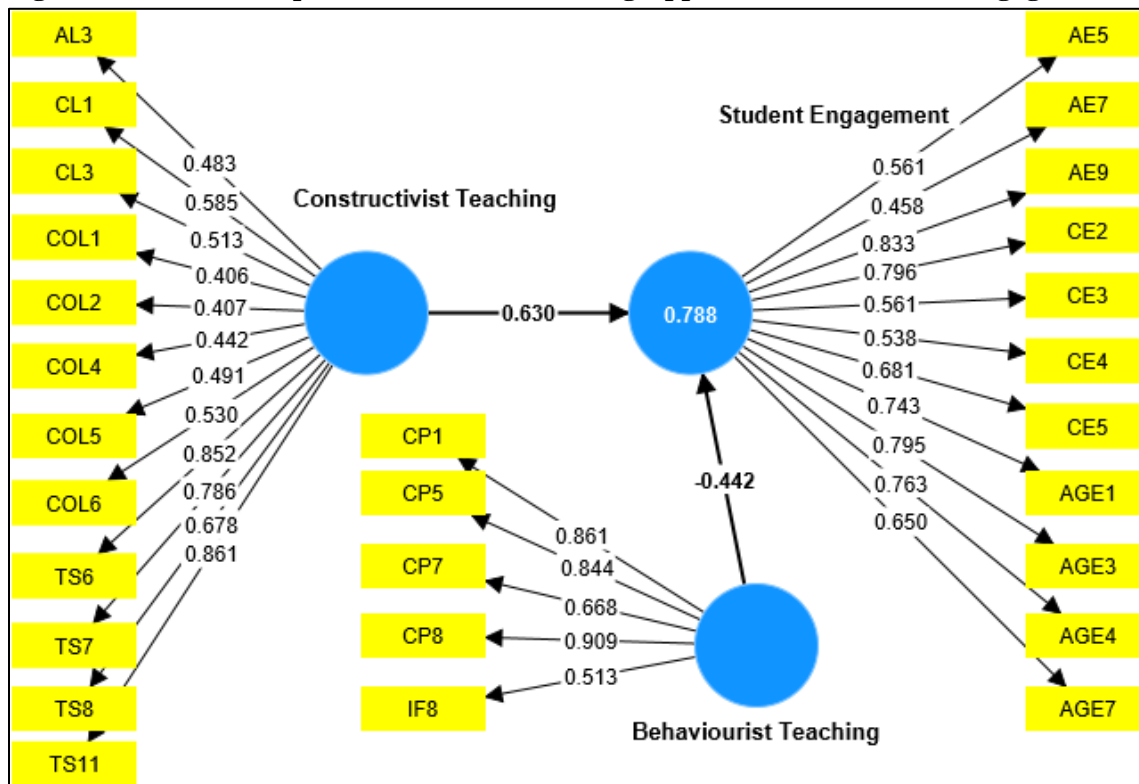
Figure 3 shows that all the constructs (immediate feedback, continuous practice, and reinforcement) measuring behaviourist teaching (see Appendix 1) were retained, hence appropriate measures of the variable. The model shows that for immediate feedback, six out of eight indicators were retained; for continuous practice, six out of eight indicators were retained; and for reinforcement, six out of nine indicators were retained. The retained indicators

were deemed appropriate measures of the constructs.

Teaching Approaches and Student Engagement

To ascertain the relationship between teaching approaches, namely constructivist and behavioural, a structural equation model (Figure 1) was drawn. The structural equation model estimates are indicated in Table 4.

Figure 4: Structural Equation Model for Teaching Approaches and Student Engagement



The structural equation model for teaching approaches and student engagement (Figure 1) shows that after Factor Analysis, while all the measures for constructivist teaching loaded in the model, for behavioural teaching only continuous practice and immediate feedback loaded; hence reinforcement was dropped. While the structural model also includes the betas (β) and R-square,

Table 4 further presents the path coefficients, coefficients of determination (R^2 and adjusted R^2), and the associated t statistics and p-values. The model shows that two hypotheses postulating that constructivist teaching approaches (H1) and behaviourist teaching approaches have a significant relationship with student engagement in secondary schools (H2) were tested.

