

A Practical Partnership:

A Literacy Practicum Framework to Improve P-20 Learning and Enhance University-School Connections

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Abstract: There have been many changes in the field of education in recent years, and some of the most important changes directly impact the training of preservice teachers. Educator preparation providers must consistently look for new and innovative ways to effectively prepare teacher candidates. This article discusses a successful P-20 partnership that utilizes a practicum designed to allow teacher candidates the opportunity to practice teaching literacy skills to young children. Partnerships between schools and universities are extremely pivotal in the nurturing of pre-service teachers, and this practicum proves to be an invaluable learning tool for all involved.

The field of education has seen a great number of changes in recent years. An example of such change is the implementation of the Common Core State Standards. The Standards were designed as the "culmination of an extended, broad-based effort to fulfill the charge issued by the states to create the next generation of K-12 standards in order to help ensure that all students are college and career ready in literacy no later than the end of high school" (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010, p. 3), The Common Core reform was the third major restructuring to take place in public education in three decades--the first was A Nation at Risk (National Commission on Excellence in Education, 1983), and the second being the No Child Left Behind Act of 2001 (Public Law 107-110). In the complex world of education, change is inevitable and never-ending. As Jennifer Scoggin (2014) notes, those who construct the initiatives in education are constantly looking for that perfect, onesize-fits-all solution, and teachers "are often faced with a new philosophy, a new program, or a new curriculum each and every year" (p.7).

However, even with all of these major alterations

to the P-12 educational system, some of the most substantial changes have occurred in the preparation and training of teacher candidates. The years preceding the completion of an Education Preparation Program (EPP) are critical for determining the success and longevity of educators' careers, Now more than ever, pre-service teachers must have a wide array of diverse real-world experiences to ensure that they are truly prepared and ready for that all-important initial year in the classroom. Such experiences give preservice teachers an understanding of the professional knowledge and daily practices associated with education and offer them an opportunity to truly reflect upon their own fitness to teach (Villers & Mackisack, 2011).

Universities and schools have a long history of collaboration (Walsh & Backe, 2013). Such partnerships are certainly not new to teacher preparation programs throughout the state, yet are certainly now more vital than ever before. Grudnoff and Tuck stated that "in an ideal world the teacher educators and the schools will be involved in a partnership and have a shared understanding of what constitutes good teaching and good teacher education" (2003, p. 39). While we have not reached that "ideal world" that Grudnoff and Tuck spoke of over a decade ago, we are making substantive strides in bridging the gap between P-12 and postsecondary environments. The statistics are very clear and speak volumes: We need one another.

Partnerships allow institutions to see firsthand the practices and current trends of the P-12 environment so that genuine and practical learning can take place in the college classroom. In addition, partnerships can encourage collaboration and professional development opportunities for school teachers (Price, 2005; Steeg & Lambson, 2015). Working together decreases barriers for P-20 students and leads to essential teacher education reform (Lauer, Dean, Martin-Glen, & Asensio, 2005; Walsh & Backe, 2013). In order to produce highly effective educators, there is a need for strong and successful partnerships. Such collaborations help to ensure that teacher candidates are being appropriately trained in both university settings and in the P-12 environments. Therefore, it is vital that EPPs continually explore ways of providing essential real-world experiences in a multitude of diverse settings.

The Partnership: A Literacy Practicum

The Educator Preparation Program (EPP) in this partnership is situated within a University System of Georgia (USG) institution. The university has multiple campuses within the middle region of the state. While three of the campuses are residential, there is a significant population of students who commute.

There is also a mixture of traditional and nontraditional students on each campus. In the fall of 2013, it was determined that there was need to add a practicum component to a literacy course for the candidates on the institution's second largest campus. The practicum was designed to enhance literacy content knowledge and pedagogy for this site's cohort of teacher candidates, as pre-service educators need time and opportunity to practice the teaching of reading and literacy skills, especially in the early grades (Dawkins, Ritz, & Meister, 2010).

