

Full Length Research Paper

Research Orientation and Research Learning-Related Behaviour of Graduate Education Students at University of Botswana

Nenty, H. J. and *Adedoyin, O. O

Educational Foundations, University of Botswana

Accepted 20 November, 2010

One of the negative aftermaths of the on-going controversy among researchers with regards to which research method, qualitative or quantitative is superior is its adverse influence on learning-related behaviour of graduate students in the research classroom. The need to expose graduate students to all sides of the same coin in research methodology is retarded by the confusion this controversy has created in the minds of students. Many come to class with their minds already made up as a result of indoctrination by their supervisors and peers. With this mindset, they tend, without any critical inquiry, to be inclined immaturely to one or the other of these orientations even if their research problem does not called for the methodology they have been indoctrinated to prefer. This study aims at exploring the influence of research inclination on research classroom learning behaviour of University of Botswana graduate education students. Survey data were generated from a total number of 79 graduate education students at the University of Botswana (GES.UB), on research inclination and some research-related affective behaviour. Using ANOVA, seven hypotheses were tested. The results showed that feelings as to the usefulness of research generally and to one's professional life, the likelihood of offering research courses if they were not compulsory, and of registering for any research course in the future, and the level to which research courses are deemed to be demanding all are significantly influenced by research orientation. These were discussed briefly and recommendations made.

Keywords: Research orientations; education graduate students; university of Botswana; professionalism; usefulness of research.

INTRODUCTION

Graduate research in education is fascinating, fulfilling and packed with intellectual excitement, and research on graduate education student's affective, approaches to research studies have consistently shown that there are a lot of factors influencing their research-related behaviour. Personal factors including the student characteristics, such as prior knowledge, intellectual ability, values, attitude and their personality as well as the extent to which they perceive research to be useful to them has some influence in learning research. While situational factors include the structure of the course, curriculum

content, methods of teaching and mode of assessing their capabilities, research methods, classroom situations and the intellectual and time demand of their research course.

Richardson (1994) identified a variety of individual motivations, such as desire for career change, intellectual curiosity and satisfaction in having a degree. The orientation to learning found in this study was thus determined to a significant extent by student characteristics. Students have their own characteristics in the process of constructing knowledge from diverse educational and life experiences. This means that the inclination of postgraduate students towards research is to a very large extent determined by the student's attitude, their formal qualifications, research training, and

*Corresponding author Email: omobola_adedoyin@yahoo.com

prior experiences, shape their expectations and their approaches to research study. The student's experiences and particularly motivation, self-efficacy, attitude also have an impact on their inclination and on how they view post graduate research studies.

Contrary to Keeves' (1997) advice that "the methods employed in educational enquiry should be influenced by the nature of the problems being considered" for indoctrinated graduate students, their preferred research inclination is what determines their research problem. Sometimes they try to bend the obvious by chasing solution to a research problem with unsuitable and invalid method. This also have adverse influence on some learning behaviour in the research classroom. Constructivist thinking has broadened the concept of research to include skills other than those that border on numeric operationalization of concepts and phenomena. Words, like numbers, are research data and could be collected, analysed and individual or group meanings could be extracted. Though in most cases such meanings are not generalizable, they provide new insights into human understanding.

The Research Problem and Purpose of the Study

The dwindling proportions of UB graduate education students who are willing to undertake quantitative research is worrisome, and tend to paint a grim picture for the future of quantitative research in Botswana (Nenty, 2009). Based on formal and informal interaction, it is known that some students come to research classes with their minds made up as to their research inclination. The need to expose graduate students to all sides of the same coin in research methodology is retarded by the confusion this controversy has created in the minds of students especially those who come to class with their minds already made up as a result of indoctrination by their supervisors. Indoctrination at an early age be it religious, ethnic or professional stifles intellectual growth and development. With this mindset, they tend, without any critical inquiry, to be inclined immaturely to one or the other of these orientations. It becomes difficult to penetrate their minds with materials reflecting the orientations other than that they have been indoctrinated to prefer.

