



An On-line Journal  
for Teacher Research

## Promoting Reflective Practices in Special Education through Action Research: Recommendations from Pre-Service Teachers

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The development of reflective practice for pre-service teachers is an essential component of personnel preparation programs (Grossman, 2008). Critics of personnel preparation programs have long-contended that teacher training has become remote from the real world; filled with theory rather than understanding educational settings and issues. Many have demanded that teacher preparation emphasize inquiry into teaching and reflection in practice (Etscheidt, Curran, & Sawyer, 2012). The value of reflection for pre-service teachers has been extensively confirmed, particularly with the current emphasis on student outcomes (Ward & McCotter, 2004). Teacher reflection is now viewed as a necessary tool for educators to develop and sustain responsive instructional practice. Professional standards delineate reflection as a disposition and performance competency for teachers (Council for Exceptional Children, 2009). In addition, reflective opportunities are outlined as an accreditation standard for teacher education programs (National Council for Accreditation of Teacher Education, 2008).

In response to research showing the benefits of reflective practices, many personnel preparation programs have sought ways to help teachers-in-training (pre-service teachers) develop reflective practices in their teaching. This has been done by providing multiple opportunities for reflection and scaffolding within a variety of reflective experiences during extensive field and student teaching practicum experiences (Harford & MacRuaric, 2008). One powerful approach for integrating inquiry into teaching and reflection in practice is action research. The purpose of this

article is to provide a description of an effort by faculty to increase teacher reflection in the preparation program area of special education by using action research and to describe pre-service teachers' responses to the process.

### Method

This purpose of this qualitative study was to explore the relationship of pre-service teachers with action research. Faculty researchers wanted to find out if pre-service teachers could learn and apply the principles of action research in their teaching and to investigate how action research could be used to promote or encourage reflective teaching of pre-service teachers.

Teachers-in-training were challenged to conduct action research projects in schools where they were completing their practicum in special education. The pre-service teachers participated in a course training module on action research over a four week period prior to beginning their practicum. Once established in their student teaching practicum setting, the pre-service teachers developed and carried out an action research project following the guidelines given in the training module. They were challenged to identify a learning problem or behavior, design an intervention, carry out the intervention, evaluate it and then reflect on the process. Approval was granted for this project through the University of Northern Colorado Institutional Review Board (IRB). All practicum students completed action research projects during their practicum, but some were given the option of participating in this research project. Declining to participate had no

affect on their grade in the practicum and signed consent is on file with the university (as per IRB requirement).

There were four data collection points used to gain insight to the process of action research from the perspective of five pre-service teachers, each semester, over four semesters (20 pre-service teachers total). Each pre-service teacher completed an initial questionnaire about their perception of action research after the training module was completed. During the project, the teachers-in-training kept a daily reflective journal. Each was also interviewed by a faculty member at the conclusion of the action research project. Finally, follow-up, in the form of a written questionnaire, was completed by the pre-service teachers two weeks after the end of the practicum (Marshall & Rossman, 1999; Falk & Blumenreich, 2005).

## Data Analysis

Each of the post-project interviews was audiotaped. Interview analysis included several steps. Following the interviews, the audiotapes were reviewed and transcribed. The author independently coded each transcript for the identification of data patterns or themes. This was accomplished by separating the data into smaller pieces of meaningful information then labeling the smaller set with a qualitative description or code. Afterward, a code list was created. Next, the code list was analyzed and collapsed into larger themes. To safeguard credibility, 25% of the interview data were randomly chosen and coded by an independent researcher with access to the code dictionary. The author and an independent researcher then compared the coded interview data to discuss any agreements or disagreements in the analysis. There were no disagreements over the codes. Following the identification of the themes, member checks were conducted to further ensure validity of the findings whereby a summary of the thematic areas was presented to a small sample of participants. All pre-service teachers who participated in the member checks agreed that the three areas of themes accurately reflected the information they shared. Data analysis of the pre-project questionnaires, reflective journals and

follow-up questionnaires were analyzed and categorized into themes following a similar procedure as above but did not include transcripts (Marshall & Rossman, 1999).

## Results

The following themes emerged from the data collection and analysis concerning the broad research questions. Pre-service teachers found they were able learn the process of action research through training. Action research helped the pre-service teachers to become reflective in their planning and teaching and to deliver better services to students. University supervisors reported that the use of action research improved the pre-service teachers' understanding and use of the diagnostic teaching cycle, therefore, it improved direct student instruction.

