

Pre-service teachers' challenges and attitude toward the flipped classroom

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ABSTRACT

Technology has greatly extended the reach of students to learning materials and content. Many researchers have concluded that the traditional or face-to-face approach has outlived its usefulness and we should move to a more dynamic approach powered by technology. Such is flip learning. Although flip learning is not a new concept, the practice is relatively new in sub Sahara Africa, especially, in Nigeria, where the face-to-face approach is still widely used. Flip learning strategy frees up classroom time and gives more opportunity for students to study their learning material and content. In this current study, the main objectives were to examine the attitude of pre-service teachers towards flip learning and the challenges they faced. The study employed the descriptive research method; Questionnaires and Focus Group Discussion were used to gather data. A total of 273 pre-service teachers participated in the study. The results show that the pre-service teachers have positive attitude towards flip learning and that they also experience challenges such as poor internet connection and power supply among others.

Keywords: Flip learning, attitude, student-centred learning, pre-service teachers.

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INTRODUCTION

The use of digital technologies has helped approaches in classroom instruction evolve over the years. This evolution has naturally transformed the activities in the classroom where the teacher dominates almost everything that happens to a more inclusive, student centred system where students can engage and interact with their teachers and colleagues anywhere they are through various platforms. Student-centred approach has taken root in our instructional process. Abel and Campbell (2009) state that teachers perform the function of a coach, motivating and guiding the student through the instructional process and this in turn allows for collaboration and cooperation in and outside the classroom. This system makes it possible for the needs of the students to be considered either as a group or individual and also motivates them to participate effectively in the learning process. In the same vein, Attard et al. (2010) expressed their view of this approach:

“Student-centred Learning represents both a mindset and a culture within a given higher

education institution and is a learning approach which is broadly related to, and supported by, constructivist theories of learning. It is characterized by Innovative methods of teaching which aim to promote learning in communication with teachers and the learners and which take students seriously as Active participants in their own learning, fostering transferable skills such as problem-solving, critical thinking and reflective thinking. p. 4.

However, moving towards student centred learning entails emphasis being made on how and why a subject matter is taught and concentration is put on students learning. It places the student (learner) in the centre of the learning process while the teacher gives room for the students to learn cooperatively and independently. This according to Collins and O'Brien (2003) includes techniques such as:

i) Substituting active learning experiences for lectures,

- ii) Assigning open-ended problems,
- iii) Problems requiring critical or creative thinking that cannot be solved by following text examples, involving students in simulations and role plays, and using self-paced and/or cooperative learning.

This system makes students to be effective and motivated to learn because they can set the tone for their learning. Similarly, Jones (2006) explains that students do not depend on their teacher all the time, waiting for instructions; they can take initiative and learn from learning resources provided by the teacher.

One element of student-centred learning is being applied in the flip classroom where the students can obtain their learning content outside the classroom and the time for classroom teaching can be used for more interactive and active activity such as group discussion and working collaboratively with peers. The Flip Classroom is an instructional strategy that provides teachers with a way of reducing the amount of face-to-face interaction in their teaching exercise while promoting self paced learning and in-depth engagement with the students and content. According to Milman (2012), flip learning saves the time of students in order to learn actively and classroom activity will not jeopardize valuable time needed for students to cover the content.

Likewise, Nichols (2012) explains that in the flip instruction, students have ample time to go through the subject; the students who are not able to attend class can also have access and obtain learning materials. While the teacher acts as a facilitator providing guidance for the students to practice more, he/she is also involved in students' learning process or and any other process that is connected to students learning inside the classroom and outside of it.

