THE DEMONSTRATION OF TEACHING VALUES IN ELEMENTARY PRE-SERVICE TEACHERS' E-PORTFOLIOS

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Electronic portfolios have become a part of many teacher education programs as technology is integrated into these programs. Accrediting organizations, professional associations and others have promoted the use of portfolios in teacher education both as a part of the teacher candidate's assessment of students and as a means by which the teacher education program assesses the developing teaching abilities of that candidate.[1] When used in the assessment of a teacher candidate, the electronic portfolio (e-portfolio) is a means of demonstrating the teaching values of the candidate. Teaching values are evident during the process of a candidate constructing a personal set of criteria for selecting the social studies lesson plans that will be included in the e-portfolio.[2] The very act of decision making incorporates values, even as the candidate is also meeting teacher education program guidelines for his or her e-portfolio. So, an important question for social studies teacher educators, particularly in elementary education where candidates are demonstrating their abilities in teaching an array of subjects, is "What teaching values are demonstrated by the choices elementary teacher candidates make when they select and include social studies lesson plans in electronic portfolios?"

An electronic portfolio can be defined as a "purposeful collection of student work that exhibits the student's efforts, progress and achievements."[3] Often, the e-portfolio consists of artifacts, evidence and reflections documenting both what the developer knows and is able to do in the profession of teaching. The e-portfolio initially differs from traditional portfolios in that information is collected, saved and stored in an electronic format.[4] E-portfolios require a considerable investment of time and effort on the part of students and instructors in both learning the technology to be used and in making decisions about the scope and contents.[5]

While an obvious difference between electronic and traditional portfolios is the use of technology in e-portfolios, some have argued that e-portfolios involve differences that are greater than simply formatting issues. Claims are made that e-portfolios have greater capacity to foster authentic self-assessment because their developers can restructure them relatively quickly and enhance them using technological applications such as graphics, highlighting, music, sound bites and commentary.[6] It has been argued that e-portfolios require the demonstration of problem-solving skills in terms of technology usage and, perhaps more significantly, in compelling the individual to take personal responsibility.[7] Responsibility gives a degree of control over the process. When a teacher candidate is involved in creating a personal e-portfolio, that individual also has a degree of control over the process of becoming a teacher.[8] It is not the technology itself, but rather the way in which teachers use the technology involved in the construction of e-portfolios and the added level of decision making and personal responsibility that impacts teacher education.[9]

The function of e-portfolios in teacher education has primarily focused on their use in assessment, both of students and teachers. In the context of student assessment, an emphasis is placed on process—on the collaboration between student and teacher that occurs during the documentation of the work.[10] In

school classrooms, K-12 portfolio assessment involves a systematic collection and analysis of students' performances as indicators of their development and learning.[11] Assessment through the construction of portfolios is considered by some to be a more authentic measure than standardized measures of the learning that occurs in a classroom. Portfolio assessment has the added dimension of fostering students' self-evaluations of their learning through stages of collection, selection and reflection.[12]

When used for teacher assessment the emphasis is on product, in which case the portfolio represents knowledge.[13] In teacher education a duality exists, whereby teacher candidates are students assessment of process is important, and whereby they are teachers in clinical placements assessment of product is also important. The dilemma of the portfolio's purpose in pre-service teacher education, as to whether it is to serve as "some measure of mastery of a body of knowledge explicitly communicated in course instruction and assessments, or whether its purpose is to express practical knowledge,"[14] has been the subject of much debate.

Research studies have identified a number of benefits gained from the use of both traditional and electronic teacher candidate portfolios.[15] An obstacle to e-portfolios, however, is the investment of time and effort by teacher candidates.[16] Despite this obstacle, e-portfolios have been found to encourage teacher candidates to review the values they held about teaching and to identify important elements of the learning process.[17] There is also an indication that e-portfolios promote learner self-evaluation even as they maximize the use of diverse learning strategies.[18] In addition, teacher candidates have been found to demonstrate problem-solving and critical-thinking skills as they are compelled to take responsibility for their learning when constructing e-portfolios.[19]

As teacher candidates make decisions while developing their e-portfolios, they must analyze information and demonstrate a level of knowledge.[20] Throughout the process, then, portfolio developers are actively involved in their own assessments.[21] It has been argued that the primary reason for the construction of an e-portfolio is to provide a tool to enlighten teacher candidates about those parts of being a professional that include self-monitoring and taking responsibility for assessing one's own accomplishments and skills.