This study aims at exploring the influence of research inclination on research classroom learning behaviour of University of Botswana graduate education students. Specifically it will look at the influence of research orientation on students' feelings as to the usefulness of research generally and it's relevance to one's professional life; the likelihood of offering research courses if they were not compulsory, and of registering for any research course in the future, and the level to which research courses are deemed to be demanding,

and to which it provokes anxiety in learners. The findings from this study should improve decision-making within the University of Botswana on how graduate research students in education can be better supported as well as provide information on research capacity development among professional teachers in Botswana.

Research Questions

- (i) What is the influence on research-provoked anxiety by different types of research inclinations?
- (ii) What is the influence of research inclinations on student's perception of the usefulness of research, and perception of research as an intellectual and time demanding endeavour?
- (iii) What is the influence of research inclinations on student's willingness to take research courses if they were not compulsory, and willingness to recommend that research courses be made compulsory to all teachers?
- (iv) What is the influence of research inclinations on student's willingness to take more research courses, and the level to which they see research as being relevant in their professional life?

Research Hypotheses

The research questions were answered through testing the following seven null hypotheses:

H₁: The perception of graduate education students at UB of the usefulness of research is not significantly influenced by types of research orientation to which they are inclined.

H₂: There is no significant influence of research inclination on UB graduate education students' perception of research as an anxiety-provoking exercise.

H₃: The perception of graduate education students at UB of research as a demanding endeavour is not significantly influenced by types of research orientation to which they are inclined.

H₄: Research orientation does not significantly influence UB graduate education students' willingness to take research courses even if they were not compulsory.

H₅: The feeling that research should be compulsory to all teachers is not significantly influenced by research orientation of UB graduate education students.

H₆: The willingness of UB graduate education students to register for more research courses is not significantly influenced by research orientation.

H₇: Research orientation does not significantly influence UB graduate education students' perception of the extent to which research is relevant to their professional life.

Literature Review

Research skills are generally seen to be essential for successful operation in a global knowledge economy (Davis et al., 2006) and to sustain lifelong learning and professional development (Waite and Davis, 2006). Recent studies in various universities showed that there are many factors which influence postgraduates research studies; one of major factor is the students' expectations from their supervisors. According to the finding of a survey research study at the University of Technology in Sydney in 1992, student motivation to enrol in a research degree has an impact on what students expect from their supervisors. This means that the academic supervisors also contribute to the student's attitude towards research and research inclination. The supervisor's formal qualification which signify subject competence and research training, their active involvement in research and publications, as well as their knowledge of research process constitute competence as supervisors which is very important to the success of graduate students. Their attitudes, their own philosophy of higher education in particular, contribute to the quality of supervision. Especially, the supervisor's attitudes often based on their own experience shape their interaction with their students, the amount of direction and control of guidance, freedom and autonomy of their student experience. A series of research studies on the impact of lecturer research on student learning was initiated at Oxford Brookes in 1995. The results seemed to be systematic, and it also suggests that, lecturer research is, generally speaking, positively valued by students and perceived by both undergraduate and postgraduate students to have beneficial effects on their learning (Breen and Jenkins, 2002).

Another important factor according to Bandura (1994, 1986) is self-efficacy, which means an individual's beliefs about his or her performance capability. According to this author, self efficacy contributes to a person's thoughts, feelings and motivation. The degree of self efficacy experienced by individuals varies with perceptions of their ability to complete difficulty tasks. An individual with high self-efficacy will be more interested in the challenges he or she faces and will become more deeply involved with task completion. Having low self-efficacy produces low aspirations and weak commitment to difficult tasks. The individual will be more willing to give up than to persevere. He or she gives less effort, less commitment and less performance.

Research studies investigating student motivation have also confirmed that attitudes towards research are strongly influenced by the goals that students are pursuing (Breen and Jenkins, 2002). According to these researchers, amongst research students and masters students, positive attitudes towards research are associated with an orientation towards acquiring

theoretical knowledge for the purpose of developing one's potential, attaining, freedom at work, becoming involved in interesting and creative work influencing society and achieving important things in professional practice.

