

Project-based Learning Approach in a Research Methods Class: Students' Experiences

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ABSTRACT

Undergraduate final year projects are problematic in many Nigerian universities especially in terms of knowledge of research and writing skills among others. Teaching and learning methods have always been key factors responsible for the problems. Therefore, the current study adopts a project-based learning approach in teaching and learning the research method course for third-year undergraduates in a university in Nigeria. It hopes to provide a greater insight to develop an effective teaching and assessment strategy for the course. This paper specifically presents the students' experiences in learning the course using the PBL approach. Data were collected using semi-structured interviews and reflective writing journals. The data were analysed using qualitative data analysis steps identified by Braun and Clarke (2006). The findings of the study show that the participants have positive perceptions of the approach because it enables them to learn the basics of research and improve their language skills. However, they found the approach to be demanding, and time-consuming. The study identifies some implications for practice and makes some suggestions for further studies.

Keyword : language skills; Nigerian undergraduates; research methods

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1. INTRODUCTION

Research methodology course is usually a part of the requirements for the award of bachelor degrees in many universities around the world. Students are introduced to the basic knowledge and skills of the research process. This is to prepare them for postgraduate programs and equip them with essential skills to carry out investigations and provide solutions to problems or new knowledge in their prospective places of work. This would eventually help in the development of their societies. However, for many years, lecturers and researchers complain of the inability of Nigerian undergraduates to showcase the basic research knowledge and skills, especially academic writing, in their final year projects. This has been responsible for the collapse of adequate acquisition research skills in solving national problems in many working places.

There is a great concern over the quality of final projects written by Nigerian undergraduates (Dien, & Basse, 2019) and the falling standard of their academic writing skills (Haruna, Ibrahim, Haruna, Ibrahim, & Yunus, 2018). It has been discovered the research conducted by higher education students, particularly undergraduates, has very little or no element of expansion of knowledge, or contribution that would help in the development of the nation (Bako, 2005). This shows the need to revisit how Research Methodology is taught in Nigerian universities. Teaching research methodology to undergraduates has been a very challenging task for many lecturers in Nigerian universities. This is mainly due to some factors include a lack of effective teaching methodologies for some teachers and large classrooms. Perhaps, the student's problems are as the result of the improper methods used by the lectures during the teaching and learning process.

Generally, the teaching of research methods poses serious challenges to both methods teachers and learners. This is because the process 'requires a combination of theoretical understanding, procedural knowledge and mastery of a range of practical skills' (Kilburn et al., 2015, p. 191). In addition to the mastery of the subject, teachers need to acquire some skills to be able to engage the students, monitor the learning process and give constructive feedback. However, these are almost impossible in some Nigerian universities considering the larger number of students in a class.

The area of teaching and learning has been fast-changing in recent times which requires constant vigilance and skills development on the part of both learners and teachers. The context is very challenging and requires efforts to accelerate the development of methodological expertise based on pedagogic research, principles and theories (Lewthwaite, & Nind, 2016). Thus, there is a need for teachers to develop their teaching methods based on their contexts (the background of their students and available resources). In doing so, the student's experiences and perception of any teaching strategy used by teachers should be taken into consideration. This would allow the teachers to make necessary changes for a better outcome.

To improve the teaching and learning of research methods at the undergraduate level, many studies have been conducted to examine the students' experiences and perceptions. For example, Allari, (2016) investigated the experiences of female nursing students of research method class in a university in Saudi Arabia. Using a self-report template, the author asked the students to express their opinion regarding the course content, teaching and learning methods, assessment, challenges, general description. The students explained that the class was inspiring, burdensome but useful. Lombard and Kloppers (2015) also examined the views and experiences of a conveniently sampled group of 124 undergraduates of a compulsory research methods course in South Africa. The results show the students' positive perceptions of all the aspects of the class.

In comparison to attention given to research methods for students at the postgraduate level (Nind, Holmes, Insenga, Lewthwaite, & Sutton, 2020), the undergraduate research methods course is often less considered even though research methods for undergraduate level is important for shaping students' attitudes, learning and achievement in the field of research (Lombard, & Kloppers, 2015). The information currently available about pedagogical strategies to promote undergraduate students' learning of research methods is insufficient (Peachey, & Baller, 2015). The method of teaching research methods at that level is under-researched (Lewthwaite, & Nind, 2016).