Table 4: Structural Equation Model Estimates for Teaching Approaches and Student Engagement

Path coefficients	B	Mean	STD	T	P
Constructivist Teaching → Student Engagement	0.630	0.633	0.036	17.299	0.000
Behaviourist Teaching → Student Engagement	-0.442	-0.439	0.050	8.857	0.000
$R^2 = 0.788$					
R^2 Adjusted = 0.787					

The results in Figure 1 and Table 4 suggest that the hypothesis test results indicated that while constructivist teaching ($\beta = 0.630$, $t = 17.299$, $p = 0.000 < 0.05$) had a significant positive relationship with student engagement, the behaviourist teaching approach ($\beta = -0.442$, $t = 8.857$, $p = 0.000 < 0.05$) had a significant negative relationship with student

engagement. R^2 shows that the teaching approaches combined explained 78.8% ($R^2 = 0.311$) of the variation in student engagement, while Adjusted R^2 showed that constructivist teaching approaches, which had a positive and significant relationship with student engagement alone, explained 78.7% (adjusted $R^2 = 0.787$). Therefore, the coefficient of

determination (R^2) implied that 21.2% of the variation in student engagement was accounted for by factors other than teaching approaches. The findings meant that while Hypothesis One was supported, Hypothesis Two was rejected.

DISCUSSION

The hypothesis test revealed that constructivist teaching approaches had a positive and significant relationship with student engagement. This finding is consistent with several scholars, such as Arjomandi et al. (2018), Baker et al. (2017), Gillies (2016), Havik and Westergard (2020), Knudson (2020), Mentari and Syarifuddin (2020), Mugizi et al. (2021b), Xerri et al. (2018), Venton and Pompano (2021), and Wang and BrckaLorenz (2018), who reported that constructivist teaching approaches had a significant relationship with student engagement. However, the finding was inconsistent with Darnell and Krieg (2019), who reported that the constructivist approach to active learning did not improve student learning. The finding is also inconsistent with Wang and BrckaLorenz (2018), who indicated the relationship between the constructivist approach of collaborative learning and student engagement was insignificant. Relatedly, the finding was also inconsistent with Qudsyi et al. (2018), who revealed that the constructivist approach to contextual learning had no significant effect on student engagement. Nonetheless, with the finding consistent with most previous scholars, it can be affirmed that the relationship between constructivist teaching approaches and student engagement is positive and significant.

On the other hand, the finding indicated that behaviourist teaching approaches had a negative and significant relationship with student engagement. This finding closely concurs with Mugizi et al. (2020), who revealed that some aspects of the behaviourist teaching approach, such as continuous practice, had an insignificant relationship with students' engagement, unlike the other studies. Nonetheless, the finding is in contrast

to the findings of earlier scholars like; Cooper et al. (2018), Esposito and Weaver (2011), Gage and MacSuga-Gage (2017), Hapsari and Anni (2017), Holmes (2018), Kang (2016), Markelz and Taylor (2016), Sancho-Vinuesa et al. (2013), Tian and Zhou (2020), Wong and Yang (2017), Zhang and Hyland (2018), who reported that behavioural teaching approaches had a positive and significant relationship with student engagement. However, it should be noted that the study by Mugizi et al. (2020) in the context of a university in Uganda indicated that some aspects of the behaviourist teaching approach, such as continuous practice had an insignificant relationship with students' engagement. Therefore, the contribution of the behaviourist approach to student engagement in educational institutions in Uganda might be minimal.

CONCLUSIONS

This study concluded that the constructivist teaching approach promotes student engagement. This is when the teachers employ active, collaborative, and contextual learning and provide support to students. This involves teachers providing questions to answer at the end of every lesson, making students carry out research in groups, and exchanging ideas. In addition, this is when teachers show that they care about what happens to the students, teach extra lessons to enable students to catch up, ensure that students succeed, and make an effort to help students improve their performance. Further, this is when teachers ensure independent learning, promote critical thinking, analysis, and reasoning, teach from the known to the unknown, teach what is realistic, and make an effort to be at the level of the students to help them understand. On the contrary, the study concluded that behaviourist teaching approaches do not enhance student engagement. Therefore, emphasising continuous practice and immediate feedback does not make students engage in their studies. Stressing continuous revision and continuous learning from one another does not

necessarily enhance students' engagement. Also, teachers putting their focus on immediately correcting students and indicating how correctly various tasks are performed does not necessarily promote student engagement.