The specific course for which the practicum was developed focuses on literacy assessment and intervention strategies and is a mandatory course for those in the Early Childhood Special Education program. It is important to note that this practicum is in addition to the many field and clinical hours required by national, state, and institutional directives. The teacher candidates are in P-5 classroom settings each semester during their time in the program. This practicum is an added extension of the field hour requirements; it serves as another means of bringing theory and practice together, as pre-service teachers need a multitude of experiences in different settings and different contexts (Melnick & Meister, 2008). While candidates focus on the teaching of various subject areas in field and clinical placement settings, this practicum specifically focuses upon the teaching of language arts and is therefore embedded in a literacy course rather than as a "stand alone" field component. The schedule is designed so that the class and the practicum occur on the same day.

When faculty first approached the school's administration and asked permission to create such a practicum, the school's assistant principal showed great interest in the idea and quickly became the liaison between educational environments. From the beginning, school administrators and teachers recognized the value of this alliance. Once it was established that the candidates would spend time each week in the first grade classrooms, the faculty sat down with the lead first-grade teacher to discuss logistics and define the practicum. It was determined that the reinforcement and review of key ELA CCGPS Standards (now renamed Georgia Standards of Excellence) would greatly benefit the students as they prepared for state and district assessments (www. georgiastandards.org)

Since the inception of this partnership, the teachers themselves specify the specific standards that need to be reinforced. Due to the fact that this practicum occurs in the spring, the first grade teachers use data collected from the first semester of the academic year to determine types of skill reinforcement that would be most helpful for the entire population of first grade students. All teacher candidates participating in this practicum teach the same standards, but each one must create lessons based upon the academic needs of the students in their care. The following chart showcases standards and concepts that have been utilized during the practicum:

ELACC1RF3: Know and apply grade-level phonics and word analysis skills in decoding words. q. Recognize and read grade-appropriate irregularly spelled words.

ELACC1RF1: Demonstrate understanding of the organization and basic features of print. a. Recognize the distinguishing features of a sentence.

ELACC1RF3: Know and apply grade-level phonics and word analysis skills in decoding words. b. Decode regularly spelled one-syllable words (focus on nonsense words).

ELACC1L4: Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on Grade 1 reading and content, choosing flexibility from an array of strategies. c. Use commas in dates and to separate words in a series.

ELACC1L1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

b. Use frequently occurring affixes as a clue to the meaning of a word.

ELACC1L1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

j. Produce and expand complete simple and compound declarative, interrogative, imperative, and exclamatory sentences in response to questions and prompts.

While the candidates can, and do, provide support and feedback to one another, each person is responsible for creating their own lessons. The earlier pre-service teachers learn to unpack and analyze standards, the more comfortable they become with the teaching of those standards (Tantillo, 2014). This practicum allows for the weekly practice of designing lessons and implementing effective teaching strategies. Candidates work with a variety of learners--some work with gifted students or those reading at or above grade level; others might work with students who receive special education services or those who are reading below grade level. The candidates must decide upon best practices for reinforcing the ELA standards. While some use remediation methods, others make lessons that are more challenging and that utilize critical thinking skills.

The school in this partnership is located in a small rural county in Georgia. According to 2014 census information, less than 15,000 individuals reside in the county (U.S. Census Bureau, 2015). The percentage of individuals in this county who lived below the poverty line between 2009 and 2013 was 23.3%. This was above the state average of 18.2%. In addition, the percentage of adults in the county with a bachelor's degree or higher is significantly lower than the state average; 14.9% for the county compared to 28.0% for the state (U.S., Census Bureau, 2015).

The partnership school is one of five schools in the county and houses students in kindergarten through second grade. This primary school has a yearly enrollment of approximately 700 students in those three grade levels. Currently, there are 184 first graders. While this number varies from year to year, the average annual class size is 18-20 students. There are ten first grade classes and eleven first grade teachers (ten general education teachers and one special education teacher). The most current school data shows that 12 first graders receive special education services and receive most of their daily instruction in an inclusion classroom.

