

## **Classroom research: a tool for preparing pre-service teachers to become reflective practitioners.**

Eucabeth Odhiambo  
Shippensburg University

### **Abstract**

Including classroom research methodology in undergraduate is not a common practice. In order for practicing teachers to conduct classroom research in their own classrooms it is critical that they are involved in some form of planning preparation during their pre-service years. In this study, classroom research was included in one undergraduate education course for the following purposes 1) analyzing the involvement of pre-service teachers in action research through a two day field experience and, 2) assessing how this experience impacted students' view regarding classroom research as a tool for improving reflection and classroom decision making 3) assessing ways in which undergraduate faculty can improve projects to enhance student experiences and skills in using action research as a tool for instruction and assessment. Students selected topics that they were able to observe related to classroom practice, analyze and develop alternative design. Results from this study indicate that most participants experienced an increased comfort level about conducting classroom research as a tool for improving reflection, and solving classroom issues.

Keywords: Action research, pre-service teacher research, reflection, theory to practice

## Introduction

Teachers are usually reluctant to participate in action research (Bondy, 2001) and yet it has major benefits as a tool to improve reflection on classroom teaching and student learning. “If classroom research is to become a habit rather than a fluke, additional forces must come to bear” (Brondy, 2001, p.12). Brondy continues to say that state department of education through to school boards and universities must take responsibility to support classroom research. Exposure to action research must be established earlier in the pre-service years in order for teachers to be prepared use action research in their classrooms.

Significant documentation exists to demonstrate that in order to develop and improve teaching, teachers need to reflect on what they do on a regular basis. Also that classroom research is one way of improving reflectivity which in turn helps improve various aspects of learning in the classroom (Falk & Blumenreich, 2005; Alber & Nelson, 2002; Mills, 2003). A multitude of studies provide evidence of the effectiveness of reflective teaching in the professional development of teachers (O’Sullivan, 2002). Since the meaning of reflective teaching is problematic, differentiation in this paper is drawn from McKay, 1992 that “action research is the process of conducting classroom research to answer questions or solve problems about teaching and learning involving a specific group of students in a particular setting” (Cruickshank Jenkins, Metcalf, 2009, p.). Cruickshank, et al (2006) suggests five ways to developing one’s reflective abilities i.e. the use of dialogue journals, discussions, portfolios, action research and on-campus laboratory experiences.

The following processes are easily and commonly fulfilled in teacher preparation programs: dialogue journals, discussions, portfolios, and on-campus laboratory experience. However, action research is typically not included until the master’s level. At the undergraduate level reflective teaching takes the form of reflecting on the learning process, role-playing, discussions, written journals or assignments, reports outline how they set to work on a particular assignment and other observational report. The action research process is different because it involves identifying a problem, gathering evidence, reflecting/analyzing the evidence and drawing conclusions or applying it to teaching (Falk & Blumenreich, 2005). The teacher, as a researcher, takes the position of bridging the gap between theory and practice.

Often teachers fear getting involved in classroom research. They often do not see how research can enhance their work because they lack the knowledge and training to see the connection (Glanz, 2003). However, there are various benefits to the use of action research such as: improved teaching practice, enhanced collegiality, being brought closer after working on a group research project, new ways of thinking i.e. becoming more reflective (Brondy, 2001) and improving student performance (Glanz, 2003). According to Calderhead, (1988), reflective teaching:

Enables self-directed growth as a professional; facilitates the linking of both theory and practice; it helps to explicate the expertise of teachers and subject it to critical evaluation. It enables teachers to take a more active role in their own professional development p.9.

It is evident that in order for teachers to participate in action research, training is imperative. Inquiry and research might to be incorporated in teacher preparation programs, making participation in some form of research and inquiry compulsory. Baumann and Duffy (2001) suggest that pre-service teachers need support in various forms to conduct action-

research. Starting at the pre-service level provides early support, comfort (O'Sullivan, 2002; Bevevino & Snodgrass, 2000) and at the same time pre-service teachers get involved in evidence-based practice (Evans; Lomax & Morgan, 2000).

