Exploring Perceptions of Professional ePortfolios in the Hiring of

Medical Radiation Therapists

by

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Abstract

Healthcare today is a rapidly changing, complex environment and there is pressure for employers to identify and hire the best person - someone who possesses strong interpersonal and communication skills, robust clinical reasoning, and is technological savvy to ensure safe delivery and top quality patient care (McMillan, 2014). This study explores the role of an employment ePortfolio in the field of medical radiation therapy recruitment and hiring process, to support employers with the selection of best qualified candidates. This study used a mixed methodology, with quantitative survey data and qualitative data from open-ended questions. Twenty-eight individuals (22 females, 6 males) from 42 radiation therapy departments across Canada participated in the study. Sixty-eight percent were managers (n=19), 14% supervisors (n=4), 7% resource or charge therapists, and 4% human resource employees (n=1). Our results indicate that employers highly value a candidates' curriculum vitae within the ePortfolio, an introduction to the applicant, both written and video, along with the layout and ease of use being critical, as time is a potential barrier to use. Results were mixed regarding perceived value of samples of professional and reflective work, and artifacts were perceived to be the least valuable component of a professional employment ePortfolio. This study also explored the ePortfolios contribution to the assessment of a candidate, with participants agreeing it provided hiring managers a better sense of the person applying for a position, assessing a candidates' ability to communicate, and evaluating a candidates fit into the department culture. Our participants did not find the ePortfolio contributed to a more informed judgment of a candidate including: professional practice; level of critical thinking; level of development; and their ability to function within a team.

Contents

1 Introduction

1.1 Overview

Healthcare today is a rapidly changing, complex environment (McMillan, 2014). Health care professionals must possess the right attitude, along with a broad range of knowledge and skill, to thrive (McMillan, 2014). There is pressure for managers to hire the most appropriate person - someone who possesses strong interpersonal and communication skills, robust clinical reasoning, and is technological savvy to ensure safe delivery and top quality patient care (McMillan, 2014). McMillan (2014) articulates the challenge for managers to assess the proficiency of a novice practitioner and advocates using additional tools in the hiring process to select the best-qualified candidates.

A review of the literature demonstrated limited research on supportive tools in the recruitment and hiring process (Boody, 2009). In non-medical professions, such as teaching, portfolios have been used with some degree of success (Boody, 2009; Fanning, 2008; Mosely, 2005). Two main benefits to incorporating electronic portfolios (ePortfolios) into the hiring process are providing new graduates with an improved opportunity to market themselves (Dewan, 2010; Heinrich, Bhattacharya & Rayudu, 2007) and offering additional information and evidence about a candidate (Feather & Ricci, 2014; McMillan, 2014). It is conceivable that ePortfolios would provide these same benefits in the hiring and recruitment process of allied health medical professionals, including medical radiation therapists.

The field of healthcare is experiencing growing competitiveness, so it is increasingly important for a new graduate to be competent at marketing themselves to obtain a position

of their choice (Feather & Ricci, 2014). New graduates in the field of medical radiation therapy may have difficulty differentiating themselves from classmates on standard recruitment tools. EPortfolios could help to set students apart (Boody, 2009) and offer a potential advantage for new graduates as they attempt to join the workforce (Chatham-Carpenter, 2010).

Traditionally, curriculum vitae are uniform and standardized in Radiation Therapy (Canadian Association of Radiation Technologist, 2016) and do not evaluate artifacts that might demonstrate a potential applicant's behaviour, personal characteristics, professional judgment, congruency of professional values, and effective integration into a department culture (McMillan, 2014).   EPortfolios can provide supplementary information about a prospective employee which does not emerge elsewhere in the application or interview (Boody, 2009). An ePortfolio can add depth and evidence to defend professional competence and expertise, representing a valuable addition to the CV (Oermann, 2002).   Research on the effectiveness or use of ePortfolio's within the recruitment process is not well-documented in the literature (Woodley & Sims, 2011). Boody (2009) argues that employers should use ePortfolios as a source of data in making hiring decisions. In healthcare's highly competitive employment market, the development of an ePortfolio could be an essential tool for the new graduate (Feather & Ricci, 2014).

1.2 Research Goal

The purpose of this study was to investigate the perceived value of a supplemental ePortfolio in hiring medical radiation therapists.

2 Literature Review

2.1 Overview

Considerable research has been conducted on the use of ePortfolios in academia, art, engineering, architecture, business, and photography (Feather & Ricci, 2014, Moody, Stewart, & Bolt-Lee, 2002). However, until the last decade, ePortfolios were seldom used in healthcare (Feather & Ricci, 2014), and the literature on ePortfolio use is somewhat limited (Mosely, 2005). Currently, there is no research evaluating the value of the professional ePortfolio in the hiring practices of medical radiation therapists. Therefore, the following literature review is based on the use of ePortfolios in non-radiation therapy related environments. Five sections are covered, including definitions of an ePortfolio; evolution and purpose of an ePortfolio; theoretical foundations of an ePortfolio; the value of an ePortfolio; and potential impact of using an ePortfolios.

2.1.1 Definition of ePortfolio

In basic terms, an ePortfolio is an electronic platform which stores data, facilitates the organization and retrieval of information, and contains text, images, audio and/or video materials (Butler, 2006). However, the ePortfolio has significantly evolved from a simple storage medium into an extensive system capable of communicating both learning and professional experiences (Andre, 2009). PebblePad (2009) offers a more comprehensive definition, describing the ePortfolio as a system that allows capabilities, events, learning plans, or any other event which is personally or professionally significant to be linked, applied and/or reflected upon.

2.1.2 Evolution and Purpose

Within professional practice contexts, portfolios were introduced initially using a paper format (Wilkinson et al., 2002). They are often used as a tool for health professionals to document participation in conferences, courses, or self-directed learning activities as part of continuing professional development (Driscoll & Teh, 2001). Over time, ePortfolios replaced paper versions (Barrett, 1998). The early versions of ePortfolios involved the simple transition of a paper curriculum vitae to a web based format (Washington State University, 2009), where the majority of the materials and artefacts were text and scanned documents (Andre, 2009). The ability to use a digital platform for storage and sharing of information was beneficial, as it provided accessibility and ease of use (Andre, 2009). However, there was still a challenge for individuals to develop quality materials and for readers to ensure the authenticity of the claims (Andre, 2009).

As network services developed, ePortfolios evolved (Andre, 2009) into a tool that supported complex functions, including setting and monitoring goals, recording and integrating continuing professional development activities, managing learning projects, and documenting and reflecting on self-directed learning, self-assessment and performance assessment (Gordon & Campbell, 2013). The developmental and reflective properties of a portfolio distinguish ePortfolios from traditional curriculum vitae where a simple list of past achievements is provided (Andre, 2009).

2.1.3 Theoretical Foundations of ePortfolios

Green, Wyllie, & Jackson (2014) reviewed four learning theories which provide the theoretical basis for using portfolios in learning and professional contexts. These include Knowles' (1975) andrological approach, Kolb's (1984) experiential learning model,

Benner's (1984) novice to expert framework, and Schon's (1983, 1987) reflection in and on action.

Knowles' (1975) argued that students are self-directed, self-motivated and their past experiences provide relevance and meaning for learning. Knowles (1975) suggested that learners display readiness to learn as a result of personal goals, life experience, and attempting to solve problems. The ePortfolio provides a platform which can cultivate and develop these behaviours in adult learners (Endacott et al., 2004).

Kolb (1984) proposed an experiential theory of learning that combines experience, perception, cognition, and behaviour. Kolb (1984) suggested that learning is a process where knowledge is created through the transformation of experience. These concepts are then used as guides for the choice of new experiences (Green et al., 2014). Green et al. (2014) highlight the link between Kolb's (1984) work, to the application of the ePortfolio, as knowledge is seen to be created through the reflection on and transformation of personal experience.

The demonstration of Benner's (1984) novice to expert framework is also evident in the new graduate's development of an ePortfolio within healthcare. Proficiency of the learner, within the levels of the framework (novice, advanced beginner, competent, proficient and expert) can be established by assessing the learning outcomes and thought processes associated with an ePortfolio (Green et al., 2014). Reflection is an important process in the development of an ePortfolio. The reflective component of the ePortfolio has the potential to bridge content between theory and practice, linking didactic knowledge with the practice environment (Joyce, 2005; McCready, 2006). Level of expertise will vary through each stage of a career, as the new graduate attains experience and progresses

towards mastery. The ePortfolio allows students to demonstrate the use of individual abstract principles and link them to use of concrete experience as an expert, thus reflecting a new graduate's place on the learning trajectory (Green et al., 2014).

