

Using Action Research to Identify Data during Clinical Experience

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Abstract

Critical thinking is the focal point missed in many students' education. Learning to ask appropriate questions and deduce information in order to build a deeper connection to the information is imperative. Although much emphasis is given to teaching values in schools, there appears to be less evidence that teacher education courses are explicitly preparing preservice teachers for this responsibility. This paper discusses alternative master's preservice teachers' use of action research to serve as a guide during a 16-week clinical experience. Semi-structured interviews and reflection papers were conducted to create a comparative case study that analyzed the clinical experiences. The teacher candidates were in charge of planning, teaching, and assessing instruction in their classrooms. The process helped them adjust to their teaching responsibility. They collected and reflected on their action research data, used it to understand their practice, and then made plans accordingly to improve their practice. This process was empowering and helped preservice teachers grow in their confidence and competence.

Keywords: teacher capacity, preservice teacher, action research

1. Introduction

Most, if not all, graduate students in education are required to complete an educational research methods course. The preservice teachers in the study were master's level graduate students completing a 16-week clinical experience at a Historically Black College and University (HBCU). They were exposed to the idea of reflection as a way to organize their experience into a type of action research. Action research is a form of research where teachers learn to reflect on their practice while improving the understanding of their practice. It is not just thinking about teaching but is a more systematic and collaborative process (Shanks, Miller & Rosendale, 2012). Action Research Learning Project (ARLP) was an initiative to enhance the quality of teaching and learning at an HBCU by supporting staff to take an action research approach to improve some aspect of their teaching.

The intention of this qualitative research was to explore various areas of concern preservice teachers may encounter while completing the clinical experience in surrounding school districts where students complete the final requirement for teacher licensure. To be eligible for an initial teaching license, teacher candidates are required to complete particular pedagogical and content knowledge courses, prepare a summative portfolio, demonstrate particular dispositions behaviors and skills, pass required praxis exams, and receive satisfactory ratings on the assessments of their final clinical experiences (Henry, Campbell, Thompson, Patriarch, Luterback, Lys & Covington, 2013). It was expected that the elucidation and consideration of strategies would lead to a better understanding of the challenges preservice teachers experience and what methods are implemented to improve their practices.

However, during clinical experiences, preservice teachers are typically assessed on lesson planning, content knowledge, management of instruction time, management of student behavior, and dispositions, particularly attitudes toward students and colleagues (Zeigler & Montplaisir, 2014). Master's level candidates complete an action research project to examine supporting literature research and practical experiences (Mertler, 2009) during the clinical experience. Similar to research psychologist who strive to collect reliable and valid findings, these candidates use critical analysis to develop their ideas to improve their practice and share ideas with others (Zambo, 2007).

Zambo stated that completing action research gives teachers opportunities to develop clearer insights into how learning, motivation, and development contribute to the meanings students construct from the classroom experience. Action research presents a potential perspective developing teachers into critical thinkers and problem solvers capable of understanding the complexity of educational issues that no one theory or practice may answer.

2. Literature Review

Action research has become common as a form of in service training in most departments and colleges of education. Although most universities place importance on students becoming independent thinkers, exams often do not necessarily assess cognitive development (Zeigler & Montplaisir, 2014). Most exams measure knowledge of facts instead of comprehension and factors contributing to misconceptions. Students struggle when applying course information to everyday problems or situations. Teachers are empowered to examine their own teaching practices rather than receiving outside in service training that may or may not be of value to the teachers. It has a long and rich history in the social sciences, rooted in the work of Kurt Lewin (1946). Lewin thought of action research as a cyclical and dynamic process one could use to address social issues and concerns.

3. Conceptual Framework

The approach taken to this research was the Grounded Theory, in which a concept is exposed through continuous data collection and assessment (Glaser & Strauss, 1967) to explain social phenomena. The research began with a look at generative questions that helped to guide the research, but was neither static nor restricting (Glaser & Strauss, 1967) a preservice teacher investigated different areas during clinical experience. The research was gathered in three different methods: a self-diagnosis of individuals' classroom experiences, daily field notes by the researcher, and, finally, a focus group concluding the study. Various methods are used as artifacts to answer research questions. Many action research studies may have used artifacts such as assignments, projects, test scores, or other types of work as data sources. This study required students to consider a problem that was recurring during their clinical experience then attempt to implement a solution while documenting the process. Participants completing the projects were graduate students who were working teachers.