The effective use of e-portfolios requires ongoing evaluation both on the part of the instructor and of the developer.[22] The central advantage of all portfolios, not just electronic, is that the instructor is able to assess the student's process of learning.[23] Evaluation requiring teamwork, creative thinking, and reflection goes beyond the limits of the traditional classroom.[24] It can be argued that e-portfolios shift the balance from teacher-centered learning to student-centered learning.[25] Multiple sources of evaluation, combined with self-evaluation, encourage teacher candidates to recognize and address individual strengths and weaknesses.[26]

It is evident that research on the role and functions of e-portfolios in teacher education is still quite limited, particularly with respect to elementary social studies teacher education. Although a number of advantages are suggested in the literature regarding the use of e-portfolios in the broader context of teacher education, there remain many unanswered questions about best practices in the use of e-portfolios with elementary teacher candidates in social studies education.

In a study by Cynthia Sunal, Theresa McCormick, and Dennis Sunal, elementary teacher candidates were asked to identify the personal criteria employed in selecting lesson plans for placement in their social studies e-portfolios.[27] Because the criteria developed by the candidates always included references to students' engagement with the lesson, it was recommended that e-portfolios should contain lesson plans that have been taught; reflecting teacher candidates' desired outcomes and rationale for selecting guided inquiry lesson plans implemented in their clinical placements. Since the process of constructing a social studies e-portfolio involves decision making and reflection, it also serves as an expression of one's teaching values. Building on these findings, the study reported here began with the question, "What teaching values are demonstrated by the choices elementary teacher candidates make when they select and include social studies lesson plans in electronic portfolios?" In addition, two other research questions were considered, "What, if any, changes are made to lesson plans when they are placed in an e-portfolio?" and "Is there any difference in the teaching values demonstrated when comparing the social studies lesson plans included in electronic and paper portfolios?"

Methods

This study involved a cohort of twenty-seven elementary education teacher candidates participating in a social studies methods course blocked with four other courses during the semester prior to their full-time internship. In addition to courses taken on campus, the candidates completed 240 hours in a three-day per week clinical placement over a ten-week period, with two additional weeks following at the end of the semester. These participants had been randomly assigned to this cohort in a four-semester upper division program in elementary education during their junior and senior years and were participating in semester three of the program during the study. They had been introduced to elements of lesson planning in the prior two semesters and had worked in a clinical placement one day per week during the first semester and two days per week during the second semester. During the third semester, they were introduced to inquiry teaching.

Teacher candidates developed and implemented guided inquiry social studies lesson plans following the learning cycle model during this semester.[28] The social studies methods course's conceptual framework is rooted in constructivist pedagogy and reflective practices that facilitate teacher candidates' construction of their own knowledge.

These teacher candidates develop and teach individual social studies lessons, then construct a social studies unit that they teach during their two-week clinical placement. A focus of coursework in this semester is building competence in linking individual lessons into a coordinated and sequential set of lessons constituting a unit. Teacher candidates select a theme based on national and state standards.

Data were collected in relation to self-selected social studies lesson plans—in which teacher candidates were asked to select the lesson they thought was their "best" during the semester—placed in their e-portfolio at the end of the semester. They were also able to post additional social studies lessons if they chose to do so. These social studies lessons, however, must have been taught at some point during the semester. Candidates prepared a commentary responding to the question, "Why did you pick this lesson to place in your electronic portfolio as your best social studies lesson plan?" A separate commentary was written in response to two questions related to the e-portfolio versions of the lesson plans. These questions were "What, if any, changes did you make to the lesson plan(s) when they were placed in an e-portfolio?" and "If changes were made, how do such changes attempt to take advantage of the characteristics of the e-portfolio in comparison to those of the paper portfolio?" Threads were identified within the commentaries by three investigators and compared, through consideration of supporting evidence, to achieve a consensus.[29]

A twenty-nine-item rubric, designed to score guided inquiry learning cycle lesson plans was used to evaluate all social studies lesson plans written during the semester.[30] A learning cycle structures a sequence of activities in a lesson designed to help students make conceptual changes. It begins with students' exploration of new social studies information, a skill or an attitude. This exploration leads to a more guided examination of the idea, skill or attitude through inquiry. It culminates in expanding the use of the idea, skill or attitude through application in new settings. Because of the characteristics of each phase of the lesson, these three parts are labeled as follows: exploratory introduction, development and expansion. This inductive approach, applying information-processing models, is often referred to as the learning cycle.[31]