Similarly, Flipped Learning Network (2014) defines "Flipped Learning as a pedagogical approach in which direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter". It means that the learners initially acquire learning resources outside of class, mainly through lecture videos, and then use the face-to-face session to do in-depth discussion, problem-solving, or debates. Flipped classroom increases students engagement, provides teacher freedom, teachers establish personal communication with students regarding the subject, homework and any other progress, reduces time spent answering basic and repetitive questions — due to students' ability to review lectures online; increases adaptation of lecture content to respond to new learning needs (Millard, 2012; Centre for Digital Education, 2012). Talbert (2012) indicates that flipped classroom gives opportunity to make the students learn more and better.

The benefits of the flipped learning strategy are stretched across what is done in the classroom,

participation of students in the learning process outside the classroom, attitude of students to learning and many more. Technology has, however, played a huge part in making this realizable. Technology provides the platform for the learning possibilities of the flip learning strategy to be effectively demonstrated. The flip classroom uses technology to provide lectures outside of the classroom, while assignments on concepts are provided inside the classroom through learning activities (Clark, 2013). Technology is one of the kernels of the flip strategy. The main idea is to create an avenue for the learners to learn independently. Teachers using the flip strategy focus on the learning outcomes and allow the learners to select the best method to attain the outcomes. This strategy usually deploys digital technologies to make students learn. Teachers make use of video screen capture, vodcast and others to provide learning objects outside the four walls of the classroom. The students are able to learn better because the content is broken down into bits. This present study, however, examines the challenges and attitude of pre-service teachers to flipped learning in an Educational Technology course in University of Ibadan, Nigeria.

Theoretical background

Theory of More Knowledgeable Other (MKO) and Zone of Proximal Development (ZPD)

The work of Lev Vygotsky is the foundation on which many researches are based; he refers to a MKO as an individual who has better understanding than another in doing a task and understanding a concept of process. According to Vygotsky, a learner knows what he/she knows about a particular task until a MKO (teacher) is able to provide adequate and specific support to the learner to be able to achieve the desired outcome. Vygotsky (1978) defines the ZPD as the distance between the "actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers". p. 48.

In flipping the classroom, the teacher is able to teach and guide the learners so as to acquire necessary knowledge and skills by watching the video lessons. The teacher monitors how well they have internalized the skills taught in video during in-depth discussion and practicals in the classroom. At this stage, the teacher supervises, answers questions pertaining to the content, and guides the students to the finish line (attainment of the learning outcome).

Research questions

1. What is the attitude of pre-service teachers towards flip

learning?

2. What challenges do pre-service teachers face in the flipped classroom?

METHODOLOGY

Instrument

Flip Learning Attitude scale was developed to elicit information on the disposition or tendency of pre-service teachers to respond positively or negatively to flip learning strategy. The questionnaire consists of items that were measured on Likert type 4-point scale, where 4 was most degree of agreement and 1 was least degree of agreement. The statistical package for social sciences (SPSS) was used for the analyses. Focus Group Discussion (FGD) Guide was used to gather data on the challenges faced by the pre-service teachers in the flipped classroom.

Population sample and sampling techniques

The population of this study comprised all pre-service teachers in the faculty of education at the University of Ibadan in Nigeria. Purposive sampling was used to select the research sample and a total of 273 pre-service teachers participated in the study it was imperative for the researchers to select the sample using a non-probability sampling method was used to select the research sample. The type of non-probability method the researcher employed is purposive non-probability sampling. A total of 273 pre-service teachers participated in the research.

Selection of pre-service teachers

The case study focused on the challenges and attitudes of Pre-service teachers to Introduction to Instructional Technology (TEE 353) (Figure 1). The course is compulsory for year three pre-service teachers in the faculty of education. It is basically about the design and evaluation of instructional system, information and communication technology, instructional theory and concepts of audio-visual and media technology. It prepares pre-service teachers to be equipped with pedagogical skills to use the new digital technologies in the classroom among others.

Procedure

The course was divided into six video modules. Each of the six video modules was divided into two or three parts depending on the length of the original video module.

