The Role of Electronic Portfolios in the Hiring of K–12 Teachers

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Abstract

This mixed-method study explored the perspectives of principals involved in the hiring process of K–12 teachers in one Midwestern state. Participants' survey data was used to examine the pros and cons of portfolios, to determine preferences in portfolio contents and electronic delivery method, and to investigate what predictors significantly relate to participants' use of electronic portfolios. Findings for the benefits and limitations of employment portfolios show consistencies with past studies and one additional benefit—evaluating a candidate's organizational skills. Viewing video clips of candidates interacting with children received favorable reviews by participants with more than 64% of the participants desiring to see such an artifact. Using a DVD as a potential electronic delivery method was also revealed to be a desirable alternative to CD's although URL's were most preferred. Finally, principals' past use of electronic portfolios and years of experience as hiring officials were found to be statistically significant predictors of future electronic portfolio use.

Portfolios have been used for decades in many different fields. The practice of using portfolios in job searches appears to be gaining popularity as well (Costantino & Lorenzo, 2002; Wolf & Dietz, 1998; Wyatt & Looper, 2004). In education, portfolios were first unveiled as an assessment method for determining student learning in K–12 schools. More recently, universities have implemented electronic portfolios in an effort to document student learning for accreditation purposes (Wetzel & Strudler, 2006). Additionally, many institutions of higher education deem the portfolio's purpose to be twofold, adding the second use as an employment portfolio, also commonly referred to as a "selection" portfolio or an "interview" portfolio (Theel & Tallerico, 2004).

With a transition to electronic portfolios for potential use in the selection of teachers, it is important to gain insight from persons directly involved in the hiring process as to whether or not the electronic portfolio is a valued tool. Therefore, this research study was developed to determine how, if at all, building principals make hiring decisions based on selection portfolios. By examining the survey responses of principals, the study seeks to answer the following research questions:

1. What are the pros and cons of using portfolios in the hiring process?
2. What would principals desire in an electronic employment portfolio?
3. What delivery method would be preferred?
4. What factors predict principals' likelihood of using electronic portfolios and what potential improvements to electronic portfolios would increase principals' use of them in the hiring process?

Background

An electronic portfolio can be Web based or formatted using other digital media such as a CD. Electronic portfolios for employment purposes in education represent a teaching candidate's accomplishments by showcasing teaching, learning, and reflective artifacts (Costantino & Lorenzo, 2002). The electronic portfolio broadens the typical paper-pencil format of employment portfolios by including artifacts that may potentially blend audio, video, graphics, and text. In addition, hypermedia links can be used to connect specific standards to the various artifacts.

There are many benefits associated with the electronic format. First, the portfolio allows a candidate to demonstrate his/her technological competence (Costantino & Lorenzo, 2002). With an electronic format, the portfolio becomes more widely accessible and easy to duplicate for hiring purposes. This format also provides teacher candidate opportunities to market his/her skills in a professional manner. When reviewing this type of portfolio the audience experiences a multimedia presentation rather than passively reading about a candidate's past accomplishments (Wyatt & Looper, 2004). Specific benefits of electronic portfolios mentioned by hiring officials include a presentation of teaching talents as well as information provided regarding a candidate's perspectives and practices (Wolf & Dietz, 1998).

On the contrary, many hiring officials expressed skepticism regarding the candidate's ability to actually teach and what the portfolio documented his/her ability to be (Theel & Tallerico, 2004). In other words, employment portfolios typically only exhibit a teacher's successes, not weaknesses. The overall presentation, when done well, could potentially overshadow the actual substance of the artifacts and teacher qualifications (Wolf & Dietz, 1998). In a recent study where hiring officials were interviewed, the principals reported opposition altogether with regard to portfolios in either format, electronic or paper-pencil (Temple, Allan & Temple, 2003). Dissatisfaction with the idea of electronic portfolios in particular, pointed to an overabundance of information and hiring officials' lack of technology skills and time. More specifically, a panel comprised of principals, school officials, and university faculty believed the overabundance of information and limited time inhibited the use of employment portfolios in the screening process (Temple, Allan, & Temple, 2003; Theel & Tallerico, 2004). Painter & Wetzel's (2005) study suggested that electronic portfolio viewings for only the short list of teacher candidates would be more appropriate. Furthermore, principals thought that somehow "standardizing" the portfolio review process would be essential if portfolios were ever to become significant factors in the hiring process (Theel & Tallerico, 2004). Interestingly, Anthony and Roe (1997) found in their national survey of school districts that although few districts require portfolios in the application process, more than 50% of these districts later request portfolios at the interview stage.