Three scorers evaluated each of the nine social studies lesson plans written and taught by each teacher candidate, achieving a .92 inter-rater reliability using the Kappa coefficient method of calculating the reliability of categorical data. Kappa coefficient estimates the proportion of agreement among raters after chance agreement has been removed. The twenty-nine items on the rubric were scored with a "1" if it was present, complete and accurate, or with a "0" if absent. Two elementary education faculty members and one classroom teacher, who had taught the social studies methods course and previously scored lesson plans, served as scorers for this study. None of these scorers, however, had taught these teacher candidates in the social studies methods classes, nor did they have any input into the development of these lesson plans. The scorers knew that these were lesson plans that had been developed and taught during the previous semester. The rating scale contains four parts.[32] The first part includes five items examining the

background for the lesson plan. The second part contains eleven items examining the exploratory introduction phase of the lesson plan. The third part consists of seven items examining the development phase of the plan. The final part includes six items examining the expansion phase. Teacher candidates had a complete description of the components of effective learning cycle lesson plans and access to previous exemplar lesson plans. The internal components of the lesson plans were examined to determine whether there were threads among these components within the lessons placed in the e-portfolios. Lastly, paper and e-portfolio versions of the lesson plans were compared and contrasted to identify any changes that may have occurred between formats.

Random assignment was not a concern in this study since there was only one group. Therefore, the use of inferential statistics with a convenience sample such as this one is possible but limitations must be considered. An important limitation of this study was that the results were obtained from a relatively small population that was geographically limited. Therefore, the extent to which the findings presented in this study may be generalized to other undergraduate elementary teacher candidates in social studies education courses is a question for which additional research must be done.

Results

Teaching Values

Teacher candidates' description of criteria for lesson plan selection. The two most common threads found among the teacher candidates' criteria for selection of the "best" social studies lesson plan to place in the e-portfolio, found in all teacher candidate commentaries, were: a lesson they thought their students liked, and a lesson that resulted in learning.

How well students liked a lesson, as all candidates noted, was a result of an important factor, students' intensive involvement in an active role within the lesson. One representative teacher candidate's comment was "This lesson is interactive which means that the children are actively involved in hands-on, minds-on learning."

A second factor important in defining how well students liked a lesson, noted by 80 percent of the candidates, was the relationship of the content of the lesson to children's experiences. Such lessons built on prior knowledge while also setting up a problematic situation which called on students to engage in further explanation and investigation. These candidates indicated that students like being challenged as long as the challenge was not too great or too far beyond their present level of thinking skills and knowledge. One candidate gave an example noting that all of her students were familiar with tornadoes, a common natural event and disaster in this region of the country. Therefore, all the students had prior knowledge upon which to build. However, they did not understand why specific precautions needed to be taken when a tornado threatens. Students simply took some actions based on fear and on a memorized pattern of action. So, the teacher challenged them to describe what actions they took and to think through how protective such actions actually were. This candidate's students were motivated and ready to work through activities that would enable them to gain meaningful new knowledge and skills.

A third factor in determining whether students liked a lesson was the lesson's use of instructional strategies to facilitate students' active personal involvement and social interaction. Cooperative groups were used extensively in 90 percent of the lessons to accomplish such facilitation. Cooperative groups worked with open-ended activities that encouraged divergent thinking. Open-ended, divergent-thinking activities were viewed as increasing student control over learning in the lesson, thereby contributing to students' positive impressions of the lesson.

Throughout, the goal of student learning was important to these candidates. They consistently reflected on their lessons, considering whether students had gone beyond the prior knowledge they brought to the lesson—reconstructing the concept or generalization—or had developed an inquiry skill to a higher level.

Learning from a lesson cannot be separated from liking a lesson, in the view of these candidates, even though learning and liking are recognizable as separate threads in their commentaries. As noted earlier,

these candidates stated that they chose activities that were challenging, yet whose accomplishment was also well within the reach of students. As a result, they believed that the lessons would result in learning, as well as enjoyment for students. These candidates also ensured that students played an active role during the learning process. A conception of learning as resulting from active, personal and social involvement was evident.

