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ABSTRACT

The College of Education and Human Services at Wright State University (Ohio) has been working since 1987 to develop and refine a portfolio assessment approach for use with candidates preparing for teaching as a profession. This paper documented efforts in authentic assessment as they related to PRAXIS III/Pathwise Assessment, which has been adopted by the Ohio State Department of Education. As part of this assessment approach, both print and electronic portfolios for use in assessing teacher proficiency have been developed. The portfolio provides a viable procedure for documenting professional activities by entry year teachers as it relates to elements of self-concept. The print or electronic portfolio permits the teacher to document a number of successful activities that relate to the process of teaching and provide feedback to the individual that his/her efforts are worthwhile and valued within the school. Experiences in working with students, administrative feedback, and peer and parental feedback are elements that can be documented in an authentic assessment process through the portfolio. The use of the portfolio permits documentation of increased professional competence in teaching and of personal growth that reflects a positive self-esteem, and recognition of rewards that accompany the profession of teaching. (Contains 34 references.) (ND)

Teacher Education Field Experiences: Impact on Self-Esteem of Professional Year Program Interns Via Electronic Portfolios

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Abstract

The purpose of this presentation is to detail efforts in development of an authentic assessment evaluation process within a select teacher education program within a metropolitan university. Specifically, The College of Education and Human Services at Wright State University has been working since 1987 to develop and refine a portfolio assessment approach for use with candidates preparing for teaching as a profession. This paper will document efforts in authentic assessment as they relate to PRAXIS III/Pathwise Assessment which has been adopted by the Ohio Department of Education as the model for teacher licenser in Ohio.

As part of the PRAXIS III/Pathwise assessment process we have developed both the print and electronic portfolio for use in assessing teacher proficiency. A part of this documentation relates to the self-esteem of entry year teacher candidates and those participating in the internship program. We believe the portfolio provides a viable procedure for documenting professional activities by entry year teachers as it relates to elements of self-concept. For example, professional success and reflective comments on the value of working with our nations youth. The print or electronic portfolio permits the teacher to document a number of successful activities that relate to the process of teaching and provide feedback to the individual that ones efforts are worthwhile and valued within the school. Evidence is relating to working with students, assisting students with learning, administrative feedback and peer and parental feedback are elements that can be documented in an authentic assessment process through the portfolio.

In summary, we believe the use of the portfolio permits documentation of professional competence in teaching and personal self growth that reflects a positive self-esteem and recognition of rewards that accompany the profession of teaching.

A BRIEF REVIEW OF ASSESSMENT HISTORY

Evaluation remains an essential responsibility of educators. The public concern about the quality of education has frequently resulted in statewide comparisons of testing results by school and grade that appear in local newspapers. The public uses these scores to determine the success of educating students in their community. Scores alone lack the scope of assessment and evaluation. Much more goes into determining competency. Educators must incorporate both traditional and authentic assessment procedure to accurately extrapolate growth.

This paper, will look at both formal and informal assessment and relate one institution's attempt to provide a bridge-Authentic Assessment. A brief historical overview provides a framework for understanding why a vexing situation exists today in determining educational institutions learning results.

The influence of testing on educational systems and policy is considered to be more powerful now than in any time in history (Cole, Ryan & Kick, 1995). Testing experts control over schools and instructional programs, that at times, become the curriculum (Valencia, Pearson, Peters & Wixson, 1989). With the nationwide outcry for reform, a counter demand for test score improvement impedes educational progress. Educational progress is undermined by the pervasive use of tests that contrast with current theory and practice (Valencia et al., 1989).

In 1973, over twenty years ago, Worthen and Sanders introduced their text ***Educational Evaluation: Theory and Practice*** by explaining the then state of art in assessment:

> Evaluation is one of the most widely discussed but little used processes in today's educational systems. This statement may seem strange in the present social context where attempts to make educational systems accountable to their publics are proliferating at a rapid pace.

Many question if any progress in evaluation has occurred in the last 20 years. Of course

progress has happened. But a review of formal and informal evaluation might clarify why authentic assessment is having such a difficult time finding legitimacy in the 1990's.