Recent studies also offered insight with regard to portfolio contents. One broad recommendation is to decrease the trend for including too much information, suggesting that candidates be more selective with the artifacts chosen for the portfolio. When including a philosophy of

teaching, shortening the document to one page or less and bulleting key ideas is more desirable and easier to interpret (Painter and Wetzel 2005). One desired artifact is a candidate's resume (Temple, et. al, 2003; Wolf & Dietz, 1998).

Theel & Tallerico's (2004) study provides several suggestions regarding portfolio artifacts. First was the recommendation that candidates focus on a readable, brief, and highly selective format for the hiring portfolio while also suggesting typical portfolio contents, such as "lesson plans; photographs of projects, in-class activities and teacher-student interactions; examples or descriptions of classroom teaching practice, occasionally including an audiotape or videotape; and documentation of the applicant's student teaching experiences"(p. 28). Other requested portfolio contents included a candidate's teaching philosophy and on occasion, assessments of students' work and unit plans.

In Constantino & Lorenz's (2002) *Developing a Professional Teaching Portfolio: A Guide for Success,* chapter seven outlines two main classifications of portfolio artifacts: introductory artifacts and instructional artifacts. In general, introductory artifacts give information about how the employment portfolio is organized while the instructional artifacts showcase a candidate's teaching effectiveness, such as evidence of planning, projects that demonstrate a multicultural perspective, and the use of technology in the classroom.

Video clips as artifacts have potential, particularly clips that are real and convey information not readily found in paper format (Painter & Wetzel, 2005). Video clips have the potential to capture a candidate's actual teaching and how this instruction impacts student performance. Additionally, a video clip may exhibit how a candidate relates with students and works collaboratively with colleagues. A video clip may also showcase a candidate's ability to adjust instruction after analyzing assessment results. Interestingly, Shulman (1998) recommended "portfolios include not only the documentation of teaching, but the documentation of student learning. In the ultimate nirvana, the very best teaching portfolios will consist predominantly of student portfolios" (p. 36).

Furthermore, Painter & Wetzel (2005) found that hiring officials saw little value in linkage between artifacts and professional standards; however, interest in standard's linkage increased when K–12 students' achievement standards were considered.

We found no large-scale studies that revealed hiring officials' preference between paper portfolios and electronic portfolios. Perhaps this reflects the "evolving" role of portfolios in the hiring of K–12 teachers. Painter and Wetzel (2005) recommend two potential delivery methods: including the URL on the district application form and on a resume and/or having teacher candidates on the short list leave a CD. In addition, focus group participants recommended having hypertext links with changing color so as to track previously visited artifacts (Temple, et. al, 2003). Having preservice teachers post their employment portfolios on the university Web site was another recommendation.

Last, the literature was reviewed to find how principals' technology skills impact interest in using electronic portfolios during hiring. The ePortConsortium White Paper (2003) outlined seven broad areas in which electronic portfolio challenges may arise including *usability* and *assessment*. A correlation between these two challenge areas and the building principals' skills was found to impact the extent in which electronic portfolios are utilized in hiring. Many principals do not have an adequate level of comfort with technology to effectively work through an electronic employment portfolio (Reilly, 2003).

Summary

Although the previous studies unveiled both benefits and limitations of using electronic portfolios, these studies were often done on a small scale and in the format of an interview. The results were presented most often qualitatively and in the form of case studies. Some general information regarding a portfolio's contents and principals' general skill levels with technology were also found. Perhaps due to the rapid technological advances in very recent years, we found limited research which specifically addressed the use of electronic portfolios in the hiring of teachers. Furthermore, there have been no studies done using quantitative data. We believe results from our study will extend the knowledge of portfolio use in the hiring of teachers, knowledge that has potential to influence many educational stakeholders.

Methods

Data were collected through a 19-item survey that was developed specifically for use in this study. We found no previous portfolio studies that were conducted via a survey method. The four research questions guided our construction of the survey items. Before distributing the survey, the survey was piloted with a small sample of local principals for convenience purposes. Only minor revisions were made to a few survey items after the feedback was acquired through the pilot survey. The survey included demographic information, Likert scale questions, ranking items and open-ended questions. The Cronbach Alpha reliability coefficient for the Likert scale items was .644.