Professional practice was considered by Schon (1983) to be complex and not clearly understood through conventional models. Everyday practice was found to be messy, unpredictable, multifaceted, challenging, and stressful, therefore, practitioners needed to understand the complexities of practice before they could learn from practice (Schon, 1983). Schon (1983, 1987) discusses reflection-in-action and reflection-on-action, both of which are critical to the philosophy of ePortfolio use (Green et al., 2014). Reflection-in-action occurs during an event or situation when decisions and behaviour affecting the outcome can be changed. As a healthcare practitioner, reflection is a critical behaviour which leads the practitioner to question assumptions that form the basis of knowledge (Green et al., 2014). Reflection-on-action occurs after the event or situation, requiring the individual to think back and consider their actions during the event. This reflection will not impact the outcome but is useful for the individual to uncover how knowledge was used in practice. Knowing-in-action and reflection-in-action both contribute to how professionals apply knowledge in practice (Green et al., 2014).

The learning process of reflection aims to gather, analyse, and apply evidence (both scientific and tacit) to enable healthcare professionals to learn from experience, apply new knowledge, and therefore, be more prepared in the future (Gordon & Campbell, 2013). Moon (2004) defined reflection as thought processing, applied to complex or unstructured ideas, which do not have an obvious solution. Moon's model of reflection includes identifying an issue, need, or dilemma, and in attempting to understand, leads to

transformative learning (Gordon & Campbell, 2013). Effective self-reflection skills are fundamental to the development of a quality ePortfolio, as reflection needs to be a mindful and intentional strategy, which seeks understanding and learning from both clinical and professional practice (Green et al., 2014).

2.1.4 Value of ePortfolios

An ePortfolio potentially provides at least two areas of value in the hiring process: as a marketing tool for the applicant and an assessment tool for the recruitment panel.

2.1.4.1 *Marketing for Applicants*

The first key benefit for an applicant using an ePortfolio is the ability to showcase him/herself. In today's competitive job market, it is important for applicants to be competent at marketing themselves to improve their chances of obtaining a job (Feather & Ricci, 2014). Employers want to understand the person behind the curriculum vitae. Heinrich, Bhattacharya, & Rayudu (2007) reports that recruiters believe it is important for applicants to get their personality across as part of the recruitment process, and emphasise that multiple characteristics make a person suitable.

In an employment situation, an ePortfolio can be a powerful self-marketing tool (Dewan, 2010; Heinrich et al., 2007), providing a broader platform than the curriculum vitae to showcase skill, achievement, and quality of work. The ePortfolio allows an individual more creativity than a standard CV, is simple to deliver to an employer as a link and provides employers access to more information than they would typically receive in a paper-based format (Woodley & Sims, 2011). For a new graduate, development of an ePortfolio could be an essential tool to promote their application within the recruitment process (Feather & Ricci, 2014).   EPortfolios can help to set applicants apart from their

peers (Boody, 2009) by providing additional information and evidence about a candidate to a hiring manager (Feather & Ricci, 2014; McMillan, 2014; Dewan, 2010). The ePortfolio offers more detail and depth, compared to the summary text of a CV, allowing a manager to look beyond the curriculum vitae and get acquainted with the candidate on a more personal level (Heinrich et al., 2007). An ePortfolio, then, offers a potential advantage for a candidate, especially for new graduates, as they strive to enter the workforce (Chatham-Carpenter, 2010).

The benefit of being able to produce highly professional applications that integrate quality evidence to support claims has become increasingly important for professionals striving to attain a competitive edge (Andre, 2009). Applicants must use a variety of tools to convince the employer that they have the right credentials, achievements, experience, goals and that they would be a good fit for the department (Akpan & Notar, 2012). The ePortfolio can be a valuable adjunct as a way to distinguish oneself from other applicants (Chatham-Carpenter, 2010; Collin, 2011).

However, there is a common belief that when compiling an ePortfolio, volume is related to quality, and the ePortfolio has the potential to accrue large amounts of irrelevant information (Andre, 2009). If managed poorly, an ePortfolio may be so basic that any benefit may be lost. On the other hand, a collection of extended artefacts can be overwhelming and equally meaningless (Drisicoll & Teh, 2001). Ensuring that the materials are of professional quality, reflect current professional standards, and adhere to ethical and professional guidelines is important (Andre, 2009).

In a study of educational administrators (252), Mosely (2005) explored the use of an ePortfolio in the hiring process. The authors report that greater than 80% of respondents

believed ePortfolios provided candidates with an opportunity to efficiently present information, and 65% agreed the ePortfolio is a useful means of distinguishing one candidate from another, along with identifying an individual's strengths.

2.1.4.2   Assessment Tool for Hiring

The second key benefit of an ePortfolio over standard curriculum vitae is helping a hiring panel to assess an applicant. There are two ways the ePortfolio supports this process.

First, the ePortfolio provides more personal information about a candidate during the hiring process. McMillan (2014) expresses the difficulty in evaluating candidates during the hiring process, especially novice practitioners. Curriculum vitae provide an overview of a candidate with point form highlights for each performance category, but not in-depth information. The curriculum vitae lists formal education, however, it can be challenging to interpret, as it tends to suggest academic success but does not necessarily equate to success in the job (Wonacott, 2002). The ePortfolio demonstrates the knowledge, skill, experience, and disposition a candidate possesses (Jones, Downs, & Repman, 2012), including an individual's behaviour, personal characteristics, professional judgment, alignment of professional values to behaviour, and effective integration into a department culture (McMillan, 2014).

Second, an ePortfolio can illustrate a candidate's level of a professional capability. The ePortfolio demonstrates depth of experience and evidence to illustrate the candidate's professional competence and expertise (Oermann, 2002). The ePortfolio can be considered an indicator of an applicant's learning and experience (Katerattanakul & Siau, 2008), as the quality and content of an ePortfolio provide information about an applicant's stage of

development and experience with academic knowledge and clinical practice (Cottrell,

2007). In the medical community, the pace of advancement is significant, and therefore

currency of knowledge is expected to be revised every two to five years (Hughes, 1990).

This means that understanding the level of a candidate's professional expertise, along with

their aptitude for research methods, depth of reasoning, and critical thinking with the

material (Tribe, 1994) becomes critical when evaluating a candidate. In addition, an

ePortfolio provides a measure of affective skills, self-assessment, and reflection

(Bhattacharya & Harnett, 2007; Robles & Braathen, 2002), which can be valuable attributes

to assess when evaluating a potential candidate, or comparing candidates'.

The multidimensionality of ePortfolios offers leadership another tool in the

employment process beyond the curriculum vitae, application, and interview (McMillan,

2014). Using the ePortfolio provides a clean and concise method for employers to identify

unique qualities and skills of a potential new employee (Feather & Ricci, 2014), and

maximise the potential of hiring qualified candidates who are a good fit for the department.

2.1.5 Impact of the ePortfolio in the Hiring Process

Time has been noted as a barrier to consistent ePortfolio use in hiring practices

(Moody, 2002). Mosely (2005) explored the use of ePortfolios in the hiring practices

among 252 educational administrators and warned that time was an issue during the

assessment process. The authors reported that those who object to ePortfolios found them

too time-consuming to review. The authors added that candidates needed to be highly

selective in their presentation of material in an ePortfolio.

Research on effectiveness and use of ePortfolio's within the recruitment process is not

well-documented (Boody, 2009; Woodley & Sims, 2011), especially in the allied health

domain. Hallam et al. (2008) noted that there had been little research on the actual use of ePortfolios in the recruitment process or employer's preferences. Fanning (2008) commented that there was no standardised structure for an ePortfolio, particularly within an employment setting. Standardisation, though, is essential to maximise consistency and inter-rater reliability in the assessment process (Feather & Ricci, 2014).

The focus in the ePortfolio literature emphasises practical tips on ePortfolio creation (e.g., Cotterill et al., 2006; Staub & Johnson, 2003; Walz, 2006), however, considerably less advice exists to help hiring panels to evaluate them (Carliner, 2005). Despite widespread ePortfolio use, there appears to be no consensus about purpose, content, how long it should be, or how it should be organised (Fanning, 2008; Sowter & Cortis, 2011). Criteria for evaluating portfolios are individualised to disciplines, and additional criteria need to be developed to help reviewers identify unique or hidden talents, and support evaluation unique to managers' needs (Carliner, 2005).

Despite the minimal ePortfolio recruitment evidence from healthcare, experience in education (Mosely, 2005; Sivakumaran, Holland & Heyning, 2010) and business (Boody, 2009) suggests that portfolios can be used for evaluating potential recruits. Education uses ePortfolios to integrate theory into practice, to demonstrate the mastery of curriculum and skills, and to enhance the assessment process by revealing the depth and breadth of knowledge (Patrick-Williams & Bennett, 2010).

Mosely (2005) surveyed educational administrators (n=252) to explore their use of ePortfolios in the hiring process. The authors reported that 76% of respondents felt that the ePortfolio allowed assessment of a candidate at a greater depth, and 65% agreed that the ePortfolio is a good means of distinguishing one candidate from another and identifying

an individual's strengths. The authors reported that while only 46% felt that the ePortfolio played a major role in the hiring process, the majority of respondents (90%) agreed that the ePortfolio provided information not available using other methods.

