

## Virtual Programs and Assessment in Graduate Teacher Education

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### Introduction

This action research paper presents data about an online Master of Arts in Education (MAE) in Learning and Behavior Disorders (LBD), P-12 and an online Master of Science (MS) in Library Media Education (LME) at a Western Kentucky University. During extensive program revisions, the two programs developed a collaborative assessment model while preparing more than 300 special education and 300 library media personnel. Each program has elements in common as well as distinctive strands.

Exceptional Education (EXED) and Library Media faculty provide strong field-based, multi-disciplinary, and competency-based programs that integrate research-based curriculum and pedagogical knowledge with practical skills relevant to the targeted student population. The intent is to meet the demand for quality professional educators. A primary goal of these preparation programs is to develop skills and enhance dispositions so that the candidate and their P-12 students can experience success.

The online MAE in EXED leads to P-12 LBD certification. The EXED program emphasizes culturally sensitive practices for effective teaching in high-poverty, demographically diverse rural schools. The MAE requires 30 semester hours, a comprehensive exam, a research tool, and a professional development portfolio. LBD certification requires a passing score on Praxis II administered by the Educational Testing Service (ETS).

The online MS degree in LME is a dual track program in Library Media Education and Educational Technology. The LME track prepares students for service as library media specialists or information service specialists in schools, colleges, public libraries, and private organizations. The Educational Technology track prepares students for careers as training development specialists or educational technology specialists in schools and businesses, and provides teachers with an Instructional Computer Technology Endorsement, P-12. The MS in LME requires a minimum of 30 semester hours, a comprehensive exam, plus a research tool. Library Media Education certification requires a passing score on the Praxis II exam for School Library Media Specialists administered by ETS.

The collaborative assessment model utilized by these two programs replaces outdated and inefficient structures and processes. This model focuses on preparing and sustaining quality professionals, while measuring and documenting both program and effectiveness of student learning through the use of technology, data driven decision making, collaborating with multiple partners, and coordinating these factors in alignment with Interstate New Teacher Assessment and Support Consortium (INTASC), National Council for Accreditation of Teacher Education (NCATE), Southern Association of Colleges and Schools (SACS), Association for Educational Communications and Technology (AECT), American Association of School Librarians (AASL), Council for Exceptional Children (CEC) and International Society for Technology in Education

(ISTE) teacher standards. The ultimate goal focuses on the student's ability to affect K-12 learning. Online graduate course content and projects in these two programs include technology integration and assessment of student learning in curriculum applications as well as to enhance productivity and professional practices.

## **Theoretical Context**

The assessment movement in higher education has evolved into a resignation of dealing with political accountability and economic implications while most of us still embrace the primary focus and significance of improving student learning. We have shifted from teaching-centered to learning-centered where higher education is producing learning rather than just providing instruction. (Angelo, 1999).

If we acknowledge that assessment drives student learning, it will likely remain at the center of the curriculum design process, and will be central to the student learning experience. (Ramsden, 1992; Biggs, 1999). Higher education instructors need a principled basis for designing new forms of assessment, closely aligned with instructional goals and standards while employing the interactive features of online technology. (APA, 1993). A constructivist learning environment is based on social interaction, communication, exchange of views, collaboration and support for learners to take more responsibility for the learning process through learner-centered tasks (McLoughlin and Oliver, 1998). The features of the student-centered curriculum and assessment include performance-based tasks that require students to create a product, engage in teamwork, and self and peer assessment (Laurillard (1996).

Reeves (2000) suggests three main strategies to integrate alternative assessment into online learning environments: cognitive assessment, performance assessment, and portfolio

assessment. Further, he proposes five critical aspects of performance assessment. These are focused on complex learning; engagement in higher-order thinking and problem solving skills; stimulation of a wide range of active responses; involvement with challenging tasks that require multiple steps; and significant commitment of student time and effort. Simonson et al. (2000) claims that proponents of alternative, performance based assessment suggest that the content validity of authentic tasks is ensured because there is a link between the expected behavior and the ultimate goal of skill/learning transfer.