Including action research in an undergraduate introductory course stems from the premise that the use of action-research will “engage students in structuring their own perception of a situation, their actions or learning, or their engaged in altering or adjusting these structures” (De Jong & Korthagen, 1988 quoted in Wubbel & Korthagen, 1990) thus developing a reflective attitude. Wubbel and Korthagen’s study of teachers from program designed to promote reflective teaching indicate that such teachers had a greater capacity to improve; they also had a better teacher-student relationship and a higher job satisfaction. Additionally, Bevevino & Snodgrass’s study (2000) show how service teachers use action research to improve their teaching and results.

Action research is one process in the training of pre-service teachers that is often omitted and that might significantly help capture the above benefits gained from being a reflective practitioner. It is not the purpose of this study to measure the levels of reflectivity. The purpose of this study was to: a) analyze the effectiveness of using a two day field experience project to teach pre-service teachers the process of conducting classroom research as a means of problem solving and developing their reflective abilities b) analyze how this experience impacted students’ view about classroom research as a tool for improving reflectivity and classroom decision making and c) assess ways in which undergraduate faculty can improve projects to enhance student experiences and skills in using action research as a tool for instruction and assessment. Usually in an undergraduate introductory course, students learn a cross section of teaching concepts. This study focused on assessing and improving achievement of the following goal: exposing pre-service students to action research before they enter into the field. It also addressed the following question: How can action research assignments benefit all students?

## **Methods**

### **Sample and procedure**

The subjects in this study were twenty seven undergraduate pre-service teachers enrolled in a basic 200 level education course in a teacher preparation program. The class met for 75 minutes twice a week during a 16 week semester. Of the participating students 20 were sophomores, 5 juniors and 2 seniors. All students enrolled were education majors. The course used a text book, had students participate in various observation and writing activities and required students to take four chapter tests. Of relevance to this paper is the action research project which comprised of a preview of the meaning of action research, student’s topic of interest, observation and presentation in addition to other course requirements. The final grade was aggregated by adding up the research paper and the presentation. The method used to structure this action research project part of the class attempted to follow the general structure of an action research as outlined by Mill, (2003) and Glanz, (2003): 1) identify an area of focus 2) collect data 3) analyze and interpret data 4) develop an action plan. The thought process was modeled after Calhoun’s action research cycle (see diagram 1).

## **Action research structure**

Three weeks into the semester, students took a pre-test with questions including: their involvement in action research in the past, areas of interest and what expectations they had for this project. The goal was to find out how much students know about any kind of research which would help structure the depth of instruction on the topic of action research. Students were then involved in reading and discussing elements of reflectivity and characteristics of a reflective practitioner based on the class text by Cruickshank et al. 2006.

Information and examples on the kinds of research questions from various topics and action research processes were discussed prior to students selecting a research question. Also students were required to read samples action research articles conducted by students teachers in the college of education and human services and compiled by the college. Students were expected to complete an eight step deadline process to ensure progress of the research project. Students were informed that the research project was a 12 week process which would culminate with a presentation at the end of the semester. Several deadlines were provided so as to ensure progress of the research project. The steps covered in order to complete this project were as follows:

### **Preparation**

During week 3 action research as a tool for reflection discussed, research topic samples shared and discussed.

Step 1: During week 4 students paired up with a partner of choice. They developed a research question and established a plan to answer the question (Glanz, 2003). The students were allowed to pick a research question based on their interest. They were to assume that this was an existing problem in the classroom. In case such a problem did not exist in the classroom the students were instructed to record data observed and use that data as a learning experience for best practices. The research question was posted on Blackboard discussion forum accessible to everyone in order to avoid duplication of questions. Once one question was taken other groups had to find something else as long as the study was not the same they were approved. Once the questions were posted the group was required to conference with the professor for the following reasons 1) discuss the question, rationale and methodology for approval before moving on to the next level. 2) make sure that the question was answerable in a two day observation; 3) ensure that there was no duplication of focus and 4) ensure that the questions were not too broad.

Step 2: During week 5 & 6 students were required to read and complete a review of literature section of the research by reviewing a minimum of four professional journals or book sources related to their topics. Then they turned in a rough draft consisting of action research statement, question, rationale (importance of study), methodology and review of related literature.

