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The movement toward authentic assessment and the role of technology

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The movement toward authentic assessment and the role of technology

Abstract

Assessment can be defined as the process of collecting evidence of what a student knows and is able to do. There are several types of assessment available for use. The list includes, but is not limited to, standardized tests, performance based assessment and portfolios. All of these have both positive and negative aspects to evaluating student learning.

THE MOVEMENT TOWARD AUTHENTIC ASSESSMENT

AND

THE ROLE OF TECHNOLOGY

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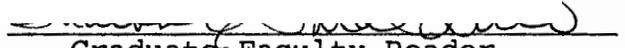
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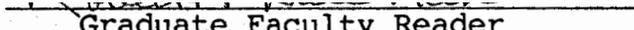
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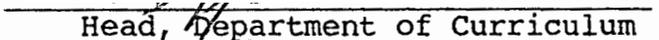
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CHAPTER ONE

Introduction

The role of education is ever changing. Teachers are constantly evaluating curriculum and how it is presented. The goal of education is to have students master that which is taught. The educational system then attempts to assess the learning that has occurred. Assessment can be defined as the process of collecting evidence of what a student knows and is able to do. The measurement and reporting tools that are used often times do not present an accurate picture of the student's achievement. "The use of the standard curve in the classroom results in a self-fulfilling prophecy and test results that are technically invalid and educationally destructive" (Wiggins, 1993, p. 155).

Like education, assessment continues to change. In the movement from an "industrial to an Information Age nation, we have moved from placing disproportionate value on rote memorization of decontextualized facts to highly valuing the ability to solve complex problems through critical thinking and communications skills" (Bruder, 1993, p. 23).

Several different assessment methods are on the forefront in the education field. More educators currently are now using standardized tests, performance based assessment tools, and portfolios to evaluate student progress in an attempt to present a more accurate picture of student achievement. Alternative or authentic

assessments require students to perform in some way. These writings, explanations, or constructions comprise performance based tests and in this paper will be considered performance based assessment tools.

Research Question

With the current trends of assessment in the educational field, what tools can provide the most accurate picture of a student's achievement?

Terms

Terms used in this paper include the following:

1. assessment--A systematic basis for making inferences about a student's learning progress.

2. developmental checklist--A checklist developed to assist in documenting the growth and progress of individual students.

3. performance based assessment--A form of assessment that allows teachers to evaluate a student's skill by asking the student to perform tasks that require skill.

4. portfolio--A record of learning that focuses on the student's work. Student's reflection on that work may or may not be included.

5. rubrics--A description of a level of performance for a given standard.

6. simulation--An attempt at recreating a real life situation electronically.

7. standardized test--a widely accepted multiple choice test that measures specific criteria.

8. summary report--A brief written report that summarizes a student's performance in several areas.

9. work sampling--An ongoing evaluation process that reflects the goals and objectives to be met while keeping track of a student's progress.

CHAPTER TWO

Literature Review

Educators are required to evaluate student achievement. Before choosing one or more evaluation method it is most important to look at the purpose for the assessment. Clarifying the reason for the assessment can make choosing the appropriate type or types of evaluation to be used more meaningful.

There are several reasons for assessment. One such reason is to diagnose learning and teaching problems. Evaluation is also used to report progress to parents. Assessment can aid in instruction and curriculum decisions. Determining placement or promotion decisions for students can be another reason to do assessment. Lastly, depending on the type of evaluation, it can aid the student in assessing his or her own progress. Determining the purpose of the assessment can be crucial to choosing appropriate evaluation methods and tools.

Educators and educational leaders have started to look at how different types of assessment can benefit the various reasons for the evaluation. Wiggins (1993) states: "Education is a purposeful activity, and we seek to have all students learn what we have to teach. If we are effective in our instruction, the distribution of achievement should be very different from the normal curve" (p. 154).

A reform of educational assessment techniques has come about over the past decade. There are three factors contributing to the reform movement: "the changing nature of educational goals, the relationship between assessment and teaching and learning; and the limitations of the current methods of recording performance and reporting credit" (Marzano, Pickering and McTighe, 1993, p. 9). Seeley (1994) suggests: "classrooms are moving from a testing culture -- where teachers are the sole authority, students work alone, and learning is done for the test--to an assessment culture --where teachers and learners collaborate about learning" (p.6).

