

Assessment of Students' Attendance, Participation and Classroom Involvement in e-Classroom

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Abstract: Assessing students' involvement in e-classrooms enables instructors to identify students who may be struggling with the material or disengaged from the learning process. It allows instructors to provide timely feedback and support to help students overcome challenges and stay on track with their learning goals. Tracking attendance, participation, and classroom involvement helps instructors ensure the quality and effectiveness of e-classroom sessions. It allows instructors to assess whether instructional strategies are fully engaging students and promoting active learning in an online environment. A College of Primary Education was used for the study in Southwest, Nigeria. Access was gained into classes in the twenty-seven (27) departments in the six Schools in the College. The average attendance of students in the various departments were taken every week and reported on monthly basis for three months during the Covid-19 period. Findings revealed that students had a slightly high attendance rate, participated actively and were involved to some extent in the E-classroom. It is recommended that the government through institutions of learning should provide students with facilities that will ease the process of on-line classes, while students should always make themselves ready and available for on-line classes.

Keywords: Assessment, Attendance, Participation, Classroom involvement, e-Classroom

1. Introduction

The advent of technology has irrevocably transformed the landscape of education, leading to the rise of the virtual classroom. As educational institutions increasingly adopt e-learning platforms, assessing students' attendance, participation, and classroom involvement has become a focal point for educators. These parameters are essential indicators of student engagement, academic performance, and the overall effectiveness of digital learning environments (Kazeem, 2021).

Before addressing assessment strategies, it is imperative to define what is meant by attendance, participation, and involvement within an e-learning context. Attendance refers to the frequency with which students log into the e-learning platform and engage with course materials. However, in an e-classroom, mere attendance is insufficient; it must be accompanied by active participation, which encompasses a student's contributions to discussions, responsiveness to quizzes and polls, and interactions with peers and instructors. Classroom involvement, on the other hand, goes beyond just participation; it signifies a student's emotional and intellectual investment in the learning process.

When most classes were still taught face to face, participation was measured in terms of coming to class (attendance). Romer (1993) advocated mandatory attendance based on the strong relationship between attendance and performance. Other researchers examined the usefulness of different participatory metrics (hand raising, response cards, clickers). In the Internet environment, measures of attendance focused on time spent on the course site, clicks, and pages visited. Participation shifted to making meaningful contributions in email conversations and on discussion boards. In general, research shows that active class participation improves subjective and objective student performance. Students perceive that they do better in class, and objective criteria like Grade Point Average (Credé, Roch, & Kieszczynky, 2010) and scores on final exams confirm this (Duncan, Kenworthy, Mcnamara, & Kenworthy, 2012; Irwin, Burnett, & McCarron, 2018).

E-learning is a powerful engagement tool that students can use both inside and outside the classroom. Online media such as Internet portals and smartphones provide effective and simple information. Open communication and interaction options with many advantages. These media are public, accessible to anyone from anywhere, and all students can see what other students are doing and have done. They are open, without time restrictions, without face-to-face meetings or the need for parties to be present at the same time. This solves the problem of employees or students not being available during working hours, for example. Evaluating each student's participation is free and ongoing, so it is not a time-consuming process for faculty members. Evaluations may include number of participants, leadership, quality of questions asked, quality of answers given, speed of response, initiation, course-related activities, etc. As suggested by Wu & Chen (2005), some e-learning portals may provide automatic evaluation through the portal itself. Due to the importance of this area, it is advisable to introduce it in all courses to increase student participation and encourage

continuous learning. It is recommended to give more weight to this area. B. 30%; however, this percentage may be changed if deemed necessary by faculty members.

E-classroom is a form of online learning, offering various educational programs in an online form. This multimedia classroom technology provides a unique learning experience. It promotes quality learning. It makes learning very innovative, effective, and engaging. The e-classroom aims to go beyond the blackboard and textbook approach and improve the learning experience. It helps in connecting technology with education. So, e-classroom is all about bringing excellence in education. Also, it is environmentally friendly, as the students will not be using textbooks or copies. It will minimise the use of paper and save the environment too. Obviously, there will not be any need for infrastructure. So, it is very cost-effective too. This classroom is a fun activity and can help in minimizing stress. It even makes subjects like history, geography, and civics very interesting and engaging. The audio and video format makes it easier for students to understand and retain information. It provides students with the perfect learning environment where they can learn, grow and thrive.