One hundred participants were randomly selected from a population of 1,005 principals in one Midwestern state. This sampling included principals from both private and public schools at all levels. One follow-up mailing and one e-mail contact was sent in an attempt to increase the number of participating principals. Participants completed one survey and were given the option of doing so in a paper format or an online format. Nearly all of the surveys were completed in paper format with only five participants choosing to complete the online format.

In all, there were 37 principals who consented to participate in our study. The majority of the participants, 81%, were over 40 years of age. The number of years served as a hiring official for their school ranged from 1 year to 30 years with a mean of 11 years of experience. School sizes also varied; the smallest number of students served was 66 and the greatest number was 2,500. Our sampling represented an average school size of 365 students. For the multiple regression analysis, two of the online surveys were not used due to inconclusive data. The entire survey is included in the appendix.

Data Analysis

The 19-item electronic portfolio survey for this study included three additional questions for principals who had used either format of portfolios in the past two years (see questions #4–6). Participants were asked to list both the pros and the cons of using portfolios in the hiring process of teachers. The responses for these two items were typed and mounted to index cards. We used the Constant Comparative analysis to code the data independently. Following our individual analysis, we met to discuss common themes among the data. The top four themes for both the portfolio pros and cons are discussed in the results section below.

The rest of the data was analyzed using quantitative methods. In addition to calculating the percentages to describe participants' preferences in electronic portfolio artifacts and delivery methods, we used the multiple regression analysis to determine whether electronic portfolio use is related to or predictable from paper portfolio experiences, years of experience as a hiring official and technology skill. With our sample size, three predictors were selected so as to allow approximately 10 cases per independent variable (Espin, Shin, Deno, Skare, Robinson, & Benner, 2000; Neter, Wasserman, & Kutner, 1990).

Results

What are the pros and cons of using portfolios in the hiring process? Following individual coding using the Constant Comparative analysis, we were able

to identify four main themes related to benefits of employment portfolios as identified by the participants in our study. These are listed in order of importance: *opportunity to view actual artifacts, comprehensive look, candidate's organizational skills,* and *convenience*. For the open-response item, the words "picture," "see," and "view" were used repeatedly as principals expressed the beneficial aspects of portfolio use.

Additionally, the principals identified the *comprehensive look at candidates* as being beneficial. For example, one participant commented that it "helped give a more complete picture of the candidate." Another principal's response included a record of "strengths, weaknesses, red flags, references" allowing us to conclude that the provided variety offered in this format was found to be beneficial.

The word "organization" was found in more than five of the total open-response comments made by principals with regard to the benefits of portfolios. The way a candidate organizes his artifacts provides others with an opportunity to pass judgment on the type of *organizational skills* displayed. The participants for this study viewed having this opportunity as a strength of portfolio use. Last, *convenience* emerged as a key theme. For example, the participants found having opportunities to view portfolios multiple times and in a location that was self-selected as desirable. In addition, we also received four "none" responses to the portfolio limitations open-response item. After further discussion and analysis the group concurred that this type of response was indeed speaking quite highly of portfolio use during the hiring stage and could be coded as an advantage.

There were four major portfolio "limitation" themes that evolved which are listed in order of importance to participants: *time factor, poor preparation, timing of presentation*, and *evaluation*. As noted in previous studies, the *time factor* presents an obstacle for principals particularly when portfolios present an abundance of information. In addition, candidates' *poorly prepared* portfolios may potentially display a negative portrayal of the candidate, often by including meaningless information or an obvious lack of organization. We interpreted principals' responses as a reflection on how this presents a drawback more to the actual teacher candidate than to the principal.

A third theme that emerged was that of when to showcase a teaching candidate's portfolio, *timing of presentation*. Several participants indicated that the interview was not an appropriate time to discuss one's portfolio. We interpreted this theme as an overlap with principals' concern with the *time factor* previously mentioned as the first emerging drawback.

Last, participants expressed concern with the difficulty in *evaluating* teaching candidates' portfolios. With different formats, an abundance of information, and lack of consensus as to what constitutes a "quality" portfolio, principals felt this was a negative aspect of portfolio use.

Additionally, we attempted to discover *what the participants would desire in an electronic portfolio used in the process of hiring teachers*. Our survey included a list of artifacts to select for inclusion (see survey item #9). An additional write-in question was provided to allow participants with an opportunity to recommend additional artifact choices for which there were four unique comments recorded. Table 1 reflects the artifacts selected ranked by percentage. There was no limit to the number of items a participant could select.