Evaluation, not a new concept, clearly was evident when Socrates used mediated evaluations as part of his attempt to guide learning with his students. Even the Chinese (200 B.C.) conducted civil service examinations (Worthen and Sanders, 1973).
Our nation's evaluation history is strongly rooted in the testing idea. Robert Thorndike (early 1900's), called the father of the educational testing movement, helped convince the country of the value of measuring human change. The standardized test paradigm gained momentum in the 1920-30's. *The Eight Year Study* of Tyler and Smith and the accreditation evolution established formalized evaluation as the most substantial way to account for learning. The establishment of the Educational Testing Service (ETS) solidified the supremacy of tests as the ultimate assessment tool.

With the school reform movement came dissonance over testing as an indicator of classroom learning. The 1980's theme of "accountability" fostered test documentation. School systems invested huge amounts of time, energy and money into testing. Minimum competency tests, state-mandated tests, criterion-referenced tests and norm-referenced tests were but a few that became an active part of the school schedule. These exercises involve limited tasks (ex. reading a phrase and answering a multiple choice item). A major test criticism is that most tests require lower level thinking skills and ignore higher-level (perhaps controversial but certainly more life useful) skills. Almost every state expects educators to teach for knowledge, skills, attitudes and values, yet tests can give little or no information on these except for some knowledge and skills. While traditional modes of assessment continue in a majority of classrooms, educators do recognize the problems inherent to these tools.

Educators have questioned the content of standardized achievement tests, pointing to its narrow assessment of isolated skills (Gomez & Bloch, 1991; Shepard, 1989) and applies only to limited curriculum areas (Jacobs, 1990). Teachers believe that the multiple choice formats consistent with traditional assessment do not measure students' ability to organize relevant information or to present a coherent argument. Teachers see that their colleagues are being forced to teach to tests and understand that this leads to cheapened instruction, undermining the authenticity of test scores. Many times instruction falls to mere practice and drills, driving out quality teachers and devaluing the meaning of test results (Shepard, 1989). Traditional assessment practices may be insensitive to the individual growth that educators desire in students; thus the instruction itself appears misguided (Valencia et. al., 1989). Educators know that reports based solely on traditional standardized test scores represent a limited, microscopic and incomplete view of students' abilities (Hiebert & Calfee, 1989) and fail to clarify the total progress of students (Flood & Lapp, 1989). As Wolf (1989) identifies, traditional assessment structure does not promote encouragement of lifelong skill acquisition, and much of the testing prevents students from thoughtfully responding to and judging their own work.

Lately, there has been a movement that opposes mere testing for accountability, and this movement is supported by evidence from educational psychology theorists who view learning as "constructive and interactive in nature." (Wolf, 1989). As we move toward the turn of the century, educators are determined to clarify the necessity for more multi-dimensional assessment tools. A revisit of informal strategies form the 1960's and early 70's left educators short of a satisfactory method for assessing the dynamic process involved in learning. A cry for authentic assessment, rich in documenting all aspects of learning, surfaced

AUTHENTIC ASSESSMENT DEFINED

Several characteristics represent authentic assessment. Of prime importance to educators is the belief that assessment should measure student performance in relation to sound educational goals. The student should be exposed to content germane to these goals. It must reflect the student's current work. Since learning represents much more than merely retaining given knowledge and mastering a set of discrete skills, authentic assessment must be multi-dimensional to include all the knowledge, skills, attitudes and values identified by the system as essential. Students should be asked to apply skills, integrate knowledge and demonstrate values and attitudes. Multi-dimensional means to employ multiple indicators of students' performance. This new assessment requires the concentration of student and teacher. Example of the process include observation, conferencing, the writing process, self evaluation, collaborative evaluation as well as traditional paper and pencil tests.

