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Evidence-Based Decision-Making in Teacher Preparation

Introduction

As teacher education faculty, we have an ethical responsibility to prepare our students for the demands of the teaching profession. Certain practices have achieved status in teacher education coursework: Differentiated Instruction,

Cooperative Learning, Flexible Grouping, and Scaffolding to name a few. Each of these strategies asks teachers to make instructional decisions based on the collection and analysis of data. In addition, classroom management practices, authentic assessment and student growth measures necessitate clear evidence gathering. As teacher candidates progress through their programs, they should encounter evidence-based decision-making — multiple means of collecting evidence, analyzing the evidence, setting goals, and evaluating results – throughout their coursework. We ask our teacher candidates to be reflective practitioners, in essence we ask them to use information to make evidence-based decisions. The current pressures of accountability and the vision of supporting the learning of all students require evidence-based decision-making as a tool in any teacher’s repertoire.

Faculty who follow to the Standards for Teacher Educators find a direct connection between enhancing evidence-based decision-making throughout a teacher education program. Specifically, Standard 4: Professional development asks us to reflect on our own practice and model how teacher candidates can engage in reflective practice. We value reflective thinking and expect our students to “form knowledge, collect data, reflect on that data, and make changes to their practices” (ATE, 2008, p. 4). Standard 5: Program Development incorporates the language of

evidence-based decision making. “Research and program evaluation must be gathered and applied to make data-driven decisions to benefit individual programs and the overall profession” (ATE, 2008, p. 5).

Jacobs, Gregory, Hoppey, and Yendol-Hoppey (2009) find teachers who continually use data to make instructional decisions depend on their experience and professional knowledge. Good teachers use their experience and intuition, their professional wisdom, to make changes. These teachers seamlessly adapt instruction and intervene in classroom management situations. They continually assess their students instinctively and naturally. Brown and Hirschfeld (2008) conclude, “it may be that teachers who take responsibility for assessment may be more effective classroom practitioners” (p. 13). How do we bring that expertise to teacher candidates? How do we give them a necessary tool for meeting the current accountability requirements, delivering quality instruction as well as foster their own personal reflective abilities. Evidence-based decision-making affords the new generation of teachers a value-added “commodity” to their professional toolkit (Popham, 2009, p. 11).

In this paper, I will explore where teacher educators can model and teach evidence-based decision-

making. It must be noted that in this paper I do not seek to justify the benefits of different forms of assessment nor do I want to delve into the complex literature of the differing theories of assessment practices or systems. I believe a discussion of implementing evidence-based decision-making can include and allow for different interpretations of theory. The “tension between formative and summative assessment” discussed in the literature is not germane to this paper (Taras, 2007, p. 368).

The focus here is to implement more opportunities for teacher education students to explore, use, question, and consider data and data-based decisions within a broad definition of assessment. Assessment in this context is more than student academic performance, assessment can include teacher observation of student behavior, gathering survey information on student interests, along with checking for understanding through a thumbs-up or thumbs-down response. Assessment processes and systems from multiple perspectives can be incorporated into course content as teacher candidates develop sound skills and knowledge of curriculum development, instructional design, quality assessment, and a just learning environment. I’m following Popham’s (2009) approach to “lay out the content that should be addressed – in a real-world, practical manner rather than an esoteric, theoretical fashion” (p. 8).

Theoretical Framework

“Using data to make instructional and curricular decisions is part of the work of teachers in today’s classrooms” (Jacobs, et al., 2009, p. 52). Traditionally, assessment literacy is defined as “a teacher’s familiarity with those measurement basics related directly to what goes on in classrooms” (Popham, 2009, p. 4). In today’s era of accountability teachers are asked to review standardized test scores for weaknesses, have a solid understanding of what individual students know and can do, along with establishing professional development goals as a reflective practitioner. When do teacher candidates learn how to do this? How equipped are they upon graduation to jump into data, goal setting, and action planning discussions?

