Authentic assessment of student work:

The use of portfolios

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Abstract. Two questions that will be explored in this article are, 'Why should teachers use portfolio assessment as a form of authentic alternative assessment in today's classroom?' And 'What are some of the guiding principles involved in developing student portfolios in order for students to take ownership of their learning in a heterogeneous class?' The use of student portfolios for assessing students' learning are becoming increasingly important as an alternative to traditional standardized assessment practices, particularly in North America. Portfolio assessment illuminates a dimension of student learning that cannot be found in traditional test standards. Student portfolios represent a multi-faceted approach to student assessment, and they provide teachers with a more diversified set of tools and processes for managing issues surrounding multiculturalism, integration, and student economic and ethnic diversity. This paper describes how student portfolios are used as an alternative assessment practice in the heterogeneous classroom in order to capture evidence of student growth and development over a period of time.

INTRODUCTION

Portfolio assessment is authentic in the sense that it provides a multitude of descriptive details regarding student achievement. Authentic alternative assessment practices focus on the learning processes students engage in, including the ways in which students represent, organize and use the knowledge acquired to process new information which is gathered from a variety of sources to better understand the thinking and learning processes of the students (Seely, 1996). Evaluation by authentic alternative assessment practices can be seen as part of the ongoing daily experience in the classroom (Goodman, 1991). Portfolio assessment is therefore linked at many points to the curriculum through objectives, content, instruction, and evaluation (Tyler, 1949). The decisions that teachers make have serious implications for students as these students progress through their academic programs. Since educators tend to rely on the results of assessment practices to determine the academic course for many students (Smith, 1994), assessment practices within the educational system, as a component of the curriculum, play a critical role, not only in the academic lives of many students, but in teachers' professional lives as well (Seely, 1996). This paper describes how student portfolios are used as an alternative assessment practice in the heterogeneous classroom in order to capture evidence of student growth and development over a period of time. Two questions that will be explored in this article are, 'Why should teachers use portfolio assessment as a form of authentic alternative assessment in today's classroom?' And 'What are some of the guiding principles involved in developing student portfolios in order for students to take ownership of their learning in a heterogeneous class?'

The use of student portfolios for assessing students' learning is becoming increasingly important as an alternative to traditional standardized assessment practices, particularly in North America, where it has long been assumed that learning can only be measured accurately and reliably using traditional assessment methods. Opponents of portfolios may claim that there is no validity or reliability in portfolio assessment of students because portfolios resist standardization, traditional standardization practices, particularly standardized testing, neither augment instruction nor enrich a deficient background or supply missing motivation (Moss, Huot and Williamson cited in Williams, 2000). However, 'standardization' is not to be confused with 'having standards' (Williams, 2000; Huot and Williamson, 1997; Wiggins, 1993).

William (2000) describes the postmodern view vis-à-vis portfolio assessment as "When students cannot reach the pre-established standards, the problem does not lie in the students or the instruction they receive; it lies in the standard" (p. 265). Teachers' assessment of their students tends to take the form of standardized assessments particularly in North America because of the stringent framework of public accountability. Teachers are skeptical about the public's acceptance of portfolio assessment, since it seems to be much more subjective than traditional paper and pencil and machine scored tests.

Portfolio assessment illuminates a dimension of student learning that cannot be found in traditional test standards. Student portfolios represent a multi-faceted approach to the assessment of student learning. They provide teachers with a more diversified set of tools and processes for managing issues surrounding multiculturalism, integration, student economic and ethnic diversity. Portfolio assessment makes allowance for learning opportunities that are suited to a variety of learning styles and dispositions. Furthermore, it provides students with different paths for demonstrating their knowledge and skills, and their capacity to use rubrics that guide them in the production and evaluation of their own work. This results in a more purposeful teaching and equitable evaluation system, which allows different students to produce quality work.

CAN TEACHERS INITIATE, SUPPORT, AND SUSTAIN CHANGES IN THEIR ASSESSMENT PRACTICES?