Step 3: During week 7 or 8 students were involved in a two day urban classroom observation and teaching experience and at the same time gathering evidence for their action research. The observation and teaching experience was merged with the action research. On the first day they shadowed their assigned teacher observing and gathering evidence related to their topic of research. They also made other observations related to the classroom environment on the 1<sup>st</sup> day. Students were able to discuss with their host teacher the lesson they were expected to teach the

second day. After the first day of data collection students came home and reflected on the evidence before going back to the same classroom to collect more data and teach a lesson. The reflection time gave the student an opportunity to do any one or more of the following: ask more questions; make decisions on additional data collection so as to maximize on data collection; figure out possible solution/s to any problem observed as related to their research question and finally include in their lesson solutions whenever possible.

On the second day either more evidence was gathered and/or various possible solutions were implemented during one or two lessons taught by the pre-service teachers. In cases where adjustments were not needed, students only recorded what they observed as data for presentation. Step 4: week 10-12 students provided a rough draft of their research paper with the following sections research statement, research question, rationale (importance of study), methodology and review of related literature and results. Students were encouraged to discuss areas of difficulty with the instructor before turning in the final paper. Other sources of support were suggested i.e. the university's learning center.

Step 5: week 13 students turned-in the complete action research paper following the format detailed in step 3 above. They were required to attach the rough draft in order to provide the instructor with an opportunity to assess the recommended changes from previous conferences.

Step 6: week 13-15 students summarized their paper into a 15 minute presentation. They were given a choice to present their research through the use of poster or power point presentation formats. At this time samples of previous presentations were displayed in class and critiqued for elements of a good poster presentation. The nature of the presentation required the students to a) provide the research question, and methodology b) summarize the literature reviewed c) give in detail the results or observations made, solutions they implemented if any and their recommendations. Students were graded on both the research paper and research presentation based on items on two different rubrics (see Table 1 & 2).

All students completed a 10-15 minute Theory to Practice survey at the end of semester. The survey asked nine questions which were a mix of specific questions, yes, no and open ended questions. The questions assess students views on their experience, benefits gained, problems experienced and recommendations for this project.

The questions included 1) what kind of research have you participated in previous to this one? 2) Do you plan to use action research in your classroom to improve your practice? 3) Which kind of research do you prefer to participate in? 4) What did you learn from doing this research activity and comments. Participants were asked to rate the project on their agreement with dimensions including application of learned theories to this project, knowledge gained about real classroom issues; seeing direct connection between selected topic and topics discussed in class; comfort trying to find solutions to classroom problem using the action research process; comfort in attempting an action research during student teaching or thereafter; the connection between action research and reflection. Each item was rated on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, and 5 = strongly disagree).

Data was analyzed from the survey taken by students before and after the day in school. Their responses were analyzed through descriptive statistics (percentages) and comments were analyzed for emerging themes.

## Results

A variety of schools and grade levels between K-8 were represented in this project. Research questions posed represented a wide variety of topics including classroom management to teaching strategies as sampled below:

1. What strategies does the teacher use to keep students on task? Are they effective?
2. How does teacher X actively pursue parent involvement in the classroom?
3. What methods does the teacher use to lower classroom anxiety, when teaching a foreign language?
4. What effective strategies does teacher X use in managing the classroom when dealing with distractions?
5. What types of learning styles are most often addressed by the teacher in the classroom?
6. What extra steps are taken by the teacher to best suit the needs of students with learning disabilities or the students who are gifted?
7. What are some effective methods of punishment and reward in the classroom?
8. What classroom management strategies does the teacher use with special needs /low ability students?
9. How does leisure reading aloud to students after being away from the classroom setting affect students' behavior during the next lesson and the rest of the day?
10. How does classroom set up affect classroom instruction?

The pre-test given to students was compared to the exit survey taken after the field experience. Students were first assessed for how much they knew about action research which was then compared with items on the second assessment done at the end of the study. Fewer students (41.5%) indicated to not having participated in any kind of data collection in the posttest as compare to 50% in the pretest. In the pretest only 15.2% has participated in action research, another 15.4% in the University's undergraduate research program and the rest 69.2% specified their participations as: high school psychology class, research topic papers, psychology class, statistics class, research paper, communication studies, and observations (Graph 1). In the exit survey students were more specific about the research activities they had been involved in such as: survey, high school sociology class, statistical research and analysis, surveys for research projects, general research projects and research papers. The area of interest most participants wanted to do their project on was classroom management 10(38.5%). Other areas of interest were motivation, diversity, accommodating diverse needs, communication, transition, time and resources.