Pajares (1992) believes teachers’ conceptions are a product of their experiences in education as students. With this construct in mind, teacher educators seek to not just lecture about best practices in teaching and learning; instead, we model those practices as part of our curricular experiences. We teach a strategy by facilitating our students’ exploration of that strategy and facilitate class discussions examining the benefits and limitations of the strategy. Our students try these strategies in practical situations and reflect on the implementation. I suggest we take the same approach with teaching our candidates how and when to gather data, analyze evidence, and make decisions based on the evidence. To begin, assessment literacy is a vital component to honing the practice of making data-based decisions.

Assessment literacy includes designing assessments, focusing inquiry questions, gathering data, interpreting results, and using the results to make changes in instruction (Jacobs et al., 2009; Quilter & Gallini, 2000). However, Popham (2009) recognizes many teachers have little knowledge of assessment due to a limited “exposure to the concepts and practices of educational assessment” in an educational psychology course or a methods course (p. 5).

William and Black (1996) have identified three phases of assessment: eliciting evidence, interpreting evidence, and taking action. Whether formative, summative, or diagnostic, the processes of assessment include all three phases.

Popham (2009) provides a list of knowledge and skills to develop teachers' assessment literacy:

1. The basics of assessment: construction, reliability, validity
2. Choosing the appropriate assessment format
3. Feedback and scoring of student performance
4. Collecting and interpreting students' attitudes, interests, and values
5. Interpreting standardized achievement and aptitude assessment data
6. Assessing students with unique needs: English Language Learners, students with disabilities, etc.
7. Preparing students for standardized tests
8. Appropriate interpretation of standardized test data (pp. 8-10)

Today's teachers are faced with pressures to validate instructional decisions and to meet the needs of all learners. "[A]ssessment-literate teachers will typically make better decisions, and because we want students to be better taught, it should be obvious that today's teachers must acquire more assessment literacy" (Popham, 2009, p. 6). If teacher education curricula are truly authentic, then teacher candidates should encounter data-based decision-making activities throughout their program.

Authentic, Contextual Programming

Although there have been changes in accreditation and theoretical movements, teacher education courses still follow a typical sequence of Foundations, Human Development or Educational Psychology, Assessment, and Methods courses. Plus, teacher candidates spend practica hours working in various capacities in school settings. The capstone experience is an internship or student teaching. Throughout the program, students develop knowledge and skills and are assessed accordingly. By taking an analytic look at our teacher education programming, we can find authentic ways for pre-service teachers to develop knowledge, skills, and dispositions through authentic evidence-based decision-making activities.

Teachers who collect and use data develop a mindset of meta-cognition and reflection. They see the benefits of diagnostic or pre-assessments to collate "prior knowledge, skill levels, misconceptions, profile learner interests, reveal learning style preferences" (McTighe & O'Connor, 2005, p. 11). They have targeted goals, recognize when something isn't working, and approach a problem in a different way. Formative assessment data is gathered to guide instruction or to modify classroom management procedures. Summative information provides these teachers with an overview of what students have learned or can do. Decisions can be made for next year or even the next unit depending on performance and achievement. First, teacher candidates need to practice observing and acting on their reflective thinking. According to Black, Harrison, Lee, Marshall, and Wiliam,

(2004) "first and most difficult task is to get students to think of their work in terms of a set of goals" (p. 14).

Jacobs et al (2009) has found six conceptions of teacher use of data for instructional decision making:

1. Data use requires ongoing attention to multiple sources of data
2. Data use focuses teachers on individual students' needs
3. Data use creates a sense of urgency and serves as a catalyst for action
4. Data use leads to changes in professional practice
5. Data use requires sophisticated professional knowledge
6. Data use requires a culture of support (pp. 44-50).

Interestingly, Taras (2002) notes a double standard between what teacher educators say and do by describing what happens in courses. "We have student-centered learning, on the one hand, and students as protagonists being excluded from the main role which is assessment, on the other" Taras, 2002, p. 503). We expect students to be reflective but tend to be the ultimate assessor of progress and learning. "[S]tudents are generally only allowed access to peripheral and relatively unimportant forms of assessment" and are "rarely part of summative assessment practices. The use of "peer and self-assessment are not included in summative grades." (Taras 2002, p. 504).