In the Nigerian context, the story is the same, there is a dearth of research promoting undergraduates' learning of research methods. On the one hand, there are not enough studies on new and effective methods of teaching and learning research method for undergraduates. On the other hand, there is also a lack of research examining and assessing the methods used by teachers/lecturers in teaching research methodology. Therefore, this study adopts a Project-based Learning strategy (PBL) to teach a research method course for one semester in a university in Nigeria. Specifically, the paper reports the students' experiences and perceptions of using the strategies in their research method class. The findings would help teachers to make necessary changes to suit the need and abilities of their students in teaching and learning research methodology.

2. LITERATURE REVIEW

Project-based learning (PBL) is a learning approach based on the constructivist theory that learners acquire knowledge and skills best when they are allowed to take charge of their learning and construct new knowledge from previous ones through interaction with peers. In PBL, learning is centralized on a project which is the final product produced at the end of the learning process. Students learn while working on the project which is the centre of their curriculum and related to their real-life (Thomas, 2000).

Buck Institute for Education defines the project-based learning approach as "a systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks" (Markham, Larmer, & Ravitz, 2003, p. 4). At the end of the learning process in PBL, students are expected to produce a final product in form of an artefact, presentation, performance, or videotape etc that offers solutions to the driving question. Thus, students' learning and knowledge are demonstrated based on the quality of the project.

Some of the features of this learning approach are, students are allowed to choose what to learn and how to learn (Bell, 2010). They can select their driving question (which must be related to the

curriculum), specific activities related to the project, and how to present the outcome. They can also choose to work individually or in small groups and decide on whom to select as group members. The major role of the teacher during the learning process is to facilitate and guide the students through each step.

Project-based learning has many benefits to students. It helps them to connect all knowledge that they had learned in the classroom to real life. It also promotes their motivation to learn as opposed to the traditional teacher-centred approaches which rendered students passive learners and make learning boring (Lee, 2010). When students are allowed to make decisions by themselves such as setting studying goals, rules, and methods, students internalized those experiences. They also develop higher self-esteem and confidence in academic achievement, respected others, had a higher sense of belonging, and contributed to the learning process (Yang, 2007). The approach also helps students to develop 1) flexible knowledge, 2) effective problem-solving skills, 3) self-directed learning skills, 4) effective collaboration skills, and 5) intrinsic motivation (Hmelo-Smith, 2004).

3. RESEARCH METHOD

The study adopts a case study research design to examine the participants' experiences of a research methods class using a project-based learning approach. This research design enables the researcher to collect in-depth data from the participants. Only qualitative data were collected, merged and analyzed to answer the research question.

Participants

A complete class of 111 (61 Male and 50 Female) third-year undergraduates were selected to participate in the study. The participants are students of the English and Literary Studies Department. They were enrolled in a Research Method I class for 13 weeks at a University in Northern Nigeria.

Research Methods I Course

The Research Methods I course is part of the requirements for the award of Bachelor of Arts English and literature in the university. The course aims at introducing students to the basics of research knowledge and skills. It introduces the students to the concept, types and importance of research. It also introduces them to the methods and tools of conducting research activities and research report writing. The following are the objectives of the course:

- explain the definition, types and features of research,
- Select a good research topic
- identify some of the research designs
- be acquainted with sources of literature and conduct a literature review
- be acquainted with some methods of data collection and analysis
- produce a good reference list using at least one format of referencing
- produce a good term paper demonstrating some knowledge of research

Instruments

Two instruments were used for the data collection: semi-structured interviews and reflective journals. For the reflective writing journal, the participants were asked to sincerely write their experiences of using the PBL approach in their Research Method I class in week 13. They were given the freedom to write about anything and to express their likes and dislikes, such as the project activities, peer collaboration, weekly assignments or tutor facilitation. Having gone through all the scripts, semi-structured interviews were conducted with some of the participants to shed light on some unclear information. The researcher made it clear to the participants that their comments in the reflective journal and the interviews would not affect their final grades in the course.

Research Procedures

In the first meeting with the participants in the first week, the researcher who is also the course lecturer explained to the participants the purpose and stages of the study and sought for their consent. They were informed that participation in the semi-structured interviews and reflective journaling was voluntary. The responses they provide would not affect their academic performance. They were told that their writings would be kept confidential and their names would not be mentioned anywhere, and only the researcher has access to the data. Thereafter, they were asked to select group members by themselves, to choose people they are more comfortable working with. Each meeting lasted for three hours.