There are several types of assessment available for use. The list includes, but is not limited to, standardized tests, performance based assessment and portfolios. All of these have both positive and negative aspects to evaluating student learning.

Standardized Tests

Standardized tests are one form of assessment currently being used in educational settings. The questions are often given in a multiple choice format. Test administration can be done to a small or large group all at one time. This type of format makes scoring of the tests easier and less expensive. However, these types of tests have many disadvantages (Kahn, 1989). The full range of a student's knowledge does not get tested. Every test is limited in what it actually can measure. The tests give the

learners the idea that learning facts is more important than learning to problem solve.

Standardized tests often drive the curriculum as teachers feel pressure for the students to perform well on the tests. The test may not match the curriculum for a specific school district. However, instructors find themselves teaching to the test material. Repeated failure on standardized tests can have a devastating effect on students. "Repeated failure breeds low self-esteem and negative attitudes toward learning, perhaps causing some students to drop out" (Livingston, Castle and Nations, 1989, p. 24). Standardized tests are often ethnically and culturally biased. Worthen and Spandel (1991) suggest "minority group members note that many tests have disproportionately negative impact on their chances for equal opportunities in education and employment" (p. 67). Students respond to test questions from whole experience not just from what they have learned in the classroom. The environment from which they come to school may be rich with experience or may be disadvantaged.

Performance Based Assessment

Performance based assessment is an alternative method of assessment. It is defined in Bruder's (1993) article as "assessment that allows teachers to evaluate a student's skill by asking the student to perform tasks that require the skill. The student is to perform with knowledge instead of merely recalling or recognizing other people's

knowledge" (p.23). Performance based assessment has many
of the same characteristics of portfolios. Actual samples
of student learning are evaluated for school based
learning.

One approach to performance based assessment is the
Work Sampling approach. The Work Sampling approach has
three components. Those components are developmental
checklists, portfolios and summary reports. All of these
components are classroom focused and educationally
applicable. The student, teacher, district administration
and the student's family are all involved in the process.

The first part of the Work Sampling approach is the
developmental checklist. This component covers such areas
as personal development, language, mathematical and
scientific thinking, social studies, art, music and
physical development. The checklist is accompanied by a set
of rubrics for the checklist. The rubrics explain in detail
what each areas expectations are. This enables the teacher
to evaluate all students consistently (Meisels, 1993).

The portfolio component of the Work Sampling approach
relies on collection of two types of work: core items and
other items. Core items are items completed by all
children, covering several different domains. Other items
can be selected by the teacher or student to individualize
the portfolio (Meisels, 1993).

The final part of the Work Sampling approach are
summary reports. These are brief statements produced by the

instructor to describe the student's progress.

The report is intended to accomplish three goals: To help teachers summarize information from the checklists and portfolios; to provide a document easily understood by parents; and to provide general information about each child's individual progress that can be used by school administrators and others (Meisels, 1993, p. 7).

The availability of technology in the classroom makes performance based assessment easier to implement and manage. Technology and performance based education go hand in hand. At the lower level of use could be the utilization of a bar scanner to scan observations of student work. Bruder (1993) suggests "teachers walk around their classrooms and scan bar codes that relate to their observations of student's work such as "mastered" or "developing" for a certain skill" (p.23). What would have been tedious record keeping, is now easy downloading.

At the high end use of technology is the student using multimedia to create demonstrations and creations of what they have learned. Student's can use the multimedia approach to demonstrate what they have learned, when pencil and paper testing may be inappropriate and much more difficult. However, it is also important to evaluate the learning objective and not the multimedia use itself (Bruder, 1993).

Another application of technology in the performance based assessment approach is the use of simulations. Educators must exercise caution when using simulations as an assessment tool. Simulations often time only give the end product, and not how the product was created or reached. The process is many times as or more important as the product. If the technology does not record the process, then the teacher must record that process for evaluation.

The Work Sampling approach to assessment is very time consuming. The instructor is not only involved in the collection of materials, but must also write summaries of the students' progress throughout the year. In addition, behavioral checklists must be completed.

Space for storage is another concern of the Work Sampling approach. The amount of records maintained throughout a year and the work collected can take a large amount of storage. Again technology can help as work samples can be scanned as photos for electronic storage. The issue of electronic back-up becomes a need when electronic storage becomes important for record keeping.