Brown & Hirschfeld (2008) have determined students learn more when they view assessment "in terms of personal accountability" (p. 13). As teacher educators, we need to not only assess our students, we need them to assess themselves and act

on feedback. Taras (2002) identifies "[t]hree conditions for effective feedback: (1) a knowledge of standards, (2) the necessity to compare these standards to one's own work, and (3) taking action to close the gap" (p. 505). Too often, teacher educators take a summative approach — the grade stands with no use of feedback to revise or rethink. As McTighe & O'Connor (2005) recommend Encourage self-assessment and goal setting. We should "allow new evidence of achievement to replace old evidence" (pp. 12-17).

The new mandate for monitoring and measuring preservice teachers' dispositions is a natural opportunity to bring self-assessment into the teacher education program. From beginning level courses to advanced levels of field experiences, teacher candidates can set goals, gather evidence, evaluate performance, and determine action steps for future growth. Whether teacher candidates mark performance on rating scales or write narrative summaries institutions can use this data for program review as well as examining individual progress. Ritchhart and Perkins (2000) recognize the power of a comprehensive look at dispositions. Nurturing dispositional growth requires that an "occasion" has occurred to use the desired behavior, then there is preparation to act out that behavior, lastly, the behavior is displayed "to the extent that [a teacher candidate's] ability permits" (Ritchhart & Perkins, 2000, p. 31). These practices must be ongoing across courses and across the entire teacher education program in order to be intrinsic and automatic and evidence must be gathered along the way to validate improvement, justify interventions, or make programmatic changes.

Second, authentic learning experiences should be embedded in education coursework. Youngs and

Bird (2010) provide an example where s teacher candidates create a case in order to “increase classroom knowledge” (p. 192). Students choose an activity to explore. They describe the activity in terms of “what they could see, hear, and read” (p.193). This evidence becomes the data for interpretation and analysis. Students develop hypotheses to understand what is happening in the activity making connections to course texts. The next step allows students to present arguments and to deliberate options. They compare “advantages and disadvantages” and determine the best approach (Youngs & Bird, 2010p. 193). Rather than reading a case study and discussing the issues and solutions, this case activity puts pre-service teachers in an authentic, personal role with a real-life task.

Another task asks teacher candidates “to teach 2-4 students better than you have to date (while you continue to try to teach the class as a whole)” (Youngs & Bird, 2010, p. 194). Again, students develop a case, gather the information, think, plan, and act. Both tasks are scored on a rubric that aligns to the program goals and assesses knowledge, skills, and dispositions. These case activities add depth to typical lesson study conversations and collaborative planning sessions.

A third means of including evidence-based decision making can happen with practica. Activities for teacher candidates to develop evidence-based decision making skills during practica could include monitoring when and how often students use a bathroom pass, absentees and tardies, and on-task v. off task timeframes. Data can be recorded with tools developed by administrators for teacher evaluation. Rating systems, recording sheets, checklists, and scripting provide useful data for reflection and action. Teacher candidates can observe and coach each other, videotape themselves, or use data from mentor teacher observations. However, reflection can only be purposeful if candidates are allowed to act and change based on the feedback.

Conclusion

“Individual teacher inquiry, reflection, and data-based decision making” have the power to change teaching practices (Huffman & Kalnin, 2002, p. 570). Pre-service teachers can and should have opportunities to prepare for current reality of accountability before they enter the teaching profession. Teacher education programming should include:

- Choosing the best teaching and assessment methods for the situation
- Using available technology and data analysis software programs
- Learning and experiencing observation and data collection strategies
- Participating in action planning and strategic planning processes
- Connecting their performance to personal professional goals

The essential question for teacher educators should be the same as teachers, if we’re educating the whole child, what do we know about that child so we can best teach that child? “Like successful athletic coaches, the best teachers recognize the importance of ongoing assessments and continual adjustments on the part of both teacher and student as the means to achieve maximum performance” (McTighe & O’Connor, 2005, p. 11).

We teach the belief that assessment drives instruction – do we model that practice? Do we gather student data, their interests, concerns, questions, and knowledge before instruction? Do we address

gaps between expectations and performances? If so, we are modeling quality, research-based teaching and learning practices. We are preparing our candidates for the thinking and decision-making currently required in the daily lives of professional teachers.

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