THE VALUE OF INSTRUCTIONAL PLANNING

BY JENNY L. DAUGHERTY, NATHAN MENTZER, AND HELEN NUNEZ

It is real teaching to real students with a real outcome.

An important aspect of preparing preservice teachers for their own classrooms is instructional planning (Baylor, 2002). A teacher’s job is multifaceted, from providing instruction, to managing the classroom, to assessing learning. A key component of being successful across these is thorough planning prior to interacting with the students. Preservice teacher education programs typically integrate instructional planning experiences throughout the students’ educational careers. For example, students are required to submit lesson plans in several courses. Many programs also require a course on instructional planning and assessment to help build students’ knowledge and skills around designing learning objectives, preparing standards-based lesson plans, and developing authentic assessments. However, there is often a divide between the preservice teacher’s vision of the classroom and the realities of the inservice teacher’s classroom. Textbooks, assignments, and projects are meant to provide meaningful authentic learning experiences for the preservice teacher. However, it is often not until their senior year, during their student-teaching semester, where they more fully appreciate the reality of instructional planning as a teacher.

In order to better develop Purdue University Technology and Engineering Education preservice teachers’ instructional planning abilities and to provide an earlier “dose of reality,” the preservice teachers enrolled in an instructional planning course during the spring of 2013 worked with a middle school teacher to prepare a unit of instruction that was taught to the middle school students during the same semester. Following a peer coaching approach, where an experienced teacher works with newer teachers (Margerum-Leys & Marx, 2004; Zwart, Wubbels, & Bergen 2007), the seven preservice teachers were able to teach half of the unit to the middle school students to see how their unit fared in real time. Slagter van Tryon and Schwartz (2012) stated that peer coaching can benefit teachers in “gaining deeper understanding of teacher practices in management, content, and integration” (p. 31). In order to gauge the value of this approach to teaching instructional planning, the authors, one of whom was the college instructor for the course, collected data from the preservice teachers and the inservice teacher on their experiences. The questions the authors sought to address were:

1. How do the preservice teachers’ understandings, attitudes, and beliefs about instructional planning change after developing and delivering a unit to a middle school class?
2. What impact does working with preservice teachers have on the inservice teacher’s views of his own instructional planning?

The Unit

Prior to the start of the semester, the college instructors met with the inservice teacher to discuss the unit that the preservice teachers would develop. The eighth grade technology class was selected, and the unit topic, Multimedia Production, was identified. This unit topic had been added to the course by the inservice teacher for that year and had not yet been developed. The preservice teachers’ first assignment was to collect data on the inservice teacher, the
student population, and the classroom environment. The preservice teachers investigated the curriculum used in the class, the available materials and equipment, student characteristics such as the percentage of ELS students and those on free and reduced lunch, and the inservice teacher’s instructional style and preferences. A background report was prepared from the data collected to help guide the college students’ development of the unit plan, specifically for the inservice teacher’s class.

The goals of the ten-day Multimedia Production unit were to introduce the students to video production, the use of related equipment and software, and storyboards. In addition, the unit was to include a group project that was challenging but engaging for the students and connected the key concepts explored in the unit. The preservice teachers brainstormed ideas on how to focus the unit, including a morning television show, a commercial, and a music video. Based on a vote of the top three ideas, the preservice teachers were divided into groups and developed proposals to “pitch” to the inservice teacher, who, along with the college instructors, selected the proposal to proceed with. The unit that was developed included a project that had the students develop a commercial for a design project completed by the students earlier in the course. The preservice teachers had the opportunity to teach the first half of the unit to the middle school students during three sections of the course.

The instructional planning approach used for the unit was based on the development of a standards-based curriculum unit, connecting the student’s learning to the objectives of each lesson plan (ITEEA, 2003). The preservice teachers had to develop a unit based on the technology standards with identifiable outcomes and specific technological literacy strategies for their unit. The lesson plans included all of the instructional materials, including the activities and assessments needed to accomplish the objectives. The use of this instructional planning approach provided the basis for the preservice teachers to design the complete unit on Multimedia Production.