In his initial analysis of the data for this research, Nenty (2009) found that the level to which students perceived that they have problem with numbers has a significant influence on their preference of research orientation. Those who indicated high level of problem with mathematics tended to opt significantly for qualitative research. On the same vein, Coleman and Conrad (2007) found out that graduate students in business and social science have a pervasive dislike of statistics and research courses. Teachers of required graduate courses in statistics and research incur student antagonism and hence low course evaluation because of students' unfavourable disposition towards mathematics. Because of this "disincentive to teach statistical courses emerges making it increasingly difficult for departments to find instructors or for new Ph.D.'s in the business and social science areas to choose research methods as a career, teaching path" (p.20).

There have also been other studies conducted on graduate students enrolment in research methodology and statistics classes (Huggins, 2000; Kahn, 2000; Onwuegbuzie, 2001), research in this area have found that most of these students are extremely frightened about taking such courses. Students deem educational research courses to be most difficult in their programs of study, often revealing that they would not have enrolled in these classes if they had not been required to do so (Onwuegbuzie et al., 1997). Most graduate students have negative attitude to research studies because of their fear for research methodology and statistics courses, Onwuegbuzie (1997) indicated in his research on graduate students that most of the students struggle in research methodology and statistics courses, culminating in underachievement and negative attitudes towards research.

Trimarco (1997) also examined anxiety in research and statistics courses and found that lack of perceived statistical competence was responsible for increased fear in statistics, and this affects postgraduate students in their research studies. Murtonen (2005) examined the university social science and education students' views of research methodology, by asking them whether a negative orientation towards quantitative methods exists. A questionnaire was administered on students from Finnish (n=196) and US (n=122) to give their views on quantitative, qualitative, empirical and theoretical methods in research. And also to indicate their readiness to use quantitative and qualitative methods in their own research, and the difficulties they experienced in quantitative methods learning. In both countries it was found that students have negative research orientation

towards quantitative methods, and this negative attitude had been developed before they entered the University for their Post-graduate Studies.

A study was conducted by Mohamed and Bakar 2007 using a sample of 153 students enrolled in Master's degree programs at the faculty of Education Universiti Putra Malaysia. One of the objectives of the study was to predict students' decisions to enroll for a doctoral program in the Faculty of Education. A discriminant analysis was used to identify variables investigated in the study that distinguish those who will come back for a doctoral program and those who will not come for the doctoral degree program. The predictors used were: job factors, personal factors, program factors, social factors, gender, satisfaction, and academic performance. The overall Wilks' Lambda was significant $\Lambda = .84$, $\chi^2(7, N = 153) = 22.52$, $p = .002$ indicating that overall predictors differentiated among the two groups (Group 1= will come back for a doctoral degree; Group 2= will not come back for a doctoral program). Of the total 153 cases, 104 cases (68%) were classified correctly.

METHOD

This exploratory study was carried out to determine if the research orientation preferred by UB education graduate students has any significant influence on their research learning-related behavior. Data for this study was collected from UB graduate education students who took second of the two compulsory courses in educational research for graduate students in the Faculty of Education in 2006. The course has a balanced presentation of the three research orientations. Of the 83 students who registered for the course 78 willingly took part in the study. Some were absent from class on the day the data were collected. Of this number, 52 were females while 25 were males, and one did not indicate his/her gender. The questionnaire for the study was developed by first listing several indicants (Kerlinger and Lee, 2000) of each of the variables involved in the study and then converting these into questionnaire statements intended to elicit the level of behaviour under measurement possessed by the participant (Nenty, 2009).

The subjects were requested to react to each of the statements by choosing the level to which they agreed or disagreed with it. The agreement scale had seven options ranging from 'very strongly disagree' to 'very strongly agree'. A Cronbach alpha analysis of the reliability of the instrument in measuring the variables gave: usefulness of research (14 items), $\alpha = .873$; level to which research is an anxiety-provoking endeavour (6 items), $\alpha = .798$; and level to which research endeavour is demanding (2 items; split half) r_{xx} (corrected for test length) = .637. The rest of the variables were one-item variables.