In addition to determining what content the principals valued, we included one survey item to learn what delivery method would be preferred by principals serving as hiring officials. The participants were given the following item:

> If you were to receive and use an electronic portfolio from a candidate, which delivery method would you prefer? Please rank the delivery methods to indicate the preferred delivery method for an electronic portfolio.

Table 1: Principals' Desired Portfolio Artifacts by Percentage (n = 37)

Desired Portfolio Artifact	Percentage of Participants Choosing This Response
Candidate's resume	94.6%
References	94.6%
Letters of recommendation	89.2%
College transcript	83.8%
Student teacher evaluations	78.4%
Candidate's previous work experience	78.4%
Candidate's teaching philosophy statement	64.9%
Video clip of candidate interacting with students in a classroom setting	64.9%
Evidence of reflection on teaching experiences	56.8%
Sample lesson plans	54.1%
Sample tests / other assessment instruments	35.1%
Artifacts to document experience with ethnic and cultural diversity	24.3%
Artifacts that document community service learning activities	21.6%
Examples of candidate's work in college methods classes	18.9%
Other open-response recommendations provided by participants	
I would like a statement of how the candidate uses assessment to guide instruction, rather than specific examples	2.7%
Authentic assessment &/or rubric design	2.7%
Photos of classroom organization	2.7%
General artifacts; candidate's choice—what do they deem worthy of inclusion?	2.7%

Table 2: Principals' Preference in Electronic Portfolio Delivery Method

Preferred Delivery Method	Percentage of Participants Choosing This Delivery Method
Web site address to view in a computer browser	51.4%
CD to play on my personal computer	22.9%
DVD to play on my computer or television	25.7%
Other (write in response)	0%

> Rank from 1 to 4 with 4 being the most preferred and 1 being the least preferred.
>
> ___ Web site address to view in a computer browser
>
> ___ CD to play on my personal computer
>
> ___ DVD to play on my computer or television
>
> ___ Other (please specify) _____

None of the participants provided a written alternative ranked "most preferred;" however, one participant recorded that an e-mail attachment could be an additional option although this was marked with the lowest rating. Our goal was to find out what method is most desirable; therefore the results in Table 2 reflect the preferred method of delivery.

Table 3: Multiple Regression Summary Analysis (N = 35) for Three Predictors (Independent Variables) of Electronic Portfolio Use in Principals' Hiring Decisions in the Next Year

Independent variable (Predictor)	Standardized Weight (Beta)	*t*
Previous Electronic Portfolio Use	.497	2.893 *
Previous Paper Portfolio Use	.163	1.027
Years as Hiring Official	-.277	-1.589

** p < .05. Note. R2 = .250*

Multiple Correlation = .50. Note. F (3, 31) = 3.453, p < .05.

Table 4: Multiple Regression Summary Analysis (N = 35) for Three Predictors (Independent Variables) of Electronic Portfolio Use in Principals' Hiring Decisions in the Next Year

Independent variable (Predictor)	Standardized Weight (Beta)	*t*
Previous Electronic Portfolio Use	.511	2.936 *
Years as Hiring Official	.312	-1.787 *
Self-Reported Technology Skill Level	.006	-.038

** p < .05. Note. R2 = .225*

Multiple Correlation = .47. Note. F (3, 31) = 3.000, p < .05.

Table 5: Principals' Responses to Options for Increasing Electronic Portfolio Use in the Hiring of Teachers

Option for Increasing Electronic Portfolio Use	Percentage of Participants Choosing this Option
A standard format for candidates to follow	86.5%
Training on the technology needed to assess portfolios	16.2%
A standard procedure or rubric for assessing electronic portfolios	29.7%
Other (Please specify)	0 %

Finally, we investigated whether future electronic portfolio use in the hiring process (dependent variable) is related to or predictable from various combinations of predictors:

1. Previous Electronic Portfolio Use
2. Previous Paper Portfolio Use
3. Years as a Hiring Official
4. Self-Reported Technology Skill Level

We looked at two different combinations of three independent variables, both which resulted in statistically significant results at the .05 level. Our regression equation used in Table 3 included previous electronic portfolio use, previous paper portfolio use, and the number of years the principal had served as a hiring official.