In week one, the students were introduced to the concept of research, types and importance of research. Relevant examples were given from the participants' real-life situations. In week two, the two major approaches to research (quantitative and qualitative approaches were introduced to the students. Research design and tools for data collection were discussed in week three. In week four, the literature review, its definition, types and importance were explained. In week five data analysis, interpretation and suggestion were introduced to the students.

In week six, the participants were introduced to the basic research procedures. First, they were asked to work in their various groups to identify language-related problems worth researching. With the help of the lecturer, each group was able to identify a problem to investigate. Based on the problem they were able to form research topic, research questions, objectives of the study, significance and scope of their studies. Finally, they were asked to further refine all the items learned, draft and submitted in the next class.

In week seven which also lasted for three hours, the lecturer asked each group to present their assignment of the previous week. After the presentations and corrections, the lecturer explained how to write a literature review, such as how to review definitions, and types of the variables of their various projects. They were also guided on how to write findings of previous studies on the variables. Each group worked with peers to come up with the items (definitions, types and findings of empirical studies related to the variables. They were also asked to submit the draft in the following week.

In week eight, the participants presented their assignments and learned how to write the components of chapter three: research design, setting, participants, instrument and method of data collection. They were also asked to draft it and submit it in the subsequent class. In week nine, after the presentation of the previous assignment, the lecturer introduced them to qualitative and quantitative data analysis. However, only descriptive statistical analysis which includes frequency, percentage and bar chart was discussed in detail to answer the research questions. Each group was instructed to analyze their data and present the frequencies and percentages. In week ten, the participants presented summaries of their findings, implications, limitations of their studies and recommendations. In week eleven, the participants learned how to write a bibliography using APA format. They also learn to write abstracts for their research. Each group was asked to write to submit in the following week.

In the last week, each group made oral presentation of their findings to the class using power point projection. Observations, questions and suggestions were made for each group and they were asked to make the necessary changes complied their works and submit them to the course lecturer who is also the researcher. After the whole class activities, the participants were asked to submit their reflective journals after which the semi-structured interviews were conducted.

Data Analysis

The responses of the interviews were audio-recorded and transcribed verbatim. The transcripts and the reflective journals were analyzed qualitatively and themes emerged. The trustworthiness of this study was ensured by using the criteria by Lincoln and Guba (1994), including credibility, dependability, conformability, and transferability through detailed, systematic, and organized description of ideas reported by students, developing general categories, and go over them repeatedly until agreed themes were recognized. To ensure the validity of the analysis, the participants were asked to check the transcripts and report. Also, one researcher in the field was asked to check the analysis to ensure their accuracy. Specifically, Braun and Clarke (2006) six steps of qualitative data analysis were followed in analyzing the data of the study. These include familiarization with data through reading and rereading, generating initial codes, searching for themes through collating codes into potential themes, reviewing themes through checking, defining and naming themes through ongoing analysis, and producing the report

4. RESULTS AND DISCUSSION

From the interview responses of the participant, the findings are categorized into three to answer the research question: what the participants learned, their perceptions, and the challenges they face in the learning process. Generally, the findings show that they have positive perceptions of the approach because it is inspiring and useful. However, its burden is too much and time-consuming.

A. Participants' Positive Perceptions of PBL

The participants have positive perceptions of the project-based learning approach in the learning research method. They found it interesting because they were able to realize that research generally is related to their real-life situation. For example, a participant revealed that using this method helped him to understand research generally as a problem-solving process.

I like it because it is related to my personal life. I find it interesting because I understand research is like helping people to solve their problems. It could be related to language or anything.

Another participant also expressed her positive perception of the approach. According to her, the group interactions and the class presentations enabled her to overcome her speaking anxiety.

I like this approach it gives every student the opportunity to speak every day. And that is good. For me now, because I speak in every class, I don't feel shy like before.

Another participant added that initially, it was boring and demanding but later it became very interesting.

B. What Participants' Learn in the PBL Class

From their responses, the participants reveal that they learn the various aspects of research and research report writing. Some participants explained that a research proposal, how to search for literature related to their topics, materials from previous studies; how to write abstracts, sampling techniques and many more.

One of the participants explained that he did not know how to write a research proposal before. He was even afraid of research because he could not imagine himself writing a huge book in the name of the project. Did not know how to start a project. He thought projects could only be possible for him through copy and paste. However, after going through the project-based learning approach, he is optimistic that he can write the project himself.

