BUSINESS AND TECHNICAL EDUCATION STUDENTS' EXPERIENTIAL LEARNING AND STUDY ENGAGEMENT: KOLB'S MODEL ANALYTICAL APPROACH

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Abstract
To address concerns about learning by experience among higher education students, this study was conducted to shed more light on the aspects of experiential learning that can influence students' engagement in their academics. Drawing on Kolb's experiential learning model, this study investigates the influence of experiential learning dimensions (viz., concrete experience, reflective observation, abstract conceptualization, and active experimentation) on the dimensions of study engagement (viz., vigor, dedication, and absorption). Four main hypotheses were formulated and tested in this study. The study was a cross-sectional correlation survey. The participants were Business and Technical education students (N = 663) drawn from four universities in three geo-political zones of Nigeria. Questionnaire was used for data collection and regression analysis was apllied for data analysis in order to test the hypotheses. Findings revealed that concrete experience, reflective observation, abstract conceptualization, and active experimentation are discrete predictors of each dimensions of study engagement – vigor, dedication and absorption. It was therefore recommended that any form of experiential learning should be geared towards promoting students concrete experience, reflective observation, abstract conceptualization, and active experimentation as the cycle will lead to improved academic engagement and outcomes.

Keywords: Business Education, Experiential Learning, Kolb's Learning Model, Study Engagement, Technical Education.

Introduction

While in school, students are expected to acquire multidimensional skills that will enable them to cope with the demands of school-to-work transition. In technical and vocational education and training (TVET), the allied higher education students are expected to possess skills that will make them employable after graduation. Hence, one expectation of any TVET graduate of higher education is the possession of employability skills (Awodiji & Magogodi, 2023). It is expected that such students have the skills to make them gain employment immediately after graduation, yet these skills appear to be lacking or not adequately possessed among these graduates because of certain inhibiting factors such as inadequate use of contemporary teaching techniques, insufficient or lack of teaching resources, political instability, poor learning environment (e.g., Ayonmike, 2014; Onwusa, 2021). These factors definitely affect learning or employability skills acquisition among the TVET students.

Learning is said to occur when there is a relative permanent change in behavior, knowledge and skills of the learner as a result of experience. This may imply that learning is polymorphous. Beyond the regular classroom learning, students are therefore expected to be exposed to different learning approaches, techniques and methods to enhance them change in their knowledge, attitude, values and skills. In TVET, learning is expected to take place within and outside the regular classroom settings. Such learning situations or experiences helps students to maximize learning potentials. Hence, emphasis is placed more on learning by doing in the context of TVET (Coppe et al., 2021).

Technical and vocational education and training is a holistic educational programme that involves the acquisition of practical skills, knowledge, value and attitude to enable the learner transit from school to work smoothly (Orji & Ogbuanya, 2022). In the formal education sector, TVET is offered in the Nigerian university as Agricultural education, Business education, Computer education, Entrepreneurship education, Home economic education, Industrial technical/technology education (Chukwuedo & Odogwu, 2022). In this study, our interest is specifically on business and technical education. While business education is characterized with the programme that prepares graduates to specialize in accounting education, entrepreneurship education, consumer education, marketing education and office technology and management (c.f., Edokpolor & Egbri, 2017); technical education (sometimes referred to as career and technical education, technology education, industrial technical education, or industrial technology education) is characterized by an educational training that prepares prospective graduates in the fields of automobile technology, building technology, electrical technology, electronic technoloigy, mechanical technology and woodwork technology (c.f., Chukwuedo & Ogbuanya, 2020b). A closer look at these conceptualization reveals that the recipients of these programmes must always undertake hand-on training to meet the emerging technological and business dynamics. Hence, experiential learning becomes more necessary than ever in these fields of study. This study, therefore, intends to add to existing literature to call or reawaken the attention of TVET practitioners and experiential educators on how experiential learning can be adopted to foster academic outcomes.

The concept of experiential learning buttress several teaching-learning activities and processes often employed in adult education, vocational education and training, and higher education contexts (Fees & Perchiniak, 2023; Kob & Kolb, 2013, 2015; Miettinen, 2000). Some of these activities include initial training, work placement learning, work-integrated learning, industrial training, internship, work-based learning, workshop practice or laboratory teaching, simulations and service learning experiences (Kolb & Kolb, 2013). Experiential learning positions learning as a continuous process where theory and practice are conceptualized and reconceptualized, with each spiral deepening a student's understanding. However, it appears greater attention has not been given to these activities by scholars, to follow experiential learning approach as a a theory. This is one of the thrust of this study.