Sivakumaran et al. (2010) surveyed 1600 educational administrators in two states and reported that 94% of participants would review the portfolio, regardless of whether it was required for the application process. Administrators still liked a curriculum vitae and indicated that the ePortfolio was an extension of traditional application materials. However, the authors suggested that administrators did not appreciate them to their fullest extent. The authors encouraged candidates to continue to use ePortfolios to provide snapshots of their skill sets, supporting documentation, and evidence of qualification.

Moody et al. (2002) surveyed 1500 recruiters from across the United States and reported that business students did not submit portfolios in large numbers, although 76% of recruiters said that they would have liked to see them. Only one-third of applicants offered them ePortfolios in the interview process, however, over 70% of the recruiters commented that these portfolios were moderately-to-extremely effective. Recruiters still favoured the curriculum vitae and interview as methods for demonstrating these skills, but they also felt a portfolio was useful in demonstrating requisite skill and evidence of these skills in context.

2.2 Limitations and Gaps in Previous Research

The majority of research on ePortfolios used during the hiring process has occurred in areas other than healthcare, with limited study in hospital environments (Feather & Ricci, 2014). Previous research suggests that ePortfolios are valuable in the hiring process, however, these results cannot be easily generalised to medical radiation therapy, as the

needs are very different within this setting. In addition, previous research does not

address the relative impact of specific components of the ePortfolio for assessing an

applicant or how the ePortfolio specifically informs in the hiring process.

2.3 Research Questions

Two specific research questions were addressed in this study:

1. What is the perceived value of specific ePortfolio components? (CV,

   introduction, video, sections, samples of reflective practice, written artefacts,

   journal artefacts, image artefacts, web artefacts)

2. How do ePortfolios inform in the hiring of medical radiation therapists?

3 Method

3.1 Design Philosophy

This project followed a pragmatic approach to methodology. Crestwell (2014) describes pragmatics as research which is problem-centered and relates to real world practice. Pragmatic researchers use both quantitative and qualitative data to provide a complete understanding of the problem and accept diverse views in their findings (Crestwell, 2014). This study used a convergent parallel mixed methods approach. Crestwell (2014) defines this method as collecting both qualitative and quantitative data at the same time and then integrating the results during the final interpretation. This approach allows for a more in-depth understanding and additional insight into the questions being explored (Crestwell, 2014).

3.2 Participants

Twenty-eight individuals (22 females, 6 males) from 42 radiation therapy departments across Canada participated in the study. Sixty-eight percent were managers (n=19), 14% supervisors (n=4), 7% resource or charge therapists, and 4% human resource employees (n=1). Regarding experience, 29% (n=8) had 11 or more years, 36% (n=10) had 3-5 years, 14% (n=4) had 6-7 years, 14% (n=4) had 8-10 years, and 4% (n=2) of participants had 0-2 years. Eighty-nine percent (n=25) of the participants rated themselves as comfortable or very comfortable with using technology. Only 21% (n=6) were familiar or somewhat familiar with ePortfolios.

3.3 Data Collection Tools

3.3.1 Survey Data and Open-Ended Questions

The survey questions, developed from previous research within other disciplines (Boody, 2009; Fanning, 2008; Mosely, 2005; Hartwick & Mason, 2014), were pilot tested with two readers from within Radiation Therapy Leadership, for clarity and understanding. The final version was composed of 11 questions (Appendix B) divided into four sections: demographics (Items 1 to 6), perceptions of specific ePortfolio components (Items 7a to 7i), perceptions of how ePortfolios informed the hiring process (Items 8a to 8g), and open-ended questions exploring perceptions of the ePortfolio as a supplement in the hiring process (Items 9 to 11). For demographics, we collected details including job category, time acting on the hiring panel, gender, and comfort with online technology. To assess how ePortfolios informed in the hiring process we concentrated on eight areas including sense of the person overall, informed judgment of the applicant, communication, overall fit within the department and culture, professional practice, critical thinking, development, and ability to function within a team. To evaluate perceived value of specific ePortfolio components, we focused on nine defined items including CV, introduction, video, layout, samples of reflective practice, written artifacts, journal artifacts, image artifacts, and web artifacts. The open-ended questions focused on what participants viewed as benefits and challenges of an ePortfolio in the hiring process.

3.4 Procedure

3.4.1 Consent

The consent of each participant in the study was obtained individually, on a survey-by-survey basis. Each online survey began with a letter of invitation (Appendix A) outlining key information for the potential participant to consider, including information about anonymity and confidentiality of their responses and explained participants' right to refuse to participate or skip questions, without consequence.

3.4.2 Data Collection

Forty-two emails were sent out to managers from all Canadian Radiation Therapy Clinics (Appendix A). Each email contained a letter of invitation (Appendix A) and links to the online survey, consent form, and ePortfolio materials. Participants were given two weeks to review the study material and complete the survey, with a reminder email sent at one week. To increase the sample size and obtain more valid and reliable results, managers were asked to forward the email containing the letter of invitation, survey, and study materials, to two additional members of the hiring panel in their centre. Also, each participant was offered the opportunity to send their email address to a neutral third party to enter a draw for a single prize of a $50 as an incentive to participate.

The survey (Appendix B) took approximately 20 minutes to complete: 15 minutes to review the ePortfolio materials and 5 minutes to answer the survey questions. Participants were not given explicit instructions as to how to evaluate the supplemental ePortfolio to garner more authentic perceptions.

3.4.3 Data Analysis

To assess perceptions of ePortfolio use in hiring practices, descriptive statistics and frequency analyses were completed on the Likert responses. A content analysis was used to organise and assess open-ended survey responses. Below is a table outlining the data collection and analysis.

Table 1 – Overview of Data Collection and Analysis

Research Question	Data Collection and Analyses
1. What is the perceived value of specific ePortfolio components?	• descriptive statistics and a frequency analysis were done on Likert answers • content analysis of open-ended survey responses
2. How do ePortfolios inform the hiring of medical radiation therapists?	• descriptive statistics and a frequency analysis were done on Likert answers • content analysis of open-ended survey responses

4 Results

4.1 Perceived Value of Specific ePortfolio Components

Table 1 displays the value that the hiring panel participants placed on specific components of the ePortfolio (Appendix B). Over 90% of participants valued having a copy of the applicant's CV included in the ePortfolio. Three-quarters of the participants agreed that an introduction to the applicant, recorded video introductions, and a clear layout were valuable or highly valuable. Half of the participants agreed that samples of professional work, and written entries, were valuable or very valuable, and about 40% agreed that journal and image artefacts were valuable or very valuable. One-quarter of participants agreed that web artefacts were valuable or very valuable.

Table 1 - Value of Specific ePortfolio Components

Items	Mean (SD)	Somewhat Valuable /Not Valuable	Neutral	Valuable/ Very Valuable
a. A copy of their CV (n=22)	4.4 (0.9)	5%	5%	91%
b. An introduction to the individual (n=22)	3.9 (1.0)	18%	5%	77%
c. Recorded video introductions (n=22)	3.9 (1.3)	18%	5%	77%
d. Layout divided into sections for quick access (n=22)	3.8 (1.0)	9%	18%	73%
e. Samples of professional or reflective practice (n=22)	3.4 (0.9)	14%	36%	50%
f. Written entries (n=20)	3.3 (1.0)	20%	30%	50%
g. Journal artifacts to represent an idea or something meaningful (n=22)	2.9 (1.1)	36%	23%	41%
h. Image artifacts to represent an idea or something meaningful (n=22)	2.7 (1.2)	41%	23%	36%
i. Web clip artifacts to represent an idea or something of value (n=21)	2.7 (1.0)	33%	43%	24%

4.2 ePortfolios Informing the Hiring Process

Table 2 provides a summary of perceptions of how the ePortfolio informs the hiring process (Appendix B). Three-quarters of the participants agreed or strongly agreed that the ePortfolio gave them a better sense of the overall person applying for a medical radiation therapy position. Almost two-thirds of respondents agreed or strongly agreed that the ePortfolio allowed them to obtain a more informed judgment of the applicants' level of communication and overall fit into the work culture. About one-third of the participants agreed or strongly agreed that the ePortfolio allowed them to make more informed judgments about the applicants' level of critical thinking and professional practice. Only one-quarter of the participants agreed or strongly agreed that the ePortfolio provided enough information to make an informed judgment on an applicant's level of development. About ten percent of participants agreed or strongly that the ePortfolio provided them with a more informed judgment of the applicants' ability to function within a team.

