How do my teaching actions influence my students’ learning?

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Introduction

According to research reports, English Language Learners (ELLs) who are national-origin minority students and limited in their proficiency of the English language, make up 7% of our educational system. Of these ELLs, 71% score below a basic level on mathematics and reading tests in 8th grade (Chang, 2008). The achievement gap is considered to be caused mainly by a lack of understanding of the academic language associated with concepts taught in the classroom (Rivera et. al., 2006). Research studies conducted have shown that, “struggling students need supportive, daily small-group instruction” (Huebner, 2009, p. 91). Small group instruction typically refers to a teacher working with a group of two to four students on a specific learning objective. The action research study I present here focused on implementing a small group strategy with two struggling English Language Learners in a fourth grade classroom. The study sought to answer the question, How will the use of small group instruction help struggling ELL students understand math concepts taught during class time?

This action research study was conducted in a public elementary school in a southeastern state. The school serves 405 students ranging in age from preschool to fifth grade. The student population is diverse, with 80% of students being Black, 11% Hispanic, 7% White, and 1% Asian. As a Title I school and with a grant from the state, the school provides free breakfast and lunch for each student.

The fourth grade is made up of a diverse group of 50 students. In the first block of 25 students, the setting in which the research was conducted, there are two white students, four Hispanic
students, one Asian student, and 18 black students. The class is made up of 13 males and 12 females. Three students are receiving Special Education services. In addition, four students have behavioral plans. In the classroom, the students are seated in groups of eight or nine. The students are in assigned seats and follow a routine each day. The students learn science and mathematics in this classroom and switch to the other fourth grade classroom for instruction in social studies and reading. The classroom follows a routine with the textbook and workbook. Occasionally, the students will move away from their desks to work in centers. The classroom is built around the teacher’s authority and students demonstrate an understanding of their role and expectations.

During my time in the fourth grade mathematics classroom, I noticed two Hispanic students, one male and one female, who speak English semi-well, but did not seem to understand the concepts taught during instruction. Whole group instruction is utilized most often in this classroom. These students seemed disengaged and unaware of the material being taught. They seemed to tune out during class time and hesitated to respond when prompted to answer questions. When released to do the independent mathematics work after whole group instruction, these two students were unable to complete the exercises due to a demonstrated lack of understanding. The students were then withdrawn and acted as if they felt inadequate in comparison to their peers. I noticed little time was spent working with these students one on one by the teacher. Therefore, I wanted to explore an effective way to work with them to help them better understand the concepts taught in this mathematics class by implementing small group instruction.

To address the problem I identified which is stated above, I developed a research question. The question guided my teaching as I tried to implement a strategy that would be most beneficial and enhance the students’ learning of mathematics concepts: How will the use of small group instruction help struggling ELL students understand math concepts taught during class time?

**Review of Literature**

According to the National Center for Education Statistics (2004), English Language Learners can be defined as national-origin-minority students who are limited in their English proficiency. English Language Learners are being seen in the general education classroom more and more and represent one of the fastest growing groups of school-aged children in the nation. In 2006, the ELL population was projected to be at 9.9 million students, with 5.5 million being Limited English Proficient (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006). These learners represent approximately 7% of all school-aged children in today’s educational system (Chang, 2008). With the growing population of ELL students, a growing achievement gap is also present. On the National Assessment of Educational Progress, 71% of ELL students in 8th grade scored below a basic level on both the reading and mathematics tests (Brooks & Thurston, 2010). The low performance of these groups of language learners is a major concern in the educational system and poses new questions as to how teachers can differentiate their instruction to best meet these students’ individual needs.

When considering the achievement gap between native English speaking students and English Language Learners, researchers and educators have sought to investigate why ELLs struggle in the general education classroom. One of the main problems facing ELLs is their struggle to
understand academic language. Francis et al. (2006) stated, “Mastery of academic language is arguably the single most important determinant of academic success for individual students” (2006). Many ELL students might be able to engage in conversations in social contexts and many have basic skills, but lack the complexity in their oral and written academic language to meet today’s standards.