The topics in the video modules include:

1. Introduction to instructional technology
2. Systems, Instructional system Design
3. Basic Processes in Instructional System Design (Part A)
4. Basic Processes in Instructional System Design (Part B)
5. Programmed Learning and Individualised Learning system
6. Modern trends in Educational Technology

At the beginning of the class, an orientation was carried out to provide guidelines and grounds rules for the students.

Rules for discussion before and during contact hours

1. You must be seated in the lecture theatre at least 5 minutes

before the lecture time.

2. You must download the video lesson before the class and study it for discussion during contact hours, questions are asked, task/activities are practised and creative ideas are shared with colleagues.

3. Visit the class website for information about the course, activities, timetable, tools, tutors and instructor.

4. Document and submit all queries to the course lecturer.

6. There is penalty for being absent for group activities and late submission of tasks.

7. Successful completion of the course will depend on the successful completion of activities and examination.

8. There will be a rapporteur for each discussion session; the repertoire will document comments, questions, queries that arise from the video lesson as well as the contact sessions.

9. There will be a class leader or discussion convener, the convener will arrange the class and ensure decorum in the classroom at all times.

10. All students must have a copy of the ground rules and read before coming to class.

11. There must be absolute decorum in the class during contact hours.

The course syllabus was made available to the students and at the start of the discussion class, the students are distributed into groups, they therefore discuss and engage themselves on what they have studied in the video lessons. The pre-service teachers discuss practical ways they can apply what they have watched in video to everyday practices in the classroom or the educational system in general.

RESULTS

Research question 1: What is the attitude of pre-service teachers towards flip learning?

Table 1 indicates the mean average of pre-service teachers' attitude towards flipped learning. There are items such as: 'I prefer to have these kinds of video lessons in other courses 93%; The use of the video lesson makes learning objectives more realistic 90%; there is a better student to instructor interaction 90%' and so on. The result indicates that the attitude of the pre-service teachers towards flipped learning is 78.5%, which means that they have positive attitude towards flipped learning strategy.

Research question 2: What Challenges do Pre-service teachers face in the flipped classroom?

Figure 2 shows the Focus Group Discussion (FGD) that was conducted to find out the challenges the pre-service teachers faced in the flip classroom. 60% of the pre-service teachers indicated that they had problems connecting to the internet. 20% had difficulty in downloading the video lessons from the course website. 10% complained about epileptic power supply, 5% indicated that their mobile phones are not compatible with the video format, lastly, 5% complained about the size of the videos.