## Learning the Process

At the outset of their projects, none of the pre-service teachers in this study were familiar with the term action research. They reported being uncomfortable with the formal term "action research" and suspected this project may be busy work. Pre-service teachers were puzzled by the prospect of the action research project, even after completing the initial training where many examples were provided from inside and outside the field of special education. They unanimously reported that participating in a mock project was the most helpful part of the training, as they were taken through the process of conducting action research. It was only after this mock project that the pre-service teachers came to realize that action research was a systematic approach to instruction that may provide a framework and guide their planning and teaching in a helpful way.

After completing the action research project, the pre-service teachers in this study reflected on the need for more training and planning before beginning the project with a focus on systematic movement through each step of the project. They wanted the process and individual steps simplified for them as beginning researchers. The pre-service teachers reflected on how they felt they "messed up" individual steps of the project

and had to go back and correct them before moving forward. Themes of difficulties emerged in the areas of collecting baseline data, researching interventions and determining interventions that were narrow enough to be doable, but still reliable. Daily frustrations about the individual steps of the project and the need for support from supervising teachers were expressed in journals. Pre-service teachers were able to consider mistakes they may have made in their procedures, think about how these mistakes may have influenced their results and then make changes to lessen the effects of the mistakes. They were reflecting on the process of the project! For example, one student expressed the need for more focus on data collection and the evaluation process. He said, “The key to turning teaching into action research requires a very systematic third step: Evaluation. How will you know if your action plan is working? Coming up with a clear plan for collecting data that will answer the question: How well did it all work? Did the student improve? If yes, will the teacher continue the intervention? If no, will something be added or will you try something different? Whatever the decision, collecting data to document progress or what happens when changes are made is important.” This statement shows that this student understood the thought process of the action researcher, but needed more information in order to plan his study in the most effective manner.

## **Reflective Planning and Instruction**

The second major theme that emerged related to the question of how action research might promote the use of a diagnostic teaching cycle. At the out-set of the project it was evident that the pre-service teachers were highly confused and doubtful about the value of the action research process in improving their teaching. As they progressed through the sometimes challenging process of completing the project, they realized that designing their action research project gave them a framework by which they could identify a problematic behavior, research, plan, and then implement an intervention. Themes from the reflective journals revealed that the pre-service teachers were thinking about and analyzing what

they were doing throughout the project. One teacher commented, “Journaling throughout the project forced me to think about what I was teaching, why I was teaching it and how I was teaching it.” Another participant added, “It dawned on me one day that I was expected to teach with a plan rather than intervene with students using only my intuition and experience. Since I have limited experience, my thoughtful research and planning was bound to result in better instruction.” The pre-service teachers realized that they had to begin with a formal plan in mind of how they were going to approach each step of the project in order to improve student learning outcomes.

Of note, many of the pre-service teachers reported that their cooperating teachers were not familiar with the term action research, rather, these veteran teachers felt it was just good diagnostic teaching. Pre-service teachers also reported that action research took a lot of effort and they didn’t know how they were going to handle working with more than one student at a time in such an intense way in the near future.

## **Discussion and Recommendations**

Pre-service teachers in this study were highly focused on teaching skills their students needed in order for them to be successful in general education programs. Through action research, teachers learned that this approach to teaching was highly flexible and responsive to the needs of the individual student. Isn’t this what special education is all about? It is teaching as an experiment; continually observing, shifting, responding, trying and reflecting. The pre-service teachers involved in this study learned to go to the research to solve instructional dilemmas rather than relying on traditional teaching strategies or those displayed by their cooperating teachers. They realized that they already engage in discussions with other professionals about what is or is not working when trying to help students reach their full learning potential. Action research was reported as being a beneficial exercise in coming up with new ideas and trying out teaching strategies. The participants felt that the action research project helped them frame these

interventions and reflect upon them to determine their value.

From the perspective of the university training program, the inclusion of the action research project was successful in developing reflective practitioners who seek to improve student learning. Actually conducting action research helped the pre-service teachers understand what a reflective teacher really is. The action research process brought credence to pre-service teacher's observation, reflections and gut feelings. Where a thoughtful practitioner's final analysis of a teaching situation may be based on intuition, experience and hearsay, action research empowers the teacher by addressing why the implementation worked or did not work. This study found that action research allows sustained focus and empowers teachers to empower their students to learn.

## **Recommendations for Success: Setting up an Action Research Project**

In addition to the general process of doing action research, there were some specific recommendations that pre-service teachers in this study reported as essential when setting up an action research project in order to ensure success. Students reflected that part of being a pre-service teacher includes making mistakes as part of the learning process. They may have made mistakes during their action research projects - as they may have included any one of these features incorrectly as a novice researcher. Planning and reflection on the process were keys to success.