Given the opportunity 65.2 % indicated that they would be interested in action research rather than writing a research paper as regularly done in other classes. Ninety one point three percent (91.3%) indicated that they planned to use action research to improve their practice. Fifty two point two percent (52.2%) indicated that participating in the research project gave them a better understanding about classroom research, while 47.8% felt somewhat better. 58.3% indicated that they were able to directly observe, study classroom issues and implement solutions to classroom problems.

They agreed that they were able to: apply theories learned to this project (75%), gaining more knowledge about real classroom issues (83.3%); see direct connection between selected topic and topics discussed in class (58.3%). Additionally they were comfortable trying to find solutions to classroom problem using the action research process (75%); comfortable in attempting an action research during student teaching or thereafter (70.8%) (Table 3). Finally participants indicated that they were able to see the connection between action research and reflection (70.8%).



Students expressed that they had gained knowledge about action research and that they were more comfortable with action process. Seven students indicated that they found the project to be beneficial and interesting.

One student said, "I found it really beneficial and interesting testing our questions out in a real classroom."

Another comment:

"I really liked this assignment!!! Going and doing the observation at day in school was a blast and very beneficial! I really like how the assignment was spread out over the whole semester... This made things less stressful!"

Two students commented on the experience gain by doing this project. One wrote:

"It opens new experiences to students who are going to become teacher."

"this project was a great deal of work however I feel that I am ahead of my classmates that did not get this opportunity."

Another student indicated that the project was useful to the classroom and that the skill would be useful in the future.

"I found it interesting how useful action research is in the classroom. I feel it will be very beneficial in the future."

There were common project criticism that was identified by nine of the fourteen students who responded to the comments section:

One student explained, "I felt I had too much to do while I was at Day in School. I would have loved to give the action research project more attention..." Similarly, half of the students felt that more time could have been spent discussing the APA style of writing since most of them were used to MLA. Considering that only 7.7% indicated that they were familiar with APA style of referencing. The rest were either familiar with MLA (88.5%) or other forms of formatting 3.8%.

Other comments regarding difficulties with the project were as follows: "I think if I was to go back and try to improve this project I would have taken more time to observe a variety of classrooms. Also I would have tried to find more literature to help me understand what I was seeing."

In summary a majority of the students were supportive of the project and agreed that it was important for their future classroom.

On day two the solutions were implemented only if they were directly related to instruction i.e. teaching strategies, or discipline as it was deemed to reduce the problem or solve a problem previously observed.

Host teachers had been asked to evaluate the pre-service teachers during instruction. Some host teachers expressed in their comments how impressed they were by what the students did during instruction. One teacher was impressed by how her classroom was rearranged and asked the students to leave that arrangement. Others made comments in the evaluation to the effect that they liked certain strategies, games the students used and would use them in the future. Another teacher expressed satisfaction with the classroom management system the students has used, which allowed them to get their work done. As much as some of these were general strategies used by the students, most of the strategies were targeted to help avoid classroom management issues they had observed on the first day.

After the data collection and analysis, students were required to provide an oral presentation at the end of the semester discussing the action research and how they implemented any solutions in the classroom during the lesson that they taught the second day or their

recommendations. During presentations students were able to answer questions from their peers and the course instructor.

## Discussion

The goal of this project was to provide students with an effective practical experience in action research as a means to solving classroom problems through a reflective process. This project ensured that students had actual classroom exposure and after observation were able to find immediate solutions or propose possible solutions. Some were able to implement the proposed solutions in their own lesson. This project allowed students to share information giving them confidence in their work and at the same time connect theory to practice. It allowed students to work collaboratively with each other and the classroom teacher.

This project set out to involve students in the process of classroom research in order to develop their reflective abilities. Studies suggest that action research has the potential to improve teaching and the teacher (Glanz, 2003; Brondy, 2001). Based on the percentages presented above, students gain from this project, it is recommended that teacher training colleges should involve pre-service teachers in some form of action research.

This project provided students an opportunity to meaningfully participate in a real classroom. It was evident that more students understood the meaning of research better after the project which explains the change from 52% to 41.5% of students indicating that they had participated in some kind of data collection process. This was a more accurate indication of the kind of data collection they had been involved in prior to this project.