Before COVID-19 pandemic traditional classroom teaching was the method of teaching which was changed to online teaching due to restrictions of the COVID-19 pandemic. However, due to COVID-19 pandemic restrictions, traditional classroom teaching was shifted to online teaching. Students have to go online to attend, participate and get involved in the classroom, which is not physically assessable to them. Assessing their attendance and participation helps gauge students' engagement with course material. It provides insights into whether they are actively involved in the learning process or if they might be disengaged. Monitoring attendance ensures that students are fulfilling their obligations and responsibilities as learners. It also encourages accountability and helps establish a sense of commitment to the course.

2. Literature Review

E-learning is also called Electronic Learning or online learning information and communication technology to enhance and facilitate teaching and learning is called e-learning according to Oye, et.al., (2012) in Ezeude et.al.

Lack of internet facilities, technology and e-learning facilities have been identified as major problems of adopting or fully utilizing online e-learning platforms by most Nigerian Universities E – learning platform such as Zoom, Microsoft teams, Udemy, Coursera have been recognized to improve student's academic performance to a great extent. The result revealed that a good number of e-learning platforms have been utilized by undergraduates, there were recognized strategies of provision of more e-learning facilities and internet services that should be adopted to improve the continuous utilization of e-learning platforms among undergraduates. It was suggested that the government should assist in supporting tertiary institutions with financial services and management experts to promote and sustain the use of e-learning platforms in tertiary institutions.

Data collected by Holister, (2022) from course evaluative studies reported decreased in live lecture engagement and attendance with 72 percent reporting that low engagement during lectures with their online learning experience. A majority of students reported that they struggled with staying connected to their peers and instructors and managing the pace of course work. Students had positive impressions however, of their instructional staff. The majority of students felt more comfortable asking and answering questions in online classes, suggesting that there might be features of learning online to which students are receptive and which may also benefit in – person classes.

Several studies have explored the effectiveness of various attendance tracking systems in e-classrooms. These systems range from simple login/logout timestamps to sophisticated biometric authentication methods. Research suggests that automated systems are generally more reliable and efficient than manual methods in tracking attendance. Smart phones with downloaded software applications were used to check and show students attendances automatically, which can successfully reduce some time for tracking their attendance according to Chiang, et.al., (2022).

Researchers have proposed various metrics to measure students' engagement and participation in e-classrooms. These metrics often include frequency of interactions in discussion forums, submission of assignments, engagement with multimedia content, and participation in live sessions or virtual classrooms. Studies indicate that higher levels of engagement are associated with better learning outcomes.

The student participation scale developed by Anderson, et.al., (2019) revealed six types of elements of student's participation.

1. Students working together with peers and school staff
2. Students having a voice about schooling
3. Students having a say with influential people at school
4. Students having influence on decisions made at school
5. Student having a voice about school activities outside the classroom and
6. Students having choice

Going by Community of Practice theory which suggests that learning occurs within communities where members share common interests, goals and practices. In an e-classroom, assessing students' attendance and participation can gauge their integration into the virtual learning community, their contributions to shared knowledge and their active participation in group activities.

3. Attendance

Students' attendance is a controversial issue in higher education institutions; however, in my opinion, regular attendance of students in class is an important factor in the learning process, otherwise there would be no need for faculty and classes. Increasing student attendance in class depends on several factors, one of which is its assessment as a participation activity by the student, i.e. to motivate students who regularly attend and to encourage others not to miss classes without good reason. It is preferable to assess the attendance by the end of the term/ semester. Some higher education institutions leave the attendance policy within the hands of the faculty, while others set a general policy with a limit for the maximum percentage of absenteeism. In any case, and to reach a compromise for this debatable area, it is suggested to give it less weight, such as ten percent, with grading depending on the regulations followed by the faculty or the institution. For example, if the maximum allowed percentage of absence is 30%, as implemented in NCT (after which a student may be barred from taking the final exam), then students with more than 90% attendance may be considered to have full points, those with more than 80% attendance, 70% of the points, and those with more than the lowest acceptable percentage of attendance (70% attendance), half the points. Likewise the assessment for different limits of absenteeism may be adjusted accordingly.