Table 2 - Ratings of How the ePortfolio Contributes to Assessment of Applicant Qualities

Item	Mean (SD)	Disagree /Strongly Disagree	Neither Agree nor Disagree	Agree/ Strongly Agree
a. ePortfolio provides a better sense of overall applicant (n=12)	3.8 (0.7)	8%	17%	75%
b. ePortfolio provides a better sense of communication level (n=14)	3.7 (1.0)	14%	21%	64%
c. ePortfolio provides a better sense of overall fit into work culture (n=20)	3.4 (1.0)	30%	10%	60%
d. ePortfolio provides a more informed judgment of the applicant's professional practice (n=14)	3.1 (0.8)	21%	50%	29%
e. ePortfolio provides a more informed judgment of the applicant's level of critical thinking (n=17)	3.0 (1.1)	35%	29%	35%
f. ePortfolio provides a more informed judgment of the applicant's level of development (n=12)	2.8 (0.8)	42%	33%	25%
g. ePortfolio provides a more informed judgment of the applicant's ability to function within a team (n=18)	2.6 (0.7)	56%	33%	11%

4.3 Benefits and Challenges of Using ePortfolios

4.3.1 Benefits

Based on the open-ended responses, the general attitude towards ePortfolios during the hiring process was positive. There were two general themes that emerged: the ability for the candidate to showcase themselves and the ability for the hiring panel to assess the candidate in a more complete way.

4.3.1.1   Ability to Showcase

Participants recognised the ePortfolio as a tool for candidates to showcase and differentiate themselves from other candidates. There were three specific benefits that participants focused on. The first advantage noted by participants was the video introduction (*n*=10). One participant commented that "the video was helpful. Nice to see someone before the interview (less nervous) and I liked being able to see and hear the person speak". A second participant said, "Adding the audio and visual elements to the review process supplements the CV. [I] can see the potential for the video to show growth and progression". A third participant stated, "[I] liked the video introduction, gives some insight into their professional demeanour/communication style". A fourth participant added, "[the ePortfolio] gives the applicant a chance to speak and be seen by the hiring manager in a non-anxious environment, as opposed to an interview, which may be over the phone, and cause poor communication".

The second advantage that participants identified was that the ePortfolio provided candidates with a better opportunity to communicate their personal and professional self (*n*=10). One participant said, "It was a little more personal, you could get a brief understanding of what the candidate views as important aspects of Radiation Therapy and the personal introduction by the candidate provided more information regarding his personality". Another participant stated, the ePortfolio "indirectly [demonstrates a] commitment to professional career advancement and job placement". A third participant commented, "[I] liked the ability to gain insight into the candidate's professional self". A fourth participant noted, "It was interesting to see the thought put into the selection of

videos and journal articles. To me, it showed a sign of professionalism that did not come through as well in the CV".

The third advantage of the ePortfolio was providing the candidate with the opportunity to demonstrate depth and quality of their work (*n*=11). One participant acknowledged the ePortfolio "allow[ed] the candidate to better display, promote any research, posters, presentations". A second participant said the ePortfolio "gave you a good idea of the quality of the work". Another participant added, "Overall, the ePortfolio adds another layer of information that goes beyond the typical resume".

4.3.1.2   Assessment Potential

Participants communicated the assessment potential of the ePortfolio as a tool for managers to evaluate and differentiate candidates. There were two specific advantages that participants focused on. The first advantage of the ePortfolio was to gain additional insight and to learn more about the potential candidate (n= 11). One participant commented the ePortfolio "provides a similar 'snapshot version' advantage that an in-person interview does". A second participant remarked, "[there is] much more information available to the reviewer. [The ePortfolio] allows a more personable connection to the applicant without actually interviewing". A third participant stated, "[I] have a better understanding of the applicant before the interview process". A fourth participant noted, "[I] was able to view a lot of information quickly and easily", while another participant expressed "it was an asset in being able to put a face to a name and get a sense of the personality of the candidate, especially if the interview was not going to be in person".

The second advantage was the increased depth and targeted information within the ePortfolio (*n*=7). One participant stated, "[the ePortfolio] shows a more targeted

representation of skill and knowledge". A second participant noted the ePortfolio

"provides you with some context and a clearer picture of experiences". A third participant

commented the ePortfolio was "more personal and gives more in-depth

[information]rather than just written documentation with no explanation". A fourth

participant appreciated that "[the ePortfolio] gives more information, such as a [research]

poster for you to view the candidate's written work". Another participant expressed that

"overall, the ePortfolio adds another layer of information that goes beyond the typical

resume".

The main suggestion that participants said would be advantageous for candidates to

include in their ePortfolio, beyond what was presented, would be letters of

recommendation or performance reviews (n=4), with one additional suggestion of key

reflections on critical points in their career thus far.

4.3.2 Challenges

There were five main challenges identified by participants with the use of ePortfolios.

Time was considered the first challenge by some participants (n=6), in the consistent

and effective use of ePortfolios. One respondent commented that the "time commitment [is

a challenge], especially when you have multiple CVs to review". A second participant stated

that "[ePortfolio] lengthiness could be a definite barrier in a busy hiring process", however,

another participant recognised time as a factor but dismissed it as a barrier, "for some, time

might be a factor if not technologically savvy. Not a huge issue, though".

The second challenge identified was the layout and platform of the ePortfolio,

including the volume of information provided (n=5). One participant questioned that they

could get "bogged down in the visual appeal; [however] is that representative of all the

skills I am looking for?"   A second participant stated, "There is some 'fluff' material that could make reviewing the ePortfolio tedious", while a third participant added, "some of the information seemed like filler". A fourth participant noted that "I like the electronic portfolio, but the layout is a bit distracting. I don't find the information linked together like a well-written resume".

The third challenge identified was establishing the authenticity of the ePortfolio (n=2). One participant expressed, "this type of ePortfolio makes me wonder if it is original work" and a second participant noted, "[I'm] not sure that what the individual says online is truly how they demonstrate their skills and attitudes".

The fourth concern about ePortfolio use during the hiring process was introducing potential bias (n=2). One participant did note that having a visual representation of the applicant may bring out some existing internal biases that the interviewer has, "seeing the person may lead to a bias by some people. I don't personally believe I would screen a candidate out by their appearance, but it could happen".

The final challenge identified was related to technology (n=4). One participant noted that the "loading time [was a challenge]", while a second participant commented that the ePortfolio is "hard to view on a mobile device, and on a desktop looked different with different browsers". A third participant remarked that the ePortfolio "selects for those who have high computer skills".

It is worthwhile noting that a number of participants (n=4) commented that they observed no challenges to ePortfolio use during the hiring process.

5 Discussion

5.1 Perceived Value of Specific ePortfolio Components

Previous research focused on the overall value of ePortfolios in the hiring process (Sivakumaran et al., 2010; Moody et al., 2002; Hartwick & Mason, 2014). This study focused on five distinct aspects of assessing perceived value.

The first aspect of perceived value within the ePortfolio was the curriculum vitae. Our results align with current literature reporting that a candidate's curriculum vitae, within the ePortfolio, is still a highly-valued component in the application process (Sivakumaran et al., 2010; Patrick-Williams & Bennett, 2010; Oermann, 2002; Mosely, 2005; Moody et al., 2002). Approximately 90% of our respondents acknowledged they would like to see a CV inside the ePortfolio.

The second valued aspect of the ePortfolio was an introduction to the candidate, written and video, with greater than three-quarters of participants stating this was a particularly useful component in the ePortfolio. The hiring panel commented that they liked the video introduction as it gave additional insight about a candidate's professional demeanour and communication style, and provided a better representation of the candidate, that it was more personal, providing more depth, rather than written documentation with no context or explanation. Participants noted the ePortfolio could be a tool for an applicant to showcase themselves and differentiate their application from another. They saw the benefits for the applicants in presenting themselves in a way that was free of nerves and allowed a directed representation of their professional self. Participants also noted the ePortfolio allowed the candidate to promote themselves better

and demonstrate the quality of their work compared to curriculum vitae alone. Hartwick & Mason (2014) reported a 93% positive response to video introductions during the hiring process from principals, and Mosely (2005) noted that 80% of educational administrators valued an autobiographical sketch. The results are consistent with the premise that ePortfolios are valuable to showcase applicants in the recruitment process (Heinrich et al., 2007; Chatham-Carpenter, 2010; Dewan, 2010; Feather & Ricci, 2014; Boody, 2009).

The third aspect, valued by nearly three-quarters of respondents, was the layout of the ePortfolio. Dewan (2010) highlights that first impressions are critical, therefore the ePortfolio should be easy to read, visually appealing, uncluttered, and well organised. The literature does not delineate a standard or ideal structure for ePortfolios, especially within an employment setting (Fanning, 2008), however, Feather & Ricci (2014) acknowledge its importance to maximise consistency and inter-rater reliability.   Specifically, a well-structured layout can address two key problem areas: limited time of recruiters and excessive information provided in some ePortfolios.

