Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.7, No.22, 2016

Facilitative Learning and Students Engagement in Electrical Technology for Developing Critical Reasoning and Lifelong Learning Skills in the University of Uyo, Akwa Ibom State, Nigeria

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Abstract
Research has found that active student engagement in classroom activities can enhance academic achievement, promote retention and application of knowledge. This study investigated the relationship between students' engagement and facilitation in a student-centred learning environment. The study was conducted at the University of Uyo, Akwa Ibom State, Nigeria. 307 Vocational Education students formed the population, from where 174 were drawn to form the sample. The results of the study indicated that facilitation is positively related to students' engagement. It was concluded that facilitative learning environment is positively related to student engagement as quality instruction mediates students' engagement.
Keywords: students' engagement, facilitation, student-centred learning, Critical Reasoning, and Lifelong Learning Skills

Introduction

An essential requirement of the student-centred learning environment is that the teacher facilitate learning in the classroom. Teachers, today, realize the importance of helping students reach their full potential. Nevertheless, this cannot be achieved by simply presenting students with information to be learned, but, helping students to learn and find meaning through facilitating learning experiences. According to Melisa (2014), the task of the teacher is to ensure that the process of learning becomes easier for students to accomplish. Facilitating learning helps the students leave the class better than they came in and also with a greater capacity and desire to learn on their own.

According to Caleb, (2013), in the student-centred classroom, the role of the teacher becomes that of facilitating learning rather than primary sources of information, instruction becomes interaction in the classroom and the students assume a more active role in the teaching and learning process. The students become increasingly responsible for their learning, giving them more motivation and setting the pace for them to become successful life-long learners. The teacher in turn becomes a resource, tutor and evaluator, guiding the students in their problem solving efforts. Though the teacher instructs the students using a just-in-time approach, the teacher gradually removes the support offered to the learners as instruction and interaction continues. As the learners gradually internalize and understand the content, they are able to do more on their own.

Student-centered learning (SCL) is an instructional approach in which students influence the content, activities, materials, and pace of learning. This learning model places the student (learner) in the center of the learning process (Collins & O'Brien, 2003). In other words, the learning environment has learner responsibility and activity at its heart, in contrast to the emphasis on instructor control and the coverage of academic content found in much conventional, didactic teaching (Cannon, 2000). Additionally, learners find the learning process more meaningful when topics are relevant to their lives, needs, and interests and when they are actively engaged in creating, understanding and connecting to knowledge (McCombs & Whistler, 1997).

There has been increasing emphases in recent years on moving away from traditional teaching toward student-centered learning. This paradigm shift has encouraged moving power from the instructor to the learner, treating the learner as a co-creator in the teaching and learning process (Barr & Tagg, 1995). However, this is only achieved with students' engagement. According to Newmann (1992), student engagement can be defined as the level of participation and intrinsic interest that a student shows in school. According to Johnson, Crosnoe, and Elder (2001), engagement in schoolwork involves both behaviours (such as persistence, effort, attention) and attitudes (such as motivation, positive learning values, enthusiasm, interest, pride in success). Thus, engaged students seek out activities, inside and outside the classroom, that lead to success or learning. They also display curiosity, a desire to know more and positive emotional responses to learning and school. Research findings suggests that engagement and motivation are critical elements in student success and learning. Researchers agree that engaged students learn more, retain more, and enjoy learning activities more than students who are not engaged. Studies have shown a direct link between levels of engagement and achievement in reading and mathematics. Many school-level studies have identified higher levels of student engagement as important predictors of scores on standardized achievement tests, classroom learning and grades, and student persistence

(Dowson and McInerney,2001).

Statement of the Problem

Research has found that active student engagement in classroom activities can enhance academic achievement, promote retention and application of knowledge, enhance understanding and mastery of course content, improve critical thinking and problem solving, improve clinical competencies, enhance interpersonal skills, promote teamwork and encourage self-directed lifelong learning (Fink, 2003, Dori & Belcher, 2005).The instructional strategy employed in bringing about learning in a student-centred learning environment is the facilitation method. Most teachers use this method because it requires students' active involvement in the teaching and learning process. However, the engagement of the student is what determines the effectiveness of the instruction and by extension, the performance of the students. Therefore, the challenge of student centred learning and facilitated learning is the engagement capacity of the students. Poorly engaged students may be left out in the class interaction and activities, which will affect their overall performance and the development of essential critical thinking skills as well as lifelong learning skills.