An alternative to district and school wide efforts to manage systematic change is the creation of communities of teachers who voice common questions and concerns about

their work and who wish to grapple with such critical issues as a fair and diversified assessment system that include portfolios, processes, performance, and authentic assessments. This diversified assessment system will offer the learners the opportunities to articulate what they already know and do and to juxtapose their experience with new material about learning and assessment. While there has been much talk about consultants and other outside agents being the education experts, that view is rapidly changing (Martin-Kniep, 1998). Teachers are being encouraged to acknowledge their own expertise, education, and background knowledge, and are realizing that outside people don't necessarily know the classroom reality. Teaching is complex, especially when viewed as optimizing "intellectual performance and passion in all students" (Wiggins, 1996, p. 7). Teachers are encouraged to continuously improve upon their work in an atmosphere that provides trust and risk-taking where professional development and growth is valued and respected (Martin-Kniep, 1998). As a result, teachers require an atmosphere that celebrates teachers as learners and experts in their respective fields of endeavour (Rettig, 1999).

AUTHENTIC ALTERNATIVE ASSESSMENT

Traditional paper-and-pencil assessments favor a certain kind of learner and learning and do not assess the true academic potential of the student. They are best suited for assessing recall-based knowledge (Martin-Kniep, 1998). Authentic alternative assessment, especially portfolio assessment, endeavours to view the student holistically, and in doing so, furthers constructivist approaches to teaching and learning. Thus, portfolio assessment reflects and refracts student learning and assesses them in a more complete way; the artifacts reveal how the student applies lessons to real life situations. This concept is not new, as portfolios have "an ancient and honorable history" among writers, actors, artists and university educators who have traditionally relied on portfolios to demonstrate their skills, achievement and creativity (Glatthorn, 1996, p. 31). Research in curriculum studies has clearly revealed that portfolios are constructive instruments for authentic assessment of students (Baron & Collins, 1993; Bird, 1990; Geiger & Shugarman, 1988; Graves & Sunstein, 1992). Paulson and Paulson (1991) define portfolio assessment as:

> A purposeful, intergrated collection of student work showing student effort, progress, or achievement in one or more areas. The collection is guided by performance standards and includes evidence of students' self-reflection and participation in setting the focus, selecting contents, and judging merit (p. 295).

Assessment practices implemented in today's North American classrooms can be categorized as either traditional formal standardized assessment, which is usually summative (Scriven, 1967); or as authentic alternative assessment, which is formative (Seely, 1996). Traditional formal standardized assessment practices, used to determine and evaluate students' knowledge on specific skills and concepts, are typically compared to the performance of a large group of students.

On the other hand, alternative assessment practices are used to describe the learning processes of students, such as how students represent, organize and use the knowledge acquired to process new information (Seely, 1996). Authentic alternative assessment practices use many sources of information in evaluating student performance and can include portfolios, performance-based activities, running records, checklists, anecdotal records and observations, to mention just a few.

Authentic portfolio assessment within the curriculum gives teachers a more reliable and accurate picture of their students' strengths and weaknesses than class work or single-event, high-stakes testing. Teachers get a more accurate indication of the kinds of writing an individual student can produce by viewing the collections of students' performance and work over a period of time (Paulson and Paulson, 1991). Thus, through a sequence of portfolios, it is possible for teachers to understand the growth and development a learner has experienced over a period of time. In this way, portfolios can demonstrate that real, authentic learning has taken place for individual students (Seely, 1996).

Difficulties in using traditional exit outcomes, developing purposeful teaching units and organizing learning activities can all be attributed to the fact that teachers are used to implementing a curriculum that they did not design (Martin-Kniep, 1998). As a result, difficulty is often experienced by these teachers in valuing the contents of the curriculum because teachers are required to cover the prescribed materials by the school district or the ministry instead of fostering what it is that students want to learn (Martin-Kniep, 1998). Using portfolios, however, students can explore and document topics, which are of interest to them. Portfolios permit the gathering of detailed information about the process and the product of the work accomplished by students. It can give a more complete and accurate picture of student strength and improvement than one single item of work or individual test score. When teachers learn about assessment and learning, they are able to process the material by applying it to their own teaching.

Schmit and Appleman (2000) suggest that assessment is a sharp-edged tool which, in the hands of the well-trained can cleanly separate good from faulty practice or sufficient from insufficient curricula, leading to greater accountability, more accurate diagnosis of ineffective methods or better means by which to address the needs of students. In the hands of the untrained or uninformed, it can "bring results varying between botched curricula to outright butchery" (p. 181). But assessment is not simply a set of tools that teachers can add to their curriculum and instructional strategies: Assessment is an integral part of curriculum, providing data for evaluation and allowing teachers to meet the needs of their students. The choice of assessment that teachers prefer to use reflects their own knowledge base about the curriculum content, learning ability, and assessment knowledge and skill development. It also reflects the teachers' beliefs about the appropriateness of audiences, the choices, and the uses of assessment data to document a particular learning outcome.