Experiential learning theory (ELT) is hinged on the works of famous scholars who gave experience a central role in their theories of human learning and development. Notable among these scholars are John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers, Lev Vygotsky, and Mary Parker Follett (Kolb & Kolb, 2015; Miettinen, 2000). The contributions of these scholars were geared towards developing a dynamic, holistic model of the process of learning from experience. Thus, ELT is a dynamic view of learning based on a learning cycle driven by the resolution of the dual dialectics of action/reflection and experience/abstraction. It is a holistic theory that defines learning as the major process of human adaptation involving the whole person. As such, ELT is applicable not only in the formal education classroom but in all arenas of life.

Experiential learning can be represented as a four-stage cycle where learning begins with experiences that allow participants to observe, review and reflect on what they have practised, and then critically reflect to consciously link their experiences to theory or previous experiences. Towards this understanding, this study focuses on the application of Kolb's learning model to ascertain how experiential learning could influence study engagement.

Study engagement is characterized by behaviors such as vigor, dedication, and absorption in a given context. It is a conscious and voluntary effort an individual makes to allocate and direct their resources towards achieving studious, academic, and vocational-related tasks (Schaufeli et al., 2002; Siu et al., 2014) or to achieve the seeming unattainable expectancy equity in academic major or vocation (Chukwuedo et al., 2021). In this study, study engagement is the degree to which students devote their academic-related resources (time, effort, energy, etc.) to enhance their learning experiences. Although different dimensions of engagement exist in literature, we cautiously employed these dimensions - vigor, dedication, and absorption. Vigor represents the willingness to expend effort, intellectual resilience, and a high level of energy, dedication involves sense of enthusiasm, challenge, and pride; while absorption is characterized by being fully engrossed in a related learning activities (Schaufeli et al., 2002; Alrashidin et al., 2016). Based on these discussions, the present study aims to answer the following research question: What are the relationships between the predictor variables (e.g., CE, RO, AC and AE) and the outcome variables (e.g., vigor, dedication, and absorption)?

Theoretical Framework

Experiential Learning Theory

This study is hinged on the main tenets of Kolb's model of experiential learning, which emphasizes how cognitive, environmental, and emotional experiences influence the learning process and outcomes (Kolb, 1984; 2015). The theory states that learners learn skills better when exposed to real-life situations. Within the ambient of ELT, learning is defined as the process knowledge creation through the transformation of experience. For Kolb's model, knowledge is a function of the combination of grasping and transforming experience (Kolb, 1984). Thus, Kolb's ELT model portrays two dialectically related modes of grasping experience - Concrete Experience (CE) and Abstract Conceptualization (AC), as well as two dialectically related modes of transforming experience – Reflective Observation (RO) and Active Experimentation (AE).

Experiential learning helps learners to learn skills and develop knowledge through real-world, hands-on experiences. It is a process of constructing knowledge that involves a creative tension among the four learning modes that is responsive to contextual demands. This process is portrayed as an idealized learning cycle or spiral where the learner touches all the bases – experiencing, reflecting, thinking, and acting – in a recursive process that is responsive to the learning situation and what is being learned. From the conceptualization of Kolb's model, immediate (i.e., concrete experiences) form the center for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences

The notions of experiential learning underpin many of the teaching and learning activities used in higher education contexts. Examples include work-integrated learning, work-based learning, laboratory teaching, simulations and service learning experiences. In each of these activity types, learning begins with experiences that allow participants to observe, review and reflect on what they have practiced, and then critically reflect to consciously link their experiences to theory or previous experiences (Cooper et al., 2010). Overall, Kolb's model summarizes these teaching and learning activities as a cycle or learning styles

Kolb (1984) has described experiential learning as a four-stage cycle. These include concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE) (see Figure 1). This cycle is a sequential process that enables learning to occur "through a process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p.41).