There are several goals of this partnership. First and foremost, the ultimate objective is to enrich the learning of the first graders in the school setting. When the children show gains and improvements in their understanding of the literacy standards, the practicum can be considered successful. The practicum experience allows students to have more teacher support, which can be extremely beneficial for all students. This is especially true for those who need continuous reinforcement of ELA concepts and those who may benefit from a variety of instructional practices (Price, 2005). However, while students should be the top priority of any partnership, the goal

of this collaboration is also to enhance the learning of the teacher candidates. According to Price (2005), partnerships such as this allow pre-service teachers to learn more about programs of study and the procedural practices of school systems, as well as experiences in potentially new teaching practices. This can potentially lead to hiring prospects, as school districts across the state wish to employ pre-service educators who have had a multitude of distinctive and meaningful learning opportunities.

The teacher candidates can also learn a tremendous amount from the teachers. This monitoring can range from effective classroom management techniques to the classroom set-up and design of the physical environment to the appropriate use of collaborative groups. A plethora of information can be gained through these weekly interactions. In addition, inservice teachers can benefit from this partnership and from the teacher candidates themselves. Not only does this practicum allow another adult to be in the classroom to reinforce standards and give instruction. but the experienced teachers can also acquire new and innovative ideas from novice teachers. Teacher candidates often use technological resources to create and enhance their instruction; seeing exciting and innovative ideas can be a tremendous advantage for veteran teachers as they prepare their own lessons. This allows the practicum to be a "win-win" for those involved and creates a culture of learning for the students, classroom teachers, and pre-service teachers alike. As Villers and Mackisack (2011) attest, all members of collaborative partnerships should be considered "as an integral part of the whole" (p. 185).

Small Group Instruction: Utilizing the Learning Center Approach

One of the most critical and unique elements of this practicum is the fact that instruction is constructed through the use of learning centers, or stations. In the field experiences that occur during the program, the candidates' primary teaching practice revolves around whole group instruction. This practicum allows the candidates to practice working with small groups of students, which is vastly different from teaching an entire class. Small groups of first grade students, organized by the inservice teachers, rotate throughout their respective classrooms. Centers allow children the opportunity to receive instruction from the inservice teacher and pre-service teachers. Each rotation lasts approximately 10-15 minutes.

Learning stations allow students to practice skills and strategies, which were originally taught in whole group instruction, in a much smaller group setting (Diller, 2003). Working in small, collaborative groups is a powerful way to engage students in the content.

According to Moritz and Holmes (2007), when students work on cooperative projects, they become "engaged with the content at deeper, more meaningful levels" (p. 69). In addition, literacy learning centers allow teachers to use differentiated activities that can help "meet the diverse range of student interests, ability levels, and needs" (Moritz & Holmes, 2007, p. 69).

One of the most important concepts that the pre-service teachers learn through this experience is efficient time management and appropriate pacing. Due to the fact that teacher candidates have such a limited amount of time to work with each group of students, it is important to maximize every moment. Although it is imperative for educators to create an introduction for the lesson to "hook" the learners' interest, preservice teachers can spend an expansive amount of time "chit-chatting" with students at the beginning of a lesson. Cunningham (2009) believes that regardless of the length of a lesson, the introductory phase should be brief so that more time can be spent on student practice. In his study, Snyder (2011) found that many inexperienced pre-service teachers struggle with talking too much and becoming repetitive when speaking. This often tends to come from nervousness and lack of self-confidence. The time constraints of this practicum help the teacher candidates to stay on task and teach the content. Having a limited amount of time also offers pre-service teachers the opportunity to practice appropriate classroom management skills and to exercise methods of keeping students from being distracted or off-task.