I am always afraid of research because if I see projects of people I use to think about how can I write such a big book. But now I know it is not impossible for me, I can write a research proposal.

Another participant also revealed that using this approach particularly help her to identify a research topic and write a good problem statement for her research. She added that previously when students were asked to submit topics for their final year project, they used to simply copy titles of previous projects from other schools and submit them. However, with the back and forth in the group interactions, she can now identify researchable problems and formulate research topics by herself. she is also confident that she can write his project by herself.

I learn how to create research topics from research problems. Before I was thinking about where to copy my research topic, but now I don't need to copy.

Based on the group activities and the weekly assignment, some of the participants were able to learn to search for literature relevant to their research topic. A participant explained that he learned how to look for relevant materials

What I learn most from this approach is how to write a literature review. Specifically, how to search for materials relevant to our work.

C. Challenges the Participants face in the PBL Class

Despite the positive experience perceptions and what the participants learn using the project-based learning approach, they face some challenges during the process. These include limited time, over activities, inactive group members and. These are explained in detail below.

One of the challenges faced by some of the participants is limited time for the activities involved in the project. They specifically pointed at the weekly assignment and presentations. This is because according to them, their assignments in other courses it was very difficult and challenging.

Time is always not enough because we have an assignment for other causes. So, it was challenging to do all the assignments before the next class.

The approach may not be time-consuming as claimed by some of the participants. This is because the weekly assignments are given based on the class activities as explained in the procedures. In every session, the course lecturer explains the steps to follow in writing every aspect of the project. The participants also discussed in their respective groups how to write the items discussed using their topic. I think the major factor causing the distress among the participants is the fact that most of them are not used to daily or weekly assignments. Mostly their lecturers give a maximum of three continuous assessments, including assignments and quizzes, in a semester. Thus, the participants may not find it easy using this approach (which gives weekly assignments) for the first time. Also, the problem could be attributed to the fact that many the participants do not appropriately allocate and utilize their time daily. They used to be reluctant because not many assignments were given by their lecturers. There is a need for course lectures to properly guide students on time management, how to fully utilized their time to achieve success.

In addition to the challenge of limited time, some participants complained that some group members were inactive during the group discussions. Some were shy to speak up their minds. They do not contribute academically or participate actively in the group especially assignments after the class. Group leaders are usually left alone to do most of the works.

What I don't like is when some group members don't contribute academically to the assignments. They only contribute financially when we come to print the assignments or buy something.

The problem of inactivity of some of the participants in the group work may as a result most of them are not used to group activities. They are used to the traditional teacher-centred approach where teachers dominate the class discussions. Some students may not overcome their anxiety in only one semester. Probably, if similar approaches are adopted eventually, they may overcome them gradually. Also, the students should be allowed to self-select their group members, people they are more comfortable working with. This may enable them to be more engaged and actively involved in the group activities. Another challenge the participants faced is the multiple corrections given weekly by the course lecturer. They complained that they did not like the corrections.

Honestly, what I don't like is the corrections of the term paper. Every day we submit, there must be corrections.

I think this could also be attributed to the fact that most of the participants are not used to this kind of approach. When assignments are given, some of them simply copy and paste and submit. Some students copy from one another. Using this approach, there was no room for the students to copy from one another. They were also asked to present and explain what they had written. There was limited room for copy and paste.

Another challenge or rather a shortcoming of project-based learning approach to the participant, they were master only research procedures related to their project instead of the general knowledge. For one participant explained that she wanted to learn how to conduct both language and literature research but her group chose a literature topic. As the result, she was more conversant with how to conduct literature research than language-based research.

I wanted to learn both language and literature research but because my group choose a literature topic, I am good only in literature research.

5. CONCLUSION

The aim of this study is to investigate the undergraduates' experiences and perceptions of using a project-based learning approach in a research method classroom. The findings of the study reveal that the participants have positive perceptions of the approach because it enables them to learn the basics of research and improve their language skills. However, they found the approach to be demanding, time-consuming. There are some limitations to the study which includes, the study was conducted for only one semester. Further studies can adopt a longitudinal study for at least two consecutive semesters may give better results. Also, the researcher who is also the course lecturer is the only facilitator to the

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participants. Thus, two or more facilitators may be more supportive of students' learning in further studies. Despite the limitations of the current study, lecturers could still benefit from the findings. They can teach research methodology by given students practical experiences as demonstrated in this study instead of the traditional method where students are merely told about research methods.

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