

Science Education Students' Expectation on Research Project Supervision and Attitude to Its Writing in Nigerian Universities

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Abstract

Science education students' expectation on research project supervision and attitude to its writing in Nigerian universities was studied using descriptive survey. The study was guided by two research questions. A sample of 9,200 project students were randomly drawn and used for the study. Project Writing Expectation and Attitude Questionnaire (PWEAQ) with Cronbach alpha reliability value of 0.76 was used for data collection. Mean and percentage were used for data analysis. The study identified 17 students' expectations on project supervision (76% positive + 24% negative). It was also found that students' attitude to project writing due to unfulfilled positive expectations were 39% positive and 61% negative. Meanwhile students' attitude to project writing due to unfulfilled negative expectations were 80% positive and 20% negative. Thus, it was recommended that students should develop positive rather than negative expectations; while supervisors'/university authority should meet students' positive rather negative expectations to ensure research project ethics.

Introduction

A research project, dissertation or thesis writing encompasses the collection of relevant information from a variety of sources with the intention of becoming thoroughly informed about an engaging topic for the purpose of communicating knowledge to an audience. It is an honest academic activity aimed at identifying a problem, formulating research questions or hypotheses, collecting/analysing data, making conclusions/recommendations based on results/findings in order to proffer solution to the identified problem. The University of Melbourne (2018) sees research project as providing an occasion for continued and systematic study of an issue in education policy, principle and practice where students define a feasible research question within the project topic area, identify suitable methodology to answer it, and analyse an existing dataset (i.e. relevant literature, policy documents, or empirical data from a project that already has ethical approval). Consequently, findings of a research project could be applied in addressing related problems or may serve as basis for further studies. Being an integral part of undergraduate and postgraduate programmes, all science education students are required to complete a research project in partial fulfilment for the award of first or higher degree. Each project student need work under the guidance of a project supervisor(s). Depending on area of research interest or research topic, students may choose or be assigned project supervisor(s). Students are provided with a step-by-step guide or approved format to simplify the research process. Timelines for research

project completion are also clearly defined. The essence of student(s) working under project supervisor(s) is to ensure a good quality research.

A good quality research project offers healthy and right evidence which revolves around a novel question with feasible study methodology guided by systematic planning, time-based/realistic objectives, sufficient/relevant data that make significant contribution to knowledge by solving a problem that existed in the real world (Editage Insights, 2019). It is usually based on a suitable rationale and can propose directions for future study. In conducting, reporting, and publishing good quality research, all relevant ethical guidelines should be practiced. Researches of good quality benefit the society and contribute to the general development of mankind. Nevertheless, it should be noted that, in most cases, high quality research projects result from good research project supervision. Achor, Aligba and Ellah (2018) maintained that both supervisors and supervisees have roles to play to ensure quality project writing; and that experience and attitudinal dispositions of both the supervisor and supervisee influence the product of a research project written. This implies that a research project is a product of both the supervisor(s) and the supervisee(s)' experiences and inputs.

Research project supervision entails project supervisor(s) offering professional guidance in their field of study to their students, providing direction for research, setting milestones, monitoring research progress, providing feedback, being a source of encouragement and rendering expertise support



throughout the research project period. The supervisory support according to The University of Sydney (2022) is expected to produce research of the highest quality if done well. Although problems sometimes arise between project student(s) and their supervisor(s), it is advisable that such should be addressed as fast as possible. As experienced experts, research project supervisors are also expected to understand and assume key supervisory roles as educators, supporters, coaches, counsellors and directors. This could be why Narayana (as cited in Akinbola, Ekpudu, Ojeaga & Akinbola, 2018) stated that research project supervision is an integral part of tertiary education especially at the university level and as such, demands high level of commitment. It is a complex process that requires extensive attention, discussion and determination to reach high quality research work or writing that would benefit the society. Research project supervision is an interactive process of academic research activity that requires the development of social as well as academic skills (Abiddin, Ismail & Ismail, 2011). This interactive process comes with some level of expectations on both the supervisor(s) and supervisee(s).

Research project writing is a painstaking exercise that systematically addresses the solution to an identified problem of study. It is usually guided by an approved format for conducting, writing, and presenting an organized research report. Although the format may slightly differ from one tertiary educational institution to another. National Open University of Nigeria - NOUN (2019) maintained that it is designed to guide students and their supervisor(s) on the acceptable standards expected of them in conducting a research project of good quality. However, it is disappointing that some students fail to abide by the guidelines of project writing or to give it the detailed attention it requires. Some even play down on the guidance of their project supervisors while adopting some edge-cutting approaches, which are indeed, counter-productive. Such attitude could result from students' expectations on project supervision.