Getting to Know the Students: The Reading Interest Inventory Component

During the first week of the practicum experience, the teacher candidates' initial task is to become acquainted with the students with whom they will work. One way to accomplish this goal is through the use of reading interest inventories, which help educators to discover the "preferences and personalities" of students (Miller, 2009, p. 39). "Student attitudes toward reading are a central factor affecting reading performance" (Seitz, 2010, p. 30), so it is imperative that each teacher candidate is able to understand how the students feel about reading and their own reading and literacy skills. Motivation and reading achievement are intertwined (Guthrie et al., 2006).

The inventories given during the practicum can also give great insight into the students' personal hobbies and interests apart from reading in order to determine if reading is a focal point of their leisure time. It is very helpful to gather such information since the candidates have not had previous interactions with the students. The knowledge garnered from the utilization of these reading interest inventories is paramount in efficiently

planning for the weekly lessons and instructional strategies that will be applied during the practicum experience. Prior to the first meeting, the pre-service teachers decide upon age-appropriate questions that they plan to ask the students in order to get to better know them. In the literacy course, faculty lead the candidates in a discussion of interest inventories and their purpose. Questions are derived and adapted from a variety of sources (Miller, 2009; The Elementary Reading Attitude Survey (McKenna & Kear, 1990); Reutzel & Cooter, 2011). The following table gives an overview of questions used by the candidates:

Do you enjoy reading? (Do you think reading is fun?)

Do you like it when someone reads to you?

What types of books do you like to read?

What is your favorite book?

What is the name of the last book you read?

Do you like to read alone or with a partner?

What makes someone a good reader?

What do you like to do for fun?

(What are your hobbies and interests?)

What is your favorite movie?

What is your favorite television show?

What is your favorite subject in school?

What do you want to be when you grow up?

Asking too few questions will not provide appropriate data, and asking too many questions of first graders could prove to be overwhelming and tedious for the children; therefore, the pre-service teachers ask approximately seven to ten questions. When completing the reading interest inventory, it is critical that the children do not feel that they are being given a test, or that there are "right" or "wrong" responses. Therefore, candidates create activities that will allow the students to give their answers in an enjoyable and non-threatening way. This allows the students to feel more relaxed, thus allowing them to give more honest and thorough responses. After this initial time with the students, the pre-service teachers spend time analyzing the answers given by the students to create a "base-line" for the type of instruction that they will give during the practicum experience.

Weekly Lessons: Reinforcement of Standards through Games and Hands-on Activities

As previously stated, the first grade teachers assign



Nonsense Words

grade level ELA Common Core Georgia Performance Standards that they feel need to be reintroduced, reviewed, and reinforced. The standards targeted for such extra reinforcement change yearly to best meet the needs of current first grade students. Due to the fact that the pre-service teachers only have a short amount of

time with the students, the goal is to reinforce the designated literacy skills using

games and hands-on activities. The use of these instructional strategies is nothing new in the primary grades-teachers have long known the benefits of making learning activities that are Punctuation and enjoyable. In fact, research from



Capitalization



Sight Words

several decades shows us that using games is one of the best ways to reinforcement literacy development skills and is more beneficial than the continual use, and overuse, of worksheets or traditional workbooks (Dickerson. 1982). However, the use of games and hands-on activities can be more easily managed in small

group instruction. Such activities can allow students, especially those who are struggling with ELA concepts and with the complexity of reading, to feel more comfortable in their understanding, to find enjoyment in the content, and to be more Capitalization involved in the lesson.



Punctuation and

Weekly Reflections: Evaluating the Effectiveness of the Lessons as well as the Progress and Needs of the Students

Timperley, Parr, and Hulsbosch (2008) believe that the ability to inquire and reflect is an essential element for teacher candidates. Another critical component of this practicum is the weekly written reflection that the candidates must complete. After each lesson has been taught, the candidates take time to reflect upon the lesson itself and what occurred during the time they spent with the students. In these reflections, several themes emerge, including the management of time, the engagement of the students, interventions that were used, the strengths of the lesson, and what improvements could be made for future lessons. In addition, candidates frequently discuss how they

differentiated their instruction from one group to another to most adequately meet the needs and interests of the students.