The Preservice Teachers

Data were collected to explore the impact of these experiences designing and delivering a unit on the preservice teachers’ understandings, attitudes, and beliefs about instructional planning. Pre- and a post-questionnaires were administered to the seven preservice teachers, three of whom were female and four of whom were male, all between the ages of 20–23 years. In addition to capturing the preservice teachers’ demographic information, respondents were asked to rate the level of their agreement on a scale from “not at all,” “somewhat,” “for the most part,” and “definitely” for 17 statements about different aspects of instructional planning within engineering and technology education. Three open-ended questions were also included on the questionnaire asking the preservice teachers to identify what they think is important to consider in developing lessons and what they anticipate to be challenges in transitioning to becoming an inservice teacher.

According to the comparison of results between the pre- and post-questionnaires, the preservice teachers revealed some differences in certain areas after they had developed and delivered the unit for the inservice teacher. Those that changed the most from pre to the post experience were the following:

- **Use of a written lesson plan.** When asked whether teachers use written lesson plans when they teach, the initial reaction was a strong tendency to respond “not at all” or “somewhat” (n=5). After the unit planning experience, the shift was to believing teachers “for the most part” and “definitely” (n=5) used lesson plans.

- **Role of objectives.** On the pre-questionnaire the majority responded “somewhat” and “for the most part” (n=4) that objectives describe in measurable terms what learners must know or do upon completion of a lesson and on the post-questionnaire results showed all of the pre-services teachers shifted to “for the most part” and “definitely” (n=7).

- **Student engagement.** A significant shift in believing that the most important thing in teaching is student engagement from “for the most part” (n=5) to “definitely” (n=6) on this statement. This indicates that the participants’ experience led to perceiving engagement in the classroom as a major contributor to learning effectiveness, even more than they initially thought.

The other questions showed little change after the experience. There was consistent low-level agreement (“not at all” to “somewhat”) on the following items from the pre- and post-questionnaire:

- Instructional objectives are good to have but not that important for technology education classes.
- I anticipate that the principal will rarely ask for my written lesson plans.
- It is important to teach all students as if they all learned alike.

And there was consistent high-level agreement (“for the most part” to “definitely”) on the following items from the pre- and post-questionnaire:

- Instructional planning involves planning the interaction between the teacher and students that results in the targeted learning outcomes.
- Technology education teachers have to advocate for their courses and how they connect to science and mathematics.
• Varying a teacher's instructional strategies (lecture, discussion, small group activities, etc.) is important.

The first open-ended item on the questionnaire was divided into three components asking the preservice teachers to think as a middle school teacher in charge of an introductory or gateway level course and to consider: (a) how would you determine what your students should know, understand, and be able to do; (b) how would you know if your students learned what you wanted them to; and (c) how would you decide the best way to teach something? For the first component of this question, the pre-questionnaire responses ranged from starting with safety instruction to administering pretests to identifying what level of science and mathematics the students will be taking. Two responded that the curriculum documentation will provide what students should know, and one included that the standards address this. On the post-questionnaire, four of the responses included standards. On the second component, the pre- and post-questionnaire responses were very similar, focusing on assessment, particularly pre- and post-tests. For the third component, the responses fell into two categories on both the pre- and post-questionnaire: (a) a trial-and-error process that is refined through experience, and how they learn.

The second open-ended question asked the preservice teachers to identify the three most important aspects a technology education teacher should consider when planning a lesson and explain why they think these aspects are important. The results of the pre- and post-questionnaire showed that the preservice teachers thought the most important aspect to consider while planning were the standards, the students, the objectives, and the content. The third open-ended question focused on the preservice teachers' perspective of what they anticipate to be the biggest challenges or struggles in making the transition from being a preservice teacher (a student) to an inservice teacher (a middle or high school teacher). In the pre-questionnaire, the preservice teachers responded that the biggest challenges were overcoming fear and being able to manage the responsibilities in the classroom. For the post-questionnaire, the responses were more specific towards obtaining respect in the classroom, as well as being able to execute an effective and timely lesson.

