Narratives of Learning: The Portfolio Approach

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Abstract

The portfolio approach to teaching and learning supports the educational practitioner in their lifelong quest for learning. Through the intentional sharing of knowledge and narratives within the practitioner’s overlapping communities of inquiry, all participants in these communities can benefit from each other. The portfolio approach offers a set of overlapping processes embedded in three spheres of intentionality, the personal portfolio, the community of inquiry, and the demonstration of competency, that together provide the 21st century educator a way of being. An examination of the three spheres answers three corresponding questions: 1) What are the range of skills and processes that will allow practitioners to present their own unique voice to their community of inquiry and their stakeholders? 2) What processes and skills must we develop as practitioners in order to participate in communities of inquiry and benefit from each other? 3) How can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace? Research methodology includes an autoethnographic review of the author’s work, reviews, interviews, observations and focus groups with student teachers from the Sharjah Higher Colleges, and with teachers at several schools in the United Arab Emirates. The reflective process ensures that we continually look back to see where we were, what we did, and where we were successful. Through demonstrations of competency and the setting of goals informed by our stakeholders, we can also see and share our professional aspirations for the future and in a healthy community of inquiry, contribute to not only our own, but our colleagues’ futures. The research concludes that the ‘time is ripe’ for the portfolio approach to make use of 21st century tools to pursue a collection of non-linear, integrated processes that will help the practitioner share their materials online for their
community of inquiry to access and for stakeholders to see their demonstrations of competency. Challenges for the future include examining how the portfolio approach can contribute to a practitioner’s social identity.

*Keywords:* portfolio, relational construction, knowledge, education
Dedication

I would like to dedicate this work to my wife Annette, who encouraged me and supported me in so many ways throughout this research.
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1. Introduction

Education is a community affair. This simple philosophy of teaching informs and guides many of the activities and processes upon which this research is based. John Dewey (1916) states that any person “whose activities are associated with others has a social environment” (Chapter 2, para. 4). While it may be that virtually everyone has a social environment, it may also be argued that educators’ activities are more intimately associated with others’ lives and they in fact spend their adult professional lives immersed in a social environment. In order to better function in this environment, Dewey (1916) also notes that we learn and grow through reflection upon our activities, which is the “discernment of the relation between what we try to do and what happens in consequence.” (Chapter 11, para. 9).

Kenneth Gergen (2009) notes that, “Education in a relational key is critical to the global future” (p. 243). Our ability to communicate with people from around the world means that our community of inquiry (Garrison, Anderson, & Archer, 2000), within which we interact and grow takes on global proportions. The tools at our disposal provide us with opportunities to learn from each other’s experiences as well as our own in ways never before possible. These tools also allow us the opportunity to access our past more readily and easily than ever before. In relation to McLuhan’s (1964) notion that ‘the medium is the message’, 21st century skills and technology force us to consider the “impact of access to new mediational means in terms of a reorganization of some underlying way of acting in the world” (Crook, 1994, p. 40). We may ask, do the new tools at our hands actually allow us to think differently? In terms of focus on process, are we able now to organize our thoughts in new and different ways?
1.1. Portfolio Approach as Process

In a previous research article, I describe a portfolio approach to learning as a “holistic” process that provides a series of processes through which to capture, review and curate one’s work (Leslie, 2012). The curation process includes reviewing the collected totality of work and selecting from that body of work representative collections, or curations, to be shared with various overlapping communities for a variety of purposes. The work being described includes all of the ideas and processes that a practitioner manages, shares and uses in order to be successful at their career. This process of curation, and all its associated activities, is the essence of the portfolio approach. By building on our curations of ideas as represented through our collected artefacts, we can then better present ourselves through our work and interact with our communities more effectively. By making our thinking more visible through the creation of intentional curations of work and ideas, we can collaborate more thoroughly with our colleagues, and we can then showcase our representational work more clearly for review and as a demonstration of competency.

In the 21st century world where people can use a wide variety of electronic tools to connect with a wide variety of groups or communities, a portfolio approach to one’s work and, for educators, a portfolio approach to their educational activities, might serve to create conditions under which a relational constructionist approach to our work can flourish. This approach can help practitioners see more clearly the relationship between our varied communications with others, and the effects of those communications on ourselves, our students, and other stakeholders. The curated collections of work placed in proper relation to other collected curations of work, both our own curations and those of our colleagues and peers, can allow our
communities to see the wider totality of work and bring our understanding closer to a relational completeness.

In any circumstances, professionals collect and organize their work in some fashion or another. By leveraging the appropriate 21st century technology and media, practitioners can make much better use of their efforts to collect and collate their work. Thus, the ‘portfolio’ being discussed in this dissertation is what may be referred to as an ‘electronic portfolio’. Given the growth in, and the near ubiquitous use of technology in education, I will use the term ‘portfolio’ to refer to electronic portfolios throughout this research. The choice among these electronic tools is overwhelming and it may be that for any given process of collection, curation and display of ideas through media, there are numerous electronic tools that could perform sufficiently well. Additionally, the portfolio approach as discussed herein is based on a number of interoperable electronic tools used in conjunction with a web platform that allows for cloud storage and retrieval of data. So, to clarify, the ‘portfolio approach’ is based on the use of electronic tools used in conjunction with an electronic platform or website in order to collect and curate our work.