The results in table 3 show that previous electronic portfolio use holds the greatest Beta weight, followed by years of service as a hiring official. These factors are weighted with respect to their correlation with participants' responses for survey item #8, a Likert scale ranking that to determine the likelihood of electronic portfolios in hiring decisions in the next year. The weight of predictor #1, previous electronic portfolio use, is significant at the .05 level; however, the other predictors do not yield a statistically significant weight. The multiple correlation coefficient (.50) shows that the correlation between principals' use of electronic portfolios and the combination of these three predictors is significant.

Next, we examined a different combination of predictors to investigate the multiple correlation. The results are displayed in Table 4.

Two of the three predictors, previous electronic portfolio use and years as hiring official were found to hold significant standard weights; however, principals' self-reported technology skill level was not significant at the .05 level. The standard weights for the three predictors show a discrepancy in size (.511 to .006), which is much larger than found with the other three predictors in Table 3. The multiple correlation coefficient (.47) represents significance between the dependent variable (future plans to use electronic portfolios in hiring) and the combination of these three particular independent variables.

Finally, we were interested to learn what factors may contribute to increasing principals' willingness to use electronic portfolios in the hiring process. The following item was included near the end of our survey:

Which of the following would increase the likelihood of your using electronic portfolios to evaluate candidates in the future?

- ☐ A standard format for candidates to follow
- ☐ Training on the technology needed to assess portfolios
- ☐ A standard procedure or rubric for assessing electronic portfolios
- ☐ Other (Please specify) _____

The participants were not limited to one choice although the majority marked only one or two of the three choices (See Table 5). Additionally, .8% of the participants provided no response at all for this particular survey item.

Discussion

When comparing findings related to the pros and cons of electronic portfolios in the hiring process from this study with past studies, several consistencies are noted. The majority of the participants (83.8%) included written feedback with regard to the benefits and limitations on portfolio use. Those that surpassed these survey items were asked to do so in order for us to gain information based on firsthand experiences with employment portfolios. Three of the four emerging themes deemed as beneficial, *viewing actual artifacts*, *comprehensive look,* and *convenience* are already supported as pros to portfolios in the literature (Costantino & Lorenzo, 2002; Wolf & Dietz, 1998; Wyatt & Looper, 2004). Additionally, all of the "limitation" themes identified through our Constant Comparative analysis have also been noted in past studies. These themes include the *time factor* for hiring officials, the *timing of the actual portfolio presentation*, the negative impression a *poorly prepared portfolio* imparts, and the challenges associated with *evaluating electronic portfolios* (Anthony & Roe, 1997; Painter & Wetzel, 2005; Temple, et al., 2003**;** Theel & Tallerico, 2004).

Using qualitative methods for this study resulted in new findings that may be of interest to various audiences such as teacher candidates, teacher educators and hiring officials. Participants in the study identified the opportunity to view a candidate's *organizational skills* via an electronic portfolio as being beneficial. The word "organization" was mentioned multiple times in the written comments made by the participants for the open-response item. Moreover, this theme, *organizational skills,* was ranked third in order of importance as measured by participants' responses for this particular survey item. When analyzing the data with regard to the principals' perspectives of limitations of portfolios once again, *organization* was a word that emerged. This time a candidate's lack of organization portrayed a negative view of the prospective employee for the principals and we coded the limitation as *poorly prepared portfolios*.

In addition to using qualitative methods, our data was also analyzed using quantitative methods. We were interested in learning about the need for different kinds of portfolio artifacts and how to prioritize what contents should be placed in an electronic portfolio. The participants were asked to select any number of artifacts from a list of 14 provided. Interestingly, 10 of the 14 artifact choices were selected by more than 50% of our participants (n = 37) even though employment portfolios are to include a highly selective format (Theel & Tallerico, 2004) and this same sampling of participants were somewhat critical of portfolios that were poorly prepared. While the participants were concerned about the time factor involved in reviewing candidate's work and the tendency to see an overabundance of artifacts, the valued artifacts vary from person to person to some extent. Without including the open-response choice, every artifact option provided on the survey was marked by a minimum of seven of the 37 participants. We observed that the top ranked items—resumes, letters of recommendation and references are quite standard in job application processes. Resumes have been identified in past studies as being a desired artifact (Temple, et. al, 2003; Wolf & Dietz, 1998). We can conclude that these somewhat traditional documents are still valued by most of the hiring officials in our sample. As teacher educators, it would be important to disseminate to preservice teachers the need to include such documentation in their portfolios. Additionally, we would recommend the inclusion of artifacts that best showcase one's teaching qualities. With our study's unveiling of the valued "organization," of one's portfolio, teacher educators should also stress this finding to preservice teachers.