Recommendations

Teachers should emphasise using constructivist teaching approaches. This should involve employing active, collaborative, and contextual learning and providing support to students. Therefore, teachers should always provide students with questions to respond to after every lesson, make them carry out research in groups, and exchange ideas. Teachers should also show that they care about what happens to the students, teach extra lessons to enable them to catch up, ensure that students succeed, and help them improve their performance. Further, ensure independent student learning, promote critical thinking, analysis, and reasoning, teach from the known to the unknown, deliver content that is realistic, and makes an attempt to communicate with students at their level.

REFERENCES

- Abubakar, A. M., Abubakar, Y., & Itse, J. D. (2017). Students' engagement in relationship to academic performance. *Journal of Education and Social Sciences*, 8(1), 5-9.
- Akpan, B. (2020). Classical and operant conditioning—Ivan Pavlov; Burrhus Skinner. In: Akpan, B., Kennedy, T.J. (eds) *Science Education in Theory and Practice*. Springer Texts in Education. Springer, Cham. https://doi.org/10.1007/978-3-030-43620-9_6.
- Aljohani, M. (2017). Principles of constructivism in foreign language teaching. *Journal of Literature and Art Studies*, 7, 97-107. <https://doi.org/10.17265/2159-5836/2017.01.013>
- Alt, D. (2015). Assessing the contribution of a constructivist learning environment to

academic self-efficacy in higher education. *Learning Environments Research*, 18, 47-67. <https://doi.org/10.1007/s10984-015-9174-5>

- Arjomandi, A., Seufert, J., O'Brien, M. & Anwar, S. (2018). Active teaching strategies and student engagement: A comparison of traditional and non-traditional business students. *e-Journal of Business Education and Scholarship of Teaching*, 12(2), 120-140
- Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development*, 40(5), 518- 529.
- Backer, J. M., Miller, J. L., & Timmer, S. M. (2018). *The effects of collaborative grouping on student engagement in middle school students*. Retrieved from: <https://sophia.stkate.edu/maed/280>
- Bond, M., Bedenlier, S., Buntins, K., Kerres, M. &Zawacki-Richter, O. (2020). Facilitating student engagement in higher education through educational technology: A Narrative Systematic review in the field of education. *Contemporary Issues in Technology and Teacher Education*, 20(2), 315-368.
- Cooper, J. T., Whitney, T., & Lingo, A. S. (2018). Using immediate feedback to increase opportunities to respond in a general education classroom. *Rural Special Education Quarterly*, 37(1), 52-60. <https://doi.org/10.1177/8756870517747121>
- Dagar, V., & Yadav, A. (2016). Constructivism: A paradigm for teaching and learning. *Arts and Social Sciences Journal*, 7(4), 1-4. doi: 10.4172/2151-6200.1000200
- Darnell, D. K., & Krieg, P. A. (2019). Student engagement, assessed using heart rate, shows no reset following active learning sessions in

