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Secondary Family and Consumer Sciences Students Teaching Young Children: Importance of Using Developmentally Appropriate Lessons

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The purpose of this action research study was to help family and consumer sciences (FCS) high school students in Early Childhood Education create more developmentally appropriate lesson plans as well as to become more reflective in practice using experiential learning, modeling, and reflection. Data were collected both prior to and during their field experiences in which they taught lessons to young children. Results indicate that a progression of modeling, videotaped classroom practice, and real-world practice along with ongoing reflection may be an effective method of teaching within early childhood education programs in FCS. Recommendations for FCS teachers with early childhood education programs are shared.

How do teachers learn the art of teaching? How do teachers improve the development of lesson plans? While many people believe that teacher education starts in college, there are several courses offered at the high school level for students who are interested in becoming teachers of young children. In one large southern state, these courses include Early Childhood Education I and Honors Early Childhood Education II. In the particular county where this study took place, Early Childhood Education II was taught as an honors course. Each of these courses are two credits, taught by family and consumer sciences teachers, and are available to students who are at least 16 years old. Students learn about child development and teaching for the birth through kindergarten level. Students are required to complete internships, as well as learn about child development theory, rules and regulations of child care centers, and developmentally appropriate practices (DAP) in early childhood education. After completing these two classes, students with a B average in the class and a raw score of 80 or higher on their final exam can articulate with a local community college and receive their Early Childhood Credential Equivalent. This equivalent can be substituted for the Early Childhood Credential that are required of all lead child care teachers in this southern state. One of the main concepts within early childhood education is DAP, which lays the foundation for high quality early childhood care and education. Within these classes, students learn to plan and implement developmentally appropriate lesson plans.

In the late 1980's, the National Association for the Education of Young Children (NAEYC) created a set of standards that outlined DAP for young children. This standard was based on three overarching themes: (a) what is age appropriate for children, (b) what is individually appropriate for each child, and (c) the social and cultural contexts in which a child is immersed (Bredekamp & Copple, 1997). A "developmentally appropriate" classroom is very child-centered where the teacher is more of a facilitator and the children direct their learning

(Charlesworth, 1998). To become a teacher that uses DAP, teachers have to take the time to get to know their students and how they learn. Because children are very social, they need to interact with each other through play as well as their environment (Rushton & Larkin, 2001). Current research on brain development indicates a positive link between developmentally appropriate practices and healthy brain development (Rushton & Larkin, 2001).

Although research documents the importance of DAP and the elements that comprise a DAP classroom, students often have difficulty applying what they learn in the classroom about DAP to actual practice in their internship. Therefore, the purpose of this study was to help FCS high school students in Early Childhood Education create more developmentally appropriate lesson plans as well as to become more reflective in practice using experiential learning, modeling, and reflection. Students (a) observed modeling of developmentally appropriate lessons, (b) reflected on these lessons, (c) created their own developmentally appropriate lessons, (d) practiced their lessons in front of the class for peer review while being videotaped, (e) completed self-reflection on this videotaped lesson, (f) created new lessons and implemented them at their internship sites while being observed and evaluated, and (g) reflected on what they accomplished. This progression of learning activities was expected to result in the development and implementation of developmentally appropriate activities during their internship. This research study was guided by the following question: Does the inclusion of modeling, video-taped classroom practice, and ongoing reflection improve development and implementation of Developmentally Appropriate Practice (DAP) lesson plans by FCS Early Childhood Education high school students in an internship setting?

Review of Literature

Teaching pre-service teachers within a high school setting is a concept that has been used for many years but very little research has been conducted on teaching early childhood education secondary students how to teach. According to Lampert (2010) "Problems with learning the work of teaching are often stated in terms of the connection—or disconnection—between teacher education and some conception of practice" (p. 22). This disconnect comes from theory being taught in classes but with little time to apply or practice the theory before graduation. While Lampert's thoughts are based on university students, this disconnect may also be evident with high school Family and Consumer Sciences Early Childhood Education students.

Moran (2007) discussed the difficulties university students have when planning curriculum for internship sites because of the inconsistency of required hours for internship (small number of hours per week) versus the hours of operation of the child care center (approximately 11 hours a day). High school Early Childhood Education students have even shorter internship hours than university students and have trouble planning activities that relate to the teachers' plans. This conflict of schedules is a second contributor to a disconnect between class content and real world application.