Data analysis and Interpretation of Results

Of the 78 subjects for the study 43 indicated that they have no research experience while 35 indicated some research experience; 31, 17, and 30 respectively preferred qualitative, quantitative and mixed-model research orientations (Nenty, 2009). The first hypothesis was tested by carrying out a one-way ANOVA of the perceived level of usefulness of research as influenced by level of research orientation (Table 1). The analysis gave an F-value of

4.319 which was observed to be higher than the critical F-value of 3.12 ($df=2, 70$; $\alpha = .05$). This led to the rejection of the null hypothesis of no significant influence of research orientation on perceived level of usefulness of research by UB graduate education students. Given the significant influence observed, a post-hoc analysis using the least significant difference (LSD) method was done. The result showed that students whose orientation was qualitative research had a significantly lower perception of the usefulness of research than those whose orientations were both quantitative ($p = .012$) and mixed-research ($p = .020$) approaches.

The second hypothesis which speculated a significant influence of research orientation on the perception of research as an anxiety-provoking endeavour by UB graduate education students was also tested by performing a one-way ANOVA (see Table 1) This gave an F-value of 1.307 which given a critical value of 3.12 ($df = 2, 70$; $\alpha = .05$) led to the non-rejection of the null hypothesis. Hence among UB graduate education students, research orientation has no significant influence on their perception of research as an anxiety-provoking endeavour

Another one-way ANOVA was done to test the third hypothesis on the perception of graduate education students at UB of the level to which research as a demanding endeavour is significantly influenced by types of research orientation to which they are inclined (see Table 1). This gave an F-value of 4.153 which given a critical value of 3.12 ($df = 2, 70$; $\alpha = .05$) led to the rejection of the null hypothesis that there is no significant influence of research orientation on the perception of graduate education students at UB of the level to which research as a demanding endeavour. The significant F prompted a post hoc LSD analysis This showed that students who are oriented towards qualitative research perceived research as being significantly more demanding than those oriented toward mix ($p = .022$) and quantitative research ($p = .014$).

A similar analysis was done to test the fourth hypothesis (see Table 1) and this gave an F-value of 3.12. This value was found to be the same as the critical F-value of 3.12 ($df=2, 75$; $\alpha = .05$). This, the researchers interpreted as showing that research orientation of UB graduate education students has a significant influence on their willingness to take research courses even if they were not compulsory. A follow-up LSD analysis showed that students who are oriented towards qualitative research indicated significantly ($p=.016$) lower level of willingness to register for the research course if it were not compulsory than those oriented towards quantitative research. One-way ANOVA done to test the fifth null hypothesis gave an F-value of 3.17 (see Table 1) which was found to be larger than the critical F-value of 3.12 ($df=2, 75$; $\alpha = .05$) indicating that research orientation has significant influence on students' feeling that research should be made compulsory to all teachers. A follow up LSD post hoc analysis showed that again students oriented towards quantitative research had a significantly ($p=.04$) stronger feeling that carrying out research should be compulsory to all teachers than those oriented towards qualitative research.

For the sixth hypothesis a similar analysis gave an F-value of 4.07 (see Table 1) which given the critical F-value of 3.12 ($df=2, 75$; $\alpha = .05$) indicated a significant research orientation influence on graduate education students' willingness to register for research courses other than the compulsory ones. A post hoc analysis following the significant F-value showed that students who are oriented towards quantitative research are significantly ($p=.006$) more willing than those oriented towards qualitative method to register for research courses other than the compulsory ones. Finally, a similar analysis resulted in an F-value of 3.44 (see Table 1) when done to test the last null hypothesis that research orientation has no significant influence on students' feelings that research is irrelevant to their professional life. Compared to a critical value of 3.12, this led to the rejection of this null hypothesis.

A post hoc (LSD) comparison showed that students oriented towards qualitative research saw research as being significantly ($p=.011$) more irrelevant to their professional life than those oriented towards the mix-model research.

RESULTS

The result of the study is summarized in Tables 1 and 2 below:

DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

Research is the life-wire of educational growth and development and hence education should be a research-active profession. As a collective, public and inclusive enterprise, expertise or professional views and practices must be founded on the findings of valid research. Other sources of information for tackling educational problems are quack and often result in invalid solutions and hence wasted effort and funds on the research study itself and on the formulation and implementation of policies based on such solutions. Solutions to educational problems and the policy that may be formulated to inform such solution are more likely to be valid if inputs from every stakeholder in the process of education are consulted through research. Since education is a public enterprise, research in education therefore should involve all stakeholders, especially teachers who are the chief operators of the enterprise. Ability to research is a differentiating hallmark of a professional in education.