Purpose of the Study

The major purpose of this study was to examine the relationship between facilitative learning and the engagement of Vocational Education students in the University of Uyo, Akwa Ibom state, Nigeria. . Specifically, the study sought to

1. To ascertain the attitude of students towards facilitative learning
2. To ascertain the relationship between facilitative learning and students engagement
3. To ascertain the difference in Vocational Education Students' engagement based on gender when the teacher utilizes facilitative learning

Research Questions

1. What is the attitude of electrical technology students towards facilitative learning?
2. What is the relationship between facilitative learning and students' engagement?
3. What is the difference in electrical technology students' engagement based on gender when the teacher utilizes facilitative learning?

Hypotheses

1. The attitude of Vocational education students differ significantly towards facilitative learning.
2. There is significant relationship between facilitative learning and students' engagement in electrical technology.
3. There is significant difference in electrical technology students' engagement based on gender.

Research Method

A survey design was adopted for the study. The design was considered suitable for the study as it employs the study of a small sample to make inference on a larger population. The population for the study is 307, comprising of students in the Department of Vocational Education, University Of Uyo, Uyo, Akwa Ibom State, Nigeria. 174 students using yaro yamane's formula, randomly selected constituted the sample. The stratified random sampling technique was used in the sampling. The researchers' developed instrument called "Students' Engagement in Facilitation Questionnaire " (SEFQ), was face validated by 3 experts in the Faculty Of Education, two experts from Test and Measurement and one other expert from the department of Vocational Education. Test retest reliability was used to establish the reliability of the instrument. The coefficient was 0.73. The mean was used to answer the research questions while t-test was used to test the null hypothesis at .05 level of significance.

Data Analysis and Discussion

1. Research Question 1: What is the attitude of electrical technology students towards facilitative learning?

Table 1: Mean Response of Students on Their Attitude towards Facilitative Learning

S/N	Items	Mean $\overline{X}$	Std	Remarks
1	The lecturer has been dynamic in conducting the class.	2.42	0.94	Poor attitude
2	The lecturer has been warm and supportive.	2.63	0.99	Good attitude
3	The lecturer has been creative	2.97	1.19	Good attitude
4	The lecturer has encouraged students to participate actively in class	2.83	1.10	Good attitude
5	The lecturer has created a relaxed, non-threatening atmosphere.	2.38	1.24	Poor attitude
6	The lecturer has a genuine interest in students	2.90	1.21	Good attitude
7	The lecturer has encouraged constructive criticism	2.76	1.21	Good attitude
8	The lecturer has encouraged good work	2.58	1.06	Good attitude
9	The lecturer has been open to students' opinions	2.63	0.99	Good attitude
10	The lecturer has cared about the quality of student learning.	2.64	1.33	Good attitude
11	The lecturer has encouraged students to express their ideas, thoughts, and feelings.	2.83	1.10	Good attitude
12	The lecturer has communicated effectively in class.	2.38	1.24	Poor attitude
13	The lecturer has invited students to share their knowledge and experiences.	3.17	1.08	Good attitude
14	The lecturer has encouraged students to take responsibility for their own learning.	2.75	1.15	Good attitude
15	The lecturer has stimulated students to think critically.	2.67	0.91	Good attitude
16	Assignments have been helpful in understanding the subject matter.	2.51	0.93	Good attitude
17	The lecturer has been responsive to students' views and comments.	2.76	1.21	Good attitude
18	The lecturer has presented the course in a well-organized manner.	2.50	0.95	Good attitude
19	The lecturer has made an effort to stimulate students' interest in the course.	2.50	0.94	Good attitude
20	Extra workload comes with learning when my teacher utilises facilitation	2.30	1.21	Poor attitude
21	I have to double my efforts to meet up with course work	3.17	1.08	Good attitude

Table 1 shows the summary of the mean and standard deviation for the attitudes of electrical technology students towards facilitative learning. The results of the study indicates that the students are positively disposed to facilitative learning, however, they also see it as coming with extra workload and demanding more from them.