This reflective piece allows the pre-service teachers to closely examine their instruction and the students' learning. Instead of teaching a lesson once, the candidates are teaching it four or five times in a short amount of time. Therefore, they learn how to adapt their plans to meet the needs of the learners. The candidates are taught to "expect the unexpected." They begin to grasp the importance of changing a lesson or activity when students are not understanding the concept or when groups meet the objectives of the lesson quickly and are able to do the activities with minimal guidance.

Candidates quickly learn that preparedness and flexibility are key components of becoming a highly effective teacher. For example, on one specific day, a large number of first graders from a particular classroom were absent, and activities were completed quickly by the students in attendance. Although the candidate working with that class was unaware of the absences until she arrived at the school, she consistently came prepared with additional resources. The candidate used these at the end of the lesson to review concepts from previous weeks. During a lesson on the concept of irregularly spelled words, another candidate discovered that the words she was using in her lesson were too difficult for the students. This novice teacher quickly modified the lesson and turned an "independent" activity into a group activity, thus limiting confusion and frustration. Since the candidates see several small groups of students during their weekly practicum experience, learning to be flexible is paramount. Engaging in reflective practices in order to refine teaching skills is critical for the effectiveness of any educator.

Signs of Success: Feedback from Administration, Teachers, and Teacher Candidates

In the two years since the inception of this practicum, signs of a successful partnership are evident. The school's assistant principal is a staunch supporter of the partnership method and wholeheartedly believes in its benefits for all involved. As an administrator, she recognizes that in order to be strong and effective teachers, it is essential for teacher candidates to have a wide array of real-world learning opportunities. The school administrator had the following statement concerning this partnership: "[The primary school] has enjoyed collaborating with [the institution]. This collaboration has allowed [teacher candidates] to learn to do the work of teachers [while] in a real classroom environment. This experience will help to enhance and strengthen [the teacher candidates'] initial teacher preparation. I believe this collaboration will result in positive gains for the [teacher candidates] as well as the teachers and students."

The inservice teachers also have positive feelings about the practicum partnership and express confidence in the benefits of having the teacher candidates in the classroom on a weekly basis. Many have stated that the students get very excited when the candidates come to the school to work with them. Furthermore, the teachers believe that the review of critical ELA competencies help prepare students for end-of-year assessments. Teachers also recognize the value for both the novice and the experienced educator. As one first grade teacher stated, "A partnership between teachers and future educators provides each a valuable insight to what is expected in the classroom as well as new ideas and strategies for veteran teachers to use in their classrooms."

At first, the teacher candidates can be quite intimidated by the practicum process and especially by the short amount of time they have with each student group. However, by the end, they realize how much they have learned from the process and how better prepared they are for their own classrooms. In their final reflections about the experience, most say that it is an incredibly rewarding experiences due to the amount of learning and growth that occurs. Candidates recognize that because of this practicum, they learn how to effectively engage students, vastly improve in time management skills, create meaningful lessons, utilize intervention strategies, and focus on instructional gains of students.

By the end of the semester, teacher candidates often discuss their newfound comfort with writing engaging and differentiated lessons. The following excerpts are examples of the comments made by the candidates:

I learned that to be a good teacher you must be able to adapt to situations.

I learned how it feels to see a struggling student get [a] concept.

I found that the students really enjoyed the interactive activities.

This semester I learned that your lessons don't always go as planned, [so] you must adjust the lesson plan.

I learned how important small group instruction is in a classroom. Working with students in small groups really benefits both the teacher and the students.

I love coming up with fun and exciting ways for my students to learn.

Time management is key, las a teacher, you must figure out how to teach the content in a timely manner, especially in small groups!

Never think that just a few minutes cannot made a difference. Just 10-15 minutes extra on content can and will make a huge difference for a child.