Portfolio

A portfolio is yet another tool to be used in evaluation. Portfolios have been used in other fields for many years. Their use in education, however, is a relatively recent concept. Portfolios can be used to meet many of the goals set forth by practitioners.

There are many different definitions for portfolios. The National Education Association defines a portfolio in the following way:

> A portfolio is a record of learning that focuses on the students' work and his or her reflection on that work. Material is collected through a collaborative effort between the student and staff members and is indicative of progress toward the essential outcome (Danielson and Abrutyn, 1997, p. VI).

Portfolios can be categorized into several types. The following are suggested descriptions and categories:

Developmental portfolio. This is where a teacher may document a student's improvement or progress in a specific subject area throughout a school year. Samples and self-evaluations may be included in this type of portfolio.

Proficiency portfolio. Proficiency portfolios can be used to determine eligibility for promotion to the next grade. Competence in areas such as math and science are included.

Showcase portfolio. Students document their best work throughout their educational career in this type of portfolio. Included can be research papers, projects, art work, anything that shows the student's acquired skill and ability.

Employment skills portfolios. In this type of portfolio student's include work readiness and

employability skills to show prospective employers.

College admission portfolios. Colleges and universities use student showcase portfolios to assess success at higher educational institutions (Lankes, 1995).

The scope of portfolios may vary. A portfolio may be used to assess a student's achievement in one specific subject area such as math or science, or it may be used to assess across the curriculum. Although definitions vary, there are also some shared characteristics. Portfolios consist of student work collections, both product and process. Also, the work collected in the portfolio is purposeful, not random. Lastly, portfolios include a reflection or comment component where students evaluate their own work or progress (Danielson and Abrutyn, 1997).

The steps in portfolio building can be broken down into four phases. The phases are collection, selection, reflection and projection. In the collection phase, the purpose for the portfolio and the objectives of the course work determine what work should be collected. The pieces of material collected should demonstrate that the student has achieved the concepts set forth in the objectives. The second phase is selection. Only enough pieces of work to show that the student has achieved the complete range of learning need to be selected for the portfolio. The third phase is reflection. In this phase the student discloses his or her thinking regarding each piece of work in the portfolio. The fourth step is projection. This phase allows

the learner to look forward and establish goals for the future (Danielson and Abrutyn, 1997).

The audience for the portfolios are the student and teacher. Parents can be involved in the portfolio process as sharing occurs at parent- teacher conferences. The portfolio can be sent home with the student for sharing with siblings and others important to the student. Another group that the portfolio might be shared with is the school district or state as documentation of student learning (Danielson and Abrutyn, 1997).

The increasing availability of technology in the educational setting has made technology-supported assessment portfolios a possibility for an additional progress reporting tool. Along with the advantages of a paper portfolio, the technology-supported portfolio has other positive aspects. Firstly, multi-media work can be easily accessible, portable and examinable. Secondly, performances can be replayed and reviewed (Barrett, 1994). The use of electronic portfolios allows the student to record words, images and sound from their educational experiences (Palmer, 1995). Many of these skills and processes were difficult to accurately record without technology. The assessment of that student can be greatly enhanced through electronic portfolios.

Technology-supported portfolios should include a video component. This makes the assessment more useful to parents and students due to the availability of video playing

devices in homes and schools today. Technology-supported portfolios can be an excellent tool to help in the communication process with parents. Parent-teacher conferences can be revealing for the parent as he or she watches his or her child read aloud at the beginning, and again at the end of the year (Bushweller, 1995).

Reading is one of the areas that the electronic portfolio is thought to be superior in recording student progress. Bushweller (1995) suggests, "educators say they can tape a child reading at the beginning, middle and end of the school year, and then compare those recording to see how the student's reading ability has progressed. The proof is all stored on a computer" (p.19). Thus, student work can all be stored in one place. The use of electronic-based portfolios is a natural connection for the integration of technology and the curriculum.

There are many concerns that need to be thought out when deciding whether or not to use technology-supported portfolios. One such concern is the storage of data. The different types of electronic portfolio pieces; word processing, hypermedia with graphics, scanned images, sound and movie files all take up a great amount of disk space. Storage of these items can be a major concern (Barrett, 1994).

A second concern is the availability of computers and other equipment. "Educators say it's best to have at least three or four computers per class before trying to use

electronic portfolios" (Bushweller, 1995, p. 21).
Educators need access to equipment such as scanners,
magnetic optical disc drives, video cameras or audiovisual
machines that digitize audio and video.