Lesson Plan Analysis. The teacher candidates had selected a lesson that was also scored by the evaluators as their "best" lesson in 93 percent of the e-portfolios. When examining the internal components of the lesson plans for threads among them, the lessons selected were found to be consistently strong in the expansion, or last, phase of the lesson. There was an appropriate transition from the previous lesson development phase. The transition then led to learning activities, providing additional practice with the new concept or skill and additional time and experiences for constructing these new ideas. These learning activities helped students apply the new concept or skill in relevant situations that differed from that in which it was initially developed. Students then had opportunities to review, compare and contrast prior conceptions with the new constructs, new skills, related constructs or related skills. The concept or skill was extended to other related concepts or skills. The lesson concluded with a summary in which students briefly described its activities and the focus of the lesson.

A second thread identified in this study was a strength found in the first phase, or exploratory introduction, in approximately 59 percent of the lessons. These lessons captured the attention of students quickly and related the content or skill focus of the lesson to their prior experiences. The key idea of these lessons was clearly presented, usually as an open, divergent question, and was congruent with the goal(s) of the lesson. This question served to orient students to the purpose and objective(s) of the lesson. Learning activities in this phase of the lesson allowed students to test and confront their prior knowledge by trying out existing ideas, predicting outcomes and constructing tentative hypotheses. During these motivating and relevant learning activities, students interacted with ideas and materials that enabled them to begin their own inquiries about the key question. As a result, there was minimal guidance or expectation from the teacher. Adequate time was available for students to relate their prior knowledge to the new concept or skill. The learning activities in this exploratory phase of the lesson allowed the teacher to assess and diagnose students' present understanding.

A third thread, identified in 37 percent of the lessons selected, was a strength in identifying the background, and planning the overall characteristics, of the lesson. These lessons clearly identified a key idea containing goals derived from national and state social studies standards. Objectives throughout the lesson were consistent with the phase of the lesson plan that was being addressed. The content was age-appropriate and the materials and activities were appropriate to that content and goals of the lesson.

A fourth thread was the generally weak lesson development phase. Just 15 percent of the lessons were scored as accomplishing all components of this phase. Seven components, in this regard, were considered. First, there was a logical transition from the first (exploratory introduction) phase of the lesson that built upon activities in that first phase. Second, data collected in the first phase of the lesson were shared and an interpretive discussion about the concept or skill followed. Third, the concept or skill was appropriately labeled and described through teacher- and/or student-led discussion. Fourth, discussion of prior experiences with the concept or skill, including those of the exploratory introduction, was encouraged and accompanied by the provision of examples and nonexamples. Fifth, a variety of learning experiences were provided to explain and illustrate the skill. Sixth, students were encouraged to construct the concept or skill from those learning experiences. Seventh, students and teacher actively described the concept or skill to provide closure on its initial development and to identify any problems the students might still have in constructing that concept or skill.

Teaching Values Demonstrated through the Lesson Plan Analysis and Commentaries. The threads found in these candidates' lessons and in their commentaries demonstrate the teaching values employed in this process. Student enjoyment of a lesson—and by extension, of learning—is highly valued by each of these candidates. This value is found in a lesson, however, only if it represents more than surface interest and

enjoyment. It is deemed present, if students are deeply and actively involved in the lesson. These characteristics are evident in the teacher candidates' explanations.

Students' construction of powerful meaning from their learning activities is another value. The focus of the lessons selected for the e-portfolios was on major inquiry skills, concepts or generalizations. Lessons that focused on factual learning or the review of prior learning are not among those selected for inclusion in the e-portfolios by the teacher candidates.

Activities and instructional strategies within lessons that increase student control over learning represent another value. Student control is viewed as enabling and facilitating meaningful and powerful social studies learning. Student control is enhanced by the use of strategies that increase social interaction among students. Such interaction also increases personal involvement which, in turn, increases student control.

Another value illustrated by the lessons selected for teacher candidates' e-portfolios is the engagement of prior knowledge and the expansion of new knowledge and skills, beyond the context in which they are learned. These teacher candidates value social studies learning that is not isolated within a lesson, but is connected to what has come before and to what follows. The interconnectedness of learning is expressed in this value.