4. Student Participation Assessment Process

Teaching staff should use their judgment to select a balance of participation areas that suit the learning outcomes, course nature, availability of time and resources, class atmosphere, and students' background and needs. Student participation assessment can be started from the first class; however, to raise awareness among students and to have an idea of their level, it is necessary first to introduce and discuss the issue with students, and to explain the importance of participation and its assessment. Following this, a formative assessment without grading (Angelo & Cross, 1993; Abuid, 2007) gives a measure of their level(s). The faculty can then decide on the proper area(s) of student involvement and when to start graded assessment.

The grading weight of participation should be considered as part of the total course grade. In NCT, this weight is considered as part of the 30% continuous assessment, while 20% and 50% are given for the mid-term and final exams respectively. The grading weight of the student-participation assessment depends on the assessment policy of the institution. However, if not specified, it may be suggested to carry five to 15% of the total course work grade; Brown University (Tyler, 2008) uses a rate of 15%.

When the areas of participation are decided, the grading weight for each area and the number of times to be assessed can be identified as per the decision of the faculty. To facilitate this, the following guidelines may help to answer several questions that may cross the mind of the assessor.

Issues with online learning include:

- Unreliable Wi-Fi often happens or always happen or sometimes happened
- Unreliable devices
- Lack of social interaction among students.
- Student's main issue was engagement.

5. Methodology

The instrument that was used to collect the data of attendance in the e – class comprised of the following: Date, Period, Time, Staff ID No, Name of Staff, Course Code, Course Title, Course Unit, Topic, Course Content.

Uploaded which showed highlight of content, being record No of students present in class (On-line) comments / Observant.

The instrument used for study was a Unit-developed instrument which was mainly based on the content reflection and attendance of students. Though in the E-classroom, there are many possible online activities in which students in which students can be engaged in and with, which they can be motivated to learn effectively. These include links, lecture notes, resources, questions and answers, discussion forums, quiz items, group works, Wikis and assignment submissions according to Park, Yu, and Jo, (2016). Access gained into classrooms under observation showed one level of participation and class involvement of student online. The time the student joined the classes was also noted. The verbal participation of students showed that college with high average attendance of students online was higher than those with low average attendances of students. Some students joined the classes later than the sterling time of the classes. Thus, they could not participate in the classroom activities as much as those that started earlier.

Research Questions

RQ1: What is the level of attendance of students in the E-classroom?

Research Hypothesis

There is no significant relationship between students' attendance, participation and classroom involvement in e-classroom.

There is no significant relationship between students' participation and classroom involvement in e-classroom.

6. Results

RQ₁:- What is the level of attendance of students in the E-classroom?

The table below shows the percentage of students' attendance on monthly basis during the COVID-19 period in the six (6) schools comprising 27 departments, in Michael Otedola College of Primary Education used for the study for three months and average attendance was recorded.

School of Arts & Social Sciences

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Creative & Cultural Arts	75.00	66.67	33.33	58.33
2	Christian Religious Studies	53.30	40.00	20.00	37.76
3	Economics	85.71	37.50	76.92	66.71
4	Islamic Studies	37.50	57.14	40.00	44.88
5	Political Science	35.71	64.29	42.86	47.62
6	Social Studies	46.60	46.67	38.46	43.91
	Average	48.84	52.33	41.46	47.54

School of Early Childhood & Primary Education

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Early Childhood Care Education	63.12	73.68	88.89	75.23
2	Primary Education	80.00	89.29	74.19	81.16
	Average	72.73	82.98	79.59	78.43