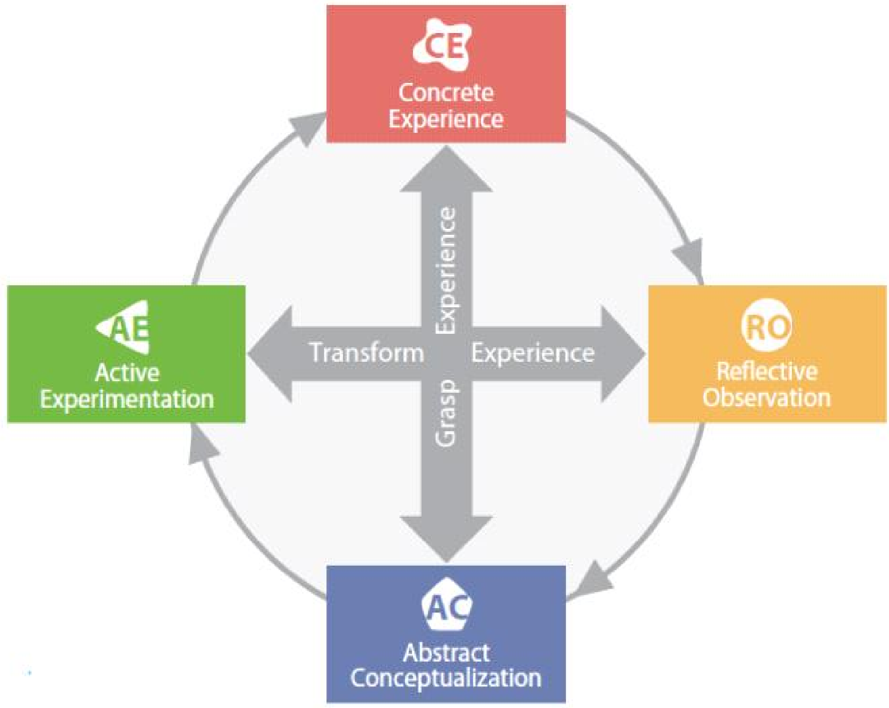

Figure 1. Experiential Learning Model.

Conceptual Framework and Hypotheses Development

The conceptual framework for this study is schematically represented in Figure 2. The model reflects the path ways between each of the dimensions of the predictor variable – experiential learning styles (CE, RO, AC and AE) and the dimensions of the outcome variable – study engagement (vigor, dedication, and absorption). The model depicts the possible predictions that gave rise to the hypotheses formulated in this study.

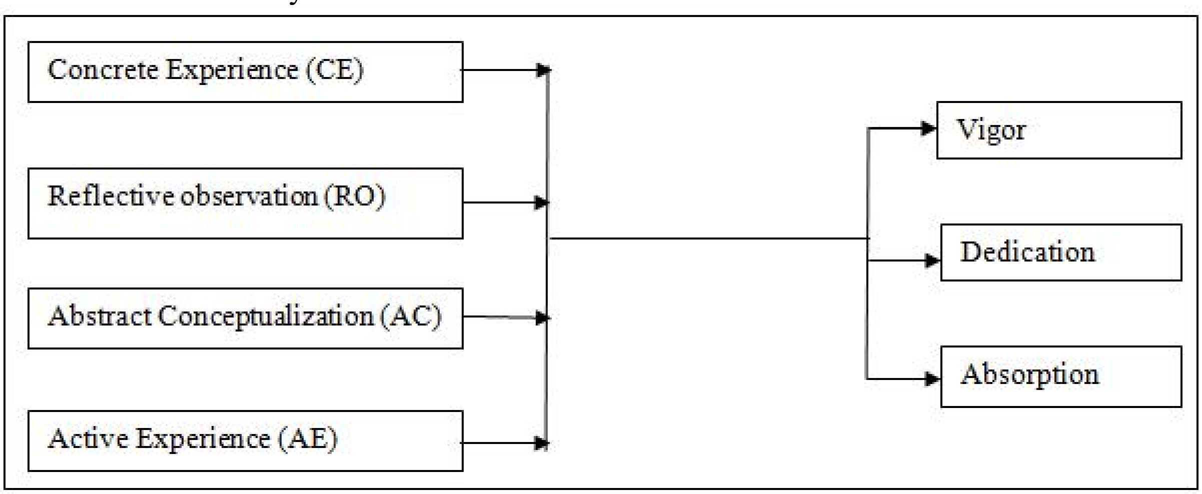

Figure 2. Schematic Representation of the Conceptual Model.

