Improving Teacher Preparation Through an Electronic Data Management System: A Lens for Reflective Practice

Kim J. Hyatt, Duquesne University, USA

ABSTRACT

The focus of this article is how technology, specifically, the utilization of an electronic data management system, can be integrated into the college classroom as a lens for reflective practice on teacher preparation. In addition to using a traditional Teacher Evaluation Questionnaire (TEQ) for feedback, the instructor documented the impact of instructional practices by entering assessment rubrics as fields in the electronic data management system. Teacher candidate scores were collected and analyzed over multiple semesters in order to make improvements to instruction. The changes to instructional practices were evidenced in higher scores on assessment rubrics following course revisions. Using an electronic data management system offers the instructor an additional resource to engage in reflective practice.

Keywords: Assessment Rubrics, Electronic Data-Management, Teaching Evaluation Questionnaire

INTRODUCTION

Learning to teach is developmental and a lifelong process. It requires essential knowledge, skills, and dispositions, delineated by professional teaching standards (National Council for the Accreditation of Teacher Education, 2007), in order to navigate effectively in today’s diverse classroom. Teacher preparation programs typically include competencies related to professionalism, planning and instructional strategies, assessment and evaluation, classroom management, and reflective practices. In learning how to teach, “it is no longer sufficient for teachers to be warm and loving toward children, nor is it sufficient for them to employ teaching practices based solely on intuition, personal preference, or conventional wisdom… As experts and professionals, they are expected to use best practice to help students learn” (Arends, 2004).

As a form of best practice, reflection is continually referenced for teachers and students alike (Boyce, 2007; Orland-Barak & Yiron, 2007; Romano, 2004; Tsangaridou, 2005; Tucker, Jones, Straker, & Cole, 2003). Reflection is understanding consequences of past actions in order to gain a new perspective for future actions (Howard, 2003; Posner, 1989; Rogers, Bolick,
Anderson, Gordon, Manfra, & Yow, 2007). For teachers, the integration of theory and practice requires systematically reflecting on instruction to enhance student learning (Carrington & Saggers, 2008; Korthagen & Vasalos, 2005); and, for students, reflection fosters various levels of cognition (Camp, 1998). Reflection, though complex and exigent, is a form of self-assessment that is a requisite part of the learning process, not only in the classroom but also in our daily lives (Bannink & van Dam, 2007; Genor, 2005; Shin, 2006).

In order to document the impact on teacher preparation, the focus of this article is how technology, specifically, the utilization of an electronic data management system, can be integrated into the college classroom as a lens for reflective practice. Data are used to document teacher candidate learning outcomes related to knowledge, skills, and dispositions in order to reflect on instructional practices.

### Rationale for Using an Electronic Data Management System for Reflective Practice

The rationale for using an electronic data management system as a lens for reflective practice in the college classroom came as a result of compiling data and writing state and national accreditation reports. The electronic data management system was initially designed to serve as a technical infrastructure for unit assessment in order to analyze data about applicant qualifications, candidate proficiencies, program quality, unit operations, and competence of graduates. Since using an electronic data management system proved to be successful for analyzing and reporting data (Blake, Head, & Hughes, 2007; Brooks-Young, 2003) for program and unit reviews at the university level, then it could also be utilized to analyze candidate learning, as a form of reflective practice for instructors.

When the electronic data management system was designed, a graduate course in the School of Education, *Introduction to Teaching*, was used as the pilot for data collection. *Introduction to Teaching* is the first course in a graduate program of study for teacher candidates seeking early childhood, elementary, and/or secondary certification. Course content is aligned with the conceptual framework of the School of Education, the Interstate New Teacher Assessment and Support Consortium (INTASC) standards, and the Pennsylvania Department of Education (PDE) standards.

### Assessment Rubrics

Assessment rubrics from *Introduction to Teaching*, along with candidate profiles, provided data for the electronic data management system. The twelve performance-based and judgment-based assessment rubrics included an article review, a classroom management plan, a teaching experience, a teaching reflection, a teaching philosophy paper, an overall evaluation of a candidate’s knowledge, skills, and dispositions, and six lesson plans (presentation model, direct instruction model, concept model, cooperative learning model, problem-based learning model, and discussion model). In addition to the twelve rubrics, self-reflections and peer evaluations were also part of the *Introduction to Teaching* experience. The scale used to score candidates on all twelve rubrics remained constant; however, the elements on the rubrics differed based on the assessment. The scale included the following scores: (0) Below Basic, (1) Basic, (2) Proficient, and (3) Distinguished. In order to receive a passing score, candidates must receive at least a “Basic” rating for their work. See Table 1.

*Introduction to Teaching* assessment rubrics were entered as fields in the electronic data management system. Candidate scores were recorded directly into the system, so human error of transferring data would not factor in the results. By directly inputting scores into the system, a copy was automatically saved in the system and then printed for the candidate. If an error occurred with a candidate’s score, for example, an instructor’s typographical error during the direct input stage, the candidate informed the instructor and the error was...
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