The mode of research most often chosen has been action research, because it is generally accepted that action research can be conducted by a practitioner in a school setting during a cyclical, reflective process. Schon (1987) stated that reflection on our reflection-in-action may indirectly shape future action. Reflective preservice teachers exhibited this sense of reflection while developing professional competence by applying theoretical concept through a systematic approach. The process of identifying one topic out of many suggestions involves looking for patterns (Ross-Fisher, 2008) then gathering information to conduct the action research as it continues to develop over time. What is required of the preservice teacher in order to undertake this systematic reflection is a four step process namely; Identify problem, Plan Action Research, Collecting and analyze data, Data reflection, and Implement action based on findings (Figure 1). Undertaking this systematic reflective approach to teaching will not only improve teaching but also improve student learning (Henning et al., 2009; McIntyre, 2008).

The focus of action research is individual improvement not a generalizable framework for other populations, situations, or times. Zambo (2007) stated that lack of generalizability causes opponents to believe that action research is "not real research." However, action research has the potential to solve problems teachers face if conducted in a reflective manner. Chris Argyris (1985) emphasized the importance of action research as including a methodology for transforming individuals to overcome the embedded patterns of reasoning of change. Through reflections, student have opportunities to reflect on course content, link material to previous experiences, and associate theoretical frameworks to practical situations (Zeigler & Montplaisir, 2014).

The action research cycle relies on teachers developing a focus for study in their classrooms or their schools. Typically, teachers must plan out an area of interest or concern in their practice. The focus may be difficult to narrow in that teachers must consider what kind of data will be realistic for them to collect while still busy working in their classrooms (Shanks et al., 2012). Action research is a self-reflective inquiry practice undertaken by participants in social settings to improve the rationality of patterns (Watkins, 1991). Reflective practice and transformation contribute to the knowledge of learning strategies to improve the educational process whether data sources include teacher observations, student work samples, interest inventories, or created assessments (Ross-Fisher, 2008). However, the recurring problem should consist as a pattern to be articulated clearly but worth investigating to provide an impact of assessment on student learning.

Cochran-Smith and Lytle (1999) identify three interrelated conceptual frameworks for action research: (1) action research as social inquiry, that is, research to ask critical, emancipator questions, about and to transform, educational practice; (2) action research as ways of knowing within communities, that is, research to develop and capitalize on the knowledge and skills teachers acquire from their classroom practice in order to build theory; and (3) action research as practical inquiry, that is, research to develop practical knowledge and to improve classroom practice in a given context.

In all forms, the core idea is that a teacher conducts systematic classroom-based inquiry in order to gain knowledge that is meaningful, useful (in that it helps to solve a problem or deal with an issue) and, thus, professionally important and valuable. A teacher carrying out action research most often seeks to answer questions and solve problems suggested by daily classroom experiences. This social-psychological construct to understand group behavior is symbolic to modifying individual behavior (Lewin, 1946). According to self-determination theory, social contexts that support students basic psychological needs of autonomy, competence, and relatedness foster motivation toward behaviors that are valued in that social context. The socio-contextual elements of the learning environment support or undermine student's basic psychological needs as they relate to solving behavioral problems.

3.1 Reflective learning

As teachers engage in continuous learning, they share new insights in their classrooms with their colleagues. Soon, the conversations in the hallways and the lunchroom are focused on teaching practices and student learning. As teachers become more effective, they are likely to allow colleagues to observe their classroom and/or share a successful strategy at a staff meeting. Sharing and collaborative are examples of school leadership because they involve actions beyond the scope of their classroom. Well-prepared teachers are the catalysts for higher student achievement. Teachers who are prepared in traditional teacher education programs and continue in-service education help ensure increased levels of student achievement (Darling-Hammond, 2000).

To build the capacity of individual teachers, explicit acknowledgement, and collaborative sharing of effective practices must be encouraged. Fully addressing the gaps in education by facilitating critical thinking skills encourages preservice teachers to become receptive, perceptive, reflective, critical, and owners of teach (O'Neill et al., 2010). Action research allows teachers to collect data that more specifically relates to the current issues relevant in their own classrooms (Shanks et al., 2012) during systematic reflective teaching events (Smith, 2010).