From the conceptual model, the researchers theorize that each dimension of experiential learning style will discretely be associated with or predict each dimension of study engagement. Although there may be possibility of combining the four dimentions of experiential learning to determine the multiple effects on each dimension of study engagement or two or more of the dimensions, this theory is not within the scope of this study. Thus, this study focuses on a model that involes a dimension of experiential learning with each dimension of study engagement and so on, which would give rise to 12 pathways with each dimension of experiential learning to produce three pathways. These theories formed the basis of the hypotheses for this study.

Hypotheses Formulations

Based on the theoretical and conceptual models of this study, the following research hypotheses were formulated and tested.

Research Hypothesis 1: Students' concrete experience (CE) will significantly and positively predict their study engagement (vigor, dedication, and absorption).

Research Hypothesis 2: Students' reflective observation (RO) will significantly and positively predict their study engagement (vigor, dedication, and absorption).

Research Hypothesis 3: Students' abstract conceptualization (AC) will significantly and positively predict their study engagement (vigor, dedication, and absorption).

Research Hypothesis 4: Students' active experimentation (AE) will significantly and positively predict their study engagement (vigor, dedication, and absorption).

Methods

Design of the Study

This study employed the quantitative approach with a cross-sectional correlation survey. According to Gay et al. (2011), a cross-sectional design involves the collection of data as a snapshot from the respondents, and therefore investigates relationships among variables at a snapshot. This design is deemed fit for this study because the researchers collected data from the respondents at a single administration and determine the relationship between the study variables, which are Kolb's experiential learning styles (CE, RO, AC and AE) and study engagement (vigor, dedication, and absorption).

Participants of the Study

The participants of this study were 663 undergraduate students of Business Education (n = 461) and Technical Education (n = 202). The participants were drawn from three universities, one from the South-east, two from the South-south, and one from the South-west of Nigeria. The convenient sampling technique was applied in reaching the participants such that the participants were selected based on their accessibility and avalaibility to the researchers at the point the researchers visited the institutions for data collection.

Ethical Considerations

Institutional ethical approval was granted to the researchers. Hence, we sought informed consent from the students before data collection. Additionally, two lecturers (one each from the two institutions) served as the research assistants during the data collection. Therefore, participants were assured of their confidentiality while responding to the instrument for data collection. All in all, participation in this study was voluntary. No student's personal or institution's identity was reported to protect the rights and welfare of the research participants.

Instrument for Data Collection

Questionnaire was used for data collection, and it consisted of two sections (A and B). Section A was structured to retrieve demographic information of the participants (e.g., gender, age, and academic level); while section B consisted of seven subsections to measure the constructs for the study, which include CE, RO, AC, and AE for experiential learning as well as vigor, dedication, and absorption for study engagement. The response options for each scale in section B were rated on a 5-point Likert scale (1= strongly disagree to 5 = strongly agree).

Experiential Learning Scale. The total number of items that measured the experiential learning style based on the Kolb's model was 16, and were generated by the researchers after careful review of literature (e.g., Kolb & Kolb, 2013). Each subscale was measured with 4 items, see the appendix for samples of all items.

Study Engagement Scale. A total of 15 items were adapted from the original student version of the 17-item study engagement scale drawn from the Utretch Work Engagement Scale (UWES – Schaufeli & Bakker, 2003). Hence, as used in previous studies, the study engagement scale has three dimensions or subscale, which are vogr, dedication, and absorption (e.g., Chukwuedo, et al., 2021; Salmela-Aro, 2017; Salmela-Aro & Read, 2017; Schaufeli & Bakker, 2003; Siu et al., 2014).

Validity and Reliability

The content and construct validity of the scales were established. Both the self-developed and adapted scales were given to two lecturers and one student to determine the face validity of the scales. The leacturers were used as experts and experienced researchers, while the student was used to determine the language difficulty of the items since the instrument would be administered to students of same characteristics. Futher, the construct validity for each scale was established using confirmatory factor analysis (CFA) model. The validity of the experiential learning scale was determined with four factor model (χ^2 = 47.324, GFI = .905, TLI = .917, CFI = .908, SRMR = .059, RMSEA = .078, $p < .05$) and that of study engagement was determined with three factor model (χ^2 = 33.128, GFI = .966, TLI = .967, CFI = .963, SRMR = .048, RMSEA = .065, $p > .05$). Additionally, the reliability coefficients, obtained via Cronbach's alpha were 0.77 for experiential learning scale and 0.89 for study engagement scale.