This project was also a way for students to experience the real classroom and become knowledgeable about what happens in the classroom minute by minute. Within the two days that the students worked with the teachers, the goal was to allow students to “incorporate a reflective stance, ... critically examining” (Mills, 2003, p. 10) their host teachers teaching and also their own teaching on the second day. They had a chance to “examine the dynamics of the classroom, ponder the actions and interactions of students and in their case teachers also, validate and challenge existing practices” (Mills, 2003, p.10). The reflection process allowed them time to develop an action plan (Creswell, 200; Mills, 2003).

Another goal for this project was to assess ways in which undergraduate faculty can improve projects to enhance student experiences and skills in using action research as a tool for instruction and assessment. The survey given before and after the project gave the professor an opportunity to figure how to improve student participation in research, and reflection. During presentations students shared their experience in addition to the data presented. They all agreed that it was a learning experience even if they did not observe good practice in all cases.

One student reflected: “Now I know what I do not want to do when I have my own classroom.”

The project met the action research steps as outlined by Falk & Blumenreich, 2005, which involves identifying a problem, gathering evidence, reflecting on the evidence and drawing conclusions or applying it to teaching (Falk & Blumenreich, 2005). In this case students had to hypothesize a possible classroom problem since it is not possible to get into the classroom for an extended period of time. They went into the classes and gathered evidence for a total of twelve hours over two days. They had a few days in between the first and second day to reflect on the evidence. They then went back into the classroom to apply solutions in their teaching where possible. Conclusions were drawn and recommendations were given when it was not



possible to implement solutions during their teaching. These recommendations were part of the paper handed in to the professor.

Areas identified by students suggested the need to improve on the identification of problem stage. At the problem identification stage, the students had to hypothesize a possible classroom problem to be solved without first going into the classroom since it was not possible to get into the classroom at the very beginning of the semester. There were cases where the hypothesized problem never really existed and so students observed and recorded best practice. Perhaps in the future arrangements can be made with the school district to allow early initial observation.

Email and phone communication with the host teachers were problematic. A flier had been sent to the principals that gave basic information however, most of the host teachers had not read the pamphlet detailing what the students were expected to accomplish. Without reading the emails, the students had to do some more explaining once they got to the school. In order to give teachers ample time to plan for the student's visit, the instructor may need to send emails reminding the host teachers of the events and dates. Also brief face to face meetings with the teachers as a group or individual may be considered. However, based on comments by the host teachers it was evident to an extent that the research implementation had some positive impact, which was an additional bonus for the pre-service teachers who felt that they had contributed positively to the classroom.

Students indicated their discomfort with using APA style of writing and referencing. As much as students were already given a presentation from the library before embarking on the review of literature, to help them with efficient ways of finding online articles and the APA style of referencing, student's comments indicate that they did not benefit much in terms of APA style of referencing. In the future student will be encouraged to visit the Learning Center to get help with editing of the whole paper and also the APA style of referencing.

At the beginning, during class discussion on the topic of improving reflection, it was explained that the action research question should be very specific so as to reduce the amount of time required for data collection. Students instinctively felt that they needed to collect a lot more data than was required. As a result they felt that they needed more time. In their reflections and comments students indicated that they need more time for a bigger study and that two days was not enough. Some also indicated that they would have wanted to observe other classes. In the future student should be constantly reminded about the time line they have and being more specific with the questions they pose. If the data cannot be collected within the twelve hours that they are in the school then the question is probably too broad.

## **Conclusion**

This action research project was an effective assignment with immense potential. Students were able to experience "research that is relevant" (Mills, 2003, p.12) and "a part of daily life as a classroom teacher" (Mills, 2003, p.14). Student reflections and comments made it possible to see areas that need some work to improve their experience. It is evident that students did not know much about action research prior to this class, even though they had participated in a various research projects. All fourteen groups completed and presented their action research. Their presentations demonstrated connecting theory with practice through research as they shared information from literature sources read and classroom observations made. They gained a significant amount of knowledge related to action research. This study demonstrates that action