When teachers engage with others in professional learning that includes studying data, planning collaboratively and improving instruction, they are engaged in work that promotes their own learning while impacting the learning of others (Shanks et al., 2012; Bednarz, 2002; Subramaniam, 2010). Preservice teachers must be willing to look outside of their experiences to envision a better future for the profession and to accept responsibility early in their preparation (Ross-Fisher, 2008). Katzenmeyer and Moller (2009) stated that individualistic focus hinders collegiality where isolation elicits little personal meaning. As preservice teachers enter the profession, gain experience, and begin to move beyond survival, they gain experience where they actually address students' unique instructional needs (Katzenmeyer & Moller).

Many action research studies focus on increasing student achievement. The lack of knowledge regarding how to train teachers for high poverty/high minority urban areas, particularly, has presented problems that are detrimental to the urban districts. One of the many challenges associated with educating student living in poverty is that students are taught by teachers who are generally less experienced and have a much higher rate of attrition (Ingersol, 2004). Action research has been modeled to be a positive professional effect on its practitioners where teachers gain knowledge and confidence, learn significant research skills, become more skeptical and critical of classroom norms (Bednarz, 2002). Razfar (2011) indicated the major challenge was identifying the voices in meta-analysis which broaden the dialogue about the dynamic potential of action-based approaches once opportunities to become members of a community of practice. The use of this study will be to inform future preservice teachers completing clinical experiences of the challenges that exist during the first years of their teaching career. Investigating a research project aids the learner examine the implementation of a strategy for building teachers' capacity (Huguet, Marsh, & Farrell, 2014).

4. Methodology

4.1 Participants

Preservice teachers from a university in Central Alabama in the United States were placed in different secondary schools. These teacher candidates were all in their final semester of completing the program of study. The grounded research study relied principally on the recorded exchanges between the researcher and the participants through individual interviews and formal written assignments. The data collected was analyzed to determine emerging concepts and commonalities during the clinical experience. The information to be analyzed and interpreted in the study has been recorded almost exclusively as the participants articulated their understandings and experiences in 4 peer reflections during the semester of the 16-week internship (Italiano & Hine, 2014).

4.2 Procedure

The candidates all taught in public schools in Alabama for five days a week. The candidates responded to the research questions through a Google form to make data collection manageable. After conducting the initial analysis, it was noted that two preservice teachers appeared to have a greater report impacting teacher practices than others, while five seemed to be less effective at identifying areas of concern. Based on these initial patterns, we analyzed several additional pieces of feedback which indicated preservice teachers not having a clear concept of establishing a definitive topic during the internship (Huguet, Marsh & Farrell, 2014). Semi-structured interviews assisted participants construct preliminary projects.

4.3. Research questions

The determination to learn the effects of the action research learning project focused on improving instruction was guided by the following research questions:

1. What issues have arisen while engaging in your action research project and how have they been addressed and/or resolved?
2. What strategies are in place to help with the concern at the school?
3. In what ways has your action research informed or reformed your teaching practices?

These questions were designed to understand the role of action research in the development of the participant. The challenge of this study was identifying the voices of meta-analysis to broaden the dialogue about the dynamic potential to establish a framework for deeper reflection. The conceptual framework provided meaning, to some degree, assessing reflections about their action research journey whether fostering pedagogical or behavioral changes. Perhaps the most difficult aspect of assisting preservice teachers narrow the action research topic was identifying 'change' in the everyday practices of participants especially since these changes were often subtle and located in the texts of everyday life (Lewin, 1946). Nevertheless, drawing on the reflective practitioner model provided the participants a framework to build relevant experiences throughout the clinical experience. The participants were asked to reflect on these questions and terms as they related to their own action research experience. Our discussions centered on the applicability of the chosen topic but more importantly, it led to rich narratives about the nuances of their own experiences.

5. Results/Findings

For the purpose of this study, data from the action research data final reports and informal focus group sessions were used for analysis (see Table 1). In this section, findings from the final report identified the project title, problem, solution, location, and student content area. Drawing on our conceptual framework, we organize our findings around practices, artifacts, and contextual conditions that differentiate the experiences during internship. The data in Table 1 presented by the action research responses took a variety of forms, reflecting in part, the personalities of the preservice teachers conducting the research and topics they chose.

The reports ranged from topics of behavior management to meeting needs of special students composed in a 4-5 page reflection during the clinical experience. The research questions focused on establishing a foundation for their professional growth and identifying patterns during instruction using the conceptual framework. Nonetheless, the research questions guided the focus group interview as they each explored how action research project emerged over the course of the clinical experience (Table 2). Participants responded to the third question "What strategies are in place to help with the concern at the school?" indicating the support systems were not there.