 Time has been identified in the literature as a challenge to regular ePortfolio use within recruitment practices (Moody et al., 2002; Andre, 2009; Fanning, 2008; Hartwick & Mason, 2014; Mosely, 2005). Mosely (2005) cautioned that time was a concern, reporting subjects who oppose ePortfolios found them overly time-consuming to evaluate. A streamlined and standard layout may allow recruiters to save time by being able to find key areas of interest quickly.

In addition to the problem of time, too much information can overwhelm recruiters (Drisicoll & Teh, 2001). Candidates need to be highly selective and intentional in their presentation of material within their ePortfolio (Mosely, 2005). A well-organized layout

can help guide applicants in the amount of information they need to provide. Moody et al., (2002) conclude that an applicant should organise materials and ensure they show their abilities related to the position they are applying for.

In the fourth area of perceived value, about half of the participants valued samples of professional and reflective work. Participants viewed these components as another way for applicants to represent themselves. On the other hand, it was noted that there was potential for work to be misrepresented in the ePortfolio, a challenge also described by Carliner (2005).

The final aspect explored in this study was artifacts provided in the ePortfolio. Woodley & Sims (2011) encourage examples on many aspects of work and life experience to support a complete representation of themselves, this may include: language, intercultural experience, leadership and management experience, or volunteer work. Heinrich et al. (2007) identify the value of having a minimum of one example in your ePortfolio from each required area or skill of the job you are applying for, coming from a variety of different settings. About 40% of participants valued the addition of journal articles to support a candidate's work or thoughts, over a third valued image artifacts to represent an idea or something meaningful to a candidate, and nearly one-quarter of respondents valued the addition of a video clip. Artifacts were perceived as the least valuable component by the majority of respondents in the ePortfolio. Some participants noted that the artifacts demonstrated a degree of professionalism, which did not come through in the CV. However, other respondents believed that there was too much information or that some information could be considered fluff, which could make reviewing the ePortfolio more tedious. One recommendation, provided by multiple

participants in our study, was for candidates to include letters of recommendation into their ePortfolio.

5.2 How ePortfolios Contribute to Assessment

This study explored four key components of an ePortfolio in contributing to the assessment of a candidate during the recruitment process: providing a better sense of the person; overall communication; how well a candidate might fit into the department culture; and offering a more informed judgment of a candidate.

The first component was providing hiring managers with a better sense of the person applying for a position. This study found that three-quarters of respondents agreed that the ePortfolio provided them with a better sense of the individual applying for the job. Managers felt that the ePortfolio provided a lot more information, gave more context and a clearer picture of the candidate's experience, and that they had a better understanding overall of the candidate. Much of the literature in non-health related areas echoes the results found in this study. Mosely (2005) found that the ePortfolio provided a valuable opportunity for employers to distinguish one applicant from another, along with the ability to recognize an individual candidate's strength. Boody (2009) added that the ePortfolio provides information about a candidate, which often does not appear in other areas of the application process, and Oermann (2002) concluded that the ePortfolio demonstrates a candidate's professional competence and expertise by providing additional depth of experience. It appears, then, that ePortfolios used for hiring medical radiation therapists follow a similar pattern to education (Hartwick & Mason, 2014; Mosely, 2005; Sivakumaran et al., 2010) and business (Boody, 2009) with respect to getting a better understanding of applicants.

The second ePortfolio component to augment the assessment of applicants was communication. Almost two-thirds of respondents agreed that the ePortfolio was useful in assessing a candidate's ability to communicate. Heinrich et al. (2007) identify strong communication skills, including written, spoken, and presentation, as highly desirable to employers. McMillian (2014) includes good communicators as a skill which is sought in an employee, and Moody et al. (2002) concluded communication, including written and oral, ranked number one, of the top five skills, recruiters seek in an applicant. In our study, recruiters valued the audio and visual components of the ePortfolio to gain insight of an applicant's communication style. Therefore, ePortfolios used in medical radiation therapy were helpful in assessing a candidate's ability to communicate.

The third component of assessment explored in this study was evaluating how well candidates might fit into the department culture. Sixty percent of participants valued the ePortfolio for assessing whether an applicant could fit into their department. Cultural fit has been suggested in the literature as an area for candidates to highlight (Akpan & Notar, 2012), however, it is an area which may be overlooked in the traditional recruitment process (McMillian, 2014). Participants in our study identified a greater understanding of the candidate, including their professional self and their views on important aspects of radiation therapy practice. As a result, ePortfolios were perceived as useful for managers when evaluating candidates fit within the department for medical radiation therapists.

The final component of assessment explored was whether the ePortfolio provided a more informed judgment of a candidate. Only one-third of reviewers perceived that the ePortfolio allows them to establish a more informed judgment of an applicant, highlighting features such as professional practice; level of critical thinking; level of development; and

their ability to function within a team. The literature identifies an ePortfolio as providing

an opportunity to evaluate a candidate's affective skills, self-assessment, and reflection

(Bhattacharya & Harnett, 2007; Robles & Braathen, 2002). In our study, however, two-

thirds of participants did not find this value in the candidate's ePortfolio. One possible

reason for this result could be the time required to review an ePortfolio (Moody et al.,

2002; Andre, 2009; Fanning, 2008; Mosely, 2005). In this study, the median time identified

by participants to review the ePortfolio was 11-15 minutes.   However, some participants

took five minutes or less to review the ePortfolio, while others took 21 minutes or more.

This disparity suggests that participants may be assessing ePortfolios differently. Custom

training in reviewing ePortfolios may be useful to guide hiring panel members into

obtaining more depth of information and insight into candidates. The recommendation for

more training is not unique to radiation therapy and was suggested by Carliner (2005) and

McMillian (2014).

5.3 Practical Recommendations

This study provides five practical recommendations for candidates creating a

professional ePortfolio when applying for a job in medical radiation therapy. The first

recommendation to a candidate is to include their curriculum vitae into the ePortfolio.

Second, applicants are encouraged to create an introduction to themselves, both written

and as a short video. The third recommendation is to ensure the layout is streamlined and

easy to read. Materials should be organised to ensure that candidates establish

comprehensive abilities related to the position in medical radiation therapy, and artefacts

demonstrate experience from diverse areas to deliver a complete representation of

themselves. The fourth recommendation is to include letters of endorsement to evidence

professional competence. Finally, the results of this study recommend that a candidate strongly considers artefacts they may want to provide, to ensure the direct relevance and ability for efficient assessment by a hiring panel, before including them in their professional ePortfolio.

5.4 Summary

This study explored two key questions regarding employment ePortfolio use within radiation therapy. This first question focused on the perceived value of five specific ePortfolio components. Participants in this study, who were potential recruiters for radiation therapists, highly valued the CV within the ePortfolio to assess an applicant. Participants also noted that the ePortfolio could be a tool for an applicant to showcase themselves and differentiate their application. Three-quarters of participants agreed that the ePortfolio must follow a layout that is clear, articulate, and efficient. Half of the participants valued samples of professional and reflective work. Only one-third of the participants considered artefacts within an ePortfolio such as journal articles, image artefacts or video clips to be valuable.

The second question this study explored was how ePortfolios contribute to the assessment of a candidate. The majority of participants agreed that the ePortfolio provided them with a better sense of the person applying for the job.   They also felt that the ePortfolio provided more context and a clearer picture of the candidate's experience. Almost two-thirds of respondents agreed that the ePortfolio was useful in assessing a candidate's ability to communicate. The ePortfolio was felt to provide a more accurate representation of a candidate's skill and knowledge, including their commitment to the profession, advancement, and/or job placement, which was seen as valuable. Finally, only

one-third of participants believed the ePortfolio provided a more informed judgment of a candidate, including professional practice; level of critical thinking; level of development; and their ability to function within a team.

5.5 Limitations and Future Research

There are five limitations to the current study: data collection; ability to make specific recommendations for radiation therapy; capturing managers' interaction with the ePortfolio; explaining the preference of pre-employment tools; and sample size.

First, this study used two different methods of data collection: Likert scales and open-ended questions. Although open-ended questions provided some insight into the perspective of participants, interviews or focus groups could provide more in-depth data.

Second, the results from this study provide some insight into the perceived value of an ePortfolio during the hiring process for a medical radiation therapist. Future studies might make recommendations as to the platform, design, layout, and timing, to guide potential candidates in using the ePortfolio tool with more confidence. This could include recommendations for applicants in making the selection of artefacts clearly and directly relevant, along with choosing artefacts judiciously. Guidance or training for participants of the hiring panel to effectively read the ePortfolio and glean the depth of information that is potentially available could also be investigated.

Third, this study did not examine how the participants of the hiring panel actually reviewed the ePortfolio. Future studies might focus on how the participants interact with the material of the ePortfolio, perhaps with the use of think-aloud protocols, where participants talk out loud while they are reviewing an ePortfolio. This self-talk would be recorded by screencasting software. This type of recording might provide an

understanding as to why there were perceived benefits or challenges amongst participants with the ePortfolio.