Hypothesis 1(H_1): The attitude of electrical technology students differ significantly towards facilitative learning.

Table 2: Summary of the Hypothesis Testing for the Significant Difference in Students Attitudes Towards Facilitative Learning

	n	Mean	SD	df	tcal	sig.	Decision
Positively disposed towards facilitative learning	123	2.93	0.85	172	4.16	0.01	*
Poorly disposed towards facilitative learning	51	2.37	0.67				

*significant

Table 2 shows the result for the t–test analysis for the significant difference in vocational students' attitude towards facilitative learning. The result reveals that the calculated t-value is 4.16 at a p-value of 0.01. Since the alpha level (0.05) is greater than the p-value of 0.01, the null hypothesis is rejected. Thus, the attitude of electrical technologynstudents differ significantly towards facilitative learning.

1. **Research Question 2:** What is the relationship between facilitative learning and students' engagement?

Hypothesis 2 (H_2): There is significant relationship between facilitative learning and electrical technology students' engagement.

Table 3: Relationship between Facilitative Learning and Students' Engagement

	$\sum X$	$\sum X^2$				
	$\sum Y$	$\sum Y^2$	$\sum XY$			
				r cal	Sig.	Decision
Facilitative Learning	509	1621				
			1239			
				0.252	0.001	*
Students' Engagement	421	1171				

*significant

The result from Table 3 shows the summary of the Pearson Product Moment Correlation (PPMC) of the relationship between facilitation and students' engagement in electrical technology for the development of Critical thinking and lifelong learning skills. The result of the analysis shows an r-value of 0.252. This indicates that facilitation is positively related to students' engagement. This also shows that 25.2% variation in engagement is as a result of facilitation. The result also shows a p value of 0.001. Since the p-value is $\leq$ .05 alpha level, the null hypothesis is rejected. Thus, there is a significant relationship between facilitative learning and students' engagement.

1. **Research Question 3:** What is the difference in electrical technology students' engagement based on gender when the teacher utilizes facilitative learning?

Hypothesis 3 (H_3): There is significant difference in electrical technology students' engagement based on gender.

Table 4: Summary of the Hypothesis Testing for the Difference in Students' Engagement Based on Gender

	n	Mean	SD	df	tcal	sig.	Decision
Male	102	2.61	1.12				
				172	2.105	.037	*
Female	72	2.94	0.85				

*= significant, df (172)

Table 4 shows the result for the t–test analysis for the significant difference in students' engagement based on gender. The Mean $\overline{X}$ of the male students is 2.61, while the Mean $\overline{X}$ of the female students is 2.94. The result reveals that the calculated t-value is 2.105 at a p-value of 0.037. Since the alpha level (0.05) is greater than the p-value of 0.037, the null hypothesis is rejected. Thus, there is significant difference in students' engagement with respect to male and female students, with the male students showing more engagement with course material than female students.

Discussion

The result of the study reveals that students attitudes towards a facilitative learning environment relates to their level of engagement. Students with positive disposition towards facilitative learning were more engaged in their course work than those with poor attitudes. However, Theresa, (2006), was of the view that key factors, such as support from teachers; clear, high, and consistent expectations and high-quality instruction, mediate students' attitudes about themselves as learners and behaviour that is correlated with academic success. This implies that, for students to be actively engaged and participate maximally in course work, both inside and outside the class, the teacher, must first of all, introduce quality instruction, which includes facilitative learning techniques as well as other active learning and instructional strategies. The students are bound to follow the teacher as they adapt gradually to the new instructional models.

Conclusion

It is concluded that facilitative learning environment is positively related to student engagement. However, quality instruction mediates students' engagement. For students to be actively engaged in course work in class and after class, instructors are expected to spur student interest through quality instructional strategies.

Recommendations

Based on the findings of the study, the following recommendations are made

1. Students must be guided through an orientation programme that can be conducted in the beginning of the semester to prepare them for the challenging classrooms of the facilitative learning environment.

2. Teachers are to encourage student participation when using facilitation instructional strategy
3. The teacher should also encourage students to form study groups, where learning can continue after class.

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