Authentic assessment must be help in esteem by the total educational community. The exercises involved should be useful, worthy and meaningful to students and learning community. Thus students are held accountable for learning of substance; likewise, educators are held accountable to provide student with informative feedback to students. Checklists, a single letter grade or number has little or no feedback for students' continual growth. Authentic assessment should be unbiased in terms of race, culture, and gender. Also authentic assessment should reflect what students are learning and help them to gain confidence in their ability to master the subject.

Fundamental to authentic assessment is the principle that students demonstrate, rather tell or question, what they know and can do. Hence, authentic assessment normally is classified as performance based. Performance based assessment expects students to demonstrate, in a natural context, what they have learned. This type of evaluation can be

open ended and can be structured or unstructured, announced or unannounced or close ended (Wiggins, 1989). In designing performance based assessment activity, four ideas should be considered:

1. The purpose for the activity should be clear. The instructor should know how he/she will use the results.
2. The activity should be designed relative to instructional goals, asking students to apply what they learned.
3. The activity should have more than possible answer and perhaps more than one possible outcome.
4. Students designed activities could serve as a possible assessment.

Assessment of this nature should be developed within the school schedule. The assessment needs to be administrated at various points during students' progress, which will lead to a more comprehensive view of the students' learning; however, educators should clarify how students undertake the task.

Scoring authentic materials causes concern from evaluation experts. Careful analysis is required. All records need to be written. A decision must be made if holistic or analytic scoring is appropriate for the purpose of the evaluation. The scoring criteria should be established before administration and both students and teachers must understand the task, purpose and usability. All recording devices must be available before the students undertake the activity (e.g. checklists and rating scales). As the evaluation is scored, written criteria should be used as a guideline (Wiggins, 1989).

Although testing will be a part (usually limited), most of the assessment involves a process of unobtrusive information-gathering about students' learning. The assessment evidence will be collected during the course of the daily schedule; it is an on-going process and not just once or twice a grading period. Efficiency is inherent in the design since the

educators will spend less time on standardized tests. The side effect of trauma should also decline. The classroom environment should remain more student-learning centered. Students' learning is explored through questions and observations. The assessment is thus more relevant to the learning task.

The employment of portfolios has obtained significant attention as an alternative to traditional student assessment. There are several reasons why portfolios accurately attend to authentic assessment criteria. Portfolios contain actual classroom artifacts. Because the portfolio can contain many entries, both formal and non-traditional entries can be incorporated. Thus a full range of cognitive skills can be evaluated. The ultimate result will be more reliable due to the availability of more than one illustration of academic performance. A clear advantage to portfolio assessment rest with the teacher being able to evaluate the students' process of learning. Therefore, current learning theories can be identified and utilized. Built on this advantage is the involvement of the students in their own assessment. Students help in the selection of work samples, and even more importantly, reflect on what the selected entry represents. Students examine, analyze and reflect on their work. This provides them the opportunity to reflect on the depth of their learning and enhance their personal self-esteem.

REFLECTION THEORY

Given: **Students seldom are requested to reflect in conventional assessment practice.**

When preliminary work entries appear in portfolios, students' reflection on each step of the learning process leads to completion. Students gain knowledge and understanding of "the scope of what they learned" (Wolf, 1989). Although original

reflections might focus on less significant dimensions as neatness of showmanship, with practice, students develop the ability to modify and expand their criteria and factors. Students and teachers need guidance in writing reflective statement. If students are not guided in reflective writing, they will tend to summarize what the selection is rather than analyzing and extrapolating what went into it, why it represents learning, etc.

According to Killion and Todnem (1990), reflections can be categorized in three avenues. First, reflection-on-action requires looking back upon what one has accomplished and reviewing the actions, thoughts and product. The second form of reflection is reflection-in-action. In this reflective activity, the individual is responsible for reflecting in the act of carrying out the task. If, for example, the student is writing a story and has left out the setting, reflection in action could guide the correction the major component of story writing. The final reflective form centers on reflection-for-action. This reflection form expects the participant to review what has been accomplished and identify constructive guidelines to follow successfully in the given task in the future.

THE REFLECTIVE TEACHER

Given: In authentic assessment, it is imperative that teachers reflect.