Data Collection Procedures

Data collection took a period of four weeks because of distance barriers and it was conducted on a face-to-face administration and retrieval. Two research assistance were used for data collection to enable the researchers get access to the students. The mode of retirieval was absolutely on-the-spot, where the students where waited for by the research assistants to respond to the items of the instrument. However, the instrument was administered to the students during one or more of their lecture time. To avoid clash between administration and lecture hour, some students who got to the class prior to the lecture time were given the instrument. Later, the rest of them were given the instrument just immediately after the lecture hour. All in all, the instrument was successfully retrieved after the lecture hour.

Data Analytical Procedures

Having retrieved the instrument, the responses of the students were coded on SPSS. Then, set of items for a given construct were parceled to form a single aggregated data for that construct. This was done for CE, RO, AC, AE, vigor, dedication, and absorption.

To answer the research question, the bivariate correlation, with Pearson Product Moment Correlation (PPMC = r) coefficient was employed, while the hypotheses weres tested using the simple linear regression model. The decision rule for establishing a relationship via bivariate correlations was based on correlation coefficients ranging between -.35 to +.35 for weak/no correlation; +.35 to +.65 or -.35 to -.65 for moderate correlation; and +.65 to 1.00 or -.65 to -1.00 for strong correlation (Gay et al., 2011). The positive or negative signs explain the direction of relationship. Correlation coefficient with unity (1) is regarded as perfect correlation, while zero (0) coefficient means none or no correlation. The decision for the hypothesis was based on the probability value (p-value) of less than or eaqual to 0.05 for the rejection region; otherwise such an hypothesis was accepted.

Results

Results of the Research Question

To answer the research question, bivariate correlation was performed and the results are presented in Table 1.

Table 1. Bivariate Correlation of the Constructs/Variables

Variables	Parameters	1	2	3	4	5	6	7
1. Concrete Experience	Pearson Correlation	1						
	Sig. (2-tailed)							
2. Reflective Observation	Pearson Correlation	.482**	1					
	Sig. (2-tailed)	.000						
3. Abstract Conceptualization	Pearson Correlation	.460**	.620**	1				
	Sig. (2-tailed)	.000	.000					
4. Active Experimentation	Pearson Correlation	.230**	.535**	.553**	1			
	Sig. (2-tailed)	.000	.000	.000				
5. Vigor	Pearson Correlation	.346**	.413**	.415**	.412**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
6. Dedicate	Pearson Correlation	.285**	.351**	.386**	.352**	.626**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.000		
7. Absorption	Pearson Correlation	.311**	.198**	.224**	.139**	.132**	.066	1
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.091	

Data presented in Table 1 depict the correlations between the study variables. The table shows significant positive correlation between CE and vigor (r = .346), CE and dedication (r = .285), and CE and absorption (r = .311). Similarly, the table shows significant positive correlation between RO and vigor (r = .413), RO and dedication (r = .351) and RO and absorption (r = .198). Additionally, the table shows significant positive correlation between AC and vigor (r = .415), AC and dedication (r = .386) and AC and absorption (r = .224). Further, the table reveals significant positive correlation between AE and vigor (r = .412), AE and dedication (r = .352) and AE and absorption (r = .139).

Results of the Research Hypotheses

Table 2 shows the results of the test of the hypotheses.

Table 2. Regression Analysis Results for the Hypotheses.

Hyp.	Pathways	R^2	F	B	T	p	Decision
1a	CE → Vigor	.120	90.089	.415	9.492	.000	Significant
1b	CE → Dedication	.081	58.432	.284	7.644	.000	Significant
1c	CE → Absorption	.097	70.694	.371	8.408	.000	Significant
2a	RO → Vigor	.171	136.053	.452	11.664	.000	Significant
2b	RO → Dedication	.123	92.790	.319	9.633	.000	Significant
2c	RO → Absorption	.039	27.021	.215	5.198	.000	Significant
3a	AC → Vigor	.172	137.151	.441	11.711	.000	Significant
3b	AC → Dedication	.149	115.872	.342	10.764	.000	Significant
3c	AC → Absorption	.050	34.768	.237	5.896	.000	Significant
4a	AE → Vigor	.169	134.874	.425	11.614	.000	Significant
4b	AE → Dedication	.124	93.604	.302	9.675	.000	Significant
4c	AE → Absorption	.019	13.051	.143	3.613	.000	Significant