A third contributing factor to a disconnect is high school students' cognitive development. High school students often have difficulty thinking abstractly and anticipating how a situation will be carried out in a classroom, making it hard to relate theory to real life application. One way to facilitate this real world application is to use Lampert's (2010) thought "that learning also occurs while doing the work" (p. 21). In this case, students should hear about the theory, participate in an activity using the theory, and then create their own activity based on the theory, and have a practice run of the activity before they actually teach children.

Lampert's (2010) idea is not new. Dewey (1938) and Kolb and Kolb (2008) also developed theories based on students' learning through doing. Students must be given the basic information about a subject and be immersed in it. This happens through hands-on learning and experimenting. Teachers scaffold the learning through a series of steps. After giving the "information" to students, hands-on practice must come for students to truly understand the information or new learning. From the hands-on experience, students will remember more and will be able to draw conclusions about their learning as well as relate the information to new experiences. Dewey theorized that real life learning comes from education put to the test (Dewey, 1938). Kolb and Kolb (2008) expanded this idea by discussing how true learning comes with experience. Teachers have to be able to integrate what they are teaching with how it will relate to a real classroom (Birbili, 2007; Kolb & Kolb, 2008; Wilson & Burket, 1989).

Modeling can be an important part of this learning through doing approach. Modeling is a technique in which instructors demonstrate processes and then let the students demonstrate and expand those processes (Jacobs, 2001). Modeling engages students while motivating them to be self directed learners (Kolb & Kolb, 2008). It is one of the best ways for students to truly understand a concept (Ball & Cohen, 1999) and allows preservice teachers to make their own pathways and apply knowledge (Birbili, 2007).

Teachers may model techniques to use in classrooms and then have students expand on those techniques and how they can be used in their internship classrooms. The more a student uses the techniques, the less the teacher has to be there for support. In this model, reflection is a key part of learning. Students must continually reflect on the processes they have used and what has and has not been successful. With this reflection, students can focus on areas that need improvement and possible ways to achieve improvement (Jacobs, 2001).

In Kolb's Experiential Learning Cycle, reflection begins with the question "What," where students discuss what they did in their project. "So What" follows where students discuss how this process relates to what they have learned. "Now What" is the last question where students discuss how this will affect them in the future (Connors & Seifer, 2005; Kolb & Kolb, 2008). Reflection should occur during the whole event not just at the end and it should be written so clear learning goals can be developed. Kolb's Experiential Learning Cycle can provide a framework to elicit quality reflection that challenges students to think beyond the classroom. In other words, students must learn to think more critically about the experience and how to relate it to teaching (Connors & Seifer, 2005).

Reflection not only allows students to move into higher levels of thinking and self-assessment, but reflection can be an important measure of student learning and an important mechanism for improvement. Moran (2007) who studied preservice teachers use of reflection, emphasized that through peer reflections, preservice teachers learn to improve weaknesses, build on group ideas, and collaborate more regularly to see and document where they have succeeded and where they need to improve. Although the recent literature discussed focuses on preservice teachers that are at the postsecondary level, these same concepts need to be examined from the perspective of the secondary student. Can using more DAP in lesson planning, implementing lessons, adding peer and self-reflection, and videotaped practice teaching improve FCS high school students' skills in an early childhood education internship site?

Methodology

Participants

Nine high school seniors comprised of two males and seven females participated in this study. The ethnic make-up of the students included four Caucasians, two African Americans, two Hispanics, and one Multi-Racial. Students were 17 and 18 years old and graduated in June 2011. The students completed an application and were accepted into Early Childhood Education I followed by Honors Early Childhood Education II. All students indicated they enjoyed working with young children and several had interests in career fields that incorporated child development concepts. Nine out of ten students returned both student and parent permission forms stating they would like to be included in this study, resulting in a return rate of 90%.

Setting

All students resided in a large southern state and attended a rural public high school (1290 students) with an average academic class size of 20. There are 65% Caucasian, 26% African American, 4% Hispanic, 2% Asian, 2% Multi Racial, and 1% American Indian students in the school. Thirty percent of the students have free and reduced lunch. The study was conducted in a career and technical/family and consumer sciences classroom as well as at a local half-day preschool center.