The participants indicated that most teachers must be creative with activities during instruction, particularly, when assuming the role of the teacher. Adolescent students may actually turn to school as a way to define themselves resulting in a higher sense of belonging. Student who require special education services need confirmation and knowledge about teacher expectations. Preservice teachers indicated that communicating expectation early really helped when administrative support was unavailable to deal with students who displayed behavioral issues. The behavioral challenges included students with attention difficulties, major self-esteem issues, belligerence, defiance and those that didn't listen. One participant indicated that several special needs students wanted to perform extremely well on assessments that they would cry because they did not know how to read. It was stated that "nothing was in place [allowing teachers] to be creative" during the day.

Participants responded to the fourth and last question "In what ways has your action research informed or reformed your teaching practices?" Topics revolved primarily around on pedagogy and content-specific curriculum, increasing problem solving related to data, and improving the use of data for monitoring and planning student growth. However, the topics were improving techniques integrating technology during instruction, student achievement, inclusion settings, school curriculum, and behavioral management. The special education preservice teacher (Participant A) indicated that it was important to approach students softly, avoiding "fussing" while the other (Participant D) stated the importance of being firm to establish boundaries. Participant G emphasized the importance to differentiating instruction using performance-based activities which engaged difficult learners who presented with behavioral issues.

6. Discussion

6.1 Explanation of unexpected findings

Participants had difficulty completing action research in the areas of identifying a specific problem, approaching a procedure to problem solving, establishing intervention strategies that addresses the problem, and developing outcomes that are targeted by the research questions. Not all students follow through with the process. Students may not experience to plan intervention while teaching. Some had limited experience with identifying the problem of the action research project.

Action research presents a practical approach to conducting research. From the study, it was evident that the participants were naïve in their approach to identify and narrow topics that would result in a solution-oriented project. The ARLP definitely needed to be operationalized to define the requirement and discuss ways that it could be used to improve their practices and to affect classroom reform. The preliminary exploration of the use of action research only uncovered their misunderstanding when identifying, developing, and providing a solution to the problem.

The core idea is for preservice teachers to "conduct systematic classroom-based inquiry in order to gain knowledge that is meaningful" (Bednarz, 2002) but continuously evolving through higher-level inquiry throughout their practice (Zeigler & Montplaisir, 2014). Action research is an ideal pedagogy to achieve critical thinking through their analysis and creation of a narrative story. The conceptual framework provided a reflective teacher lens which students executed a degree of flexibility that was relevant to their experiences (Loughland & Bowen, 2012).

6.2 Application to practice

Understanding and fostering the ability of students to think critically is essential to their educational success. The broader implications that arise from this experience facilitated the development of critical thinking skills to address on a continual basis through various lessons, projects, group problems, and/or individual assignments. Through continual emphasis on the development of critical analytical skills, preservice teachers had an opportunity to build upon their knowledge and experience to learn how to communicate and solve problems.

6.3 Suggestions for future research

This study afforded real insight into challenges preservice teachers encounter during clinical experience. The findings may be important to other preservice teachers completing clinical experience at the respective school sites, but may vary according to the group of students and strategies used with the class. The ARLP gave students the opportunity to write based upon personal experience to improve teaching and learning and ultimately their pedagogical practice.

This process might elicit a change in instructional strategy connected with a particular unit of study, or perhaps a modification in curriculum for a specific skill, or maybe even a variation of the sequence in which students are presented with certain concepts. Their individual ARLP could involve recommending ideas for future research by the preservice teachers or building teacher capacity among their colleagues during.