Students inclined to quantitative-oriented significantly more than their colleagues inclined to qualitative research felt that carrying out research should be made compulsory to all teachers. This collaborates with the suggestions made by Ayers (1993) and Hansen (1997) that teaching is a process involving continual inquiry and renewal, and a teacher, among other things, is first and foremost a questioner. Most teacher educators and researchers agree that teacher research is intentional and systematic inquiry done by teachers with the goals of gaining insights into teaching and learning, becoming more reflective practitioners, effecting changes in the classroom or school, and improving the lives of children (Cochran-Smith and Lytle 1993, 1999). The ability to research is a differentiating hallmark of a professional in education. There is a lot of evidence suggesting that teachers who have been involved in research may become more reflective, more critical and analytical in their teaching, and more open and committed to professional development (Keyes, 2000; Rust, 2007).

Teacher research is largely about developing the professional dispositions of lifelong learning, reflective and mindful teaching, and self-transformation (Mills 2000; Stringer, 2007). The real value of engaging in teacher

research at any level is that it may lead to rethinking and reconstructing what it means to be a teacher or teacher educator and, consequently, the way teachers relate to children and students. Furthermore, teacher research has the potential to demonstrate to teachers and prospective teachers that learning to teach is inherently connected to learning to inquire (Borko et al., 2007). The ultimate aim of teacher research is transformation, enabling teachers to develop a better understanding of themselves, their classrooms, and their practice through the act of reflective inquiry (Stremmel et al., 2002). Primary among the factors creating renewed interest in teacher research was the growth in the appreciation and value of qualitative methods in educational research and the concurrent shift from thinking about teacher research as something done *to* teachers to something done *by* teachers (Zeichner, 1999; Lampert, 2000).

Although, debate continues about the value and limitations of quantitative versus qualitative inquiry in educational research (e.g., Davis 2007), there has been a shift from an exclusive reliance on quantitative methods to the use of a broader range of qualitative methodologies (e.g., ethnography, narrative inquiry, biography, and autobiography) in the study of teaching and teacher education (Borko et al., 2007; Hatch, 2007). The growth in these qualitative methodologies occurred in response to questions regarding the relevance of quantitative inquiry in addressing issues and concerns of teachers and to the changing perception of teachers as researchers, as opposed to passive consumers of research on teaching.

That quantitative research-oriented students see research as useful significantly more than qualitative-research oriented counterparts see it may imply differences in the perception of this view. Research in the most fundamental form is on-going in the classroom. The teacher in his/her bid to find out what he/she does not know about the learners' ability or the effectiveness of his/her teaching, indirectly carries out research, a systematic search to find out, by developing and administering quizzes, tests, oral questions, etc. The results from this exercise are mentally or computationally analysed and the findings are used for one decision-making or the other especially as feedback for improvement of teaching and learning, thus finding solution to a problem. Some of the data resulting from this exercise are numbers, while some are words, but both are analysed and the results used for classroom decision making. So whether a teacher is oriented towards qualitative or quantitative research, he/she carries out research in his/her classroom through which data are generated analysed and the findings used to inform a solution to one teaching or learning problem or the other. Therefore through research teachers in their everyday practice create classroom level knowledge

Table 1. One-Way Analysis of the Influence of Research Orientation on Research-Related Behaviour of GES.UB