Changes Made When Lessons Are Posted on the Electronic Portfolio

This study next examined what changes, if any, candidates make to their lessons when they are posted on the e-portfolio. For 89 percent of the teacher candidates, the lesson chosen to post on the e-portfolio was one from their teaching unit. Others chose lessons written and taught earlier in the semester, noting that they found the earlier lesson best met the criteria they were establishing. For example, one candidate said, "The lesson I did earlier on banking had everyone involved. When we finished, they wanted to know what was happening tomorrow because they had lots of questions they wanted to talk about. They wanted to keep working on the topic." In two instances, candidates noted that they had posted all their social studies lessons because they showed the full range of, as one stated, "what I could do before and how much more I can do now to teach effective social studies."

When describing their e-portfolio lessons, 44 percent of the teacher candidates indicated they had made changes to the portfolio. Of those not making any changes, 35 percent said the original lesson plans looked more professional without technical alterations or additions. All of the candidates who did not make any changes linked their lesson plans to the portfolio. They noted that they had chosen what they deemed as interesting or lively icons for the links because, otherwise, their e-portfolio might appear dull, since they were not adding other features such as color.

Of those teacher candidates who elected to make no changes, 35 percent indicated that it was just much easier to add a link to an existing lesson plan stored elsewhere. These individuals recognized what was needed to make these changes, but were simply unwilling to invest the time or effort. Yet, they also acknowledged that a strength of the e-portfolio was "enabling"—the e-portfolio enables because it is easily accessed and components can be quickly linked or removed.

In addition, 31 percent of the teacher candidates indicated in their rationale that keeping the lessons in their original format serves two purposes: it emphasizes the inquiry components of these learning cycle lessons, and it more accurately shows the candidates' level of lesson-planning ability. This rationale was also tied to professionalism with these candidates stating that their professionalism was more obvious because they were not depending on technological supports, but only on the basic components of the lesson plan in their e-portfolio.

Those making changes in their lesson plans all indicated they tried to make the lesson plans more readable. Readability was increased, though, primarily by changing to a larger font size. However, most also reworked the format of the lessons. While the three stages of the learning cycle were kept intact, changes were made in the placement of materials used, key questions asked, assessments, state and national standards addressed and prerequisites. Headings were added as well. All teacher candidates used a three-column format to write the original lesson plan; placing the objectives in the left-hand column, the

procedures in the middle column, and the assessments in the right-hand column. About half of those making organizational changes replaced the three-column format with another type of format they deemed more readable in an e-portfolio. The value expressed in these changes was the ability of the e-portfolio to communicate the candidate's level of competence in constructing enjoyable lessons from which students would learn. Those not making changes, ironically, emphasized the same value, perceiving their existing lesson plans as best communicating their professional abilities in the construction of lessons that helped students construct meaningful learning.

According to the 15 percent of candidates who utilized color, it was added to the e-portfolio lessons to make them more attractive. Color was not used to emphasize parts of the lesson or specific activities within the lesson. Instead, it was used most often as a background and to separate one lesson from another. Again, the value of communication of professional capabilities was illustrated by these changes to the e-portfolio.

About 10 percent of the candidates added significant components to their lesson plans such as pictures related to the lesson's themes and a *PowerPoint* presentation. Although these components demonstrated a higher level of technology implementation, they were only found among a small number of these candidates e-portfolios. These components were added, according to the candidates, because they had been used when the lesson was taught. A photocopy of a picture or a printout of a *PowerPoint* presentation may accompany a lesson that is in a paper format; however, these candidates indicated that the color available in an e-portfolio and the ability to enlarge and reduce the size of an item on a screen are advantageous when a photo is used in a lesson. They also indicated that the *PowerPoint* presentations added to the e-portfolio had elements of sound and animation in them that were best viewed on screen rather than in a paper format. The paper format, therefore, did not as adequately represent the lesson taught.

Teaching Values Demonstrated in Paper and Electronic Portfolio Social Studies Lesson Plans

The use of an e-portfolio format for elementary teacher candidates' social studies lesson plans indicates that teacher values are more strongly expressed in the e-portfolio than in the paper format. Some of these candidates rearranged lesson plan components and added pictures and *PowerPoint* presentations to make the lessons more demonstrative of the active learning they espoused. On the other hand, more than half of these candidates did not make changes to the lessons when placing them on the e-portfolio, other than creating an attractive icon linking the lesson plan to the portfolio.