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Tables and figures

Figure 1: Action research model

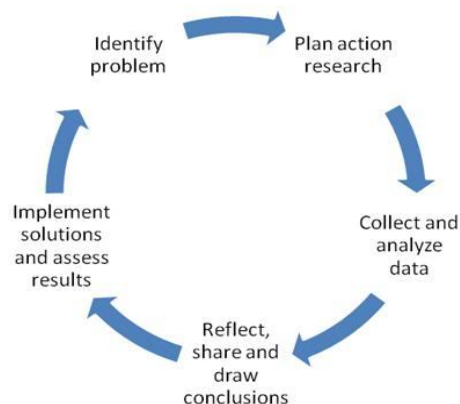


Table 1: Analysis of data

Name	Project Title	Problem	Solution	Area
A	Truthfulness of Collaboration	There is so much paperwork and meetings that most inclusion teacher doesn't get enough time spent with the students on their caseloads.	Administrative support, professional development, and more time with students instead of being bombarded with paperwork and meetings.	Special education
B	Reducing Student Tardiness	Coming to class on time	Set a method of consequences to force students to plan ahead.	Music Education
C	Fighting and Behavior in School	Fighting	Social Skills	Collaborative Education
D	Methods for Improving Math Test Scores	Students testing scores are low	More time focusing on the subject, teaching to pass the test, weekend classes for extra help to prepare	Special Education
E	Fine Arts in High School	Maintaining support for fine arts in the school	Determine the support from teachers and administrators in the school	English Language Arts
G	Social Science Infused with Technology	Lack of technology. Minimal usage of credible and resourceful sites.	More innovative strategies to promote use of resourceful sites	Social Science
H	Preparing high school juniors for success on the ACT	High school juniors are required by the state of Alabama to take the ACT in April of their junior year.	I propose an ACT preparation course as a one semester elective for 10th - 12th graders.	Secondary Mathematics

Table 2: Summary of topic selection

Participant	Action Research Project Title	What were the challenges to completing the action research learning project?	What issues have risen while engaging in your action research project and how have they been addressed and/or resolved?	What strategies are in place to help with the concern at the school?	In what ways has your action research informed or reformed your teaching practices?
A	Improving Inclusion Educational Settings In school	Finding a solution for the problem that will work	As an educator, it is nearly impossible for special education teachers to keep up with all the constant changes and continue to implement required obligations already in place. Just learn how to adapt with the changes	The school is working on opening a co-teaching English classroom to now serve math and English students	The idea of mainstreaming special education students is a wonderful idea, if executed properly to meet the needs of all students.
B	How to reduce student's tardiness?	Time and research while interning!!	Just need more time to complete work, need more preparation for work, and should be introduced during the first day of classes not in the middle of the semester.	Patrolling the halls and keeping students accountable for their actions.	Just made me more aware of issues in a school system.
C	Behavior and Fighting in Schools	My number one challenge was that I didn't know where to start. Because this is an issue at my cooperating school, I see the problem on a daily basis. It was a matter of picking something eventful to write about and elaborate on.	The issues present during my action research paper was the ongoing behavioral issues and fighting in the schools. The problems are constantly addressed, but never resolved regardless of the consequences.	The main strategies used are in school suspension and out of school suspension. This tactic does not seem to work because the problem still exists.	My action research has reformed my thinking. I feel as though I am already informed of the ongoing problem. I will have to implement a functional behavioral assessment in my teaching practices.
D	Improving test scores	Having the students interaction	Participation and different training to teach on a better lev	After school tutoring	There are different ways to teach one lesson and that teachers should also be informed on how to teach the students the information

E	The Importance of The Fine Arts	Some of the challenges I was having during this project were gathering data on and from students. I also had trouble with the people I was interviewing. The principal had to reschedule with me four times. It came to a point where I had to exclude him because of time.	No serious issues came about. At first, many did not want to do the interview, but they came around or I just interviewed others.	Next week, the Fine Arts Department will conduct an "End of The Year Showcase". During that time, the video produced for the action research project will be presented.	It gave me more insight on what I was doing was positive. I must continue on the path that I'm on.
F	The Effects of Same Gender Physical Education Class Measured	Students had to be physically condition with daily workout regimen during the school year.	Girls did not understand not want to participate in cardiovascular endurance activities that were only individual and team sports. So, it was a tremendous growth for students endurance by using an extremely well rounded school program.	Girls only physical education class along with boys only class.	I refused to see the girls inactive for class. So, I realized there needs to be collaboration and willingness to work from students. We have an opportunity to set the pace for students being healthier and smarter long term. In Physical Education classes students have to receive all of the health related fitness components.
G	Technology Infused in Social Science	One challenge was narrowing down the issues plaguing students at Jefferson Davis High school students regarding technology.	Some students have difficulty stating specific issues. I had to compose surveys and worksheets to help structure their concerns.	More proxies are put in place. More educational websites are developing ways to attract socioeconomically challenged students.	My teaching practices have been reformed. The old paradigm of lecturing has run its course. Students need high energy interaction.
H	Advancements in ACT preparation for High School students in Alabama	With the recently added requirement for all high school juniors in Alabama to take the ACT (at school), I feel we need to do a better job of preparing the students for success.	Students are dreadfully unprepared for the ACT requirements unless they are enrolled in the preparatory course.	My school has a course to prepare students but not all students take advantage.	The state should implement a program in each school to prepare students for the ACT since that is the benchmark required for student achievement.