School of Education

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Educational Foundation & Curriculum Studies	42.86	60.00	71.43	58.10
2	General Studies in Education	69.23	85.71	64.29	73.08
	Average	55.56	72.41	67.86	65.28

School of Languages

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Arabic Language	50.00	25.00	42.86	39.29
2	English Language	13.33	33.33	58.33	34.10
3	French Language	25.00	41.67	70.00	45.56
4	Yoruba Language	18.18	63.64	81.82	54.55
	Average	24.00	40.00	61.70	41.90

School of Sciences

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Computer Science	78.57	71.43	76.92	75.64
2	Integrated Science	83.33	83.33	76.92	81.19
3	Mathematics	46.67	53.33	66.67	55.56
4	Physical & Health Education	60.00	72.00	80.00	70.67
	Average	65.15	69.70	75.76	70.20

School of Vocational Education

S/N	Department	1 st reading	2 nd reading	3 rd reading	Average reading
1	Agricultural Science	57.90	57.90	72.22	62.67
2	Business Education (Accounting option)	50.00	62.50	25.00	45.83
3	Business Education (Secretariat option)	50.00	37.50	37.50	41.67
4	Business Education	84.62	30.77	20.00	45.13
5	Home Economics	76.92	53.85	61.54	64.10
	Average	63.49	53.85	50.00	55.78

Lectures were offered daily online (asynchronous). The information on the table was obtained by logging into each teaching-learning period and taking account of the number of students that were in the online classes. The result above shows the attendance of students in the School of Early Childhood and Primary Education with an average of 78.43 percent in the period under study. This was followed by the School of Sciences with an average of 70.20 percent. The School of Education had an average of 65.38 percent; School of Vocational Education had an average of 55.28 percent while the attendance was low in the School of Arts and Social Sciences and School of Languages with average of 47.54 percent and 41.90 percent respectively.

6.1 Hypothesis One

There is no significant relationship between students' attendance and classroom involvement in e-classroom.

Table 2: Relationship between students' attendance, participation and classroom involvement in e-classroom

		Students' attendance	Classroom involvement in e-classroom
Student attendance	Pearson Correlation	1	.307**
	Sig. (2-tailed)		.000
	N	100	100
Classroom involvement in e-classroom	Pearson Correlation	.307**	1
	Sig. (2-tailed)	.000	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 2, the data analyzed shows a positive relationship exists student attendance and classroom involvement in e-classroom. Comparing 0.000 level of significance with 0.05 level of significance showed in the result, ($r = 0.307$; $N=100$; $p < 0.05$) indicates a significant low relationship between the two variables. Hence, the hypothesis states that there is no significant relationship between students' attendance and classroom involvement in e-classroom. is rejected.

6.2 Hypothesis Two

There is no significant relationship between students' participation and classroom involvement in e-classroom.

Table 3: Relationship between participation and classroom involvement in e-classroom

		Participation	Classroom involvement in e-classroom
Participation	Pearson Correlation	1	.586**
	Sig. (2-tailed)		.000
	N	100	100
Classroom involvement in e-classroom	Pearson Correlation	.586**	1
	Sig. (2-tailed)	.000	
	N	100	100

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 3, the data analyzed shows a positive relationship existed between participation and teachers' productivity in public senior secondary schools. Comparing 0.000 level of significance with 0.05 level of significance showed in the result, ($r = 0.586$; $N=100$; $p < 0.05$) indicates a significant moderate relationship between the two variables. Hence, the hypothesis which states that there is no significant relationship between students' participation and classroom involvement in e-classroom is rejected.

7. Conclusion

The assessment of students' attendance, participation, and classroom involvement in e-classrooms is a multifaceted endeavor that demands innovative strategies and a keen understanding of the nuances of virtual learning environments. By leveraging advanced technology, fostering interactive learning experiences, and remaining adaptable to the diverse needs of learners, educators can ensure that engagement in digital classrooms is not only assessed but also enhanced. As education continues to evolve, ongoing reflection and adaptation will be essential in optimizing the e-learning experience and fostering student success in an increasingly digital world.

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