Research Procedures

This action research took place from February 2011 until April 2011. Approval for this study was gained through the Institutional Review Board at a large Southeastern University. Participation in this research was not mandatory for the class but was open to all the students enrolled. Students who chose not to participate were not penalized. The only incentive offered was the increased knowledge of developmentally appropriate practices in the classroom.

Pre-internship procedures. In the first three weeks of the spring semester, students learned basic information about DAP as depicted in the course outline. During this unit, the instructor modeled several developmentally appropriate activities for preschool children. These lessons included (a) reading a book with props, (b) a science activity for developing creativity in children, and (c) a lesson on dental health. While modeling these DAP lessons, the instructor discussed with the students the purpose of each lesson. Then the students created similar activities and the instructor discussed both the positive and negative aspects of their lesson activities as well as ways to change the lesson to fit individual needs and be sure they were developmentally appropriate.

After this unit on DAP was complete, students were given the task of creating a lesson plan that could be used in a preschool classroom. They were assigned a theme and created lesson plans around this theme. Students then completed a lesson plan form for the teacher's review. Next, the students engaged in a role-play of the lessons with the rest of the class and this lesson was videotaped. Initially after the role-play, students evaluated the lesson they presented, discussing strengths and weaknesses using a reflection form. Students were also assigned random partners for peer evaluations. During the peer evaluations, the partner evaluated the lesson plan from the receiving end and gave feedback to the student using a teacher-created form. Then, the student who taught the lesson watched the video and completed a self-reflection form documenting their observations and changes they would make to the lessons. The FCS high school instructor also completed an evaluation of the lesson using the same form used at the internship site. This form includes (a) questions about the goal of the lesson, (b) teaching strategies that were used, (c) how the student interacted with the children, and (d) the outcome of the lesson. At the bottom of the form is a 7-point Likert scale. A score of one indicates that no part of the lesson was developmentally appropriate, while a score of 7 indicates that all parts of the lesson were developmentally appropriate. Students could fall between one and seven depending on the developmental appropriateness of their lesson.

Internship lesson plan implementation procedures. After each student completed a videotaped lesson plan, and all peer, self and instructor reflections and evaluations were complete, students began their internship at a local preschool accredited by the NAEYC. Based on the knowledge learned about developmentally appropriate lesson plans, students created new lesson plans to implement with the children. These lesson plans followed the preschool teachers' theme or unit and were evaluated on their developmental appropriateness. Students' lessons were approved by the FCS instructor before finalizing the development and implementation of the plan. At the preschool, the students implemented their lessons with the children each week using a partner system. Four sets of students worked with their partners in four separate classrooms. One partner created the lesson for Monday and the other partner created the lesson for Wednesday. Both students were responsible for working with the children during the lesson. Two students were in separate classrooms and were only required to develop one lesson plan a week.

The FCS high school instructor observed the lessons taking place in the preschool classroom and documented the process on an evaluation using a 7-point Likert scale. The scale ranged from 1- no aspects are developmentally appropriate to 7- all aspects are developmentally appropriate. This evaluation was identical to the evaluation used in the video recording of the students. Through this coding process, the instructor was able to chart and follow growth of individual students. A folder was kept on each student including their lesson plans and the Likert scale rating they received on lesson implementation. Charting the ratings allowed the FCS high school instructor to see if students improved in increasing their use of DAP. Additionally, pictures were taken of the students implementing their lessons at the internship site.

At the end of their internship day, students completed reflections using Kolb's "What", "So What," "Now What," outline (Connors & Seifer, 2005). A total of 6 reflections were completed by each of the students.

Each reflection was evaluated by the FCS instructor for individual growth and learning during the semester. Growth was measured from where the student started at the beginning of the semester to how much they improved at the end of the semester. Students kept a portfolio with their lesson plans and reflections to chart progress throughout the semester. The internship teacher also completed evaluations on their progress. These were completed at the mid-point and end of the internship to see if growth could be determined.

Results and Discussion

Pre-Internship Experiences

Data from videotaped lessons, self and peer evaluations and reflections, and the FCS instructor evaluations were analyzed. After the videotaping was over, the FCS instructor evaluated the students' lessons based on the seven-point Likert Scale that was also used at the internship site. A score of one meant that elements of DAP were significantly missing within the lesson plan (e.g. lesson was not age appropriate and children were not able to complete the activity). While a score of seven signified the whole lesson was developmentally appropriate (e.g. lesson was age appropriate, interested the children). The average rating was 2.7 on a scale of 1 to 7 on the videotaped lessons.