- lectures. *PLoS One*, 14(12), e0225709. <https://doi.org/10.1371/journal.pone.0225709>
- Delfino, A. P. (2019). Student engagement and academic performance of students of Partido State University. *Asian Journal of University Education*, 15(1), 1-16.
- Demirci, C. (2017). The effect of active learning approach on attitudes of 7th-grade students. *International Journal of Instruction*, 10 (4), 129-144. doi: 10.12973/iji.2017.1048a
- Esposito, A. S., & Weaver, D. (2011). Continuous team assessment to improve student engagement and active learning. *Journal of University Teaching & Learning Practice*, 8(1), 97-109. <https://ro.uow.edu.au/jutlp/vol8/iss1/8>.
- Franke, G., & Sarstedt, M. (2019). Heuristics versus statistics in discriminant validity testing: A comparison of four procedures. *Internet Research*, 29(3), 430-447. Available at: <https://doi.org/10.1108/IntR-12-2017-0515>
- Gage, N. A., MacSuga-Gage, A. S., & Crews, E. (2017). Increasing teachers' use of behavior-specific praise using a multitiered system for professional development. *Journal of Positive Behavior Interventions*, 19(4), 239-251. <https://doi.org/10.1177/1098300717693568>
- Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education*, 41, 39-54. <https://doi.org/10.14221/ajte.2016v41n3.3>
- Goodman, A. (2016). The manifestation of student engagement in classrooms: A phenomenological case study of how teachers experience student engagement and how it influences pedagogical decision making (PhD Dissertation, University of Nevada, Las Vegas). <http://dx.doi.org/10.34917/9302933>
- Hair Jr, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., Danks, N.P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Cham, Switzerland: Springer Nature. Available at: <https://doi.org/10.1007/978-3-030-80519-7>
- Hapsari, A. M., & Anni, C. T. (2017, September). Increasing elementary students' behavior engagement through applying token economy technique. In *9th International Conference for Science Educators and Teachers (ICSET 2017)* (pp. 513-519). Atlantis Press. doi: 10.2991/icset-17.2017.85
- Havik, T., & Westergård, E. (2020). Do teachers matter? Students' perceptions of classroom interactions and student engagement. *Scandinavian Journal of Educational Research*, 64(4), 488-507. <https://doi.org/10.1080/00313831.2019.1577754>
- Holmes, N. (2018). Engaging with assessment: Increasing student engagement through continuous assessment. *Active Learning in Higher Education*, 19(1), 23-34. doi: 10.1177/1469787417723230.
- Juavinett, A. L., Erlich, J. C., & Churchland, A. K. (2018). Decision-making behaviours: Weighing ethology, complexity, and sensorimotor compatibility. *Current opinion in neurobiology*, 49, 42-50. doi: 10.1016/j.conb.2017.11.001
- Kang, S. H. (2016). Spaced repetition promotes efficient and effective learning: Policy implications for instruction. *Policy Insights from the Behavioral and Brain Sciences*, 3(1), 12-19. <https://doi.org/10.1177/2372732215624708>
- Knudson, D. (2020). A tale of two instructional experiences: Student engagement in active learning and emergency remote learning of biomechanics. *Sports Biomechanics*, 1-11. <https://doi.org/10.1080/14763141.2020.1810306>

- Koprivitsa, C. D. (2020). The concept of engagement. *Philosophy and Society*, 31(2), 139-276. <https://doi.org/10.2298/FID2002177K>
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and psychological measurement*, 30(3), 607-610. <https://doi.org/10.1177/001316447003000308>
- Lam, S. F., Wong, B. P., Yang, H., & Liu, Y. (2012). Understanding student engagement with a contextual model. In *Handbook of research on student engagement* (pp. 403- 419). Springer, Boston, MA. doi: 10.1007/978-1-4614-2018-7_19.
- Le, H., Janssen, J., & Wubbels, T. (2018). Collaborative learning practices: Teacher and student perceived obstacles to effective student collaboration. *Cambridge Journal of Education*, 48 (1), 103-122. <https://doi.org/10.1080/0305764X.2016.1259389>
- Lei, H., Cui, Y., & Zhou, W. (2018). Relationships between student engagement and academic achievement: A Meta-analysis. *Social Behaviour and Personality: An International Journal*, 46 (3), 517-528. <https://doi.org/10.2224/sbp.7054>
- Lester, D. (2013). A review of the student engagement literature. *Focus on colleges, universities & schools*, 7(1), 1-8.
- Lotulung, C. F., Ibrahim, N., & Tumurang, H. (2018). Effectiveness of learning method contextual teaching learning (CTL) for increasing learning outcomes of entrepreneurship education. *Turkish Online Journal of Educational Technology-TOJET*, 17(3), 37-46.
- Ludigo, H., Mugimu, C. B., & Mugagga, A. M. (2019). Pedagogical strategies and academic achievement of students in public universities in Uganda. *Journal of Education and Practice*, 3(1), 81-96. <https://doi.org/10.5281/zenodo.3497108>
- Mameli, C., & Passini, S. (2018). Development and validation of an enlarged version of the Student Agentic Engagement Scale. *Journal of Psychoeducational Assessment*. Advance online publication. <https://doi.org/10.1177/073428291875784>
- Markelz, A. M., & Taylor, J. C. (2016). Effects of Teacher Praise on Attending Behaviors and Academic Achievement of Students with Emotional and Behavioral Disabilities. *Journal of Special Education Apprenticeship*, 5(1), 1-15.
- Mentari, W. N., & Syarifuddin, H. (2020, May). Improving student engagement by mathematics learning based on contextual teaching and learning. In *Journal of Physics: Conference Series* (Vol. 1554, No. 1, p. 012003). IOP Publishing. doi 10.1088/1742-6596/1554/1/012003
- Metheny, J., McWhirter, E. H., & O'Neil, M. E. (2008). Measuring perceived teacher support and its influence on adolescent career development. *Journal of Career Assessment*, 16(2), 218-237. doi: 10.1177/1069072707313198
- Muganga, L., & Ssenkusu, P. (2019). Teacher-centered vs. student-centered: An examination of student teachers' perceptions about pedagogical practices at Uganda's Makerere University. *Cultural and Pedagogical Inquiry*, 11(2), 16-40. doi: <https://doi.org/10.18733/cpi29481>
- Mugizi, W. (2021a). University infrastructure quality and students engagement in a South Western private university, Uganda. *Interdisciplinary Journal of Education*