Teachers in authentic assessment environment do reflect. According to Lasley, (1992), "A teacher's level of experience will influence an ability to reflect critically ..Neophyte teachers will not exhibit to the same capacity for critical reflection as would possible for more veteran teacher."

Dewey (1904) attends to reflective ability when he discussed "habit of reflection". To Dewey teacher should know how (the technique) to teach and know how to reflect on the techniques used in classrooms. Reflective teacher, Dewey adds, were freed from engaging in impulsive or routine action.

A reflective teacher will be able to lead in our reformation of schools. Posner argues that "reflective teaching will allow {the teacher} to act in deliberate and intentional ways, to devise new ways of teaching rather than being a slave to tradition, and to interpret new experiences form a fresh perspective."

VanManen (1977) described a conceptional focus on critical reflection. He identified three levels of critical reflection. The first level centered on technical criteria. At this level reflection was concerned with thinking about what techniques were used to achieve the stated objectives. The second level involved conceptional reflection. The conceptual level focused on the relationships between the instructor's practices and the theoretical principles guiding the practices. The final level, ethical reflection, would enable the goal of the teacher preparatory program, designed to make reflective teachers, to move pre-service educators form a 'how to' perspective to discussing reflective decision-making. Hence, to be a reflection instructor, one should assess the consequences of actions and to determine ethical, political and moral implications for schooling and learning.

Other theorists have even constructed developmental typologies in describing reflection. The work of Kitchener and King (1981) and Ross (1989) reflects a serious attempt to deal with analysis of reflections (personal). This developmental approach suggests that teachers progress through stages of development relation to reflective ability, e.g. reflecting on the quality of their work/teaching.

In order to constructively assist students with reflection, and instructor must become proficient as asking leading reflective questions. Wellington (1991) highlights some useful reflective types of questions:

- **What did I do?**
- **What does it mean?**
- **How did I come to be this way?**
- **How might I do things differently?**
- **What have I learned?**
- **What have I learned about self?**

Reflective teachers look at techniques and faces frustrations to improve instruction and help students learn. As the instructor reflects more, assignments given to students will lead to more reflection. In a cyclical pattern, as a teacher reflects more, his/her assignments will be more reflective in nature, requiring students to reflect more. Thus a reflective teacher nurtures reflective, exploring students. Reflections allow students to their progress by reviewing their work throughout the year. Students who review their work over time can see how their thinking and working processes have improved. Assessment of student reflections has been a typical concerns voiced by many educators, and it has even been challenged. Nevertheless, it is important that student reflections be assessed. Teachers must write back to students guiding their reflectivity. Ex. Harry, You did a fine job of summarizing the selection. What about exploring what you are now confident in doing? What you will do to enrich the activity in the future? This kind of feedback form the teacher will lead student to reflectivity. Once again, to answer the question "Should reflections be assessed?, the answer is yes! It is a fact that assessment of reflection takes time, but it is certainly time well spent, both morally and educationally.

In order to initiate portfolios, it is suggested that the preliminary assessment be merely to determine if physical construction is adequate. A checklist or criteria building list would help the student understand what must go into the design. Once the portfolio construction is finalized, then the remaining of the evaluations should be directed toward reflecting and mastery of the knowledge, skills and attitudes.

Some portfolio advocates believe that formal tests should be eliminated form the portfolio. Rather than viewing formal and authentic as polars, our view rests on the idea that authentic assessment actually bridges standardized testing and class assessments. Within the portfolio, a student might (it could also be suggested) include standardized tests with reflective statements.

A Word on Assessing the Portfolio

Two givens are identified when discussing the evaluation of the portfolio and rendering professional judgment:

GIVEN ONE: Authentic Assessment means moving away from traditional assessment.

GIVEN TWO: The primary success of evaluation is to have students take the ownership of their learning.

In the first given, when discussing authentic assessment, one must be willing to accept that this type of evaluation is truly authentic and breaks away from the restraints of traditional assessment. The old paradigm where you put a letter grade, a point system etc. as the final statement on students' efforts, learning was rejected. Traditional measures can be a part of the process but never the only, and surely not, the final word.