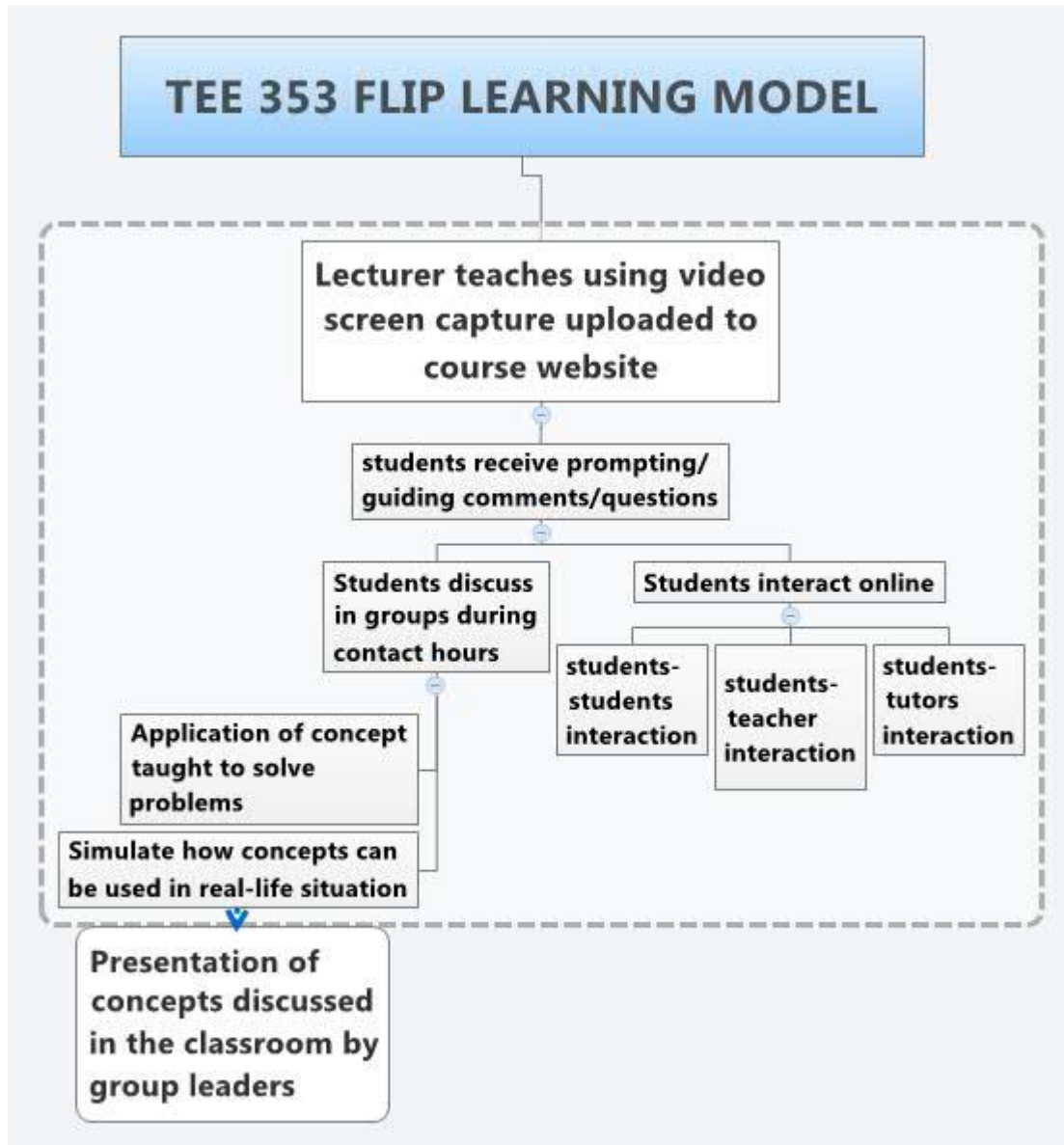


Figure 1. TEE 353 (Introduction to Instructional Technology) Flip Learning Model. Source: Adedojia (2016).