Table 2 presents the results of the regression analysis for the test of the hypotheses. For hypothesis 1, the table shows that CE is a significant predictor of students' vigor (F = 90.089, β = .415, $p < .001$), dedication (F = 58.432, β = .284, $p < .001$), and absorption (F = 70.694, β = .371, $p < .001$). Hence, hypotheses 1a, 1b, and 1c are accepted as stated in this study. This means that students' concrete experience in experiential learning cycle is a significant predictor of their vigor, dedication and absorption in academic engagement.

Similarly, for hypothesis 2, Table 2 reveals that RO is a significant predictor of students' vigor (F = 136.053, β = .452, p < .001), dedication (F = 92.790, β = .319, p < .001), and absorption (F = 27.021, β = .215, p < .001). In essence, hypotheses 2a, 2b, and 2c are upheld as stated in this study. This means that students' reflective observation in experiential learning cycle is a significant predictor of their vigor, dedication and absorption in academic engagement.

Moreso, for hypothesis 3, Table 2 reveals that AC is a significant predictor of students' vigor (F = 137.151, β = .441, p < .001), dedication (F = 115.872, β = .342, p < .001), and absorption (F = 34.768, β = .237, p < .001). Implicitly, hypotheses 3a, 3b, and 3c are retained as stated in this study. This means that students' abstract conceptualization in experiential learning cycle is a significant predictor of their vigor, dedication and absorption in academic engagement.

Further, for hypothesis 4, Table 2 reveals that AE is a significant predictor of students' vigor (F = 134.874, β = .425, p < .001), dedication (F = 93.604, β = .302, p < .001), and absorption (F = 13.051, β = .143, p < .001). In essence, hypotheses 4a, 4b, and 4c are accepted as stated in this study. This means that students' active experimentation in experiential learning cycle is a significant predictor of their vigor, dedication and absorption in academic engagement.

Discussion

Drawing insights from the tenets of Kolb's exoerietial learning model, this study investigated the association between the elements of Kolb's experiential learning cycle and study engagement among higher education students of Business and Technical education. From the results, Kolb's theory of experiential learning was supported since the overall results reveals significant effect of experience on learners learning outcomes (c.f., Kolb & Kolb, 2013, 2015, 2017; Miettinen, 2000).

The findings of this study showed that, within experiential learning, students' concrete experiences can contribute significantly to their study engagement. Specifically, concrete experience influences vigor, dedication and absoption. The findings therefore reveal that when students has concrete experience of a real-life situation (Kolb & Kolb, 2017; Miettinen, 2000) their vigor, dedication and absorption to their study will increase. This explains the fact that concrete experience promotes academic engagement and outcomes. Although this study uniquely found the effect of CE on academic engagement, the findings agree with previous studies that elucidated the effect of learning by experience such as teaching practice, work placement learning/work-integrated learning and initial training (e.g., Akpokiniovo & Ogbuanya, 2024) on student' learning outcomes.

Another aspect of the findings of this study is the predictive possibilities of reflective observation on study engagement. The study showed that students' abilitive to reflect on experiential learning outcomes, they have higher tendencies to engage in their study. Hence, this study found that reflective observation is a predictor of students' vigor, dedication and absorption in relation to their academic engagement. These findings also alogn with previous studies (e.g., Edwards, 2014) who found that work-related learning experiences are related to learning outcomes.

In a similar vein, the findings of this study depict that students' abstract conceptuaslization is a predictor of study engagement. In essence, experiential learning leading to abstract conceptualization could help students to develop higher vigor, dedication and absorption in their study. Hence study engagement could be a function of experiential learning that involves abstract conceptualization. These findings are concensus with previous studies which found that learning by experience promotes intentions to partcipate in learning conditions (e.g., Mbagwu et al., 2020) as wellas academic or practical skills performance (e.g., Chukwuedo & Ogbuanya, 2020).