The second given rests on the premise that for too long teachers have accepted the responsibility of student learning. Teachers were responsible to know how each student learned and were expected to make learning occur with each student. It did not work, did it? Why, because the student was relieved of the responsibility of accounting for his/her own learning. The public was paying for its free public education, and educators were

being held responsible for their learning. Thus they were freed up to act as the resister, as if the whole program was an opponent of theirs. Their job was to challenge the actual act of learning. To clarify this position, detailing the multi-dimensions of evaluating portfolio follows.

In the planning stages, multiple scoring strategies must be decided. Instructors must detail what types of assessments will occur and when. What will be the place of formal assessments. Will you require students to have formalized tests within the portfolio? Remember it is OK to use traditional assessments, especially for having students see how they score in comparisons. It also helps them reflect on their test taking skills and behaviors. In order to get the portfolio established, a checklist or point sheet can be devised to bring all students on line. This might sound a little behaviorist, but an instructor can use all types of learning theories to accomplish the learning task.

WRIGHT STATE UNIVERSITY MODEL

Wright State University is a metropolitan state-supported university dedicated to the educational, social, and cultural needs of the Dayton area with an enrollment of 17,000 graduate and undergraduate students.

Portfolio development began at Wright State in the fall of 1988 as a department-wide endeavor. The two areas in which it receives major attention are: (1) Phase I-Education: In this program phase, the beginning teacher education student is enrolled in introductory education course work and is required to begin a Process Portfolio (2) Phase III-Practicum: In the final phase, the students conclude their pre-service training with student teaching and are required to complete a Product Portfolio demonstrating their competency in achieving the Teacher education objectives, passed the National Teacher Exam and successful fulfilled intern teaching requirements. Along with

student teaching, students take their last education course, The Teacher in School and Society. In this course the portfolio is employed as an assessment tool for the students. Methodological coursework is accomplished in Phase II, and faculty continue portfolio development in this phase with students who have completed the portfolio introduction in Phase I. The portfolio contains five sections as well as the introduction and conclusion. The sections are: Professionalism, Content Mastery, Content Pedagogy, Classroom Management and Student-specific Pedagogy.

During the Phase I experience, students take two education courses and participate in a mentoring partnership. They also have one field experience before the term starts which lasts for one week. The "phase" design permits mentoring throughout the four-course sequence, and a mentoring professor may instruct all four courses.

At the end of the quarter, the portfolios receive a "mentor review" with the evaluation centering on adherence to the prescribed criteria, especially the reflective statements. The mentors use the portfolios during the student/mentor conference held in the last 10 days of the term. The became an asset for these conferences. Students used the portfolios as an analytical tool for their efforts and found the portfolio activity useful in connecting life experiences to undergraduate education (self concept). Formal assessment instruments are infused into two sections of the beginning portfolio. In the Professional section students are expected to place two personality assessments and reflect on them (The Myers-Briggs and the Edward's) (self concept). In the Content Mastery section they are to place their PPST scores, as well as other tests and other achievement instruments that document their content mastery.

Another element of the WSU project involves Phase III, Student Teaching. Student teaching occurs as the terminating experience in the pre-service program and the teacher education faculty believed that in the best interest of graduating students, they construct a

Product Portfolio from their process portfolio. The Product Portfolio has several formal evaluation instruments within it. The professional section can have personality instruments and the Professional section of the National Teachers Exam, but it must have proof of the professional teacher education competencies. The content pedagogy section must have the National Teacher Exam sections of content. Other formal content instruments like content classes' formal assessments, PPST or other standardized tests are suggested. Students are required to reflect on these formal instruments and analyze the results

In 1995 selected faculty have initiated a portfolio process with Professional Year Program interns to develop an electronic portfolio for documentation of professional skills. The PRAXIS Professional Assessment Domains/Criteria were selected as the model (ETS, 1995) for each interns portfolio. Using the PRAXIS Domains:

Domain A - Organizing Content Knowledge for Student Learning

Domain B - Creating an Environment for Student Learning

Domain C - Teaching for Student Learning

Domain D - Teacher Professionalism

Each intern was instructed to develop a portfolio (See Appendix A) that would document proficiency in each area. In particular, self-esteem activities are cited in Domain D and scattered in the other three sections.