### **1. Take baseline data before beginning!**

*The data collected to answer your question will provide better insight if you know where the student started from or know what the starting conditions are of the situation you are investigating.* Several of the pre-service teachers reported that they already felt behind as they hadn't collected this baseline data (or not enough of it). How can you evaluate success if you don't know the starting point?

### **2. Be sure to formulate an actual research question before selecting your**

**data collection methods.** *It is important to match the data collection to the question you are trying to answer. Having that question in mind will help with your selection process.* This took the teachers much effort and consultation. Refining the research question was difficult for the pre-service teacher. This was an area where their supervising teacher was very helpful.

**3. Pick data collection methods that are meaningful, but also doable!** *You are a busy teacher, make sure what you choose to do is something you can actually do systematically.* Students reflected that they could not possibly have done what they set out to do in the timeline they initially set for themselves and the available resources. Reviewing and revising happened throughout this project.

**4. Consider ways to get reliable data.** *Techniques for inter-rater reliability and inter-observer agreement need to be established.* This was typically the practicum supervisor or mentor teacher. At times teachers felt they may be biased in their data collection, but having another person observe the same thing helped to show strength in being reliable. Poor inter-rater reliability helped the pre-service teacher stop and consider what might be the reasons and change their procedure accordingly.

**5. Keep other factors constant!** *When investigating whether a certain intervention, teaching strategy or environmental change creates improvement, it is important not to change other things at the same time or midway through your data collection.* It was difficult to know if the data are related to the intervention being investigated if other changes were also occurring. Pre-service teachers in this study tried to do a couple of things at the same time and then were not able to tell if it was one thing that caused the change, or a combination of factors.

Along with the above recommendations, in order to make the research interpretable for other practitioners, pre-service teachers found that it was important to be specific about the student and the context in which the research was taking

place. Since action research is within the context of an individual teaching environment, it may be more applicable to some practitioners than others, depending on their own teaching context and the characteristics of their students. The strength of action research comes from being specific about context so that others can judge how well the same intervention might work for their situation. Students found that if they wrote up their action research to share with others, or just talk about it with others, they needed to be sure to include information about the following:

1. **Student characteristics** (without using the student name or other identifying information, of course!). For example: What level of disability does the student have? What educational background does the student have? Does the student have additional disabilities beyond those identified? Think about the characteristics that are important to the research project.
2. **Instructional environment.** For example: Where is the research taking place? Is the student working one-to-one with you? Is the student in an inclusive setting with a classroom of peers? When does the intervention take place? What materials and supports are available related to the research?
3. **Information about how well the plan was carried out.** Action research is subject to glitches. Students can be absent; an emergency situation might lead to a change in data collection schedule. While you, the action researcher, want to be as systematic as possible, things happen. It is important to note deviations from your research if they do occur. These details will be useful to you and to those who are interpreting your results and considering your methodology from the perspective of their own teaching environment.

## Final Thoughts

Teachers often base instructional decisions for students on professional observation, experience, and even gut feelings. Perceptions of teaching success become stronger and more applicable to other professionals when there is data supporting

these gut feelings. By being systematic in planning teaching interventions and collecting data on those interventions, teachers can contribute to the research base in the field of special education, help other professionals working on similar problems, and inform their own practice at the same time. In fact, action research is not very different from being a reflective and diagnostic teacher. Many pre-service teachers discovered that they are already action researchers. Teachers are creative and innovative by nature! Not a teaching day probably goes by that they are not solving a new problem or contemplating how to best help students improve their skills. Creative teaching ideas and experiences with students with special needs can make a significant contribution to the knowledge base concerning best practices in educating students with diverse learning needs. Despite unique challenges, teachers share commonalities in efforts to provide effective and quality education. Action research is a powerful tool in developing reflective teachers who can do just that.

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## Appendix: Questionnaires Action Research Project

### Pre-Project Questionnaire

1. After completing the module on Action Research, can you say that action research was familiar to you?
2. Describe what action research is and why it is used.
3. Do you think Action Research will be helpful in your teaching? Yes/No  
Why or Why not?
4. If you do think it will be helpful, please explain how.
5. What do you think will be the benefits to implementation of Action Research in your teaching?
6. What parts do you think will be difficult to implement?

### Follow-up Questionnaire

1. Was Action Research what you thought it would be?
2. Was it helpful to you as a teacher in a classroom? Yes/No  
If so, how?
3. Was it easy to design and implement?
4. What were the challenges you faced in designing and implementing your project?
5. What were the benefits to using Action Research in your project?
6. Will you use Action Research in your classroom in the future? Why or Why not?