The Inservice Teacher

An interview was conducted with the middle school inservice teacher to get his perspective on working with the preservice teachers. The inservice teacher teaches seventh and eighth grade Engineering Technology classes at a middle school, using Project Lead the Way curriculum and other supplementary resources. He sponsors the Yearbook and is one of the sponsors of a LEGO League. He earned a Bachelor's and a Master's Degree in Industrial Technology and has been teaching for 29 years, 27 of which have been at the same school. He was extremely open to working with the preservice teachers, allowing them to visit his classroom to collect information prior to developing and teaching the unit.

The one-hour semistructured interview was conducted by one of the authors and focused on inquiring about the inservice teachers' experiences in assisting the preservice teachers and his reflections on the process and outcomes. Upon reflecting on the approach of preservice teachers working with an inservice teacher, he believed it was a very positive experience for all involved. He stated that: “I think they [middle school students] learned a lot, and I think the college kids [preservice teachers] learned a lot too.” He added: “I think it is a tremendous experience teaching and developing what they are going to teach, because that is hard… the preservice teachers understood that there is ownership in planning and delivering a unit. It is real teaching to real students with a real outcome.” In addition, the inservice teacher felt he learned from the experience as well, stating that his learning came from seeing other teachers plan and deliver lectures, plan activities, and interact with the students. An area of improvement identified by the inservice teacher concerned assessment. More specific rubrics for different activities needed to be developed and communicated to the middle school students. He thought that the preservice teachers needed to be able to better differentiate those students who excel from those who struggle and not simply grade all the same.

Conclusion

There is no doubt that a preservice event requires the development of certain essential skills prior to actual classroom teaching. Learning how to prepare and deliver optimal results for a real class comes in great part from the lessons learned through instructional planning. As Ruys (2012) mentioned, “instructional planning is in general perceived as an important process in the professionalization of teachers” (p. 350). Not only that, but it has been shown that there is a direct relationship between planning and teaching quality, impacting instructional behavior and student achievement (Naafs, Van den Oord, Kenter, & Wiltink, 2002; Meyen & Greer 2009). The opportunity to work with a “real” middle school classroom and learn from an experienced inservice teacher strengthened the preservice teachers' understandings about the important role of instructional planning to effective teaching and learning.

Another important value of this approach was the benefit that the preservice teachers received as they developed a sense of instructional planning while simultaneously being able to learn
from direct experience with middle school students. In addition, the inservice teacher benefitted from the experience, reflecting upon his approach to instructional planning and his interactions with the preservice teachers. The role of reflection is an important aspect of effective instructional planning, as it helps teachers prepare, organize lectures and activities, select their strategies, and uniquely adapt their instruction units. This experience enabled the inservice and preservice teachers to reflect upon the experience, as well as their approaches to instructional planning. As Ruys (2012) argued “anticipatory reflection and instructional planning are in general perceived as the key to successful lessons” (p. 353).

Preservice teachers face challenges when moving from the university classroom to their own K-12 classrooms. In addition to content knowledge, they need to have developed strong planning and teaching strategies, as well as organizing frameworks and models (Gunkel, 2013). The value of instructional planning goes beyond the identification of curriculum or fun activities, to thinking through the overall approach to ensuring that every student achieves specific learning goals. Effective instructional planning should ultimately enable preservice teachers to improve their thinking, assess their style, and find ways to make a difference in the students’ learning, encouraging them to become independent thinkers (Gunkel, 2013). As Lim and Chai (2008) stated, “effective instruction is not only about designing specific learning activities to meet certain instructional objectives, but more importantly, it is about engaging and facilitating students’ knowledge construction activities that involve higher-order thinking as intentional processes for solving authentic problems within a collaborative social context” (p. 2002).

References


Jenny L. Daugherty is an associate professor in the Purdue University Department of Technology Leadership and Innovation in West Lafayette, IN. She can be reached at jldaughe@purdue.edu.

Nathan Mentzer is an assistant professor in the Purdue University Department of Technology Leadership and Innovation in West Lafayette, IN. He can be reached at nmentzer@purdue.edu.

Helen Nunez is a graduate student in Purdue University's Department of Technology Leadership and Innovation in West Lafayette, IN. She can be reached at nunezh@purdue.edu.

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