Finaly, this study found that active experimentation is a predictor of study engagement. This means that when students are exposed to experiential learning conditions, participate actively in the experience which will in turn lead to increased academic engagement. In essence, active participation influences vigor , dedication and absorption to one's study activities. These findings concor with previous findings which identified that carerer and work-related learning fosters students engagement (e.g., Chkwuedo & Ementa, 2022; Okoli et al., 2021; Orji & Ogbuanya, 2022) and satisfaction (Brooks & Youngson, 2016; Chukwuedo & Ogbuanya, 2020b).

Limitations

Just as in other studies, this study is not without limitations and will therefore acknowledge a few limitations. Because the findings from cross-sectional survey do not depict causality, we suggest that future studies should employ experimental approach to compare our findings. Although the findings of this study validate aspects of Kolb's learning model, the study did not confirm the cyclic nature of the model. Thus, future researchers should endeavour to employ longitudinal approach or other relevant methods to confirm the cyclic nature of the model. Finally, our study did not recruit students in other fields of study; hence, researchers can study students in other fields of study to confirm our findings. Despite the limitations of this study, we recommend that any form of experiential learning should be geared towards promoting students concrete experience, reflective observation, abstract conceptualization, and active experimentation as the cycle will lead to improved academic engagement and outcomes.

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APPENDIX

QUESTIONNAIRE ON EXPERIENTIAL LEARNING AND STUDY ENGAGEMENT

Dear Respondent,

This questionnaire is strictly meant for academic purpose. I assure you of your confidentiality. Thus, respond objectively to the items of the questionnaire

Sex: Male [ ] Female [ ]
Level: 300 [ ] 400 [ ]

Major: Business Edu. [ ] Industrial/Technical/Technology. Edu. [ ]
Your Age: ______________

Key. **SA** = Strongly Agree, **A** = Agree, **U** = Undecided, **D** = Disagree, **SD** = Strongly Disagree

	Experiential Learning Scale – Self-Generted via Literature, e.g. Kolb & Kolb 2015					
SN	**Concrete Experience Subscale**	**SA**	**A**	**U**	**D**	**SD**
1	I enjoy learning new concepts/theories practically					
2	I prefer to learn skills by doing rather than more of reading/listening					
3	I have had opportunities to learn things as they are in real-world situation					
4	I feel comfortable trying new things and learning via practical ways					
SN	**Reflective Observation Subscale**	**SA**	**A**	**U**	**D**	**SD**
5	I enjoy learning when I observe others experiences					
6	I make attempt to figure out why things are done in a given pattern					
7	I do take time to reflect on my experiences					
8	When situation arises, I think of ways I could have done them differently					
SN	**Abstract Conceptualization Subscale**	**SA**	**A**	**U**	**D**	**SD**
9	I try to define/explain concepts or theories when I anm studying					
10	When I study things, I try to identify patterns and links between concepts					
11	When I learn complex ideas, I enjoy developing patterns to explain it					
12	I enjoy internalizing concepts/ideas to make meaning to me					
SN	**Active Experimentation Subscale**	**SA**	**A**	**U**	**D**	**SD**
13	I am excited to experiment new ideas and methods					
14	While learning, I try to summarize the ideas from my lecture materials					
15	I do not mind taking risks to try out difficult tasks for new solutions					
16	I learn better when I see opportunities to apply what I have learned					
	Study Engagement Scale Adapted from UWES and other Literature					
SN	**Vigor Subscale**	**SA**	**A**	**U**	**D**	**SD**
1	Mentally, I feel very strong when I study					
2	When I study, I always persevere even when it looks difficult					
3	I can embark in academic activities at a time					
4	Every day, I feel like studying/going to school to study/learn					
5	I feel energetic when I study					
SN	**Deification Subscale**	**SA**	**A**	**U**	**D**	**SD**
6	I find studying full of meaning and purpose					
7	To me, studying is challenging					
8	I am proud on the things I study in my specialty					
9	I am enthusiastic about my study					
10	Studying make me excited					
SN	**Absorption Subscale**	**SA**	**A**	**U**	**D**	**SD**
11	When I am studying, I forget everything else around me	Please Turn Over				
12	I enjoy concentration when I am studying					
13	I get carried away when I am studying					
14	I feel happy studying intensely					
15	I don't know when time flies when I am studying					

For enquiries, please contact the researcher via 08029026002. *Developed July, 2021*
Thank you for your time