Due to the deficits ELLs experience in understanding academic language, many studies suggest these learners do not engage in classroom instruction. Arreaga-Mayer and Perdomo-Rivera (1996) found that elementary ELL students spend most of their time listening to their teachers and little time actually using language for authentic purposes, which is a vital component if students are to construct meaning in the second language. Brooks and Thurston (2010) concluded that ELL students are not cognitively or linguistically engaged in classes due to their inability to comprehend and communicate academic language. Due to these difficulties, many researchers believe that ELLs need instructional approaches and interventions balanced between their instructional needs and the instructional environment (Francis et al, 2006).

Although, English Language Learners face many challenges in the classroom, research has been conducted to find strategies to better meet the instructional needs of these learners. Huebner states, “One targeted approach to helping struggling ELLs is daily small-group instruction for students with similar needs” (2009, p. 90). Research has highlighted both advantages and disadvantages to this strategy. One disadvantage of implementing the strategy is the time constraints placed on the school day. Small group instruction requires more time and more effort by the classroom teacher. In addition, it requires the teacher to find activities to occupy the rest of the class, while working with English Language Learners. Trees describes this dilemma by saying, “Time constraints are often at odds with knowing how to listen and speak with fellow students, particularly those who are ‘other.’ They are at odds with enabling students to be transformative individuals” (2013, p. 236).

Not only must teachers find time in the school day, but there also is a very big need for consistent progress monitoring in small groups to match the student’s difficulty to the intervention. Teachers must take time to track growth and respond (Francis et al., 2006). Another disadvantage to small group instruction occurs when ELL students are in groups with English speaking classmates. In this instance, small groups could be harmful if the ELL students feel forced to participate or inferior to their classmates. Some feel incompetent or neglected when the dominant students take control of the group (Chang, 2008).

Despite the disadvantages, there are several proven advantages to small group instruction with ELL students. One major advantage is the ability of teacher to gain flexibility in the instructional objectives and the pace of instruction. In addition, ELLs in small groups can share their ideas, ask questions to clarify and gain understanding, and learn how to engage in cooperative learning. Studies have shown teachers can provide additional remediation or enrichment in the small group (Chang, 2008). Student small groups can help improve speaking and listening skills. Although ELL students are hesitant to speak in a whole group, they will more likely speak in a small group setting. Small groups promote concept development as students explain their ideas, get input from others, and refine their thinking, so they come to a deeper understanding
(Garrison, Leslie, Mora, & Kerper, 1999). Therefore, there are both advantages and disadvantages to implementing this strategy.

Small group instruction is beneficial for ELLs in many areas, especially in the area of literacy, but research also shows that small groups are beneficial for math instruction. Francis et al. describe the struggles of ELL students in math by saying, “A very common misconception about mathematics is that it is a ‘universal language,’ one that is synonymous with numbers and symbols, and a ‘culture-free’ static body of knowledge (2009). The lack of understanding in mathematics by ELLs is actually mainly due to the academic language associated with it. When a student does not understand the language of instruction or the concept being taught, learning opportunities are very limited (Garrison et al., 1999). Therefore, Francis et al. suggest that “ELLs need early, explicit, and intensive intervention in basic mathematics concepts and skills” (2009). In order for the teacher to effectively do so, this supplemental intervention for the subgroup of ELL students with difficulties usually takes place in the small group setting (Francis et al., 2009). Therefore, small group instruction helps close the achievement gap with ELLs in multiple subjects, but especially mathematics. Small group instruction can be adapted to better meet these diverse learners individual needs

Method

After reviewing the literature and realizing the benefits of small group mathematics instruction with ELLs, I implemented small group instruction with the two English Language Learners in my class each day after their whole group mathematics instruction. I reviewed the concepts taught in whole group activity and practiced the mathematics strategies with the students. In addition, I extended the activities by explaining the concepts in real-world scenarios and allow the students to work with manipulatives and visual representations to practice the mathematics material. As I also wanted to know the students’ attitudes toward whole group and small group instruction, I gave them surveys to gather their thoughts and feelings.

At the start of the action research, I observed the students’ behaviors during the whole group instruction. Then, data were gathered from their most recent mathematics tests. Since the students were exposed to solely whole group mathematics instruction, their average scores and most recent mathematics grades provided valuable insights on their understanding and the effectiveness of the strategy. Next, I gave the students surveys on whole group instruction to gain their direct feedback. Then, for the bulk of the study, I implemented the strategy working with the students in a small group each day after the whole group mathematics lesson. Finally, the students were tested on the mathematics material being taught to see if scores improved. Lastly, I gave students a survey to assess their feelings about the small group instruction and to determine whether or not the students felt the strategy was beneficial.