- Research*, 3(2), 98-107. <https://doi.org/10.51986/ijer-2021.vol3.02.10>
- Mugizi, W., Katuramu, A. O., Dafiewhare, A. O., & Kanyesigye, J. (2021b). Student-centered pedagogical approach and student engagement at a private university in Western Uganda. *Education Journal*, 10(5), 193-203. doi: 10.11648/j.edu.20211005.14
- Mugizi, W., Rwothumio, J., & Kanyesigye, J. (2020). Teacher-centred pedagogical approach and student engagement at a private university in Western Uganda. *Journal of Educational Research and Reviews*, 8(8), 128-137. doi: https://doi.org/10.33495/jerr_v8i8.20.154
- Newmann, F. M. (1992). Student engagement and achievement in American secondary schools. New York: Teachers College Press.
- Ohamobi, I. N., & Ezeaku, S. N. (2015). Students Engagement Variables as Correlates of Academic Achievement in Economics in Senior Secondary Schools in Anambra State, Nigeria. *International Journal of Science and Research (IJSR)*, 5(5), 473-478. <https://doi.org/10.21275/v5i5.6051602>
- Omer, A., & Abdularhim, M. (2017). The criteria of constructive feedback: The feedback that counts. *Journal of Health Specialties*, 5(1), 45-45.
- Piaget, J. (1936). *Origins of intelligence in the child*. London: Routledge and Kegan Paul.
- Qudsyi, H., Wijaya, H. E., Widiastara, N., & Nurtjahjo, F. E. (2018). Contextual teaching-learning method to improve student engagement among college students in cognitive psychology course. In *International Conferences on Educational, Social Sciences and Technology* (pp. 634-643). <https://doi.org/10.29210/2018194>
- Rogti, M. (2021). Behaviourism as external stimuli: improving student extrinsic motivation through behavioural responses in Algerian College Education. *Global Journal of Human-Social Science*, 21(1), 29-41.
- Roza, A. S., Rafli, Z., & Rahmat, A. (2019). The Implementation of contextual teaching learning (CTL) to improve the students' speaking ability in Islamic studies course. *International Journal of Applied Linguistics and English Literature*, 8(4), 45-50. <https://doi.org/10.7575/aiac.ijalel.v.8n.4p.45>
- Sancho-Vinuesa, T., Escudero-Viladoms, N., & Masià, R. (2013). Continuous activity with immediate feedback: A good strategy to guarantee student engagement with the course. *Open Learning: The Journal of Open, Distance and e-Learning*, 28(1), 51-66. doi:10.1080/02680513.2013.776479.
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modelling. In *Handbook of market research* (pp. 587-632). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-319-57413-4_15
- Skinner, B. F. (1953). *Science and human behaviour*. New York: The Free Press.
- Stapleton, L., & Stefaniak, J. (2019). Cognitive constructivism: Revisiting Jerome Bruner's influence on instructional design practices. *TechTrends*, 63, 4-5. <https://doi.org/10.1007/s11528-018-0356-8>
- Tian, L., & Zhou, Y. (2020). Learner engagement with automated feedback, peer feedback and teacher feedback in an online EFL writing context. *System*, 91, 102247. <https://doi.org/10.1016/j.system.2020.102247>
- Tian, M., Lu, G., Li, L., & Yin, H. (2021). International undergraduate students in Chinese higher education: An engagement typology and associated factors. *Frontiers in Psychology*, 12,