As we developed this paper and analyzed our research findings for the past three years we were cognizant of the need to share findings and thoughts on how the professional portfolio assists in the documentation of self-concept. We believe that within the occupational career of teaching it is extremely important to assist entry year teachers in developing professional competence and reflection on the impact on self esteem levels. Certainly issues of self-concept, creativity and learning comprise an intellectual dimension of teaching. We believe that the portfolio permits a teacher candidate to document personal

interest, personal reading interest, and evidence of activity in new areas of both teaching and self interest. We believe the portfolio can help motivate individuals tap into their creativity, continue their education and keep their interest and vigor for the job alive. Certainly the choice of teaching as a profession is ultimately linked with job satisfaction and as many of you know a high number of first year teachers leave the profession within two years. It is within the *Professional Domain* that we believe the portfolio permits entry year teachers and professional teachers an opportunity to develop and document professional interest, career plans, personal aspirations, special talents and ultimately the ability to reflect on their career in the teaching human field. A healthy person is one who can successfully integrate the stresses of a demanding professional job, professional career, and continue to develop a positive outlook on life as they mature within their chosen field.

The professional portfolio permits students and/or entry year teachers to document problems in classroom management, learning difficulties, motivational issues, peer relationships with other teachers and ultimately personal satisfaction with their chosen field. By constructing a PRAXIS III domain oriented portfolio teachers are more comfortable and assured when undergoing the entry year PRAXIS III evaluation.

Entry year teachers with a high sense of self esteem will be more prone to document pride in their accomplishments, act independently, and assume responsibility for continual professional growth. We also believe that the portfolio permits documentation of their ability to tolerate high levels of stress and cite new teaching approaches with enthusiasm. It should also reflect their feelings regarding ability to influence learners in the classroom and exhibit a broad range of evidence in areas such as classroom management, classroom control, valuing learners and continual professionalism through self development.

Professional Portfolios at Wright State University for both undergraduates, graduate students, and professional year interns are specifically oriented around PRAXIS

III/Pathwise professional assessment domains. We have subscribed within teacher education and the educational leadership department to use the PRAXIS III/Pathwise domains for assessing and documenting skills of beginning teachers in classroom settings. In particular in Domain D: Teacher Professionalism permits ample opportunity for documentation of self esteem activities that lead to enhanced professionalism. In this category, teacher candidates can document certifications awarded, special awards, degrees completed, colleague comments about teaching and professional evaluations from professional administrators and others. Information of this source has a profound impact on self esteem and even more so when the candidate is able to see the material in a fully developed professional portfolio.

Technology and Portfolios:

At this point, it is essential to shift to the role of technology in portfolio development and self-concept analysis. We believe the electronic portfolio provides a unique opportunity to assist students with both professional and personal growth. A major research question in documenting portfolio use centered on **"What roles can technology play in authentic assessment of graduate students?"**

According to researcher Grant Wiggins (1989), assessment is authentic when we directly examine student performance on worthy intellectual tasks and traditional assessment, by contrast, relies on indirect or proxy 'items' - efficient, simplistic substitutes from which we think valid inferences can be made about the student's performance at those valued challenges. Wiggins continues by stating that authentic assessment is labor intensive, time-consuming and expensive. Meyer (1992) clarifies the difference between performance assessment and authentic assessment by asking who has the locus of control. In authentic assessment the student not only completes the desired behavior, but also does

it in a real-life context. The student determines the topic, the time allotted, the pacing, and the conditions under which the examples are generated.

Technology can be employed by both the student and the teacher to improve performance and instruction. It can provide the means for students to reflect on authentic tasks that will be part of their professional life. Teachers can enhance their instruction and lessen their workload by taking advantage of the unique capabilities of various technologies.