The higher education faculty needs to develop a learning community culture. Four preconditions are critical to this collective culture. First, we need to develop shared trust by highlighting individual successes and helping faculty members feel respected, valued, safe, and in the company of worthy peers. Second, a faculty can share vision and goals by collectively identifying learning-related goals worth working toward and problems worth solving while considering the costs and benefits to faculty members and students. For example, a simple approach may be to ask faculty to list two or three assessment questions they would like to see answered in the coming year or things they would like to ensure that students learn well before graduating. Then, common goals are identified across the lists. When common goals are determined, they must clear, specific, linked to a timeframe, feasible, linked to standards, and, most importantly, significant to the field. Third, a shared language or concepts must be built. Before a faculty can collaborate productively, they establish common definitions for terms such as learning, community, improvement, productivity, and assessment. Fourth, shared guidelines must be developed. In other words, build a list of research-based guidelines for using assessment to promote student learning and program improvement. Examples of guidelines include engaging actively in students' academic work, setting and maintaining realistic high expectations and

goals, providing regular and specific feedback, and providing connections of research findings to authentic real-world applications of assessment projects. (Angelo, 1999)

## **Research Methods**

The purpose of this descriptive, developmental research was to investigate the current status of the graduate LME and EXED programs to describe "what exists" with respect to three variables—student assessment, graduation rates, and collaboration between the two programs. The scope of this research was not only concerned with the existing status and interrelationships of the three variables but the course and program revisions that took place over the last three years. One type of developmental research is “Model or System Development” which is the creative development of a model or system (paradigm) based on a thorough determination of the present situation or system and the goals sought. (Key, 1997) The development of a Collaborative Assessment Model is the primary outcome of this three-year research.

In this section revisions from both programs will be described separately and then the collaboration between programs and faculty will be explained. WKU faculty began their investigation, leading to program revisions that uniquely address how quality and capacity will be ensured through research-based pedagogy that incorporates the critical components of theory, demonstration, guided practice, and authentic application in school and community-based experiences. The research questions used by both programs during this reform process are as follows:

1. How do we prepare and sustain quality professionals?
2. How do we measure and document effectiveness of programs?
3. How do we effectively prepare students in the use of data in decision making?

4. How do we effectively prepare students in the use of technology in data management?

### **Library Media Education**

The Library Media Education program faculty began their program review with alignment of courses with state and national standards—the KETS, AECT, AASL, and ISTE. The next step involved the creation of a chart outlining all LME course objectives, assignments, and field experiences. At times, faculty members were surprised at the results of this chart. Areas of duplication were discovered and negotiation for the appropriate placement of some assessments ensued. For example, a webquest was required in both the Collection Development and the Integration of Educational Technology courses. Discussion revealed that the professor of Collection Development was only requiring this assessment because the instructor felt that students should know how to create a webquest. Negotiation involved a discussion of the best placement of the assessment measure which turned out to be Integration of Educational Technology.

Critical performances are specific assessments which provide evidence about what teacher candidates must know and be able to do at different levels of growth and development toward one or more teaching standards. They are usually a culminating project of multiple parts which encompasses most content and accomplishments in the course.

Multiple sources of input were utilized to outline critical performances for the overall program and individual courses. The critical performances are the result of contributions from the LME Advisory Council concerning necessary and practical skills for librarians, faculty expertise, students, graduates, current research and university practices (professional portfolios

and Teacher Work Samples). Once the members of the faculty identified critical performances, they worked on the specific requirements of each critical performance and scoring rubric.

Another major program revision included the LME Comprehensive Exam. The old style for this exam was a Praxis-like multiple choice exam that had been created by the faculty. An item analysis was conducted to determine which courses were represented and which questions were most answered incorrectly by students. Not only did this analysis reveal many inconsistencies in the exam, but many of the standards and critical performances were not represented. A new essay-type of exam was created with a question from each course that was correlated to critical performances and standards. Students answer four questions by selecting a question from four groups.

The development of a graduate survey and database of graduates added an ongoing check and balance to the process of continual program assessment. Graduates provide input about their preparation to become a library media specialist and suggestions for improvement in the program. This graduate survey data, student performance on critical performances in courses, LME Comprehensive Exam passing rate, and Praxis passing rates are analyzed each year and used to make adaptations to the program.

### **Exceptional Education**

Faculty have developed a new program model, the MAE in LBD, P-12, that increases both the capacity and quality of teachers while helping graduate students from underrepresented populations to overcome barriers to participation in the LBD program. This new model has improved the capacity of the program by implementing strategies to serve students for whom the program is currently inaccessible, including students who are employed and unable to enroll in a

full-time program, students who are not able to commute to campus, students who can not afford tuition, and students who have difficulty negotiating barriers to participation due to disability. Structural improvements to increase the responsiveness of the LBD faculty to the needs of these diverse students include the use of on-campus programs, interactive distance education technology and course delivery, and on-line web delivered courses. WKU continues to develop a comprehensive program that allows for maximum accessibility for students.