680392. <https://doi.org/10.3389/fpsyg.2021.680392>
- Venton, B. J., & Pompano, R. R. (2021). Strategies for enhancing remote student engagement through active learning. *Analytical and Bioanalytical Chemistry*, 413, 1507–1512. <https://doi.org/10.1007/s00216-021-03159-0>
- Wang, R., & BrckaLorenz, A. (2018). International student engagement: An exploration of student and faculty perceptions. *Journal of International Students*, 8(2), 1002-1033. <https://doi.org/10.32674/jis.v8i2.124>
- Wara, E., Aloka, P. J., & Odongo, B. C. (2018). Relationship between emotional engagement and academic achievement among Kenyan secondary school students. *Academic Journal of Interdisciplinary Studies*, 7(1), 107-118.
- Watson, J. B. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20, 158–177.
- Wong, G. K. W., & Yang, M. (2017). Using ICT to facilitate instant and asynchronous feedback for students’ learning engagement and improvements. *Emerging practices in scholarship of learning and teaching in a digital era*, 289-309. https://doi.org/10.1007/978-981-10-3344-5_18
- Xerri, M. J., Radford, K., & Shacklock, K. (2018). Student engagement in academic activities: A social support perspective. *Higher education*, 75, 589-605. <https://doi.org/10.1007/s10734-017-0162-9>
- Yu, R., & Singh, K. (2018). Teacher support, instructional practices, student motivation, and mathematics achievement in high school. *The Journal of Educational Research*, 111(1), 81-94. <https://doi.org/10.1080/00220671.2016.1204260>
- Zhang, Z. V., & Hyland, K. (2018). Student engagement with teacher and automated feedback on L2 writing. *Assessing Writing*, 36, 90- 102. <https://doi.org/10.1016/j.asw.2018.02.004>
- Zhou, M., & Brown, D. [Eds.]. (2015). *Educational learning theories*. <https://oer.galileo.usg.edu/cgi/viewcontent.cgi?article=1000&context=education-textbooks>

APPENDIX

Appendix 1: Study Instrument

Constructs	Items	Measures
Section A: Demographic Profiles		
Demographics Variables (DV)	DV1	Sex (1 = Male, 2= Female)
	DV2	Age group (1= Below 14 years, 2 = 14 - 18 years, Above 18 years).
	DV3	Students Class (1= S1, 2 =S2, 3 = S3, and 4 = S4)
Section B: Dependent Variable: Student Engagement		
Behavioural Engagement (BE)	BE1	I try hard to do well in school
	BE2	In class, I work as hard as I can.
	BE3	When I am in class, I participate in class activities.
	BE4	I pay attention to what my teachers are teaching when in class
	BE5	When I am in class I ensure that I do my work
	BE6	In school, I make sure I do everything possible to succeed
	BE7	When I am in class, I concentrate on what is to be learned
	BE8	I make sure I go over something again and again until I understand it
	BE9	I am an active participant in school activities such as sports day and clubs
	BE10	I volunteer to help in school activities such as sports day or club activities

Constructs	Items	Measures
Cognitive Engagement (CE)	CE1	I spend a lot of time on my studies and homework
	CE2	I give all my attention to the lesson while in class
	CE3	I complete my homework on time.
	CE4	I work as hard as I can at my tasks (assignments)
	CE5	I do my best in class
	CE6	I do not give up trying even when the tasks are hard
	CE7	I make effort to do my best to learn while in class
	CE8	I make sure I try my best when working on my tasks
	CE9	I read my notes even when there are no upcoming exams
Affective Engagement (AE)	SE1	When I am teaching, majority of the student show that they enjoy learning new things during lectures
	AE1	During class, I make sure that teachers help me to understand what they are teaching
	AE2	I make an effort to answer teacher's questions when asked in class
	AE3	I ask teacher questions in class and outside class in order to understand
	AE4	I make sure my teachers understand that there is something I need to understand
	AE5	If there is something I have not understood from teachers, I ask fellow students to explain to me
Agentic Engagement (AGE)	AE6	I actively participate in class discussions at school When my classmates have different opinions on something, I make an effort to make them understand what I am thinking
	AGE1	During class, I make sure that teachers help me to understand what they are teaching
	AGE2	I make an effort to answer teacher's questions when asked in class
	AGE3	I ask teacher questions in class and outside class in order to understand
	AGE4	I make sure my teachers understand that there is something I need to understand
	AGE5	If there is something I have not understood from teachers, I ask fellow students to explain to me
	AGE6	I actively participate in class discussions at school
AGE7	When my classmates have different opinions on something, I make an effort to make them understand what I am thinking	
Section C: Independent Variable 1: Constructivist Teaching		
Active Learning (AL)	AL1	Teachers involve us in self-guided learning activities
	AL2	Teachers involve us in discussions while in class
	AL3	Teachers provide questions to answer at the end of every lesson
	AL4	Teachers allow us to consult one another in class as we learn
	AL5	Teachers avail us materials and sources to help us understand the material we learn
	AL6	We are given regular assignments by our teachers
	AL7	Sometimes teachers involve us in discussions
	AL8	Teachers make us to carry out research beyond the notes they give us
Collaborative Learning (CL)	CL1	We are helped by teachers to form study groups
	CL2	Teachers make us exchange ideas in study groups
	CL3	Teachers make sure that groups remain focused on learning
	CL4	Each study group is required to present to the whole class
	CL5	Teachers tell us the benefits of working in groups