One promising finding for this portion of the study was the participants' interest in *viewing a video clip of the teaching candidate interacting with students in a classroom setting* (64.9%). This data supports Painter & Wetzel's (2005) study that outlines the potential for including video clips rather than all print kinds of documentation.

Surprisingly, *sample tests/other assessment instruments* was an artifact that received less than 50% of the support from our sampling. At the time of this study, the participants involved in our study were part of a statewide authentic assessment program where teachers are immersed in various aspects of classroom-based assessment. We predicted that building administrators would desire teaching candidates with some skill level in this area for this reason. At a closer look, however, two of the four write-in comments representative of one participant reflect a specific assessment-related artifact suggesting that *sample tests/other assessment instruments* may have needed further clarification or rewording.

In addition to investigating principals' preferences in electronic portfolio artifacts, we collected data that was related to preferences in electronic delivery method giving participants three options and a place to write-in a response. Painter and Wetzel (2005) provided two potential delivery methods: including the URL on the district application form and on a resume and/or having teacher candidates on the short list leave a CD. Our findings indicate that a URL is the most preferred delivery method, followed by a DVD and then the CD. These findings lead us to conclude that the DVD provides further convenience options for a hiring official while also allowing greater technological enhancements to a teacher candidate. Interesting to note, *convenience* was also a theme that emerged from our data when we explored the participants' perspectives of electronic portfolio benefits.

The quantitative data used thus far was shared using descriptive statistics in an attempt to provide information specific to our research questions. Additionally, we incorporated quantitative methods to investigate predictability factors with regard to participants' future electronic portfolio use. In our review of the literature this type of analysis has not been attempted in past studies. We examined different combinations of factors to determine if certain types of predictors are related to principals' use of electronic portfolios.

One predictor, past electronic portfolio use in hiring, was a significant factor for both combinations of variables. This finding implies that those participants with prior experiences with electronic portfolios viewed them as a beneficial evaluation tool and were willing to include them in hiring decisions again in the next year. The past use of paper portfolios did not prove to hold a significant standard weight as did the past use of electronic portfolios.

Interestingly, we did find that the number of years a principal served as a hiring official to be a significant predictor of electronic portfolio use. Perhaps with more experience in evaluating candidates, principals become more confident with permitting alternative methods of evaluation such as the portfolio route. If a hiring official knows which artifacts are most important, it may be simpler to work through to seek these contents out. Additionally, more experience may equate to more opportunities to view different kinds of portfolios. Although previous experience with paper portfolios did not hold a significant beta weight, when this predictor was combined with years of experience in hiring and electronic portfolio use, the multiple correlation was statistically significant at the .05 level.

Although we examined how the participants' self-reported technology level correlated to electronic portfolio use in hiring and found significance with the multiple correlation, the discrepancy in the Beta weight of self-reported technology level when compared to the other two predictors is appalling, a difference of .505 and .306 respectively. The low standard weight may indicate inaccuracies in participants' self-reporting. The lack of technology skill found in our study is consistent with past electronic portfolio studies that suggest principals' lack of technology skill inhibit electronic portfolio implementation (Reilly, 2003; Temple, et al., 2003). This finding indicates a need for Educational Administration departments to evaluate whether or not their program adequately prepares school principals for using technology in various ways.

Related to this question, we surveyed our participants to determine what kinds of training would be desired so as to increase their use of electronic portfolios in hiring decisions. Interestingly, when given opportunities to receive additional training on the technology needed to assess electronic portfolios, only six of the 37 participants felt this option would increase their likelihood of using electronic portfolios. Instead, an overwhelming majority of principals, nearly 87%, desired the candidates to follow a standard format in the development of an electronic portfolio. This option has the potential to eliminate many of the limitations of electronic employment portfolios that emerged in our study—time to present, time in reviewing, poor preparation and even the evaluation process could become more standardized. Findings from this study with regard to portfolio contents, combined with past studies, may also lead to recommendations for how this standard format should be developed.

Recommendations

As teacher educators, the information provided via a statewide survey has proven to be an invaluable tool. Despite repeated attempts to increase the return rate, the timing of our survey may not have been most appropriate for our sample. In the future, we would consult our Educational Administration experts to determine better ways to involve more participants as we set out to have 100 participants in our study yet only received 37 consent forms. For this reason, results from this study may not be representative of larger populations.

