

Title of Session: Data-Driven Decision Making for Prioritizing Program Work

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Literature Review

Due to recent federal changes, teacher preparation programs around the nation are expected to prove their ability to prepare “effective teachers” by collecting and reporting empirical evidence to support their claims (Wayman, 2005). In fact, the Council for Accreditation of Educator Preparation approved new standards for accreditation in fall 2013 that not only require programs to systematically assess their performance, but to also include various audiences in their analyses. In particular, Standard 5.5 states: “the provider assures that appropriate stakeholders, including alumni, employers, practitioners, school and community partners, and others defined by the provider, are involved in program evaluation, improvement, and identification of models of excellence,” (CAEP, 2013).

Because of this call to utilize multiple data sources to inform program improvement, data-driven decision making (DDDM) has made a recent resurgence in the field of education. The increased use is largely due to its guiding principle that “organizational improvement is enhanced by responsiveness to various types of data,” (Marsh, Pane, & Hamilton, 2006). DDDM also allows for a low-cost way to utilize data that already exists. Programs are not required to spend money collecting responses as the data typically has already been collected for an alternate purpose. Finally, DDDM offers programs the ability to create *actionable knowledge* rather than just *information*, (Mandinach & Honey, 2008). The difference, here, being that information becomes actionable knowledge when “data users synthesize the information, apply their judgment to prioritize it, and weigh the relative merits of possible solutions,” (Marsh, Pane, & Hamilton, 2006). For institutions founded upon action research and research in practice, DDDM offers the unique benefit of turning information into synthesized actionable knowledge that can be used to make changes and inform program direction to continuously improve the future educators it prepares. Examples of DDDM in the field of education go back to the 1980’s when it was being used to improve school-based decision making and educator practice (Wayman, 2005). In fact, the school administrators in one study found using DDDM improved educators’ attitude towards students and encouraged them to seek out professional development, (Massell, 2001). More recently, it has been used in teacher preparation programs to analyze the need for data dashboards to house the enormous amounts of data each teacher candidate generates as they move through the program. In particular, the University of Kentucky utilized DDDM to assess the need for an interactive space to house the data for each of

their teacher candidates in order to meet the need for continuous improvement (Swan, 2009) and further aid the future use of DDDM in the program.

Data Sources

- Performance Assessment Scores (2012-2013 academic year) - This data source provided scores for every teacher candidate in the program on eight performance indicators as measured during four observations during the student teaching residency. This data source also included one area of reinforcement (strength) and one area of refinement (area for improvement) for each teacher candidate observation. The previous years' Performance Assessment Scores were used as the current academic years' scores were not yet collected and available for analysis.
- Instructor Survey (Fall 2013)- Faculty who teach courses in the teacher preparation program were asked to identify areas where *"you think teacher candidates are most in need of additional instruction?"*
- Alumni Survey (Fall 2013)- Alumni who had graduated from the program within the last three years and who are currently classroom teachers responded to an electronic survey. They were asked to identify areas where they felt well-prepared by our program as well as *"about what topic(s) are educational/teacher resources most needed?"*
- Focus Groups with Teacher Candidates (Spring 2014)- Two focus groups were conducted with teacher candidates who were in their senior year student teaching residency. They were asked to identify areas where they felt well prepared as well as topics they would like addressed through additional support and professional development.

Methods/Procedures

Data from each source was first analyzed on its own to identify prioritized areas of need from each stakeholder group. The results from the 4 different sources mentioned above were then aggregated, coded using a common language framework and then analyzed for themes. The resulting list of themes provided insight into the areas where our program could be strengthened in order to better-prepare future teachers. These themes are being used to guide the program in its work creating high-quality, on-demand learning modules that serve as differentiated learning opportunities for teacher candidates. Teacher candidates can access these independently, supervisors can direct students to modules based on identified need, or instructors can embed these online resources into courses. The framework language used to code the results incorporates content from four major teaching frameworks (TAP, TAL, Danielson, and Marzano) and is organized into 5 domains (Learning Environment, Planning & Delivery, Motivation, Student Growth & Achievement, and Professional Practices). The five domains contain 21 topics which can be broken down further into 60+ sub-topics. This was utilized in order to make the different data points "speak the same language" as some were TAP specific, TAL aligned or employing Danielson or Marzano language.