Constructs	Items	Measures
	CL6	Teachers give groups opportunities to present and discuss
	CL7	Learning in groups is effective because we learn from one another
	CL8	In study groups, each member has the opportunity to contribute during discussions
Teacher Support (TS)	TS1	Teachers put in effort to ensure that we perform better
	TS2	Teachers spare time to help us to get better grades
	TS3	Teachers are helpful and ready to help us whenever we need academic support
	TS4	Teachers challenge me to think about my future goals
	TS5	There are teachers who believe in me and know that I am a hard worker
	TS6	Most teachers in this school care about what happens to students
	TS7	Some teachers teach extra lessons to help students catch-up
	TS8	Teachers put in effort to ensure that we succeed
	TS9	The teachers expect us to do well and encourage us even when our performance is not good
	TS10	The teachers are constantly watching us such that we stick to learning
	TS11	The teachers make effort to help us in order to improve our performance
Contextual Learning (COL)	COL1	My teachers ensure self-directed learning
	COL2	My teachers stimulate thinking, analysis and reasoning
	COL3	My teachers activate my prior knowledge
	COL4	My teachers teach from the known to the unknown
	COL5	The knowledge taught in lectures is realistic
	COL6	My teachers are equal to my level of knowledge helping me to understand
	COL7	The knowledge taught in lectures is relevant to my needs
	COL8	My teachers arouse my curiosity during learning
Section D: Independent Variable 2: Behaviourist Teaching		
Immediate Feedback (IF)	IF1	The teachers immediately make us aware of our strengths
	IF2	The teachers provide us with immediate concrete feedback on activities we have performed
	IF3	The teachers immediately alert us about gaps in our learning
	IF4	The teachers are supportive when we experience difficulties in a task
	IF5	The teachers immediately alert us about gaps in our knowledge
	IF6	The teachers provide us with immediate constructive feedback on activities we have performed
	IF7	The teachers immediately make us aware of our weaknesses
	IF8	The teachers immediately correct us to demonstrate how correctly different activities are performed
Continuous Practice (CP)	CP1	I am encouraged to revise continuously
	CP2	Teachers regularly administer assignments / tests
	CP3	Teachers help us to revise assignments and to make corrections
	CP4	I have been helped by teachers to view problems in my work as an opportunity to learn
	CP5	Teachers discuss with me my mistakes in order to learn from them
	CP6	Teachers guide me to continuously learn from other students
	CP7	Teachers always guide me on how to carry out future study tasks
	CP8	The teachers allow me time to continuously carry out learning
	CP1	I am encouraged to revise continuously
Reinforcement (RI)	RI1	Teachers praise students who do well during class
	RI2	Teachers display good work of students to the whole class

Constructs	Items	Measures
	RI3	Teachers question students' behaviour
	RI4	Teachers correct students who act inappropriately
	RI5	Teachers identify undisciplined students for warning
	RI6	Teachers carry out whole class punishment
	RI7	Teachers criticise students when they perform poorly
	RI8	Teachers carefully evaluate whatever students do in class
	RI9	A warm and responsive attitude from teachers make me participate in giving my contributions in class