The utilization of technology in higher education has been minimal even through technology has been evident secondarily by "use of classrooms and labs emphasizing 'hands-on' computer-based drill and practice exercises" (Chambers, Mullins, Boccard & Burrow, 1992). Modern electronic classrooms encourage a change in faculty roles by supporting mentoring, stimulating and facilitating discussions. The newer electronic classroom "blocks out outside stimuli and presents situations as realistically as possible short of the use of virtual reality; thus it projects students into meaningful situations in which learning occurs faster due to the focus of attention" (Chambers, et al, 1992).

College of Education and Human Services

For the last five years, the graduate programs in Library Media, Computer Education and Teacher Education have required a portfolio as part of students' culminating activities. This requirement has evolved into a mediated document and presentation that represents an array of knowledge, skills and values obtained by the student during their degree work.

Students entering either program are required to take an entry course that introduces them to their specific program of study, expectations of the department, library resources available to them, and the basic structure and requirements of the portfolio they must

complete by the end of their program. The last quarter of their studies, students complete an exit course. During this course the student finishes and presents the portfolio, explores and shares research findings within their discipline, and reads a professional book to share with the class. The entrance and exit class are uniquely scheduled in that while they are both worth two quarter hours of credit, they meet as though they are a four-hour class but for only half of the quarter. The exit class meets the first five weeks, the entrance class the last half, and both meet together during the final exam week. Two full time program faculty are responsible for teaching these classes.

Having a common entry point has proven beneficial as students begin to bond with other beginning students, questions are asked and answered, the department has the opportunity to detail expectations, and a mind set is created about the development of the portfolio. Students are instructed on how to write reflectively and are encouraged to do so as their program progress. The exit class is usually smaller than the entry class and by this time most of the students know each other and end up as sources of support and assistance. Having both classes meet at the end has been very helpful for the entering students. The instructors leave the room near the end of the evening to give students an opportunity to talk freely about what the programs are "really like".

Most likely the infusion of technology into the assessment of these graduate students was natural and not as intimidating as this is their area of study. One program focuses on school library media preparation and licensing and the other deals with computer-based technology and instruction. There are several classes that both groups of students take and all have the opportunity to develop production skills that will enable them to create a mediated portfolio. Certainly some students enter with more skills and access to technology than others. Both programs of study require an internship near or at the end of their program.

There is an infusion of authentic assessment opportunities throughout the entire programs of study. Students are asked to perform tasks and demonstrate knowledge and skills, some of which are videotaped and available later for inclusion in the portfolio if desired. For example, students in the cataloging and classification class are asked to catalog and process a variety of materials using popular computer cataloging programs like Follett's *Quick Card* or *Winnebago's Catalog Program.* Students learning how to do research and explore reference tools quickly find and depend on *Internet* sources like gopher, archie, and other archival areas both in-house and throughout the world. Instructors have the opportunity to share in these explorations both on-line through "chat" modes or by reviewing findings via e-mail. Media and television production classes permit and encourage students to create materials that will support their professional work. Telecommunications coursework involves students in actual distance learning activities and involvement in a variety of delivery modes.

Digital and optical media are part of both programs of study. Understanding how laser video disks and CD-ROM disks work to reviewing many video-based materials are critical. The department hasn't moved yet to creating their own video disks or CD-ROMs but see this as a future goal. As the graduate programs progress, video tape is used for reflection and the development of instructional materials. Students and faculty check-out camcorders and tripods to video tape activities in classrooms, media centers, computer labs and other educational facilities.

Students in the computer education program of study are exposed to a variety of hands-on classes and workshops on topics such as Classroom Applications of Computers, Desktop Publishing, or DOS and Hard Drive Maintenance in which they can demonstrate their skill and knowledge of how to use these programs in an instructional setting.

As technology evolves, so does the variety and depth of use change. Students now

as a matter of course use video editing equipment to help assemble their videotape that accompanies the written portfolio. Inserts of examples of lessons taught, interviews, and skill-dependent tasks can be easily included. Student accounts on the university network provide the capability for electronic submission of assignments and electronic office hours with the faculty.