Timeline

Day 1: Observe students during whole-group instruction.

Day 2: Continue to observe students during whole-group instruction. Collect data and test scores.
Day 3: Continue to observe students during whole group instruction. Give students survey to collect feelings about whole group instruction.

Days 4-8: Implement strategy. Work with the two students into a small group to reteach, practice, and extend concepts taught during whole group instruction.

Day 9: Test students on material being taught to see if the strategy helped improve their understanding.

Day 10: Give students survey to collect thoughts about small group instruction.

Data

Early in the study, on Day 2, I gathered the two ELL students’ most recent mathematics test grades from the classroom teacher. Students took those tests after exposure to solely whole group instruction. At the conclusion of the study, on day 9, students were tested once again on the math material for the week, after the small group implementation. See Figure 1.

![Student Test Scores](image)

<table>
<thead>
<tr>
<th>Test 1 (After Whole-Group Instruction)</th>
<th>Test 2 (After Small Group Strategy Implemented)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student A</td>
<td>62</td>
</tr>
<tr>
<td>Student B</td>
<td>72</td>
</tr>
<tr>
<td>Student A</td>
<td>66</td>
</tr>
<tr>
<td>Student B</td>
<td>87</td>
</tr>
</tbody>
</table>

Figure 1. Student Test Scores

In addition to test scores, I gave students surveys before the implementation to assess their feelings toward the whole group instruction that was taking place. I then gave the students a survey at the conclusion of the study on the implementation of the small group strategy. I pulled various questions and responses from each survey to use in my data collection.
Data Analysis

As test scores illustrate in Figure 1, each of the students showed improvement on their weekly math test after the small group strategy was implemented. Although the improvement seen with Student A was smaller, both students’ scores improved.

On Survey 1, both students indicated they understood only a little bit during whole group instruction. At the conclusion of the study, on Survey 2, both students indicated they preferred when I worked with them in a small group setting. Student A explained her preference by saying she needed help and liked being read the material. Student B said he learned more in the small group. Student A indicated she learned the same amount when in a small group, while Student B indicated he learned more. Therefore I can look at the test scores and the survey responses and not only conclude that students understood more of the material, but that they also preferred the small group instruction.

Conclusion

After reflecting on, and analyzing, the results of my action research, I conclude that my method was effective because each of the focal students’ mathematics test scores improved. In addition, each student gave positive feedback about the strategy at the conclusion of the study. I got the results I expected, however, it is likely the results would have been more conclusive had I had more time for the study. From my observations and the first few weeks of implementing the strategy, I realized both students are capable, but need extra support with the academic language due to their limited English proficiency, just as the research states. Therefore, after a little bit of support in the small group setting, the students grasped the mathematical concepts taught.

I was slightly surprised to see that Student A’s math test score only improved a little bit. Another surprise was the change in the students’ attitudes and confidence throughout the study. Initially, the students were withdrawn during whole group instruction, and I observed that they demonstrated feelings of inadequacy in comparison to their peers. After the small group method was implemented, however, the students began to engage in whole group instruction. They began to raise their hands to respond to questions and I could see their demonstrations of confidence building. Even though they still had limited English skills, they tried to participate in discussions and share with the class. Therefore, I conclude that the students’ scores improved but also their confidence grew and they began to become vital participants in the class.

After reflecting back on the results of the action research, I would definitely use small group instruction again with English Language Learners. It would be a regular, necessary component in the classroom. Based on the results, there is evidence it was beneficial and it helps develop the potential of these students with just a little bit of extra support. The small group instruction helped improve test scores, build confidence in the students, and initiate their involvement in the classroom.

Due to the number of English Language Learners in the schools today, it is important to reflect on whether or not this method would be useful in my future classroom. My intention is to implement this strategy into my future classroom due to the positive results. I would regularly
implement small group instruction with ELLs in addition to the whole group instruction. The strategy appears to hold promise as well across multiple subjects. The small group provides a safe, supportive environment for these students and may help make each feel comfortable and confident in the classroom. I need to implement this strategy with even more students for a longer period of time to see if students’ test scores and attitudes continue to improve.

References