Students' expectations on project supervision are strong beliefs, hopes, suppositions, assumptions or anticipations that something will happen or be the case. However, the reality may turn out differently. More than anything else, expectations may determine reality. One's expectations also impact those around one. In a self-fulfilling prophecy, students may rise or fall depending on their expectations. This could be why the New King James Bible (1982) stated in the book of

proverbs, chapter 13 verse 12, that "hope deferred makes the heart sick but when the desire comes, it is a tree of life". This implies that students' expectations could influence their attitude to project writing. This influence could be positive, neutral or negative. Expectations and experiences of supervisors and supervisees are essential for effective project supervision and writing. Ada (2018) identifies some of these expectations to include independence of students in research writing, regular meeting of the supervisors with their supervisees for interaction and guidance, critical and constructive supervision criticisms, objective comments and more importantly honesty in research work and report. Thus, fulfilled expectations could yield positive attitude. Unfulfilled expectations may result in negative attitude. Meanwhile, a zero expectation is likely to breed neutral attitude.

Students' attitude to project writing refers to settled ways of thinking or feeling about project writing, supervision or project supervisor(s) that affects their research behaviour. Thus, attitude includes cognitive, emotional and behavioural components. The United Nations Education, Scientific and Cultural Organisation - UNESCO (2022) maintained that, in education, attitude could be seen as a learned tendency or readiness to evaluate things or react to some ideas, persons or situations in certain ways, either consciously or unconsciously. In most cases, students' attitudes are underpinned by values and beliefs with influence on their behaviour. These attitudes could be positive, negative or neutral. Ucha (2020) and UNESCO (2022) reported that positive attitudes result in confidence, cheerfulness, hopefulness, honesty, genuineness, optimism, sincerity, seriousness and reliability; but hatred, anger, bitterness, abhorrence, pessimism, resentment, dislike, doubt, distrust, glumness are products of negative attitudes. Meanwhile neutral attitudes are exemplified by indifference, detachment, objectivity, fairness, impartiality, unbiasedness, open-mindedness, dispassion, aloofness and justice. It is suggestive that students' negative or neutral attitude to project writing could threaten quality research and timely graduation.

Empirically, Ucha's (2020) study on "an evaluation of students' attitude towards project writing in selected universities of south-west Nigeria", it was established that predictive and environmental factors affect students' project writing attitude, behaviour and performance. Also, Fajobi and Osiesi (2020) investigated "research terminologies awareness and project writing challenges of education undergraduate



students in federal universities in south west, Nigeria” and found that majority of education undergraduate students are not fully aware of some research terminologies and have challenges in writing their research projects. Mapolisa and Mafa (2011) studied “Challenges being experienced by undergraduate students in conducting research in open and distance learning” and discovered that students approaching their final year in university need considerable encouragement and motivation to have interest in research writing and not see it as an unattainable task, because most students usually have a phobia of conducting research independently to avoid mistakes in writing.

Also, in a “comparative study of research project supervision on the performance of graduating business students in Nigerian universities”, Akinbola, Ekpudu, Ojeaga and Akinbola (2018) discovered that motivational factors and inhibiting factors affect student graduating performance. The results also indicated that research project motivational factors have a positive impact on students’ research writing capacity and time management but the inhibiting factors in project writing negatively affect student writing and research capacity. That project supervisors are motivated when their supervisees complete their research project within the stipulated time. Tahir, Ghani, Atek and Manaf (2012) investigated “effective supervision from research students’ perspective” with the findings that the three most important attributes of supervisors are: supervisors should be friendly, approachable and flexible; knowledgeable and resourceful; and encourage students to work and plan independently. In addition, the results indicate that effective supervision means that supervisors are able to establish good and professional relationships with students; give support and guidance; and provide continuous motivation and inspiration. Chabaya, Chiome and Chabaya (2009) in a study on “students’ failure to submit research projects on time: A case study from Masvingo Regional Centre at Zimbabwe Open University” also found that inhibiting factors such as the inability to cooperate with supervisors and individual differences of project supervision styles do affect students negatively. Furthermore, the issues of not letting students write projects in their own area of interest should be discouraged, even though it has been the contention of supervisors that most students do not like to write an original research project that is novel and creative in nature. However, these studies did not specifically identify the students’ expectation on project

supervision and how these affect their attitudes to project writing. It is against this backdrop that this study is predicated.