A third concern for the use of electronic or
technology-supported portfolios is the amount of time
involved. It can take many hours to scan in student work.
The educator and student must be selective in which pieces
of work are to be scanned and saved in the student's
portfolio.

Lastly, a concern for the use of technology-based
portfolios is the availability of technical support for
educators. Districts who have technical support already in
place will have less difficulty. However, those districts
who do not have troubleshooters already in place, will have
to deal with educators who may become frustrated and may
view the electronic portfolio as a time-consuming headache
(Bushweller, 1995).

Although the use of portfolios, electronic or paper,
as assessment tools have led to concerns by some in the
education field, there are many advantages to their use.
Evans (1993) suggests "samples of student work are
concrete demonstrations of what is known and what is not
known" (p.72). Students are given the opportunity to
"reflect, revise and restart, if necessary, in order to

paint a portrait of themselves as learners" (Evans, 1993, p. 72). The instructor may also go through these steps, in some instances.

There are four major areas in which portfolios are of an increased benefit when used. Assessment becomes authentic. Students choose work to include in their portfolios that show their best work possible. Unlike standardized testing, teachers can view the students as individuals and the perspectives are at the center of the discussion. The students and teachers participate in the active process of evaluating the work in the portfolios. Also, the instructor can concentrate on the student's skills and knowledge.

Instruction becomes enhanced. Students become shareholders in the instruction. They are more motivated and engaged in learning. Students are genuinely concerned about the quality of their work. "Portfolios permit a sharing of accountability for student learning with the students themselves" (Danielson and Abrutyn, 1997, p. 28). Enhanced teacher-student communication can occur as both parties clarify their interests in learning.

There are many ways to share the portfolios with parents. One way is to share the materials collected at parent-teacher conferences. The portfolio can be the center of the discussion. Student-led conferences can be used to allow the student to explain and describe work in the portfolio. The parent can then ask questions regarding the

work. The portfolio can also be sent home with a comment section for the parent to respond to the work included and the student's progress.

The success of portfolios can be spread through discussion with colleagues. Portfolio use forces teachers to clarify expectations. The assignments given must be of the quality expected for portfolios. The instructor can become immediately aware of parts of the curriculum in need of improvement. "When evaluating student work instructors must see to it that standards are not overly narrow and standards are communicated to the students" (Danielson and Abrutyn, 1997, p. 36).

CHAPTER THREE

Summary

With the current trends of assessment in the educational field, what tools can provide the most accurate picture of a student's achievement? Research has shown that there are a variety of assessment tools available for educational evaluation of students. These tools include, but are not limited to, standardized tests, performance based assessment and portfolios. Each of these models have both positive and negative aspects.

Standardized tests have been used for years. The instructor can test a large group of students in a short period of time. Scoring of the test is a relatively quick and easy task. These types of tests, however, teach students to be rote learners, not problem solvers. The tests often are biased to cultural differences.

In performance based assessment the student is evaluated on the process. The product does not receive as much emphasis. The work sampling approach to performance based assessment has three components: developmental checklist, portfolio and summary report. These pieces all fit together to form the complete assessment of the student. This approach gives a much broader range of the student's achievement. However, those in opposition of performance based assessment list amount of time spent evaluating and the amount of space needed for storage of collected work as possible problem areas.

Portfolio assessment can provide a wide range of data. The instructor and student select pieces of work to include in the portfolio. A key component is the self-evaluation and assessment that the student does of his or her own work. The student takes ownership in his or her education. The portfolio can be shared with parents. This sharing opens the lines of communication. Storage of collected work and time to evaluate are obstacles to instructors.

The increasing availability of computers and other technologies makes electronic portfolios very attractive. Electronic portfolios are much like paper portfolios. The instructor collects work completed by the student. However, the material is stored electronically, specifically on videotapes, audiotapes or computer disks. This type of assessment allows the evaluator to view the students in a broader range of knowledge. The availability of equipment, storage of work and time remain the concern of instructors when using electronic portfolios.

When choosing which tools to use, the instructor must initially decide on what the goals of the assessment are. Though all of the assessment tools discussed leave educators with some concern for validity, they also have positive aspects. A combination of assessment approaches would give the most accurate illustration of what a student has learned.

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