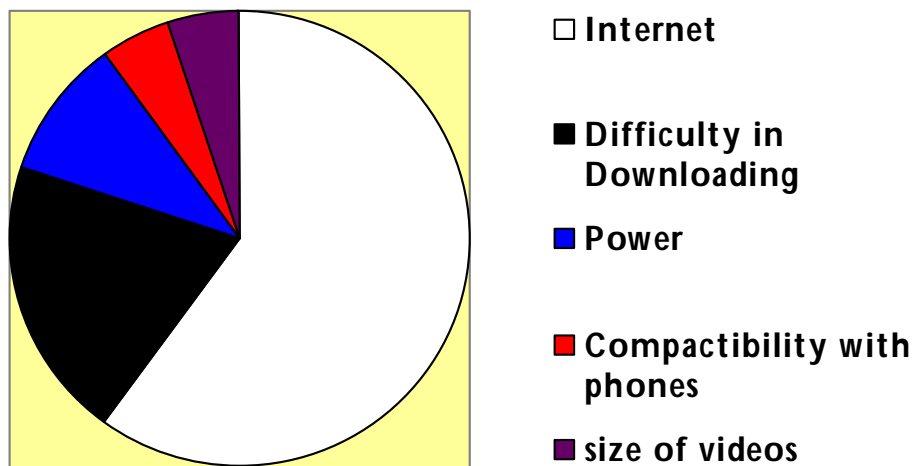
DISCUSSION

Clearly, pre-service teachers' attitude plays a role in determining their behaviour in the flip classroom. It can be implied from the findings that pre-service teachers have general positive attitude to the flip classroom strategy. The results show that the flip classroom actually allows them to study at their pace, it creates an avenue for them to acquire relevant and specific support and gives opportunity for deep interaction not only with the learning content but also with colleagues and teacher. The disposition of the pre-service teachers indicates that the strategy promotes active learning and makes the learning content more accessible to them. The results confirm that the flip strategy allows the students to have

more time on assigned task and are also able to prepare and study the learning materials several times before discussion in the classroom. The pre-service teachers have a busy lecture schedule in other course and therefore the flip classroom frees up their schedule for them to focus more on independent study and (re)search. This is in line with the research of Stone (2012) who asserts that majority of the students in a Genetic Disease class have positive attitude towards the flip strategy. Their positive attitude to the flipped classroom could have been influenced by ease at which they can learn, interaction among students, self pace learning and so on. Pierce and Fox (2012) also concludes that students recognised the convenience and pedagogical benefits of the flipped classroom instructional model.

Table 1. Pre-service teachers' attitude towards flip learning.

S/N		Mean	Std. Dev
1	The video lessons are engaging and appealing to me	3.30	0.65
2	Making use of the video lessons is easy for me	3.21	0.72
3	I prefer to have these kinds of video lessons in other courses	3.01	0.93
4	Class discussion with course facilitator helped me with my learning	3.33	0.73
5	I prefer to download the video lessons from the website	2.38	0.90
6	The video lessons are well organised	2.93	0.82
7	The video lessons promote independent learning	3.41	0.88
8	The video lessons make learning more accessible	3.29	0.79
9	There is sufficient learning material/resources for the course	3.56	13.25
10	There is adequate learning support for classroom discussions	2.80	0.89
11	There is adequate student to student interaction	3.01	0.89
12	The use of the video lesson makes learning objectives more realistic	3.20	0.90
13	Receiving the video lessons before the class makes me learn better	3.35	0.71
14	There is a better student to instructor interaction	3.07	0.86
15	The video lessons promote active learning	3.12	0.79
16	Receiving the discussion points makes me know what is expected of me in the class	3.13	0.64
17	The discussion points guided me to prepare well for the class	3.25	0.69
Weighted mean		3.13 (78.5%)	

**Figure 2.** Challenges faced by pre-service teachers.

However, the pre-service teachers faced some challenges in the flip classroom. Majority of the students complained about poor internet connection that hampered the downloading of the video lessons from the course website. There are several Internet Service Providers in Nigeria. However those with fast connection are quite expensive. Therefore the pre-service teachers often rely on the mobile internet connection which could be unstable. Downloading the videos from the class website also posed a challenge for some of the pre-service teachers. They did not understand the process of downloading the videos; however, this challenge was quickly tackled. Immediately they complain, an available

tutor takes them through the steps of downloading from the website. Poor supply of electricity contributed a setback to some of the pre-service teachers. This was a problem when it came to charging the batteries of their devices to watch the video lesson when there is no power supply. Few of the pre-service teachers complained that the video format was not compatible with their mobile phones. This often occurs when they use a low-end mobile phone to watch the video lesson. Some of the pre-service teachers also complain about the large size of the video lessons which posed some problems downloading them. In the light of this challenge, the video lessons were edited and compressed to allow the pre-service

teachers to download them with ease.

Conclusion

Evidence from this study suggests that the pre-service teachers have positive disposition toward flip learning. They express that the strategy promotes active learning and makes the learning content more accessible to them. However, some of the challenges they faced include: poor internet connection and power supply, incompatibility of mobile phones, and size of the video lessons. It is recommended that teachers should use the flip learning strategy for the pre-service teachers while considering challenges they might face.

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