GUIDING PRINCIPLES

The term 'authentic' refers to tasks that require students to engage with real life challenges and problems. Given the fact that authentic alternative assessment practices depend upon a variety of methods and procedures to gather and analyze information, it is important to consider whether the alternative assessment practices are soundly constructed and implemented. In developing alternative assessment practices for the classroom, teachers must address Valencia's (1990) four guiding principles. Student assessment should be anchored in authenticity, be continuous and ongoing, be multidimensional and provide for active and collaborative reflection (Valencia, 1990). Sound authentic alternative assessment practices are designed to provide the information needed to evaluate student performance on an individual basis to monitor and provide feedback on her educational progress, and to allow the student to take responsibility for her own learning.

The student is encouraged to take primary responsibility for the selection of portfolio entries, although teachers and others may be involved to varying degrees. The student and teacher may decide mutually on the contents of the portfolio. On the other hand, if portfolios are mandated by the state or province, the required types of learning samples may be dictated and the learner may have limited control over what goes into the portfolio (Rolheiser, Bower & Stevahn, 2000). As a result, these highly standardized portfolios may restrict opportunities for teachers and students to demonstrate their individuality and ingenuity (Murphy, 1997, in Williams, 2000).

In some of the cases, the criteria for judging students are usually agreed upon by teachers and students and are not set by outside agents or agencies. Students may either document their best work or demonstrate their growth in their portfolios. Samples from categories of artifacts will, for example, exemplify achievement or will demonstrate learning over a period of time (Rolheiser, Bower & Stevahn, 2000) in subject specific areas. Thus the artifacts recommended by the teacher represent the individual expectations that the teacher has set for her student (Farr & Beck, 1991). According to Martin-Kniep (1998), there is an increased coherence in curriculum, instruction and assessment practices when there is a match among teachers' intended goals for student learning, what they teach how they enable students to learn and what they collect as evidence that learning has taken place. The foci of the evaluation are the product, the process and the performance (Worthen, 1993), and the work samples are collected and reviewed in a systematic way (Paris & Ayres, 1994). This match can happen only when both teachers and students are clear about the purposes and the objectives of content, learning and assessment (Martin-Kniep, 1998; Rolheiser, Bower & Stevahn, 2000).

According to Valencia's (1990) first guiding principle, portfolio assessment practices should be authentic in nature. As an authentic assessment practice, portfolios attempt to assess the 'orchestration, integration, and application of skills in meaningful contexts' (Valencia, 1990, p. 338). Artifacts in the portfolios are meaningful and purposeful pieces of information that display student progress in a myriad of contexts. Information gathered regarding student performance is used to guide curriculum and instruction to better meet the students' needs.

The second guiding principle (Valencia, 1990) is that portfolio assessment practices are on-going. The artifacts are collected and reflected upon throughout the school year. Portfolios offer evidence of growth and development as the pieces of information are evaluated. The process of collecting and assessing information is continuous since old artifacts are replaced with new ones as the former artifacts lose their relevance. Through the portfolio process, learning is viewed as always evolving and changing (Seely, 1996). Portfolios are not restricted solely to document the growth and development of student learning: Teachers may choose to use the portfolio format to reflect their own professional growth and development as well.

Thirdly, if we believe that learning is complex and multi-faceted, then the assessment practices used to evaluate the learning should also be 'committed to sampling a wide range of cognitive processes and affective responses' (Valencia, 1990, p. 338). In this way, students stand a better opportunity of being assessed on a multidimensional level through authentic portfolio assessment practices, allowing their strengths to be assessed, as well as areas of improvement.

Finally, reflection is a careful, systematic consideration of practice (Burke, 1997). Collaborative reflection among and between students and teachers is an important aspect of portfolio assessment methodology (Clark, 1995; Wolf & Siu-Runyan, 1996). According to Wolf and Siu-Runyan (1996), "reflection is what allows us to learn from our experiences; it is an assessment of where we have been and where we want to be next"(p. 32). The reflection process is critical for educators who want to grow professionally (Burke, 1997). Since discriminating the essential from the superficial is a necessary requisite to empowerment in our expanding world of information, schools are encouraged to provide teachers with the time and space to do so (Seely, 1996). Dietz (1994) wrote: "The process of looking at one's development through a portfolio process functions like a literal mirror-when one sees one's own image or performance-the lateral reflection sparks internal reflexion" (p. 10). Collaborative reflection engages the teacher and the student in the evaluative process. The student is evaluating her own strengths and areas for improvement, while the teacher is examining her own teaching effectiveness. As partners in the assessment process, teachers and students are actively engaged in dialogue about learning and teaching (Seely, 1996). In this way, the curriculum can support portfolio assessment within teachers' educational practices, thus challenging formal standardized assessment practices.