Conclusion: Continuous Improvement for P-20 Students

We must do all we can to prepare future teachers for the career ahead. One way to do this is by giving preservice teachers a plethora of rich and meaningful experiences in a variety of school environments, Just as we believe that connecting prior knowledge and realworld examples help children to learn most effectively, we must also carry this theory into the training and advancement of our pre-service teachers, Experiences gained today will help shape the classrooms of tomorrow. Novice teachers need to be allowed to hone and practice their skill, especially when learning to teach a subject as complex as reading.

This practicum is not designed for teacher candidates to simply observe in a classroom for a few hours, nor is it one in which the candidates are required to teach just one or two lessons throughout a semester; this is a fast-paced and engaging practicum in which candidates create weekly lesson plans and activities. The experience allows teacher candidates to learn how to work in small group settings, as they are not always afforded this opportunity in other field placements, and also permits candidates to learn more about lesson planning, differentiation of instruction, and reflecting on students' strengths and areas of need. In addition, the teacher candidates are able to receive guidance and support from the EPP faculty, experienced teachers, and other pre-service teachers.

Throughout the state, there will always be a need for institutions of higher learning to train and prepare highly qualified and effective teachers for the field of education. Embedding an additional school experience for the candidates has been extremely valuable for this EPP. As the climate of education continually changes, the logistics of this practical partnership will continue to grow and evolve. Such changes will be based upon the needs of the students and teacher candidates. All P-20 students are truly deserving of creative practices that will enhance learning and improve the educational system, and this model has proven to be beneficial for all involved.

References

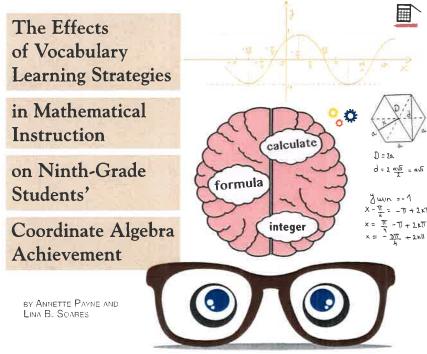
Cunningham, G. (2009): The new teacher's companion: Practical wisdom for succeeding in the classroom. Alexandria, VA: ASCD:

Dickerson, D. P. (1982). A study of the use of games to reinforce sight vocabulary. The Reading Teacher,

- 36, 46-49,
- Dawkins, S., Ritz, M.-E., & Louden, W. (2010). Learning by doing: Preservice teachers as reading tutors. Australian Journal of Teacher Education. 34(2), 40-49.
- Diller, D. (2003). Literacy work stations: Making centers work. Portland, ME: Stenhouse.
- Georgia Department of Education: Georgia Performance Standards, (2015). Retrieved from http://www.georgiastandards.org/Standards
- Grudnoff, L., & Tuck, B. (2003). Learning about teaching, learning while teaching, and becoming a teacher. English Teaching: Practice and Critique, 2(1), 33-42.
- Guthrie, J.T., Wigfield, A., Humenick, N.M., Perencevich, K.C., Taboada, A., & Barbosa, P. (2006). Influences of stimulating tasks on reading motivation and comprehension. *Journal of Educational Research*, 99(4), 232-245.
- Lauer, P.A., Dean, C.B., Martin-Glen, M.L., & Asensio, M.L. (2005). Teacher quality toolkit (2nd edition). Aurora, CO: Mid-continent Research for Education and Learning.
- McKenna, M.C., & Kear, D.J. (1990). Measuring attitude toward reading: A new tool for teachers. The Reading Teacher, 43(9), 626-639.
- Melnick, S.A., & Meister, D.G. (2008), A comparison of beginning and experienced teachers' concerns. Educational Research Quarterly, 31(3), 40-56.
- Miller, D. (2009). The book whisperer: Awakening the inner reader in every child. San Francisco, CA: Jossey-Bass.
- Moritz, A.P., & Holmes, K. P. (2007). Finding center: How learning centers evolved in a secondary, student-centered classroom. *English Journal*, 96(3), 68-73.
- National Commission on Excellence in Education, (1983). A nation at risk: The imperative for educational reform: A report to the Nation and the Secretary of Education, United States Department of Education. Washington, DC: National Commission on Excellence in Education.
- National Governors Association Center for Best Practices & Council of Chief State School Officers