Issues of time spent, cost and labor are shifted onto the shoulders of the students rather than remain focused on the instructors. Instructors are now able to spend their time in valid and reliable tasks such as viewing and analyzing video taped excerpts of an intern's day, sharing in the joys and frustrations of online reference searches, critiquing newly produced materials. Faculty and students electronically engage in the oral analysis of research, collaborate on solutions to real problems, and together gain confidence in performance obligations.

Technology Hardware and Software

Specific technology involved in Wright State's graduate programs include:

- Video camcorders and editing equipment
- Macintosh and PC computer workstations and labs equipped with laser and dot-matrix printers and scanners
- Internal and external CD-ROM playback units
- Access to over a thousand educational and other computer software programs
- Online computer services like *America On-Line, Prodigy, CompuServe* and *Internet*
- Access to video disk players and a modest collection of video disk and CD-ROM programs

- Access to an educational resource center with a media production lab, and instructional materials collection, a microcomputer lab, and a professional reading area
- Students are given an account on the University's network that enables them to use e-mail, access to *Internet*, access to the campus libraries and accessing information and people in remote locations

Benefits

It is now possible to evaluate exit outcomes and areas of the curriculum that were usually not assessed. Traditional testing tends to "over assess student 'knowledge' and under assess student 'know-how' with knowledge" (Wiggins, 1992). The student can also use technology knowledge and skills to achieve an effect or products. Course assignments and class activities can be designed to support a variety of approaches, learning styles, and solutions. Technology allows for simulations and examples that are realistic in context, thought-provoking and engaging. Technology can assist in the development of testing activities that can be designed to replicate constraints and opportunities encountered in real-life professional situations. Using International Society for Technology in Education (ISTE) guidelines for technology competencies for all teachers, it is possible to review all programs of study for planning educational applications of technology in teacher education curricula. Even though these guidelines refer to basic teacher knowledge, skills and attitudes, all graduate education programs will find them useful in establishing instructional outcomes and determining assessments practices.

Conclusion

Higher education along with the rest of society is racing into a future shaped by technology. Predicating technology's impact on teacher education programs might be done by examining tends and innovations. Computer hardware has and will continue to improve in speed, size, efficiency, capacity, and cost. Software trends include transparent

communication between platforms, customizable applications, and converging user interfaces. As lines separating computers, televisions and telephones blur, the information highway will offer all types of possibilities for education and entertainment. Examples could include permanent personal telephone numbers, videophones, on-demand customized products, movies and still images on-demand, customizable television and newspapers, and customized textbooks and instructional materials (Beekman).

The college of Education and Human Services at Wright State University, has begun to restructure teacher education by providing access to technology throughout undergraduate and graduate programs of study and to assess students using a variety of technology tools and experiences. This task is not finished and along the way we must deal with issues of what it means to provide a positive climate for learning, how to support and enhance our faculties' new roles, determining what are appropriate authentic activities, and understanding how best to empower our students by helping them set personal and professional goals, allowing them to work cooperatively, and to engage in self-evaluation and reflection on their performance, progress and products.

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Appendix A:

Sample Portfolio Scoring Template

In reviewing a professional portfolio the following questions should be considered:

- What evidences of growth do you look for?
- What criteria do you use to judge the portfolio content?
- How much time will be needed?
- What judgments do you make about a portfolio?

Sample Score Sheet for Portfolio Assessment

- Scoring Rules: 0 = No Evidence; 1 = Provides Little Evidence;
  2 = Provides Two Examples; 3 = Provides Strong Detailed Evidences, Reflections, Is Organized and Uses Supporting Detail.

Sample Scoring Template:

Name: _____ Date: _____

Reviewed by: _____ Area: Professionalism

Evidences:	Ratings:
• Personal Strength/Weaknesses	0 1 2 3
• Efficacy (Values Students and Profession)	0 1 2 3
• Professionalism Relationships	0 1 2 3
• Relations With Parents	0 1 2 3

Summary Comments

Score _____ (Add points assigned for each category, maximum 12.)

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