Candidates' comments indicate that a portfolio in either format must demonstrate their professionalism, interpreted as the communication of their teaching abilities. Those abilities include planning and teaching for challenging and active guided-inquiry learning, with a high degree of student control that students find enjoyable and are able to link to prior knowledge as well as expand to new contexts.

Conclusions and Implications

The results of this study indicate that elementary education teacher candidates share a set of values that influence the criteria they use to select their "best" social studies lesson plan for posting in their electronic portfolio. The two major values expressed were students' enjoyment of a social studies lesson and the learning constructed as a result of participating in the lesson. These candidates were able to further specify each of these, identifying such lesson characteristics as an appropriate level of challenge and the facilitation of social interaction.

These candidates viewed the e-portfolio as a vehicle for communicating their social studies teaching values through a demonstration of their professional abilities and competence. In examining teacher candidates' responses, it is evident that none of these subjects chose a lesson because it would display well digitally, using the capabilities of an electronic portfolio. The findings indicate that these teacher candidates are cognizant of values they hold about social studies teaching and that these values incorporate what they consider to be some important elements of the learning process in social studies,

such as active student participation and divergent activities. These findings support Leonard Herman and Mark Morrell's conclusion that e-portfolios can encourage teacher candidates to review their teaching values and identify important elements.[33]

Although the degree to which candidates used the capabilities of the electronic format varied, there was recognition of the ease in which links can be made to lesson plans, *PowerPoint* presentations and other teaching artifacts. There was also recognition that changes in the e-portfolio, other than the creation of links, are time-consuming; with several of the candidates in this study having been unable or unwilling to expend the additional time and effort required beyond adding links. Others viewed revisions made to lessons when they were placed on the e-portfolio as interfering with the communication of their lesson-planning abilities. None of the candidates, however, resisted the use of the e-portfolio. The teacher candidates' use of simple technological applications in this study is consistent with previous studies which found that e-portfolios enable their developers to highlight and enhance various components of the e-portfolio.[34]

A high level of agreement was found among evaluators and teacher candidates regarding which lesson represented the "best" lesson. The evaluators used criteria represented in a rubric to make their determination while the subjects developed their own criteria independently. These teacher candidates were found to be better able to plan some phases of the lesson plan than others. They were neither uniformly excellent nor uniformly weak in their lesson planning. The plans were chosen by the teacher candidates after having taught them, and were evaluated by the scorers with the knowledge that they had been taught. It can be expected that the scorers were not influenced by knowledge that these lesson plans had been taught since they did not have contact with the students during the semester in which they were developed and taught. On the other hand, it is appropriate to expect that teaching the lesson had an impact on the teacher candidates who experienced students' responses to, and participation in, the lessons. Therefore, the subjects' perception of students' positive responses to the lesson would influence their determination of the "best" lesson. The teacher candidate's commentaries support this conclusion.

The electronic portfolio lends itself to posting comments, reflections or a rationale, along with a lesson plan. Therefore, these teacher candidates could have used this opportunity to demonstrate how they have grown in their ability to identify areas within a lesson plan needing revision, and discussing what revisions could be made even in a lesson identified as their best. However, this approach requires confidence in one's teaching as well as a willingness to identify problem areas. While these subjects had extensive clinical experience in classrooms, they were not yet ready to use the electronic portfolio as a place in which they critiqued themselves in terms of where change was needed. Researchers have argued that e-portfolios lend themselves to self-assessment because of the developer's ability to make revisions, stimulating a continuing interaction with the portfolio that should generate problem-solving. While this study finds indications of such self-assessment in an e-portfolio, more research is needed to examine factors facilitating and limiting elementary teacher candidates' self-assessment in social studies education.

The construction of electronic portfolios represents an initiative in many teacher education programs that is part of the effort to implement technology into elementary social studies teacher education. The identification of their personal criteria for selecting lesson plans for placement in the e-portfolio appears to be important. Because the criteria developed by these candidates always included references to students' engagement with the lesson, e-portfolios should contain lesson plans that have been taught. This study indicates that the electronic portfolios not only demonstrated these candidates' teaching values, but also highlighted them in ways that are not possible with a paper portfolio. The study further indicates that while electronic portfolios are recognized as time-consuming to construct, they are also flexible and can be revised as the teacher grows professionally.

NOTES

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