- (2010), Common Core State Standards for English/ Language Arts & Literacy in History/Social Studies, Science. and Technical Subjects. Washington. DC: Authors.
- No Child Left Behind Act of 2001. P.L., 107-110 (2002).
- Price, M. (2005). Promoting linkages: Partnerships between schools and higher education. Syracuse, NY: New York Higher Education Support Center for Systems Change at Syracuse University.
- Reutzel, D.R., & Cooter, R.B. (2011). Strategies for reading assessment and instruction: Helping every child succeed. (4th Edition). Boston, MA: Pearson.
- Scoggin, J. (2014). Be fabulous: The reading teacher's guide to reclaiming your happiness in the classroom.

 Newark, DE: International Reading Association.
- Seitz, L. (2010). Student attitudes toward reading: A case study. *Journal of Inquiry & Action in Education*, 3(2), 30-44.
- Snyder, D.W. (2011). Preparing for teaching through reflection. *Music Educators Journal*, 97, 56-60. doi: 10.1177/002743211399348http://mej.sagepub.com
- Steeg, S.M., & Lambson, D. (2015). Collaborative professional development: One school's story. *The Reading Teacher*, 68(6), 473-478.
- Tantillo, S. (2014). Literacy and the Common Core: Recipes for action. San Francisco, CA: Jossey-Bass.
- Timperley, H., Parr, J., & Hulsbosch, N. (2008). Coaching through feedback: A close and critical analysis. Paper presented to the American Educational Research Association Annual Meeting. New York.
- U.S. Census Bureau: State and county quickfacts (2015). Retrieved from http://quickfacts.census.gov/ qfd/states/13/13023.html
- Villers, H., & Mackisack, V. (2011). Optimizing opportunities to learn during practicum: Developing collaborative partnerships between the university and school. Asia-Pacific Journal of Cooperative Education, 12(3), 183-194.
- Walsh, M.E., & Backe, S. (2013). School-university partnerships: Reflections and opportunities Peabody Journal of Education, 88(5), 594-607. doi: 10.1080/0161956x.2013.835158



Abstract

The purpose of this study was to investigate if adding the vocabulary learning strategies of an interactive word wall and graphic organizers to mathematical instruction was an effective method to increase student achievement in mathematics for two ninth-grade coordinate algebra classes. The 45 participants in the study were members of two co-taught ninth grade coordinate algebra classes in the Southeastern United States. This study used a quasi-experimental design with a pre-assessment/post assessment. An analysis of covariance (ANCOVA) was used to compare the achievement levels of the two classes, as measured by the post assessment. The results did not show a significant difference between the post assessment scores of the experimental class using graphic organizers and an interactive word wall compared to the control class that did not. The results of this study may be important to teachers as they implement the Common Sore State Standards, the Common Core Georgia Performance Standards, and the Mathematical Practice Standards.

The Common Core Georgia Performance Standards

(CCGPS) (2014c, p. 45) require secondary students to be able to complete the following coordinate algebra problem:

Antonio and his friend Brittany were at summer math camp where the counselors had drawn a large coordinate plane on the gym floor. Antonio challenged Brittany to mirror him as he walked in the first quadrant.

Map both of their travels on the same coordinate plane.

Antonio began at (2, 1) and walked to (3, 5); Brittany decided to begin at (-2, 1), then tried to mirror Antonio by walking to (-3, 5). Antonio jumped to (5, 5) and side-stepped to (4, 3); Brittany jumped to (-5, 5) then side-stepped to (-4, 3). Antonio returned to (2, 1) and Brittany returned to (-2, 1).

- 1. Did Brittany mirror Antonio?
- a If you answered no, identify the incorrect