The problem of this study is the persistent lamentation from students as to finding oneself under a supervisor who knows what to do but not available to properly guide the supervisees through the process of research project writing; which results in confusion, depression, frustration and undue delay in project completion. The undue delay sometimes lead to students spilling over, abandoning their studies, being withdrawn due to expiration of study period (Abiddin, Ismail & Ismail, 2011; Ada, 2018). Worse still, even those who manage to graduate eventually during the delay period incur heavy financial burdens besides ill feelings as a result lost opportunities had they graduated without delay. Could supervisees’ expectation on project supervision or their attitude to project writing be the problem? It is on this premise that science education students’ expectation on project supervision and attitude to project writing in Nigerian universities was studied with the objectives to:

1. Identify students’ expectations on effective project supervision
2. Find out students’ attitudes to project writing based on their expectations.

Based on the objectives, the following research questions were posed:

1. What are students’ expectations on effective project supervision?
2. What are students’ attitudes to project writing based on their expectations?

Method

Descriptive survey design was used for the study. Out of all the 247,815 (210,643 undergraduate + 37,172 postgraduate) education students in the 91 public universities in Nigeria (Statista Research Department, 2022; Sasu, 2022), a sample of 9,200 (7,820 undergraduate + 1,380 postgraduate) Science Education students were randomly drawn from 15 universities and used for the study. Students were deemed fit for the study because, research project writing is one of the partial requirements for the award of first and higher degrees; which is done in the end of the undergraduate and postgraduate programmes. Two research questions guided the study. Data were collected using Project Writing Expectation and Attitude Questionnaire (PWEAQ). The self-developed PWEAQ had three sections which generated data on respondents’ biodata,

expectation on project supervision and attitudes to project writing. PWEAQ was scored on a 4-point Likert response scale of Strongly Agree = 4, Agree = 3, Disagree = 2 and Strongly Disagree = 1 with the corresponding score ranges 3.50-4.00, 2.50-3.49, 1.50-2.49 and 0.01-1.49 respectively. PWEAQ was face, construct and content validated by experts in science education, test and measurement. Their inputs were

incorporated to improve it. Thereafter, it was trial-tested and the responses subjected to Cronbach Alpha reliability formula, which yielded 0.76 index. Mean and percentage were used for data analysis.

Results

The results of the study were presented in other of research questions as follows:

Table 1: Students' expectations on project supervision

S/N	I Expect My Supervisor To:	Type	Mean	Remark
1	Display a good knowledge about my project topic	Positive	3.20	Agreed
2	Be readily available when needed	Positive	3.96	Strongly Agreed
3	Be approachable during the process of supervising my project	Positive	3.10	Agreed
4	Make constructive criticism for improvement in my project writing	Positive	3.42	Strongly Agreed
5	Discuss their comments with me for effective correction	Positive	3.69	Strongly Agreed
6	Demonstrate interest in my project work	Positive	2.55	Agreed
7	Give me clear direction in my research project work as an expert	Positive	3.71	Strongly Agreed
8	Assist me with relevant materials where necessary	Positive	3.56	Strongly Agreed
9	Guide me to acquire relevant research project writing skills	Positive	3.22	Agreed
10	Allow me make contributions during our interaction on my project	Positive	3.87	Strongly Agreed
11	Avoid making unethical demand from me	Positive	3.54	Strongly Agreed
12	Read my research project work well in advance	Positive	2.99	Agreed
13	Eschew overstretching my academic ability level	Positive	3.01	Agreed
Positive Expectation %		76		
14	Leave me alone even when someone else is writing for me	Negative	2.51	Agreed
15	Allow my unethical ways in project writing for a settlement	Negative	2.61	Agreed
16	Ignore my plagiarised research project	Negative	2.63	Agreed
17	Attend to my project work any time without prior schedule	Negative	3.40	Agreed
Negative Expectation %		24		

Result in Table 1 shows that students' expectation on project supervision were 76% positive and 24% negative. Out of the 13 positive expectation, items 2, 4,

5, 7, 8, 10 and 11 were rated strongly agreed while items 1, 3, 6, 9, 12, 13 were rated agreed. Meanwhile, all the four negative expectations were rated agreed.