According to Cooper (1994) learning is a socially constructed process, "learners build their own knowledge structures rather than merely receive them from teachers" (p. 2). In today's classrooms, students are frequently asked to solve problems using information from their own backgrounds and experiences. With some exceptions, schools are increasingly moving toward a 'process' model of education where students become active participants in their own learning, compared to the more traditional transmission model where students are passive learners.

This 'new' perspective of learning through portfolio development is reflected in the way teachers incorporate a more authentic, higher-level thinking, performance-based curriculum; such an approach is more individualized, adaptive and interactive. This shift impacts not only curriculum and instruction but assessment practices as well. Authentic portfolio assessment is a good fit within the current constructivist perspective of learning because it not only includes recording and reporting of student performance through portfolios but observational and anecdotal notes, hands-on activities, and open-ended tasks (Seely, 1996).

Another reasons for embracing authentic portfolio assessment is the increase in cultural and linguistic diversity among students in the classroom. Teachers are seeing the benefits portfolio assessment bring, in better meeting the linguistically and culturally diverse students' needs, especially with second language learners (Seely, 1996). In contrast, traditional assessment practices tend to set these students for failure by having them spend too much time and effort trying to understand the language that they do not have time to answer the questions (Chamot, 1980; Garcia, 1991). Furthermore, differences in cultural knowledge and interactional styles affect students' performance on standardized tests, which in turn affect their academic achievement (Au & Jordan, 1982)

Portfolio assessment offers teachers and students the possibility of displaying knowledge in a variety of ways, such as in observations and through hands-on activities, and can result in increasing students' responsibility for their own learning. Thus portfolios are a vehicle for students to take ownership and responsibility for their own learning (Ford, 1994).

PORTFOLIOS AT WORK IN FIFTH GRADE CLASSROOMS

In an informal field study from a Canadian school district in Ontario, where teachers face a variety of skill levels and attitudes, has revealed that the implementation of portfolio assessment with fifty grade five students has provided a more sophisticated, authentic way of viewing student performance and achievement in writing. Students reacted differently to the first writing assignment, which was about their summer. Some stared at the blank page in front of them and not knowing where and how to start their stories while, others became talkative to a point of being disruptive that other students at the table were unable to work. Yet, others found joy and pleasure in sharing and writing their stories.

As a first step toward developing rubrics, students, and teachers worked together to decide how they could tell when a piece of writing is good or how they could tell if the piece of writing has substance. Through teachers and students modeling, practice, and discussion, students began to verbalize things like "This story is very detailed".

After the students were exposed to exemplary student work, good literature, and strategies and behaviors, teachers moved to discussions about rubrics. Since students had been through the process of describing what a writer looks like and does, they were capable of working with the teachers to develop a rubric. Students were then able to choose and select pieces of their work for their portfolios based on the identified criteria.

As a result, students learned to look at their work objectively and to point out ways in which they could improve. Students were free to make selections for their portfolio whenever they wanted. This portfolio assessment process has provided them with an opportunity to be part of the assessment/evaluation procedure, so when they received their report card, the students were not surprised. They were much more aware of what they knew and what they needed to learn next.

Teachers have also found that portfolio development and its basis in agreed-upon outcomes have allowed them to develop, in comparison to standardized tests, a outcome driven curriculum that reflects the same authenticity and focus as the portfolios themselves. Portfolio assessment has given the students many opportunities to demonstrate their skills and knowledge in those same-agreed outcomes.

WHY IS REFLECTION IMPORTANT FOR TEACHERS?

A majority of teachers find it difficult to articulate or explain whether it is a book or lesson that contributes to a student's understanding or ability, simply because the daily work of curriculum. Teachers are encouraged to develop a process that will help them identify learning outcomes for their students, to align their curriculum and assessment with those outcomes and to use these outcomes as the basis for rethinking their curriculum and Assessment practices within curriculum studies. For example, the Education Quality and accountability Office in the Canadian province of Ontario (EQAO) attempts to make teachers accountable for what they teach (Chitpin, 2003). Teachers are asked to identify specific indicators for each outcome statement and list learning and assessment activities that will elicit these indicators and their accompanying outcomes. Through discussions and dialogues with one another, teachers identify those aspects of the curriculum and their instructions that deserve more time and space. Teachers are encouraged to continuously reflect on and reinvent what and how they teach and assess (Martin-Kniep, 1998).