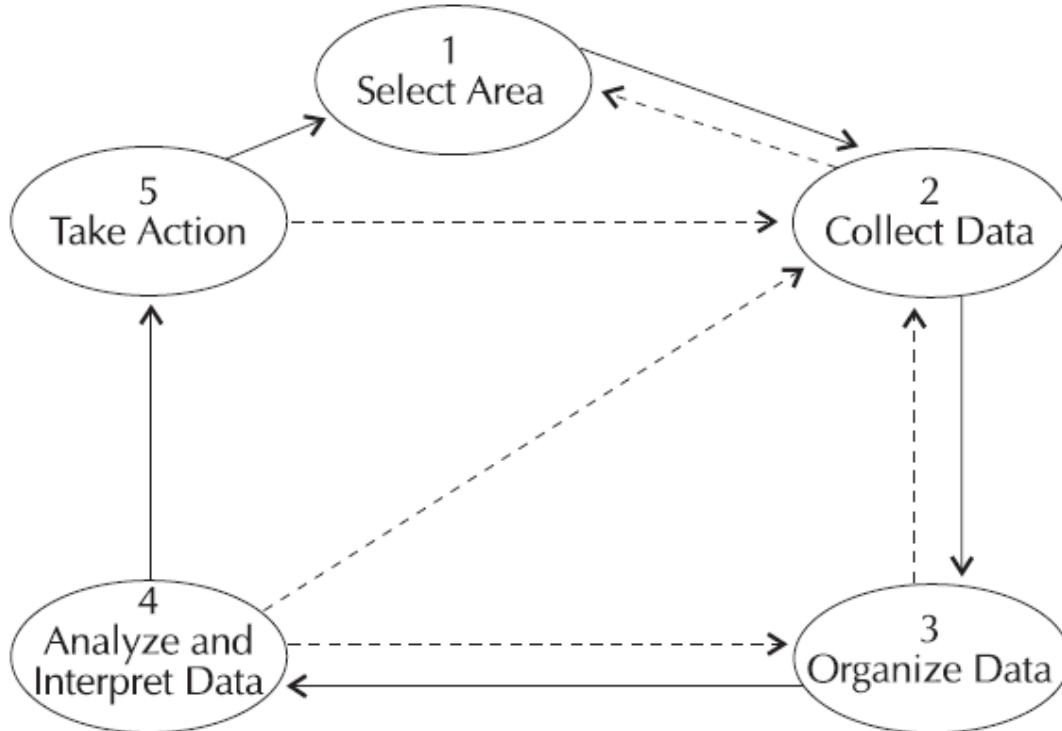
research can be applied in a variety of courses in teacher education. Future studies should assess the incorporation of action research in pre-service classrooms to better prepare pre-service teachers on ways to solve classroom problems so as to improve their classroom teaching and professional performance. Research should be done following pre-service teachers into service to find out whether action research is used to inform their decision making and problem solving. Reflection is a process which takes time to perfect, over time experienced teachers come to appreciate how their practice is improved as a result (O'Sullivan, 2002). For this reason incorporating action research in teacher education courses sets pre-service teachers on their way to appreciating better professional experience and empowerment.

## References

- Alber, S.R., & Nelson J, S. (2002). Putting Research in the collaborative hands of teachers and researchers: An alternative to traditional staff development. *Rural Special Education Quarterly*, 87568705, 21 (2).
- Creswell, J.W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Cruikshank D. R., Jenkins D. B., & Metcalf K. K. (2006). *The act of teaching*. McGraw Hill: Boston.
- Falk B. & Blumenreich M. (2006). *The power of questions: a guide to teacher and student research*. Heinemann Portsmouth: NH.
- Mills G. E., (2003). *Action Research: A guide for the teacher researcher*. 2<sup>nd</sup> Ed. Merill Prentice Hall: Columbus.
- Bondy S. (2001). Warming up to classroom research in a professional development school. *Contemporary Education*, 72(1), 8-6
- Glanz, G (2003). *Action Research: An educational leader's guide to school improvement*. 2<sup>nd</sup> ed. Christopher-Gordon Publishers, Inc.: Massachusetts.
- Baumann, J.F. & Duffy A.M. (2001). Teacher-researcher methodology: Themes, variations, and possibilities. *The Reading Teacher*, 54(6).
- Evans, M; Lomax O.; Morgan H. (2000). Closing the circle: action research partnerships towards better learning and teaching in schools. *Cambridge Journal of Education*, 30(3).
- Bevevino M. M.; & Snodgrass M. D. (2000). Action research in the classroom: increasing the comfort zone for teachers. *The Clearing House*. 73(5).
- Wubbels, T & Korthagen, F.A.J.(1990). The effects of a pre-service teacher education program for the preparation of reflective teachers. *Journal of Education for Teaching*. 16(1).
- O'sullivan C. M (2002). Action research and the transfer of reflective approaches to in-service education and training (INSET) for unqualified and underqualified primary teachers in Namibia. *Teaching and Teacher Education* 18, 523-539.