Research Classroom Behaviour	Research Orientation	n	Mean	Std. Dev	Std. Error	Source of Variation	SS	df	MS	F	Sig.
Perceived Level of Usefulness of Research	Qualitative	28	67.857	12.055	2.278	Between Groups	800.36	2	400.18	4.319	.017
	Quantitative	17	75.529	8.782	2.130	Within Groups	6486.63	70	92.67		
	Mixed-model	28	73.964	7.016	1.326	Total	7286.99	72			
	Total	73	71.986	10.060	1.177						
Level to which research course is anxiety-provoking	Qualitative	30	25.867	7.7136	1.4083	Between Groups	172.26	2	86.130	1.307	.277
	Quantitative	17	21.882	9.4729	2.2975	Within Groups	4810.27	73	65.894		
	Mixed-model	29	24.414	7.6743	1.4251	Total	4982.53	75			
	Total	76	24.421	8.1507	.9349						
Level to which research course is demanding	Qualitative	31	10.065	1.9311	.3468	Between Groups	31.529	2	15.765	4.153	.019
	Quantitative	17	8.588	1.7342	.4206	Within Groups	284.689	75	3.796		
	Mixed-model	30	8.900	2.0736	.3786	Total	316.218	77			
	Total	78	9.295	2.0265	.2295						
Took research courses only because they were compulsory	Qualitative	31	3.129	2.4460	.4393	Between Groups	28.86	2	14.43	3.12	.050
	Quantitative	17	1.530	1.0676	.2584	Within Groups	347.09	75	4.63		
	Mixed-model	30	2.767	2.2695	.4144	Total	375.95	77			
	Total	78	2.641	2.2096	.2502						
Carrying out research should be compulsory to all teachers	Qualitative	31	4.936	2.5025	.4495	Between Groups	27.89	2	13.95	3.17	.048
	Quantitative	17	6.529	1.4628	.3548	Within Groups	329.61	75	4.395		
	Mixed-model	30	5.500	1.9253	.3515	Total	357.50	77			
	Total	78	5.500	2.1547	.2440						

Table 1 Cont.

Research Classroom Behaviour	Research Orientation	n	Mean	Std. Dev	Std. Error	Source of Variation	SS	df	MS	F	Sig.
I would like to do more courses in research than the two demanded in this programme	Qualitative	31	4.484	2.407	.439	Between Groups	34.17	2	17.08	4.07	.021
	Quantitative	17	6.235	1.300	.315	Within Groups	314.67	75	4.20		
	Mixed-model	30	5.267	1.982	.362	Total	348.83	77			
	Total	77	5.167	2.128	.241						
Research is irrelevant to my professional life	Qualitative	31	2.871	2.6299	.4723	Between Groups	29.14	2	14.57	3.44	.037
	Quantitative	17	2.059	2.1057	.5107	Within Groups	313.67	74	4.24		
	Mixed-model	29	1.483	1.122	.2083	Total	342.81	76			
	Total	77	2.169	2.1238	.2420						

Table 2. Summary of Research Findings

Hypothesis on Behaviour/Variable	Research-related	Findings
1. Perceived level of usefulness of research		Quantitative-oriented students see research as useful significantly more than qualitative-oriented students see it.
2. Level to which research course is anxiety-provoking		Students oriented towards the three research methods do not differ significantly from each other in their perception of the level to which research course is anxiety provoking.
3. Level to which research course is demanding		Qualitative-oriented students see research course as a demanding course significantly more than quantitative- and mix-method oriented students
4. Took research courses only because they were compulsory		Qualitative-oriented students significantly more than quantitative-oriented ones see themselves taking research courses only because they are compulsory.
5. Carrying out research should be compulsory to all teachers		Significantly more than qualitative-oriented students, quantitative-oriented students feel that carrying out research should be made compulsory to all teachers.
6. I would like to do more courses in research than the two demanded in this programme		Quantitative-oriented students significantly more than qualitative-oriented students would like to take more research courses than the two demanded in their programme.
7. Research is irrelevant to my professional life		Students who are oriented towards mixed-model research feel that research is relevant to their professional life significantly more than qualitative-oriented students.

which is put into use in solving teaching and learning problems in the classroom.

Significantly, more than qualitative-oriented students, quantitative-oriented students feel that carrying out research should be made compulsory to all teachers. For each teacher the same classroom is unique and can operate effectively based on unique classroom level knowledge. Hence classroom level knowledge created by a history teacher for the same classroom might not be applicable for use by an English language teacher in the same classroom. Hence there is the need to carry out what Wikipedia (2010) calls 1st-person action research. As a fundamental classroom process, through especially the reflective and interactive processes of action research teachers undertake research to find solutions to their job-related problems. According to Wikipedia (2010), there are:

1st-, to 2nd-, to 3rd-person research, that is, my research on my own action, aimed primarily at personal change; our research on our group (family/team), aimed primarily at improving the group; and 'scholarly' research aimed primarily at theoretical generalization and/or large scale change (p.1).