Tyler (1949) described the four fundamental questions that must be answered in developing any curriculum and plan of instructions. They are:

1. What educational purposes should the school seek to attain? (Objectives)
2. What educational experiences can be provided that are likely to attain these purposes? (Content)
3. How can these educational experiences be effectively organized? (Instructions)
4. How can we determine whether these purposes are being attained? (Evaluation) (Tyler, 1949, p. 1).

The teacher must articulate the learner outcomes ("What do I want my students to know and be able to do?") and indicators ("What specific actions or performances would my students engage in if they were to attain desired learner outcomes?") that guide her thinking in order to define appropriate curriculum and assessments. These outcomes become the basis for identifying specific learning opportunities ("What do I need to teach

or have students experience so they will attain these outcomes?"), assessment tasks ("What do I need to collect or administer to determine to what extend my students have grown toward and/or achieved the desired outcomes?"), and processes that elicit students' achievement and performance ("How will I communicate the meaning of mastery or accomplishment? What is good enough in terms of student performance?"). Designing tasks for students leads teachers to the identification of the performance criteria and, in some cases, to the use of scoring rubrics and exemplars (scales that define and differentiate levels of student performance on a task) (Seely, 1996).

The authentic portfolio assessment method is ideally suited not only to evaluate students' progress and final achievement, to provide appropriate intervention but to give both teachers and students ownership of their teaching and learning (Valencia, 1990). Additionally, it is a method of assessment that does not necessarily require all students to reach the same level of proficiency in a particular skill at the same time. One advantage that authentic portfolio assessment brings is that teachers can assess the performance of their students in a wide variety of tasks that would be difficult to assess through more traditional means or observation. Furthermore, authentic portfolio assessment allows teachers to work on each student's individual strengths and weaknesses without regard to where the rest of the class may be on a particular skill (Martin Kniep, 1998). By gathering information over time and in a variety of contexts, it also becomes possible for teachers to make informed decisions as to the appropriate instructional path to take to meet their students' needs (Seely, 1996).

CONCLUSION

Portfolio assessment constitutes an example of a multi-faceted method of assessing the growth and development of learning and teaching, functioning like windows for viewing students' deep and unique selves, not merely as a tool for assessing students' learning. They offer glimpses into the thinking ad learning of both students and teachers. As Valencia (1990) states:

> They represent a philosophy that honors both the process and the products of learning as well as the active participation of teacher and students in their own evaluation and growth (p. 340).

Decisions as to what is assessed, how it is assessed and why it is assessed are now in the hands of both teachers and students. This expanded notion of assessment, teaching and learning allows teachers and students to participate in assessment decisions and to feel that they are part of the process which leads to improvement (Valencia, 1990). Students and teachers, both get a sense of control over instruction, the curriculum and, ultimately, the academic program within curriculum studies.

New views of learning, a diverse student population in today's classrooms, and issues of empowerment for teachers and students have entered discussion on a variety of assessment practices. Teachers and students do not feel empowered regarding their opportunities to make decisions based on current traditional formal standardized assessment practices (Seely, 1996). In harmony with the social constructivist perspective of learning, where knowledge is shared among the teaching and learning community, portfolios as an authentic alternative assessment practice are opening up the decision-making process for teachers and students.

Teachers must take the lead in rejecting this new era of standardization by puncturing the belief that they "are required to cover the content" in spite of the results. Education is not about teaching students, testing them and hoping that they will score well: The role of the teacher is to promote learning and understanding, instilling a passion for further learning and discovery. Portfolio assessment engages both students and teachers in gaining better understanding of the complexities of teaching and learning

REFERENCES

Au, K. & Jordan, C. (1982) 'Teaching reading to Hawaiian children: Finding a culturally appropriate solution', in H.T. Trueba, G.P. Guthrie, & K.H. Au (eds.), *Culture in the bilingual classroom: Studies in classroom ethnography, Rowley*, MA: Newbury House, pp. 153-177.

Baron, J. & Collins, A. (1993) 'Portfolios in teacher education', *Journal of Teacher Education*, 4(1), pp. 200-210.