The quality of the MAE program has also been improved in several ways. The EXED faculty has implemented a number of strategies and activities to make the program more field-based, multi-disciplinary and competency-based. The specific revisions and enhancements include: (a) the use of cohort groups to facilitate the growth of peer support and collegiality; (b) more intense and extensive field-based activities and critical performances that focus on culturally competent teaching, including projects requiring multidisciplinary collaboration and practical projects with a direct impact on participants' schools and K-12 student achievement; (c) development and expansion of the Professional Development Networks, which included trainees' cooperating/mentoring teachers in the trainees' field placements, members of advisory councils, parents and advocacy groups, and departmental faculty; and (d) restructured internships and classroom experiences to assure that competent teachers are trained, who will continue to serve students and not leave the field in three to five years.

### **Collaboration between programs**

There are many unique features of these programs that enhance collaboration. Together, LME and EXED graduate programs produce more graduates than any other two graduate programs in the university. The mode of delivery for both programs is primarily online. Both programs develop some of their own content and are using high tech systems to create this



content (Tegrity, streaming servers, original CD's, DVDs, etc.) Both programs use BlackBoard, an online course management system. Both the LME and EXED programs are housed in the same office suite.

Collaboration is the key to this descriptive, developmental research. The authors have been discussing online assessment strategies for three years. Performance based assessment consists of a student's active generation of a response that is observable either directly or indirectly via a permanent product. Performance based assessment must be clearly aligned with what has been taught; scoring criteria or rubrics must be shared prior to students working on the task; be clearly aligned with standards and objectives and give several models of acceptable performances; and encourage student self-assessment and reflection. (Elliott, 1995). An assessment is authentic when the nature of the task and context in which the assessment occurs is relevant and represents "real world" problems or issues. (Elliott, 1995).

Performance based, authentic assessment strategies utilized by both programs include critical performances, teacher work sample, professional portfolio, case studies, annotated bibliographies, discussion boards, guided research, webquests, group critiques, interviews, surveys, oral presentations via videotape, online tutorials, and online exams. The comprehensive exams for both programs include essay questions covering critical issues and performances for their respective fields.

Collaboration and discussion between these two online graduate programs has revealed the changing roles of faculty and students. The primary responsibility of learning has shifted from the teacher to the student. The role of instructor for online courses has become one of intense preparation prior to the beginning of class. The instructor provides content, online lectures, structure, assignments and assessments linked to standards, sample projects, and

schedules. When class begins, students must take responsibility for their own learning and, in fact, tailor learning for themselves by engaging their individual temperament, circumstances, needs, tastes, and ambition. Students have the potential to utilize every aspect of their lives—work, leisure, personal relationships, community activities, and course work—to enhance performance on the open-ended, authentic projects in each course in both programs. The instructor provides support and guidance through constant communication (email, announcements, or phone), specific and timely feedback, and providing a social context for the class. Each course contains an open discussion board called the “Water Cooler” where students and the instructor can discuss any aspect of the course.

Both programs have compiled several data collection and analysis tables. Alignment of courses with state and national standards was a major first step in program revision. Each course includes the standards alignment for that course in its syllabus. Tables representing alignment of the objectives, assessment strategies, field experiences, and critical performances for each course were constructed. Table 1 presents an alignment of data sources with NCATE, state standards, and the WKU College of Education’s conceptual framework and dispositions at different stages in the program.

**Table 1**  
**Library Media Education – Graduate Program**  
**Alignment of Data Sources with NCATE, State Standards, and**  
**Unit Conceptual Framework and Dispositions at Different Stages in the Program**  
 (two of 19 rows in original chart)