Additionally, we would recommend other teacher educators gather similar data through our survey or a similar tool so as to gather both qualitative and quantitative information from hiring officials on a larger scale. Follow-up interviews may be used to triangulate the qualitative survey findings. This information can then be disseminated with teacher candidates prior to entering the job market. There may be other demographic information or variables from the survey that can be used to

investigate the predictability of future electronic portfolio use with the multiple regression analysis. Additionally, findings from various surveys can be combined to increase the size of the study.

Video clips of a candidate's interaction with students proved to be a desirable artifact. As our technological society continues to advance, it would be interesting to explore other video and/or audio enhancements for electronic portfolio inclusion, such as video resumes, social networking sites, and vodcasting technology.

In conclusion, Anthony & Roe (1997) found that over 50% of districts, at one point, required portfolios. We recommend further work be conducted on districts that require portfolios with an attempt to standardize and eventually develop an evaluation form. The evaluation form could be used by hiring officials who could, in turn, monitor whether or not certain limitations to electronic portfolio use are eliminated.

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Appendix: Electronic Portfolio Questionnaire

1. Code: ___

Thank you for agreeing to participate in this study of electronic portfolio use by hiring agents. Please read each question and circle or check the appropriate response.

2. I have used electronic portfolios in the past 2 years to help evaluate a candidate during the hiring process. Yes No

3. I have used paper-based portfolios in the past 2 years to help evaluate a candidate during the hiring process. Yes No

Answer questions 4–6 only if you circled YES for either Question 2 or Question 3. Skip to Question 7 if you answered NO to both questions 2 and 3.

4. At what point in the hiring process did you use portfolios?

- ☐ Initial screening
- ☐ After the short list of candidates was determined
- ☐ During the interview process
- ☐ After the interview but before hiring

If you used a portfolio to help evaluate a candidate, what were the pros and cons of using the portfolio?

5. Pros _____
_____
_____
_____

6. Cons _____
_____
_____
_____

To what extent do you agree with the following statements?	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly disagree				
7. I will use paper-based portfolios in hiring decisions in the next year.	1	2	3	4	5
8. I will use electronic portfolios in hiring decisions in the next year.	1	2	3	4	5

9. If I were to receive an electronic portfolio from a candidate for a teaching position in my school, I would like to see the following items in that electronic portfolio:

- ☐ Candidate's resume
- ☐ Candidate's teaching philosophy statement
- ☐ Reflection on teaching experiences
- ☐ Sample lesson plans
- ☐ Samples of instruments used for assessment
- ☐ Examples of candidate's work in college teaching methods classes
- ☐ Artifacts to document experience with ethnic and cultural diversity
- ☐ Transcript
- ☐ Information about the candidate's previous work experience
- ☐ Artifacts that document community service learning activities
- ☐ Video clip showing the candidate teaching in a classroom setting
- ☐ References
- ☐ Student teacher evaluations
- ☐ Letters of recommendation
- ☐ Other: (Please specify) _____

10–13. If you were to receive and use an electronic portfolio from a candidate, which delivery method would you prefer? Please rank the delivery methods to indicate the preferred delivery method for an electronic portfolio.

Rank from 1 to 4 with 4 being the most preferred and 1 being the least preferred.

___ Web site address to view in a computer browser
___ CD to play on my personal computer
___ DVD to play on my computer or television
___ Other (please specify) _____

14. My level of expertise with the use of technology would allow me t o navigate through an electronic portfolio with ease.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

15. Check which of the following items you use on a regular basis in your job:

- ☐ E-mail
- ☐ cellular telephone
- ☐ handheld computer (Palm, Pocket PC, iPod)
- ☐ multi-function communication tool (Blackberry, Trio)
- ☐ Spreadsheets
- ☐ Word processor
- ☐ Scanner
- ☐ Digital still camera
- ☐ Digital video camera
- ☐ Internet or Web searches
- ☐ Electronic presentation software (PowerPoint, Keynote)

16. Which of the following would increase the likelihood of your using electronic portfolios to evaluate candidates in the future?

- ☐ A standard format for candidates to follow
- ☐ Training on the technology needed to assess portfolios
- ☐ A standard procedure or rubric for assessing electronic portfolios
- ☐ Other (Please specify) _____

Demographics

17. Age range (circle one) < 30 30–40 >40

18. Number of years you have served as a hiring official: _____

19. How many students attend the school at which you work? _____