Even if a teacher does not take part in the 3rd-person research, teachers are active at the 1st- and 2nd-person research which are aspects of action research. The 3rd-person research involved the generation of findings and theories that underlie principles and practices in different aspects of education.

Generally students who see research course as difficult tend to develop a certain level of anxiety in research classes (Papanastasiou & Zembylash, 2008) regardless of their differences in research orientation. Hence students oriented towards the three research methods were not found to be different significantly from each other in their perception of the level to which research course is anxiety provoking. To some of the students this was their first research course as it was not compulsory in some of the undergraduate programmes which they passed through, and since they registered into the graduate programme they have been anticipating this much-talked about compulsory course. Hence all of them are equally bottled up with anxiety.

But despite similarity in perception of level of anxiety in research class, qualitative-oriented students see research course as demanding significantly more than quantitative- and mix-method oriented students. For effective research capacity building a research course demands much time for class and individual assignment in areas that are relatively new to learners. New concepts have to be learned, internalized and applied; problems have to be identified, analysed and validated, both theoretical and empirical experiences of previous researchers have to be critically reviewed and evaluated and data collected with valid procedures and processes have to be analysed, interpreted and the findings

discussed and recommendations drawn. These are time and intellectually taxing and demanding exercises for a new researcher, especially so for qualitative researchers who required. The significant difference in perception of level of demand of research course might be because one of these tasks involves analyzing data using the SPSS programme which most student oriented towards qualitative research find very difficult and taxing.

This level of time and intellectual demands of research course on which students with qualitative and quantitative research-oriented differ significantly underlies the significant difference in the level of to which they see themselves registering for research courses only because they are compulsory. Qualitative research-oriented students significantly more than their quantitative research-oriented colleagues take research courses only because they are compulsory and would not like to take more research courses than the two demanded in their programme.

Students who are oriented towards mixed-model research feel that research is relevant to their professional life significantly more than qualitative-oriented students. Views and concepts related to quantitative research tend to be more crystallized than those related to qualitative research. Quantitative research more or less follows a beaten path which has been developed and validated over the centuries. With relatively later emergence the path for qualitative research tends to be chaotic and unbeaten and hence students are sometimes confused because of the conflicts that seem to exist in the series of research designs involved in qualitative methodology.

Graduate education students should be exposed equally to both qualitative, quantitative and also to mixed-model research methodology and their accompanying designs. For valid findings, graduate education students and their research supervisors should allow the research problem with which the students is involved to dictate the research orientation the student applies in looking for a solution to such problem.

REFERENCES

- Ayers W (1993). *To teach: The journey of a teacher*. New York: Teachers College Press.
- Bandura A (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura A (1994). Self-efficacy. In V.S. Ramachandran (Ed), *Encyclopedia of human behaviour*. New York: Academic Press. 4:71-81
- Borko H, Liston D, Whitcomb J (2007). Genres of empirical research in teacher education. *J. Teach. Educ.* 58(1):3-11.
- Breen R, Jenkins A (Provide year ???). *Academic research and teaching quality: Views of undergraduate and postgraduate students*. *Stud. High. Educ.* 27(3):309-327.
- Cochran-Smith M, Lytle SL (1999). The teacher research movement: A decade later. *Educ. Res.* 28 (7): 15-25.
- Cochran-Smith M, Lytle S (1993). *Inside outside: Teacher research and*