Table 2: Students' attitudes to project writing based on expectations

Expectation on Project Supervision & Type		Attitude to Project Writing Based on Unfulfilled Expectation			
I expect my supervisor to:		Positive Attitude	%	Negative Attitude	%

1. Display a good knowledge about my project topic	+	I read wide about the worthwhile topic	41	I abandon the topic	59
2. Be readily available when needed	+	I manage to consult other relevant experts	42	I pester relentlessly for attention	58
3. Be approachable during the process of supervising my project	+	I work wisely for the worthwhile project	53	I try to bribe my way through	47
4. Make constructive criticism for improvement in my project writing	+	I consult other suitable experts for such	35	I move on without bothering for upgrading	65
5. Discuss their comments with me for effective correction	+	I ask for explanation where needed	49	I correct only those I understand.	51
6. Demonstrate interest in my project work	+	I integrate my supervisor's interest	33	I ignore my supervisors' disinterest	67
7. Give me clear direction in my research project work as an expert	+	I ask for specific direction	40	I simply do anything I can	60
8. Assist me with relevant materials where necessary	+	I ask my supervisor for helpful materials	51	I make do with whatever I have	49
9. Guide me to acquire relevant research project writing skills	+	I request guidance to exhibit research skills	39	I jumble my project writing	61
10. Allow me make contributions during our interaction on my project	+	I ask for permission to air my views/ideas	26	I feel low with my supervisor's control	74
11. Avoid making unethical demand from me	+	I graciously resist such yet committed to quality project writing while seeking right solution should the case degenerates	27	To avoid trouble, I meet the demand to finish my research project in peace.	73
12. Read my research project work well in advance	+	I plead with my supervisor to read the key areas	38	All I need is "proceed to the next chapter"	62
13. Eschew overstretching my academic ability level	+	I do my best which shows my ability	33	I become fed-up with project writing	67
Cluster %			39		61
14. Leave me alone even when someone else is writing for me	-	I sit up to do the right thing	81	I quit if I can't change to a supervisor I like	19
15. Allow my unethical ways in project writing for a settlement	-	I become compelled to do the right thing	77	I quit if I can't change to a supervisor I like	23
16. Ignore my plagiarised research project	-	I sit up to do the right thing	79	I quit if I can't change to a supervisor I like	21
17. Attend to my project work any time without prior schedule	-	I adjust to my supervisor's schedule	84	I feel offended with such inconsideration	16
Cluster %			80		20

Note: Positive Expectation (+), Negative Expectation (-)

The result in Table 2 shows that students' attitude to project writing due to unfulfilled positive expectation on project supervision were 39% positive and 61% negative. The result also indicated that students' attitude to project writing due to unfulfilled negative expectation on project supervision were 80% positive and 20% negative.

Discussion

As regards students' expectation on project supervision, 17 expectations were identified. Out of these expectations, 76% were positive while 24% were negative. This means that although most of the students' expectations on project supervision were germane, a

few were detrimental to the problem-solving goal of the university research project and its ethics. This result is not strange because in every facet of the society, human beings have worthwhile expectations while some are deviant. The result is related to the findings that predictive and environmental factors affect students' project writing attitude, behaviour and performance (Ucha, 2020), students who have challenges in project writing expect their supervisors' help (Fajobi and Osiesi, 2020), and have phobia of conducting research independently to avoid mistakes in writing (Tichaona & Onias, 2011).

Concerning students' attitudes to project writing based on their expectations, it was discovered that students' attitude to project writing due to unfulfilled positive expectation on project supervision were as low as 39% positive and as high as 61% negative. This implies that if the positive expectation were met, there would be negligible negative attitude to project writing. The study also found that students' attitude to project writing due to unfulfilled negative expectations were 80% positive and 20% negative. The implication of this is that when student' negative expectation on project supervision are denied, there would be high rate of positive attitude to project writing. This is because they would be compelled by the standardized university research ethical system to do things the right way. These are similar to findings of other studies that students need considerable encouragement and motivation to have interest in research writing and not see it as an unattainable task (Tichaona & Onias, 2011), motivational factors positively impact students' research writing capacity and time management but inhibiting factors do not (Akinbola, Ekpudu, Ojeaga & Akinbola, 2018), supervisors should be approachable, resourceful, provide continuous motivation, inspiration and encourage students' independent work (Tahir, Ghani, Atek & Manaf, 2012) and inability to cooperate with supervisors, individual differences, supervision styles, and not letting students write projects in their own area of interest do affect students negatively (Chabaya, Chiome & Chabaya, 2009).

Conclusion

Based on the findings of the study, it was concluded that students usually have expectations on project supervision which influence their attitude to project writing. When their positive expectations are not met, high rate of negative attitudes to project writing are engendered. Also if student's negative expectations are resisted by the supervisor(s) and the university system,

they are to a high extent forced to accept research project writing ethics.

Recommendations

Based on the findings, it was recommended that:

1. Students should develop positive rather than unethical expectations from project supervisors.
2. Project supervisors and the university authority should ensure that students' positive rather than unethical expectations in project writing are granted.
3. When expectations are not met, students should develop positive attitudes rather than negative to cope with quality project writing.
4. University departments should regularly organize orientation workshop on "expectations/realities in project writing and interaction with supervisor" for good attitude formation to project writing.

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