Fourth, curriculum vitae are seen as an overview of a candidate, which do not include artefacts or evidence to demonstrate the depth of an individual. In our study, despite these limitations, candidates' curriculum vitae were heavily favoured as a component to include in an applicant's ePortfolio. Future research could investigate why the curriculum vitae are often preferred as a hiring tool.

Finally, the sample size in this study was small making generalizing of the results to the larger population challenging. Also, a number of potential participants did not complete the survey which may have impacted the results. A potential reason might be that those participants are not comfortable using online technology. Future research may need to account for those who are not technologically savvy and explore providing alternative ways for members of a hiring panel to receive information or to provide some initial training to build a baseline comfort in this group of people.

6 References

Abrami, P., & Barrett, H. (2005). Directions for research and development on electronic

portfolios. *Canadian Journal of Learning and Technology / La Revue Canadienne de*

L'apprentissage et de La Technologie, *31*(3). Retrieved from

http://www.cjlt.ca/index.php/cjlt/article/view/92

Akpan, J., & Notar, C. E. (2012). How to Write a Professional Knockout Resume to

Differentiate Yourself. *College Student Journal*, *46*(4), 880–891.

Alexiou, A. & Paraskeva, F. (2010). Enhancing self-regulated learning skills through the

implementation of an e-portfolio tool. *Procedia - Social and Behavioral Sciences,* 2

(2), 3048-3054. doi: 10.1016/j.sbspro.2010.03.463

Andre, K. (2010). E-Portfolios for the aspiring professional. *Collegian*, *17*(3), 119–124.

doi:10.1016/j.colegn.2009.10.005

Barrie, S. C. (2006). Understanding what we mean by the generic attributes of graduates.

Higher Education, 51(2), 215-241. doi: 10.1007/s10734-004-6384-7

Barrett, H. (1998). Strategic questions: What to consider when planning for electronic

portfolios. *Learning & Leading with Technology, 26*(2), 6013.

Benner, P. E. (1984). *From novice to expert: Excellence and power in clinical nursing*

practice. Menlo Park, California: Addison-Wesley.

Bhattacharya, M., Hartnett, M. (2007). E-portfolio assessment in higher education. In: 37th

ASEE/IEEE Frontiers in Education Conference, Oct 10-13, Milwaukee, USA. Session

T1G. Retrieved from http://fie2012.org/sites/fie2012.org/history/fie2007/

papers/1720.pdf

Bollinger, D. & Shepherd, C. (2010). Student perceptions of eportfolio integration in online

   courses. *Distance Education, 31*(3), 295-314. doi: 10.1080/01587919.2010.513955.

Boody, R. M. (2009). Career services perspectives on the use of portfolios in the teacher

   employment process: A survey. *Education*, *130*(1), 67–71.

Brown, G., & Irby, B. J. (1998). *An exploratory study of perceptions of preservice*

   administrators on traditional versus electronic career advancement portfolios.

   Symposium conducted at the Annual Meeting of the American Educational Research

   Association, San Diego, CA.

Butler, P. (2006). A review of the literature on portfolios and electronic portfolios. *In eCDF*

   ePortfolio Project. Palmerston North, New Zealand: Massey University College of

   Education. Retrieved from: https://akoaotearoa.ac.nz/download/ng/file/group-

   996/n2620-eportfolio-research-report.pdf

Cambridge, D. (2012). E-portfolios: Go big or go home. *EDUCAUSE Review, 47(2), 52-53.*

Canadian Association of Medical Radiation Technology (2016). Retrieved from:

   http://www.camrt.ca/certification/competency-profiles/

Carliner, S. (2005). E-Portfolios. *Training & Development, 59*(5), 71-74. Retrieved from:

   https://mmrus7.readyhosting.com/advancedproject/eportfolios.pdf

Castle, A. (2008). Defining and assessing critical thinking skills for student radiographers.

   Radiography, *15*(1), 70-76. doi:10.1016/j.radi.2007.10.007

Ceperley, A., & Schmidt, C. (2007). Adaptation of the career portfolio at the University

   of California, San Diego: A case study. *New Directions for Student Services, 119,* 65-

   72. DOI: 10.1002/ss.249.

Chatham-Carpenter, A., Seawel, L., & Raschig, J. (2010). Avoiding the pitfalls: Current

practices and recommendations for ePortfolios in higher education. *Journal of*

Educational Technology Systems, *38*(4), 437–456. doi: 10.2190/ET.38.4.e

Chapman, N., Dempsey, S., & Warren-Forward, H. (2009). Workplace diaries promoting

reflective practice in radiation therapy. *Radiography*, *15*(2)*,* 166-170.

doi:10.1016/j.radi.2008.04.008

Collin, R. (2011). Selling the self: career portfolios and the new common-sense of

immaterial capitalism. *Social Semiotics*, *21*(5), 615–632.

doi:10.1080/10350330.2011.564390

Constantinou, M., & Kuys, S. S. (2013). Physiotherapy students find guided journals useful

to develop reflective thinking and practice during their first clinical placement: A

qualitative study. *Physiotherapy*, *99*(1), 49–55. doi:10.1016/j.physio.2011.12.002

Corry, M., & Timmins, F. (2009). The use of teaching portfolios to promote excellence and

scholarship in nurse education. *Nurse Education in Practice*, *9*(6), 388–392.

doi:10.1016/j.nepr.2008.11.005

Cottrell, J. (2006). Reflective journals in clinical practice for radiation therapy

students. *Journal of Radiotherapy in Practice*, *5*(1), 9-16. doi:

org/10.1017/S1460396906000021

Cotterill, S., Aiton, J. F., Bradley, P. M., Hammond, G. R., McDonald, A. M., & Struthers, J.

(2006). A flexible component-based ePortfolio: Embedding in the curriculum. In A.

Jafari & C. Kaufman (Eds.), *Handbook of research on ePortfolios* (pp. 292-304).

London: Idea Group

Coward, M. (2011). Does the use of reflective models restrict critical thinking and

therefore learning in nurse education? What have we done? *Nurse Education Today*,

31(8), 883–886. doi:10.1016/j.nedt.2011.01.012

Creswell, J. W. (2014). *Research design qualitative, quantitative, and mixed methods

approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications.

Dalziel, C. (2012). Making it personal. *Training Journal*, 30–33.

Dewan, P. (2010). Looking for a library job? Create an eportfolio. *Feliciter*, *56*(4), 169–

171. Retrieved from

http://www2.hawaii.edu/~donnab/lis610/dewan_library_job_e-portfolio_2010.pdf

Dolan, G., Fairbairn, G., & Harris, S. (2004). Is our student portfolio valued? *Nurse

Education Today*, *24*(1), 4–13. doi:10.1016/j.nedt.2003.08.002

Driscoll, J., & Teh, B. (2001). The contribution of portfolios and profiles to continuing

professional development. *Journal of Orthopaedic Nursing*, *5*(3), 151–156.

doi:10.1054/joon.2001.0170

Endacott, R., Gray, M. A., Jasper, M. A., McMullan, M., Miller, C., Scholes, J., & Webb, C. (2004).

Using portfolios in the assessment of learning and competence: The impact of four

models. *Nurse Education in Practice*, *4*(4), 250–

257. doi:10.1016/j.nepr.2004.01.003

Fanning, M. C. P. (2008). The employment portfolio. *Educational Leadership and

Administration: Teaching and Program Development*, *20*, 77–91.

Feather, R., & Ricci, M. (2014). Use of ePortfolio presentations in a baccalaureate nursing

program. *College Student Journal*, *48*(4), 549–558.

Gibbs, V. (2000). Learning how to learn: A selective review of the literature. *Radiography, 6*(4), 231–235. doi:10.1053/radi.2000.0271.

Gordon, J. A., & Campbell, C. M. (2013). The role of ePortfolios in supporting continuing professional development in practice. *Medical Teacher*, *35*(4), 287–294. doi:10.3109/0142159X.2013.773395

Gray, L. (2008). *Effective practice with e-Portfolios*. London: Higher Education Funding Council for England. Retrieved from: http://www.ssphplus.info/files/effective_practice_e-portfolios.pdf

Green, J., Wyllie, A., & Jackson, D. (2014). Electronic portfolios in nursing education: A review of the literature. *Nurse Education in Practice*, *14*(1), 4–8. doi:10.1016/j.nepr.2013.08.011

Hallam, G., Harper, W., McGowan, C., Hauville, K., McAllister, L. and Creagh, T. (2008). *Australian ePortfolio Project: ePortfolio use by university students in australia*, Australian Learning & Teaching Council: Strawberry Hills, NSW. Retrieved from: www. eportfoliopractice.qut.edu.au/information/report/index.jsp

Harris, S., Dolan, G., & Fairbairn, G. (2001). Reflecting on the use of student portfolios. *Nurse Education Today*, *21*(4), 278–286. doi:10.1054/nedt.2000.0545

Hartwick, J. M. M., Mason, R. W. (2014). Using introductory videos to enhance ePortfolios and to make them useful in the hiring process. *International Journal of ePortfolio*, 4(2), 169-184. doi:10.1080/00131720802362074

Heinrich, E., Bhattacharya, M., & Rayudu, R. (2007). Preparation for lifelong learning using ePortfolios. *European Journal of Engineering Education*, *32*(6), 653–663. doi:10.1080/03043790701520602

Hilton, S. & Southgate, L. (2007). Professionalism in medical education. *Teaching and Teacher Education, 23*(3), 265–279. doi:10.1016/j.tate.2006.12.024.