Specifically, students had difficulty developing an appropriate lesson plan, and difficulty implementing the lesson introductions, conclusions as well as generally facilitating the lesson. Only 3 students had written plans with appropriate activities that preschoolers could have successfully completed and were developmentally appropriate. Five of the students delivered solid introductions, while the other four students did not have an introduction at all or it was very weak. Four of the students had no conclusions at the end of their lessons. During the videotaped presentations, four of the students did not talk to the "class" and just randomly walked around. Another four walked around and asked questions but did not start conversations about the topic they were teaching.

According to the peer evaluations of the videotaped lessons implemented prior to the internship, peers were able to easily identify lesson plan themes/concepts. Seventy-eight percent of the themes were appropriate for preschoolers based on developmental checklists**.** Sixty-seven percent of the time students could identify the developmental goal being taught in the lesson. According to Lampert (2010), humans learn by seeing and then by doing. Having the students do the activities by role-playing as children opened their eyes to tasks with which preschoolers might struggle.

When it came to self-reflection, the students were honest about themselves and took note of their faults. Six students noted changes they should make in the future, such as walking around the room more often, stopping to ask for questions, and being more prepared. Students also commented on how hard it was to teach in front of a group and that they should have prepared and organized their supplies before the start of the lesson. The videotaping allowed students to see themselves in a different light. Through this activity the students became more reflective.

Ratings of the students' videotaped lessons indicated students were indeed beginners and were at the expected level of lesson plan writing and implementation. The students had the background knowledge of child development and practice they learned in Early Childhood Education I, but were still trying to grasp how these concepts fit into practice.

Internship Lesson Plan Implementation

Data from lesson plans, student and partner reflections and evaluations, and FCS high school instructor evaluations with the Likert scale were analyzed. The table below records the data collected by the FCS teacher on videotaped lessons and the four weeks of lesson implementation at the internship. All the data were collected by the teacher using the 7 point Likert scale. During the first week seven out of the nine students implemented lesson plans and received a five. This was much higher than the average of 2.7 for the videotaped lesson. Two students received a 2.0. In the second week of interning the overall score, 3.4, was much lower due to three groups not having a prepared lesson plan. However, the students that were prepared had an average of 5.2 showing small growth from the previous visit. During the third week the students' scores (n = 6) increased to an average of 5.0 not including a student who did not bring an activity. Two students completed activities that were completely developmentally appropriate in their lessons. In the fourth week the average of scores dropped to 4.5 (See Table 1).

Table 1

Students' scores from FCS instructor's evaluation of lesson plan implementation

Student	In Class Video Lesson	Internship Week 1 Lesson	Internship Week 2 Lesson	Internship Week 3 Lesson	Internship Week 4 Lesson
A	3	5	No Activity	Absent	Absent
B	3	5	6	7	7
C	3	5	5	7	7
D	3	2	4	No Activity	4
E	3	5	No Activity	4	4
F	2	5	No Activity	4	4
G	3	5	7	Absent	No Activity
H	2	2	5	5	3
I	3	5	4	3	3

Through this study, students showed some knowledge of developmentally appropriate practices through their lesson plan development and their application of DAP did improve from the videotaped practice lessons to the internship. However, students still lacked a complete understanding of how to apply their knowledge of DAP. When students implemented their lessons at their internship site, their performance was average. Most lessons were acceptable and complemented the teachers' learning. The students did not excel in delivery of the lessons or in their ability to verbally tie the lesson into the teacher's lesson. Students had problems communicating with the children after giving directions. They would watch the children create the project but would not talk to them about the steps or what they were creating. Students also had a difficult time reviewing what the lesson was teaching. This relates to Moran's (2007) findings with preservice college students. The lack of time at internship settings affects students' abilities to get to know the children and their abilities, which hinders their ability to plan developmentally appropriate lesson plans. Students are only at the local childcare centers two days a week for less than 2 ½ hours. As Moran (2007) discussed, this short amount of time in a childcare classroom can cause students to feel disconnected. These average scores also support Lampert's (2010) ideas of disconnect between what is being learned in the classroom and students being able to apply the concepts in real settings.

Analysis of the high school teacher evaluations of individual students revealed differences between students. Indeed, several students achieved high growth in their DAP lesson plan development. Three students in two different classrooms, adapted to teaching developmentally appropriate activities easily. These students focused on the needs of their children, were more reflective and accepted and used feedback provided through the evaluations.