Diagram 1: The Action Research Cycle





Source: How to Use Action Research in the Self-Renewing School, p.2 by Emily Calhoun, 1994, Alexandria, VA: Association for Supervision and Curriculum Development. Copyright 1994 ASCD.

Table 1: Research Paper Scoring Summary

Format followed, cover page, pagination, tables, figures etc	10
Introduction: question identified	5
Importance of the study	5
Related literature: organization, relevance to topic, writing style (all direct quote vs. paraphrasing),	15
Citations APA throughout the paper	10
Methodology (clear and precise, written in past tense)	10
Analysis/Results/discussion: relates to questions, data reported comprehensively, clarity	25
Conclusion/recommendations	5
References: APA. Appendixes, labeling –diagrams, graphs	10
Grammar/syntax	5
Total	100

Table 2: Group Presentation

Organization /Topic, Question, methodology identified, recommendation	5
Accuracy of Content: review of literature	5
Results presented accurately and various ways	7
Use of Visuals/Examples/Handouts	10
Meets Professional responsibilities and Due Dates	5
Individual Strong and Effective Presentation	5
Delivery Style/Effective Presentation	5
Usage of Grammar/syntax in Speech form	3
Project reflection completed	5
Total	50

Graph 1: Student participation in research pre-test and exit survey compared

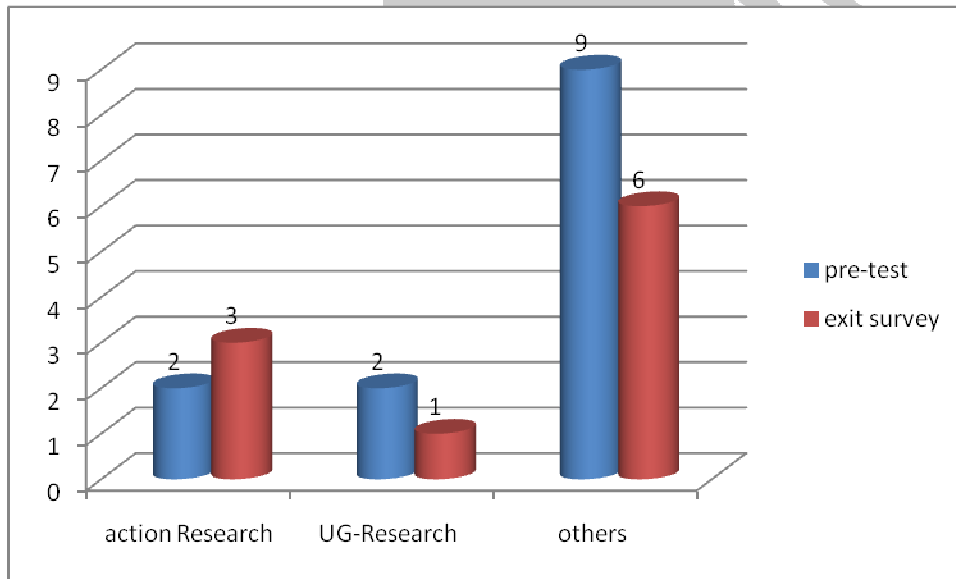




Table 3: Ratings of agreement related to project

Statement	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Mean rating
I have been able to apply the theories learned in this course and other courses to this project.	0% (0)	0% (2)	4.2%	<b>75%</b>	20.8%	4.17
Listening to various presentations helped me gain more knowledge about real classroom issues.	0.0%	0.0%	0.0%	<b>83.3%</b>	16.7%	4.17
I was able to see direct connection between my topic and topics discussed in this course.	0.0%	0.0%	16.7%	<b>58.3%</b>	25%	4.08
I am now more comfortable trying to find solutions to classroom problem using the action research process.	0% (0)	0.0%	12.5%	<b>75%</b>	12.5%	4.00
I feel comfortable in attempting an action research during my student teaching or thereafter.	0% (0)	8.3%	16.7%	<b>70.8%</b>	4.2%	3.71
As a result of this project I am able to see the connection between action research and reflection.	0.0%	0.0%	8.3%	<b>70.8%</b>	20.8%	4.13
Overall Performance						