Hughes P. (1990). Evaluating the impact of continual professional education. *Nurse Education Today*, 10(6), 428-436. doi: http://dx.doi.org/10.1016/0260-6917(90)90105-Y

James, C. (1992). Professional development: have you got a record? *Nursing Times, 88*(14), 26–29.

Jones, E. (2013). Practice-based evidence of evidence-based practice: Professional practice portfolios for the assessment of work-based learning. *Quality in Higher Education, 19*(1), 56–71. doi:10.1080/13538322.2013.772467

Jones, S., Downs, E., & Repman, J. (2012). The evolution of ePortfolios for school library education: A case study. *School Libraries Worldwide, 18*(2), 12-20.

Joyce, P. (2005). A framework for portfolio development in postgraduate nursing, practice. *Journal of Clinical Nursing. 14*(4), 456-463. doi: 10.1111/j.1365-2702.2004.01075.x

Katerattanakul, P., & Siau, K. (2008). Factors affecting the information quality of personal web portfolios. *Journal of the American Society for Information Science & Technology*, *59*(1), 63–76. doi:10.1002/asi.20717

Kim, M. (2006). Design-based research on the design and implementation of ePortfolio. *Journal of Educational Technology, 22*(2), 1-26.

Knowles, M. (1975). *Self Directed Learning: A guide for learners and teachers*. Chicago: Folett.

Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and*

development. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Kwon, SLA. (2002). Adaptability of electronic portfolio for performance assessment.

Journal of Elementary Education Research, 12, 201-238.

Lowe, M. & Rappolt, S. (2007). The role of reflection in implementing learning from

continuing education into practice. *Journal of Continuing Education in Health*

Professions, *27*(3), 143–148. doi: 10.10020chp.117

Malita, L. (2009). E-portfolios in an educational and occupational context. *Procedia - Social*

and Behavioral Sciences, *1*(1), 2312–2316. doi:10.1016/j.sbspro.2009.01.406

McCready, T. (2006). Portfolios and the assessment of competence in nursing: a literature

review. *International Journal Nursing Studies*, 44(1), 143-151.

McMillan, L. R., Parker, F., & Sport, A. (2014). Decisions, decisions! E-portfolio as an

effective hiring assessment tool. *Nursing Management*, *45*(4), 52–54.

doi:10.1097/01.NUMA.0000444882.93063.a7

McMullan, M. (2006). Students' perceptions on the use of portfolios in pre-registration

nursing education: A questionnaire survey. *International Journal of Nursing Studies*,

43(3), 333–343. doi:10.1016/j.ijnurstu.2005.05.005

McMullan, M. (2008). Using portfolios for clinical practice learning and assessment: The

pre-registration nursing student's perspective. *Nurse Education Today*, *28*(7), 873–

879. doi:10.1016/j.nedt.2007.11.006

Milinkovic, D. & Field, N. (2005). Demystifying the reflective clinical journal. *Radiography*,

11(3), 175-183. doi:10.1016/j.radi.2004.12.007

Moody, J., Stewart, B., & Bolt-Lee, C. (2002). Showcasing the skilled business graduate:

　　Expanding the tool kit. *Business Communication Quarterly*, *65*(1), 21–36.

　　doi:10.1177/108056990206500103

Moon J. (2004). *A handbook of reflective and experiential learning: Theory and practice.*

　　London: RoutledgeFalmer.

Mosely, C. (2005). The value of professional teaching portfolios to prospective employers:

　　School administrators' views. *Professional Educator, 27*, 58–72. Retrieved from

　　http://files.eric.ed.gov.login.ezproxy.library.ualberta.ca/fulltext/EJ728482.pdf

Oermann, M. (2002). Developing a professional portfolio in nursing. *Orthopedic Nursing,*

　　21(2), 73-78. Retrieved from http://www.nursing-informatics.com/Oermann.pdf

Okoro, E. A., Washington, M. C., & Cardon, P. W. (2011). Eportfolios in business

　　communication courses as tools for employment. *Business Communication*

　　Quarterly, *74*(3), 347–351. doi:10.1177/1080569911414554

Oosterbaan, A. E., van der Schaaf, M. F., Baartman, L. K. J., & Stokking, K. M. (2010).

　　Reflection during portfolio-based conversations. *International Journal of*

　　Educational Research, *49*(4–5), 151–160. doi:10.1016/j.ijer.2011.02.001

Patrick-Williams, I., & Bennett, R. (2010). The effectiveness of the professional portfolio in

　　the hiring process of the associate degree nurse. *Teaching and Learning in Nursing*,

　　5(1), 44–48. doi:10.1016/j.teln.2009.08.003

PebblePad (2009). Retrieved from: http://www.pebblepad.co.uk/.

Pincombe, J., McKellar, L., Weise, M., Grinter, E., & Beresford, G. (2010). ePortfolio in

　　midwifery practice: "The way of the future." *Women and Birth*, *23*(3), 94–102.

　　doi:10.1016/j.wombi.2009.05.001

Rassin, M., Silner, D., & Ehrenfeld, M. (2006). Departmental portfolio in nursing – An advanced instrument. *Nurse Education in Practice*, *6*(1), 55–60. doi:10.1016/j.nepr.2005.06.001

Reeves, T. C. (2000). Alternative assessment approaches for online learning environments in higher education. *Journal of Educational Computing Research, 23*(1), 101-111. doi: 10.2190/GYMQ-78FA-WMTX-J06C

Robles, M., Braathen, S., 2002. Online assessment techniques. *Delta Pi Epstein J. XLIV (1),* 39-49. Winter.

Saltman, D. C., Tavabie, A., & Kidd, M. R. (2012). The use of reflective and reasoned portfolios by doctors. *Journal of Evaluation in Clinical Practice*, *18*(1), 182–185. doi:10.1111/j.1365-2753.2010.01514.x

Schön, D.A. (1983). *The reflective practitioner: How professionals think in action*. New York: Harper Collins.

Schön, D.A. (1987). *Educating the reflective practitioner: Toward a new design for teaching and learning in the professions*. San Francisco: Jossey-Bass.

Šinkovec, U. (2008). The role of professional portfolio within verifying of informal knowledge and work experience among the future seekers of first employment. *Conference Proceedings: International Conference of the Faculty of Economics Sarajevo (ICES)*, 1–16.

Sivakumaran, T., Holland, G., & Heyning, K. (2010). Hiring agents' expectations for new teacher portfolios. *National Forum of Teacher Education Journal*, *20*(3), 1–6. Retrieved from

http://www.researchgate.net/publication/264881853_Hiring_Agents'_Expectations
_for_New_Teacher_Portfolios

Slaatto, T. (2005). E-portfolio: A beneficial tool to develop digital culture to activate and

involve citizens in digital learning activities. Paper presented at the *European

Distance and E-Learning Network (EDEN) Annual Conference*, Helsinki, Finland.

Sowter, J., Cortis, & J.,Clarke, D. (2011). The development of evidence based guidelines for

clinical practice portfolios. *Nurse Education Today*, *31*(8), 872-876.

doi:10.1016/j.nedt.2010.12.027

Staub, J., & Johnson, G. (2003). *Assessment of on-line student portfolio initiatives at Big-10

and other institutions.* Unpublished report from John A. Dutton e-Education Institute.

Retrieved from: https//www.e-education.psu.edu/files/benchmarking_03.pdf

Summers, A., & Middleton, M. (2013). Performance development plans for the radiation

therapist: A literature review. *Journal of Medical Imaging and Radiation Sciences*,

44(4), 197-202. doi:10.1016/j.jmir.2013.08.003

Tan, K., Cashell, A., & Bolderston, A. (2012). Encouraging reflection: Do professional

development workshops increase the skill level and use of reflection in practice.

Journal of Radiotherapy in Practice, 11(3), 135-144. doi:

10.1017/S1460396911000203

Thomas, K. R., Lamson, S. L., & King, A. K. (2001). *Training teacher candidates to create web-

based electronic professional portfolios.* Symposium conducted at the 81st Annual

Meeting of the Association of Teacher Educators, New Orleans, LA. Retrieved from:

http://files.eric.ed.gov/fulltext/ED458191.pdf

Tribe, D. M. R. (1994). An overview from higher education. In: Thorley L, Gregory R (Ed.),

Using group-based learning in higher education (pp. 24-31). London: Kogan Page.