Bird, T. (1990) 'The schoolteacher's portfolio: An essay on possibilities', in J. Millman & L. Darling-Hammond (eds.), *Handbook of teacher evaluation: Elementary and secondary personnel* (2nd ed), Beverly Hills, CA: Sage publications, pp. 241-256.

Burke, K. (1997) *Designing Professional Portfolios for Change, Palatine*, Illinois: IRI/SkyLight Training & Publishing.

Chitpin, S. (2003) *'The Role of Portfolios in Teachers' Professional Growth and Development: A Knowledge Building Analysis'*, Unpublished doctoral thesis, Ontario Insitute for Studies in Education, Toronto

Clark, A. (1995) 'Professional development in practicuum settings: Reflective practice under scrutiny', *Teaching and Teacher Education*, 11(3), pp. 243-261.

Cooper, W. (1994) 'Staff development for portfolios and portfolio assessment', *Portfolio News*, 5(2), pp. 2-4.

Ford, M. (1994) *'Portfolio and Rubrics: Teachers' Close Encounters with Self-Evaluation as Learners in Teacher Education Courses'*, paper presented at the Annual Meeting of the National Reading Conference, San Diego.

Garcia, G. E. (1991) 'Factors influencing the English reading test performance of Spanish-speaking Hispanic children', *Reading Research Quarterly*, 25, pp.371-392.

Geiger, J. & Shugarman, S. (1988) 'Portfolios and case studies to evaluate teacher education students and programs', *Action in Teacher Education*, 10(3), pp.31-34.

Goodman, Y. (1991) 'Informal methods of evaluation', in J. Flood, J. Jensen, D. Lapp & J. Squire (eds.), *Handbook of research on the teaching of the English language arts*, New York: Macmillan Publishing Company, pp.502-509.

Huot, B. & Williamson. M. (1997) 'Rethinking portfolios for evaluating writing: Issues of assessment and power', in K. Yancey & I. Weiser (eds.), *Situating portfolios: Four perspectives*, Logan, UT: Utah State University Press.

Martin-Kniep, G. (1998) *Why Am I Doing This? Purposeful Teaching through portfolio Assessment*, Portsmouth: Heinemann.

Paris, S. G. & Ayres, L. R. (1994) *'Becoming reflective students and teachers with portfolio and authentic assessment'*, Washington, DC: American Psychological Association.

Paulson, P. R. & Paulson, F. L. (1991) 'Portfolios: Stories of Knowing', in P. Dreyer (ed.), Knowing: *The power of stories*, Claremont, CA: Claremont Reading Conference, pp. 294-303.

Rolheiser, C., Bower, B. & Stevahn, L. (2000) *The portfolio organizer: Succeeding with portfolios in your classroom*, Alexandra, Virginia USA: Association for supervision and curriculum development.

Schmit, S. & Appleman, D. (2000) 'Portfolios and the politics of assessing writing in urban schools', in B. S. Sunstein & J. H. Lovell (eds), *The portfolio standard: How students show us what they know and are able to do*, Portsmouth, NH: Heinemann, pp. 181-194.

Seely, A. (1996) *Professional Guide: Portfolio Assessment*, Australia: Hawker Brownlow education.

Smith, J. (1994) 'Standardized testing versus authentic assessment: Godzilla meets Winnie the Pooh', in L. Morrow, J. Smith, & L.C. Wilkinson (eds.), Integrated language arts: *Controversy to consensus*, Boston, MA: Allyn and Bacon, pp. 215-229.

Tyler, R. W. (1949) *Basic principles of curriculum and instruction*, Chicago: University of Chicago press.

Valencia, S. (1990) 'A portfolio approach to classroom reading assessment: The whys, whats, and hows', *The Reading Teacher*, 43, pp.338-340.

Wheeler, P. (1993) 'Using Portfolios to Assess Teacher Performance', in Professional *Portfolios: A Collection of Articles*. Arlington Heights, III: IRI/SkyLight Training and Publishing, pp. 75-94.

Williams, J. D. (2000) 'Identity and reliability in portfolio assessment', in B.S. Sunstein & J. H. Lovell (eds), *The portfolio standard: How students show us what they know and are able to do*, Portsmouth, NH: Heinemann, pp. 135-18

Wiggins, G. (1996) 'Embracing Accountability', *New schools, New Communities*, 12(2): pp. 4-10.

Worthen, B. (1993) 'Critical issues that will determine the future of alternative assessment', *Phi Delta Kappan*, 74, pp. 444-454.