**Note: all courses have LME prefix.**

NCATE Relationship	Standard Source	Standard Name	Stage 1: Graduate Admission	Stage 2: Mid-Program	Stage 3: Clinical/Field Experience	Stage 4: Exit	Stage 5: Follow Up
NCATE Content Knowledge	Kentucky Teacher Standards	KTS 8	Content Knowledge - Learned Society Standards Unique to Each Program  OR Earned master's degree	410G Story Presentation 411G Technology Integration Unit 501 Case Study Analysis 502 SLM Center Core Collection 506 Cataloging Exercises 508 Annotated Reference Collection 512 Summary and Bibliography of a Professional Issue 518 Critical Report about a Common Contemporary Children's Literature Theme 519 Action Research Project 527 Unit Plan 535 Multimedia Collection 537 Instructional Design Project 545 Interactive Multimedia Website 547 School Technology Impact Review 590 Electronic Professional Portfolio	410, 3hrs, storytelling to audience 501, 5 hrs, compare two SLMC/ed tech ctrs., interviews 502, 10 hrs, job shadowing, journal, interviews, reflection 508, 10 hrs, 518, 5 hrs, two interviews 519, 10 hrs, action research project 527, 5 hrs, collaboration with SLMS and English teacher 535, 2 hrs, interview 537, 10 hrs, ID Project 545, 5 hrs, interview, visit to networking facility 547, 10 hrs, School Technology Impact Review 590, 120 hrs, Practicum	LME Comprehensive Exam, Electronic Portfolio, ID Project, Praxis II exam for School Library Media Specialist	Graduate Survey, Survey of Graduates after one year and two years
NCATE Pedagogical Content Knowledge/Professional & Pedagogical Knowledge & Skills		KTS 1	Designs/Plans Instruction		411G Technology Integration Unit 501 Case Study Analysis 512 Summary and Bibliography of a Professional Issue 518 Critical Report about a Common Contemporary Children's Literature Theme 527 Unit Plan 535 Multimedia Collection 537 Instructional Design Project 545 Interactive Multimedia Website 590 Electronic Professional Portfolio	537, 10 hrs, ID Project 590, 120 hrs, Practicum	LME Comprehensive Exam, Electronic Portfolio, ID Project

These tables allowed the two programs to review, compare, and contrast assessment strategies, data sources, and standards alignment more effectively.

All of the K-12 public schools participating with Western Kentucky University in this program spent time discussing the issues among their faculty and with public partners. Their continual input assists in program design, involvement, and program assessment. Numerous efforts are made to meet the needs of the students. Course and program sequences have been arranged so part time students can complete their programs in a timely manner. All courses are offered online. Tuition assistance is available through grant support, discounts for school district partners, and financial aid counseling. For students who have barriers to participation due to disability, accommodations are made through assistance from student support services and using multimedia experiences that are inclusionary.

Field experiences in the form of hands-on or field-based application projects are a part of most courses in both programs. The primary clinical or practicum field experience is in EXED 590 and LME 590. For the EXED program this semester course follows the Kentucky Teacher Internship Program cycle guidelines and requires videotapes of teaching accompanied by lesson plans and interventions and a teacher work sample. For the LME program students log 120 hours under the supervision of a certified library media specialist. Students apply skills such as cataloging, reference interviews, library administration, collection development, technology integration, and more.

Several assessment strategies from both programs provide students with experience in using data in decision making. The teacher work sample requires creating and teaching a unit of instruction. Students use assessment data to profile and analyze student learning and communicate information about student progress and achievement. The reflection and self-

evaluation section requires students to analyze the relationship between his or her instruction and student learning in order to improve their own teaching practice. Case studies furnish students the opportunity to analyze authentic situations and provide solutions incorporating theory and practice. The action research project requires students to conduct research in their own classroom, library, or technology center, analyze the data, and write a journal-type article. (Oberg & McCutcheon, 1987). Field experiences afford students the opportunity to make decisions about interviews, on-site visits, collaboration, and field projects. The professional portfolio consists of student work that displays mastery of standards; a purposeful collection of student work that exhibits the student's efforts, and evidence of student reflection. (Bailey, 1998).

Use of technology to manage data is demonstrated by instructors and students in both programs. The authors use Tegrity or Camtasia to create demonstrations, teaching or lecture videos that are either available to students on a streaming server, on a CD or DVD distributed to students. The authors use Microsoft PowerPoint to create course content. One author uses BlackBoard to post grades while the other uses Excel to keep grades.

Students in both programs use technology in three ways. One way is the use of technology to actually take the course—use of Internet to participate in the course site in BlackBoard, email, use course CDs, use software to create projects, etc. The second use of technology is learning to integrate technology in instruction and student learning. When technology integration is a focus, use of the technology and its integration is in the scoring rubric for the project. Third is the use of technology by students to manage data. Students learn how to create a spreadsheet to record pupil assessment data and create charts for the teacher work

sample. Students learn how to create a database on instructional topics and create specific types of questions to stimulate higher order thinking skills.

## **Results & Conclusions**

Results and conclusions are presented below with the research questions:

1. How do we prepare and sustain quality professionals?
  - a. Since the EXED MAE began in June 2002, 405 students have been admitted and 155 have already graduated and are fully certified teachers. Four students dropped the program for various reasons. Of the 250 continuing, 75 are scheduled for graduation summer 2005, with the remaining anticipating graduation in 2006. All students have passed the comprehensive exam and completed the Teacher Work Sample. The initial PRAXIS pass rate for the program is 94%. The remaining 6% pass when they retake the exam.
  - b. Since the graduate LME program changed its mode of delivery to a totally online format in June 2001, 337 students have been admitted and 96 have already graduated. Of the 241 continuing, 40 are scheduled for graduation after the spring and summer 2005 semesters, with the remaining anticipating graduation in 2006. All graduates have passed the comprehensive exam and completed the Teacher Work Sample and professional portfolio. The state of Kentucky has recently reinstated the requirement of the Praxis II exam for School Library Media effective September 2004. Therefore, passing rates are not yet available.
  - c. Multiple forms of performance-based, authentic assessment provide a more accurate picture of student achievement as well as significantly increase the

quality of graduates in K-12 settings. Shared assessment strategies include professional development in schools, authentic assessments, action research projects, problem based learning, simulations, case studies, web enhances instruction, electronic, standards-based professional portfolios, etc.

- d. Faculty and school practitioners have engaged with the Renaissance Project to employ the teacher work sample to showcase the effect teacher candidates have on K-12 student achievement.
  - e. The changing faculty and student roles in these models are discussed and documented. The instructor's role is one of intense preparation prior to commencement of a course and switches to more of a role of support and guidance once the class begins. The student is an active learner responsible for his or her own learning.
  - f. Objectives, content, and assessment are aligned vertically with course objectives, content and assessment and horizontally with state, national, learned societies, and accreditation standards.
  - g. The authors model effective technology integration techniques by developing slideshows with course content, teaching/demonstration videos, and creating course "text" CDs.
2. How do we measure and document effectiveness of programs?
- a. Critical benchmark measurements are presented in Table 1 documenting the performance and effectiveness of students in both programs. Data is gathered at admission, during courses, during field experience, exit data, and follow-up.
  - b. Both programs meet NCATE, SACS, and KETS standards.

- c. Program delivery options are a current hotbed of professional discourse. Options in the EXED program include online, off campus, cohorts, and distance education (ITV) while the LME program is only an online program.
  - d. Field experiences are necessary to provide the authentic context for the acquisition and demonstration of performance standards. Performance measurement includes instructor observation, videos of teaching, supervisor assessment, and student self-evaluation and reflection.
  - e. Graduate surveys of new graduates and graduates after their first and third year of employment in the field are aligned with state teaching standards and dispositions. This provides valuable data about preparation for job success and suggestions for improvement.
  - f. Program decisions are focused on increasing student achievement, not high stakes testing results.
3. How do we effectively prepare students in the use of data in decision making?
- a. Projects and assessments demonstrating the effective use of student data are shared for each program. Examples include action research projects, teacher work samples, case studies, and professional portfolios.
  - b. Field experiences provide students the opportunity to make decisions about interviews, on-site visits, collaboration, and field projects. More importantly, students make everyday decisions in authentic teaching situations with real children.



4. How do we effectively prepare students in the use of technology in data management?
  - a. Online instruction is a valuable part of the both programs. Students must use technology to manage data in each course.
  - b. Students must decide how to integrate technology in instruction. When technology integration is a focus in a course, the use of the technology and its integration are in the scoring rubric for the project.
  - c. Students learn to use technology to manage data through spreadsheets, databases, and statistical applications.

The WKU Exceptional Education and Library Media programs are based on a common conceptual framework while the contextual experience in each is slightly different. Emphasis on quality is a constant. Both programs have truly shifted from a teaching-centered to a learning-centered model as described by Angelo (1999). A learning community culture among faculty and students is developing as a result of this collaborative model. A shared trust is evidenced through the mutual respect and collective efforts in program revisions. Both programs have developed shared visions, goals, and language through a revised conceptual framework. The authors have developed shared guidelines for promoting performance-based, authentic assessment to strengthen student learning and program improvement.

Professional education is a continuing process beginning with, not ending with, initial preparation. Strong content expertise is required of all teachers. You cannot teach what you do not know. Attainment of program objectives requires a specific learning sequence—the acquisition of knowledge, the development of skills, and controlled functional use of skills.

## **Implications for Practice and Recommendations for Further Research**

This research goes to the very heart of professional education preparation in higher education today. Colleges and universities face increasing demands and many of the systems and structures currently in place will not meet future needs. This research focuses on enhancing present preparation options, developing additional options, collaborating with multiple partners, and coordinating all these in alignment with state and national standards, while focusing on the student's ability to affect K-12 learning.

The authors plan to continue a longitudinal study of graduate performance, revise graduate surveys to reflect how practice relates to state and national standards in their jobs, how well their graduate program prepared them for their jobs, and suggestions for improvement in the programs. The authors plan to gather this data from graduates immediately after graduation, one year later, three years later, and five years later. Such hard data will be invaluable in fine tuning and reporting effectiveness of the programs.

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