Walsh, A. (2009). Modes of reflection: Is it possible to use both individual and collective

reflection to reconcile the 'three-party knowledge interests' in workplace learning.

European Journal of Education, 44(3), 385-398. doi: 10.1111/j.1465-

3435.2009.01389.x

Walz, P. (2006). An overview of student ePortfolio functions. In A. Jafari & C. Kaufman

(Eds.), Handbook of research on ePortfolios (pp. 194-205). London: Idea Group

Ward, C., & Moser, C. (2008). E-porfolios as a hiring tool: Do employers really care?

Educause Quarterly, 31(4), 13-14. Retrieved from:

http://er.educause.edu/~/media/files/article-downloads/eqm0842.pdf

Washington State University. (2009). Evolution of our eportfolio thinking. Retrieved June

2009 from WSU website:

https://teamsite.oue.wsu.edu/progeval/eport/evolution/default.aspx.

Weddle, D., Himburg,S., Collins,N., Lewis,R. (2002).   The professional development

portfolio process: Setting goals for credentialing. Journal of the American Dietetic

Association, 102(10), 1439-1444. doi: org/10.1016/S0002-8223(02)90319-6

Williams, B. (2001). Developing critical reflection for professional practice through

problem-based learning. Journal of Advanced Nursing, 34(1), 27-

34. doi: 10.1046/j.1365-2648.2001.3411737.x

Williams, M., & Jordan, K. (2007). The nursing professional portfolio: a pathway to career

development. Journal for Nurses in Staff Development, 22(3), 125-131. doi:

10.1097/01.NND.0000277181.24959.3b

Wilkinson, T. J., Challis, M., Hobma, S. O., Newble, D. I., Parboosingh, J. T., Sibbald, R. G., & Wakeford, R. (2002). The use of portfolios for assessment of the competence and performance of doctors in practice. *Medical Education*, *36*(10), 918–924. doi: 10.1046/j.1365-2923.2002.01312.x

Wonacott, M. E. (2002). *Career passports, portfolios, and certificates*. ERIC Digest, EDF467241. Retrieved from: files.eric.ed.gov/fulltext/ED467241.pdf

Woodley, C., & Sims, R. (2011). EPortfolios, professional development and employability: some student perceptions. *Campus-Wide Information Systems*, *28*(3), 164–174. doi: 10.1108/10650741111145698

Zhang, S. X., Olfman, L., & Reetham, P. (2007). Designing eportfolio 2.0: Integrating and coordinating web 2.0 services with eportfolio systems for enhancing users' learning. *Journal of Information Systems Education, 18*(2), 203-214. Retrieved from http://webcache.googleusercontent.com/search?q=cache:Rh3Flc3ErKoJ:https://www.mindmeister.com/generic_files/get_file/831880%3Ffiletype%3Dattachment_file+&cd=3&hl=en&ct=clnk&gl=ca

Appendix A – Letter of Invitation

Title of Study: Exploring the Perceptions of Professional ePortfolios in the Hiring of
Medical Radiation Therapists

Principal Investigator: Jen Dewhurst MRT(T), MEd (*cand*)
jendewhurst@hotmail.com

You are being asked if you wish to participate in a research study. Please take your time to
review this letter of information and discuss any questions you may have with the principal
investigator.

Purpose of Study

This research study is being conducted to explore radiation therapy hiring panels'
perception of value and use regarding a professional reflective ePortfolio as a supplement
to curriculum vitae, during the hiring process of a radiation therapist at their center.

The literature identifies a gap in the process of recruitment within many healthcare
disciplines, including medical radiation therapy. Interest in electronic portfolios
(ePortfolios) is gathering momentum as exploration of their potential as a strategy to
support lifelong learning, and enhanced continuous personal and professional
development, has shown benefit. Traditional curriculum vitae briefly list the background,
experiences and achievements; the portfolio can provide the depth and evidence of
competencies and expertise, and research suggests, represents a valuable adjunct to the CV.
Portfolios offer ways of assessing perspective employees in ways which interviews alone
cannot, but the notion that employers will obtain a more complete picture of applicants
through ePortfolios is not a well-documented step in the recruitment process.

This study will explore the key questions:
1. What is the perceived value of specific ePortfolio components?
2. How do ePortfolios inform in the hiring of medical radiation therapists?

You are being asked if you wish to participate in this study because you have been identified
as having experience within a Canadian Medical Radiation Therapy hiring panel.

Study Procedures

If you choose to take part in this study, you will be asked to review the study information
attached, including: the sample curriculum vitae and the embedded link to a supplemental
professional reflective ePortfolio. You will then be asked to answer a series of questions
about your perceptions of what you had just reviewed.

This is a one-time participation requirement only. It is expected to take approximately 20 minutes, 15 minutes to review the material and 5 minutes to answer the questions in the attached survey. The survey will remain open for two weeks from today's date.

Risks and Benefits

There are no foreseeable risks or discomforts to participation in this study.
There may or may not be direct benefit to your from participating in this study. We hope the information learned from this study will shed some light on the recruitment and hiring practices for radiation therapists, and improve the process to allow the hiring panel a more complete picture and a better ability to evaluate potential candidates prior to hire.

Participation in the Study

Participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you would otherwise be entitled, and you may discontinue participation or skip questions without penalty. There are no anticipated costs to participation.

Confidentiality

Information gathered in this research study may be published or presented in public forums; however, your name and other identifying information will not be collected nor revealed in any way. It is important that you understand that the on-line survey is hosted by a web survey company (SurveyMonkey ™) located in the USA. The information you submit will be stored on SurveyMonkey's server and may be accessed by the U.S. legal and government officials, in accordance with the U.S. Patriot's Act. Raw data will be stored in encrypted files, on a password protected computer available only to the principal investigator, and all results will be reported as collated data.

Questions

You are free to ask any questions that you may have about your participation or your rights as a research participant. If any questions come up during or after the study, contact the study staff: Jen Dewhurst, at jendewhurst@hotmail.com.

Should you have any questions or concerns regarding your rights as a participant in this research study, or if you wish to speak with someone who is not related to this study, you may contact the REB Administration/Compliance Officer (compliance@uoit.ca and 905-721-8668 ext. 3693).

Statement of Consent

Information gathered in this research study may be published or presented in public forums; by choosing to continue on and complete the survey attached, you are consenting to your participation in the above outlined study, or any additional study the researchers may explore in the future.

Appendix B – Survey Tool

Demographics

1.   Are you a … (Manager, Supervisor, Educator, Human Resources, Other)

2.   How long have you acted as a member of a radiation therapy hiring panel?
        (0-2 years, 3-5 years, 6-7 years, 8-10 years, 11+ years)

3.   Are you?
        (Male, Female)

4.   How would you rate your comfort level using online technology?
        (Not at all comfortable, Somewhat comfortable, Comfortable, Very comfortable)

5.   How familiar are you with ePortfolios in the recruitment or hiring processes for a
        Radiation Therapist?
        (Not at all familiar, Somewhat familiar, Familiar, Very Familiar)

6.   How long did the ePortfolio take you to review?
        (0-5 minutes, 6-10 minutes, 11-15 minutes, 16-20 minutes, 21+ minutes)

Perceptions of ePortfolio Components

7.   Please rate your perception of the following components of an ePortfolio:

	Not Valuable	Somewhat Valuable	Neutral	Valuable	Very Valuable
a. A copy of their CV					
b. An introduction to the individual					
c. Recorded video introductions					
d. Layout divided into sections for quick access					
e. Samples of professional or reflective practice					
f. Written entries					
g. Journal artifacts to represent an idea or something meaningful					
h. Image artifacts to represent an idea or something meaningful					
i. Web clip artifacts to represent an idea or something of value					

Perceptions of How ePortfolios Inform the Hiring Process

8.   Please rate the following statements about supplemental ePortfolios in the hiring process. ePortfolios:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
a. Provided a better sense of the person overall applying for a medical radiation therapist position in your department					
b. Helped me to make a more informed judgment of the applicant's level of communication					
c. Helped me to make a more informed judgment of the applicant's overall fit within the department and culture					
d. Helped me to make a more informed judgment of the applicant's professional practice					
e. Helped me to make a more informed judgment of the applicant's level of critical thinking					
f. Helped me to make a more informed judgment of the applicant's level of development					
g. Helped me to make a more informed judgment of the applicant's ability to function within a team					

Open-Ended Questions Exploring Perceptions of ePortfolio Value and Use

9.   Are there any other sources of evidence or ePortfolio formats you would consider beneficial? Please explain:

10.   After reviewing the study materials, what are the **BENEFITS**, if any, in looking at the ePortfolio as a supplement to the curriculum vitae alone?

11.   After reviewing the study materials, what are the **CHALLENGES**, if any, in looking at the ePortfolio as a supplement to the curriculum vitae alone?