They challenged themselves to improve and became able to anticipate the success of their lessons and how to adapt them accordingly. All of their activities ranked in the 6-7 rating on the Likert scale indicating a high quality lesson. Ratings improved by an average of 2 points as a whole class and it was clear that some students were beginning to create developmentally appropriate activities. Other students, however, had more difficulty and plateaued at 4 on the Likert scale. These students did not show the mastery of skills needed to develop DAP lesson plans. As indicated in their reflections and their lesson plan implementation, the students with lower ratings did not seem to take the lesson planning seriously and failed to understand the impact they were having on children. Some of these students expressed frustration if a child didn't want to do the activity that was part of the planned lesson. The students equated their hard work on the lesson to high quality, so that as long as they worked hard on the plan, it should be good, even if the activity did not exhibit DAP principles.

Overall, students who were successful in their lesson plan implementation (a) planned lessons aligned with the teachers themes as well as sparked the interest of the children, (b) provided introductions that explained the lesson and continued interacting with the children throughout the lesson, (c) reviewed each activity with each child and let each child claim ownership of the projects and achievements, (d) adapted lessons to fit needs and ensured success of all children including children with special needs, and (e) expressed interest in a career in early childhood education.

Those students who did not experience growth and were not effective in lesson plan implementation (a) did not plan challenging lessons even if they did align with the teachers' theme or they had difficulty adapting to the teacher's theme, (b) had difficulty designing lessons to meet the children's needs, (c) had frequent absences and therefore had limited opportunity to interact with the children and implement lesson plans, (d) exhibited a lack of interest in the children and often did not engage in conversation with the children while they were completing the lesson activities, (e) lacked skill in executing the lesson such as lack of a good introduction and/or appropriate follow up to the activity, and (f) did not express interest in working in early childhood education as a career.

Recommendations

1. To better evaluate growth of the students, it is recommended that students complete the lesson planning and videotaping before teaching DAP. This would allow students to review their videotaped lesson plans and rewrite them based on their new knowledge of DAP gained through class discussions.
2. Results of this study support Moran's (2007) suggestion that students need adequate time at the internship site to get to know the children and their needs. Additional time would have allowed the FCS Early Childhood Education students to feel more comfortable in the classroom and to take more risks.
3. This research had a restricted sample size and a limited time frame. More growth might have been documented if the project was observed over a longer period of time. This research should be replicated with a larger sample of students. Using this research model in an Early Childhood Education I class would lay a more in-depth foundation that could be expanded in level II.
4. While the findings were very promising for students who are planning to pursue a degree in education, either early childhood education or school age education, the results for students who do not have these career goals were not as promising.

Therefore, additional ways to motivate those students whose interest is not in early childhood education would be needed.

5. Reflection is important in any field and students who plan to be teachers need to learn how to be reflective of their practice. Initially, students need guidance and practice as well as reflective feedback to succeed. When no advice is given, students are unable to see where they need to improve. Guided reflection such as the "What?, So What?, Now What?" of Kolb's experiential learning cycle can help students learn self-reflection. Self-reflection allows an opportunity to evaluate strengths and weaknesses as well as the internalizing of new abilities. Early Childhood Education is a very hands-on field and students need to learn very quickly that there is always room for growth; self-reflection can be an important skill to facilitate this continued learning.
6. Most of the students indicated that they enjoyed the teacher modeling and would have liked more lessons taught this way. Modeling can be incorporated right from the beginning of the semester and not just the DAP unit in the curriculum. Continued modeling throughout the internship would also be beneficial by allowing students to observe the FCS instructor model DAP one day and then students practice and implement similar lessons the next.

Conclusion

Although successful applications of the concepts to the lessons still eluded some of the students, the ongoing reflection seemed to facilitate critical and reflective thinking among the students. Many students were able to identify changes they would make and realized their lesson plan was not perfect.

High school students need guidance in learning how to implement real world practices such as developmentally appropriate lesson plans. Many schools focus on the theories behind learning but less on how to teach learning in a way that can be continued. Modeling effective lesson implementation helps students, not only hear the content, but to see the application of the content. A progression of modeling, videotaped classroom practice, and then real-world practice along with ongoing reflection may be an effective method of teaching within early childhood education programs in the family and consumer sciences classroom.

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