Figure 1: Visual representation of framework coding language

					
Content Domain	Learning Environment	Planning & Delivery	Motivation	Student Growth & Achievement	Professional Practices
Topics	Managing Student Behavior	Backwards Design	Motivation Theory	Setting Goals	Professional Competencies
Safe & Welcoming Environment	Components of Direct Instruction	Engaging Influencers & Role Models	Tracking Progress	Professional Conduct	
Classroom Procedures	Components of Inquiry	Culture of Achievement	Assessment	Reflective Practitioner	
	Differentiation	Investment in Learning			
	Checks for Understanding	Engagement			
	Materials & Resources				
	Elements of Delivery				

Results

Results of the analysis of **2012-2013 Performance Assessment TAP scores** for the previous academic year's graduating cohort (Figure 2) showed the lowest observation scores in areas pertaining to Planning and Delivery (ie: Academic Feedback, Standards and Objectives, Presenting Instructional Content) and Learning Environment (ie: Managing Student Behavior, Standards and Objectives).

Figure 2: Final PA Observation Mean Scores

Activities and Material	3.23
Instructional Plans	3.21
Teacher Content Knowledge	3.19
Teacher Knowledge of Students	3.16
Managing Student Behavior	3.15
Presenting Instructional Content	3.13
Standards and Objectives	3.12
Academic Feedback	3.12
<i>Mean scores of all teacher candidates in each category on their final performance assessment</i>	

Additionally, analysis of the Performance Assessment scores showed the lowest percentage of teacher candidates received Planning and Development (ie: Standards and Objectives, Teacher Content Knowledge, and Teacher Knowledge of Students) as areas of reinforcement (strength). Lastly, Figure 3 shows analysis of the Performance Assessment scores note that the highest percentage of teacher candidates received Planning and Delivery (ie: Academic Feedback) and Learning Environment (ie: Presenting Instructional Content, Managing Student Behavior) as areas of refinement (area for improvement).

Figure 3: Final PA Areas of Refinement

Presenting Instructional Content	23.9%
Managing Student Behavior	20.9%
Academic Feedback	14.4%

Standards and Objectives	11.2%
Activities and Materials	9.9%
Instructional Plans	7.9%
Teacher Knowledge of Students	6.3%
Teacher Content Knowledge	5.6%
<i>Percent of teacher candidates with each identified area of refinement in their final performance assessment</i>	

Results of 20 instructor responses to the **Instructor Survey** question “what are some topics that you think teacher candidates are most in need of additional instruction?” showed instructors felt teacher candidates need additional support in Planning and Delivery (ie: differentiation, modeling, grouping) and Learning Environment (Classroom Management, Time Management). Additionally, results from 112 alumni responses on the **Alumni Survey** to the question “about what topic are educational/teacher resources most needed?” showed alumni need resources in content-specific areas. Overwhelmingly, alumni reported needing resources surrounding the activities and projects they use in the classroom, indicative of resources related to Planning and Delivery.

After conducting **focus groups** with current teacher candidates in the Spring 2014 around the types of resources they felt they needed, responses could be grouped into Planning and Delivery (ie: Materials and Resources, Differentiation, and Checks for Understanding) and Learning Environment (ie: Management Student Behavior).

From this analysis, three recommendations were made for prioritizing work. 1) Focus learning module creation on Planning and Delivery, specifically differentiation, checks for understanding, and materials and resources. This recommendation is supported by data from current teacher candidates, previous teacher candidate performance assessment scores, and program alumni; 2) focus next on Learning Environment, specifically on managing student behavior. This was particularly noted by current teacher candidates, instructors, and alumni; 3) focus then on Student Growth and Achievement, specifically tracking progress, setting goals, and assessment which were mentioned in later analysis of in-service teachers in a professional development survey. Topics within the Motivation and Professional Practices domains should be focused on last.

Participant Outcomes (Presentation Objectives & Audience Participation):

Participants will learn about the following:

- How programs can “practice what we preach” by modeling the use of data to inform our practice
- The importance of getting input from multiple key stakeholder groups in order to ensure recommendations to make program changes are well-informed

This session will be discussion based and open to participant engagement throughout. Questions will be posed to engage participants in conversation during the session with a goal of refining our own current thinking and supporting new understanding among attendees of the issues of how to ensure programmatic decisions are grounded in good data.

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