- knowledge. New York: Teachers College Press.
- Coleman C, Conrad C (2007). Understanding the negative graduate student perceptions of required statistics and research methods courses implications for program and faculty. *J. Coll. Teach. Learn.* 4 (3): 11-20.
- Davis SH (2007). Bridging the gap between research and practice: What's good, what's bad, and how can one be sure? *Phi Delta Kappan.* 88(8):568–578.
- Fu VR, Stremmel AJ, Hill LT (2002). *Teaching and learning: Collaborative exploration of the Reggio Emilia approach.* Upper Saddle River, NJ: Merrill/Prentice Hall.
- Handbook of research on teacher education, (2nd ed.) New York: Simon & Schuster. pp.53–64.
- Hansen J (1997). Researchers in our classrooms: What propels teacher researchers? In D. Leu,
- Hatch JA (2007). *Early childhood qualitative research.* New York: Rutledge.
- Henson KT (1996). Teachers as researchers. In J. Sikula, T. Buttery, & E. Guyton (Eds.), In
- Huggis T (2003). Constructing images of ourselves? A critical investigation into 'approaches to learning' research in higher education. *British Educational Research Journal,* 29(1):89-104.
- Kahn JH (2000). Research training environment changes: Impacts on research self-efficacy and interest. Paper presented at the American Psychological Association, Washington, D.C. (ERIC Document Reproduction Service ED 4463306).
- Keeves JP (1997). Models and model building. In J. P. Keeves (Ed.), *Educational research methodology and measurement: An international handbook* Oxford: Pergamon. Pp. 386-394
- Keyes C (2000). The early childhood teacher's voice in the research community. *Int. J. Early Years Educ.* 8(1):3–13.
- Kinzer C, Hinchman K (Eds.) (1996). *Literacies for the 21st century: Research and practice.* Chicago: National Reading Conference. Pp.1–14.
- Lampert M (2000). Knowing teaching: The intersection of research on teaching and qualitative research. *Harvard Educ. Rev.* 70(1):86–99.
- Mills G (2000). *Action research: A guide for the teacher researcher.* Upper Saddle River, NJ: Merrill/Prentice-Hall.Press.
- Murtonen, M. (2005). University students' research orientations: Do negative attitudes exist toward quantitative methods? *Scand. J. Educ. Res.* 49(3):263-280.
- Nenty HJ (2009). Research orientation and research-related behaviour of graduate education
- Onwuegbuzie AJ (1997). Writing a research proposal: The role of library anxiety, statistics anxiety, and composition anxiety. *Libr. Inform. Sci. Res.* 19:5-33.
- Onwuegbuzie AJ (2001) Relationship between peer orientation and achievement in cooperative learning-based research. *J. Educ. Res.* 94:164-172.
- Onwuegbuzie AJ, DaRos DA, Ryan J (1997). The components of statistics anxiety: A phenomenological study. *Focus on Learning Problems in Mathematics.* 19:11-35.
- Papanastasioua EC, Zembylash M (2008). Anxiety in undergraduate research methods courses: its nature and implications. *Int. J. Res. Meth. Educ.* 31(2):155–167.
- Richardson JTE.(1994). Mature students in higher education: A literature survey on approaches to studying. *Stud. High. Educ.* 19(3):309-326.
- Rust FO (2007). Action research in early childhood contexts. In J.A. Hatch (Ed.), *Early childhood qualitative research* New York: Routledge. Pp. 95–108.
- Shamsiah M, Rahim B (2007) Factors influencing students decisions to enroll in a post-graduate program. A paper presented at Humanities conference in Malaysia.
- Slade M (2002). Listening to the boys: Issues and problems influencing school achievement and retention. In Flinders University Institute of International Educational Research Collection: Number 5. Australia: Shannon Research Press.
- Stremmel AJ, Fu VR, Hill LT (2002). The transformation of self in early childhood teacher education: Connections to the Reggio Emilia approach. In . V.R. Fu, A.J. Stremmel, & L.T. Hill (Eds.), *Teaching and learning: Collaborative exploration of the Reggio Emilia approach* Upper Saddle River, NJ: Merrill/Prentice Hall. Pp.135–45.
- Stringer ET (2007). *Action research.* 3rd ed. Thousand Oaks, CA: Sage. students. *J. Soc. Sci.* 19(1):9-17.
- Trimarco KA (1997). The effects of a graduate learning experience on anxiety, achievement and expectations in research and statistics. Paper presented at the 28th annual meeting of the Northeastern Educational Research Association, Ellenville, New York, (ERIC Document Reproduction Service ED 419022).
- Wikipedia (The free encyclopedia) (2010). Action research. Retrieved from http://en.wikipedia.org/wiki/Action_research.
- Zeichner K (1999). The new scholarship in teacher education. *Educ. Res.* 28(9):4–15.