The portfolio approach has been pursued not only by myself as the author, but with both professional teachers and student-teachers enrolled in an undergraduate education program. All three sets of studies provide evidence of community and sharing of ideas. Given the social nature of Education as a profession, it may seem obvious that both professional teachers and student-teachers have a predilection for activities that help to share ideas. In order to demonstrate the continuity of the approach and given the influence of Schon’s (1983) work, “The Reflective Practitioner”, the term ‘practitioner’ will be used to refer to individuals within both groups alike, except where the distinction is relevant.
1.2. **Journey toward a Portfolio Approach**

During the first years of my teaching career, I became intrigued by the possibilities of new technologies and as early as 1995, I was employing technology tools to create all my lesson plans and activities and then store them online in a rudimentary web site designed for my students, one of many precursors to my current portfolio web site. With the advent of web 2.0 technologies and the associated new opportunities for social interaction and construction, I became even more enamored of the various processes that allowed me, with increasing ease, to put my work online for others to see, share and edit. I became fascinated by the potential of new media to allow us to share ideas that were not always linear in their description. As my teaching career unfolded, I became curious about how to make the best use of my time, and overcome what I felt were organizational shortcomings in my personal skill set in order to become a better educator.

After many years of teaching abroad, I had developed an appreciation of web 2.0 technologies which enabled me to share my life with my friends and family from afar. I experimented with many different tools and formats in attempts to find the best media format for the different audiences and for the different content I wanted to share. Figure 1 highlights how media played a central role in my ability to share my thoughts and ideas with people.
The physical distance between me and my audience of friends and family encouraged me to try different media with which to share my experiences and travels and I was often encouraged by my audience to let them live vicariously through my various media forms. As I grew into my role as an educator and practitioner, it seemed a short leap to transfer these media skills to my work with my students and colleagues.

I returned to Canada after many years of living and teaching abroad in order to reestablish myself among my friends and family and to explore career options. I accepted a role as a curriculum consultant in a college system that billed themselves as ‘Canada’s Portfolio College’. Through my experiences with my new colleagues, I became firmly convinced that a portfolio was not merely a collection of artefacts and reflections as perhaps envisioned by my colleagues, but rather provided the possibility of becoming a complex process of reflective and intentional practice based on collected and collated work. As I developed, practiced various strategies and
used different media for recording and sharing my ideas, the concept of a ‘portfolio approach’ coalesced from the myriad strands of my social and professional interactions. More recently, I have strived to enhance this approach through an active and directed sharing of specific work and have studied the possibilities of passive sharing through the act of simply having one’s work available for the general public.

I was also aware of the profusion of materials and documentation that was being produced not only by me, but by my colleagues and my educational community. In the very same college that promoted the portfolio as an on-going demonstration of competency, faculty were becoming overwhelmed by the often disparate tasks put to them and by the ongoing demands of their, and their students’, portfolios. There were numerous reasons affecting individual faculty’s abilities to keep up with the portfolio work. One was the well-intentioned but disconnected range of training to support the portfolio and the mixed messages surrounding technology and emerging forms of media, including Web 2.0 technologies which were still very much in their infancy even a few short years ago. Gergen (1991) notes that “Social saturation furnishes us with a multiplicity of incoherent and unrelated languages of the self” (p. 6).

It was at this point that I noticed how we had been given numerous very powerful tools with which to work and yet we were unable to use these tools to master and amalgamate the disparate voices that we use as we progress through our relational careers. I wanted to investigate how we could use media to share our voices with the right audiences at the right time. The importance of being able to share these voices in constructionist ways are highlighted by Wortham and Jackson (2008) who note that “Constructionist approaches to education are important because they can help educators understand and change the highly enabling and constraining outcomes that educational processes have” (p. 107). It may be argued that many
educational processes can be both highly ‘enabling’ and at the very same time highly ‘constraining’ depending on the approaches to the content and processes under study or development.

Upon my return to the UAE to take up a new post in a Faculty of Education, I determined to investigate much more fully the various electronic tools and media at my disposal. As I grew into my new role, I increasingly embraced a portfolio approach to teaching and learning, introducing various aspects of it to my students and working with them in a participatory action research process to develop and refine the myriad portfolio processes that we explored together. The next section discusses some of the results of that early research.

1.3. **Portfolio Approach to Teaching and Learning**

A portfolio approach to teaching and learning as defined by previous research is concerned with the perceived benefits that a practitioner may derive from the many processes involved in building and maintaining a portfolio (Leslie, 2012). An immediate benefit perhaps is an increase in the social construction of knowledge based on the sense of community that can arise from being able to see and share each other’s work (Leslie, 2014c). For example, during initial training on various portfolio tools with a group of primary school teachers, who will be discussed at length in the context of the study, a discussion of methods for demonstrating competencies through documentation quickly led to a spontaneous and detailed discussion of folder and file arrangements. Similarly, I note that during another session, a teacher demonstrated her use of image sharing software. The ensuing discussion gave the teacher an opportunity to share her insights and receive constructive feedback from the group.
Another, equally important benefit is an improved ability of the practitioner to keep their current work in perspective and be able to reflect in a more thorough manner on the work that has been completed, either in the recent past or the more distant past. I have been pursuing my own portfolio approach for many years, with all work being contained within an online portfolio site. The ability to see, at a glance, work going back several years allows a greater focus and reflection on the work for application to current work. Also, students and colleagues are able to visit the site for current work, or to mine it for ideas, lesson plans and other work. The feedback that is received is invaluable in improving practice. As a side benefit, there is always a showcase portfolio ready for discussion or display.

A further benefit of the portfolio approach is its application to assessment. Assessment of students and of faculty themselves by supervisors can be an onerous task. One solution offered by a portfolio approach is that artefacts can be used for multiple purposes including multiple assessment purposes. This in itself presents efficiencies in that practitioners are enabled to see bigger or higher level connections between instances of their work. This loans a sense of integrity (Kolb, 1984) to the work. Perhaps it is that we need to pay attention to the banking method (Freire, 1996) in order to satisfy various assessments. There is a need to show that certain ‘truths’ have been acquired, especially in trade schools. In the Education field, society will want to know that new teachers have demonstrated certain traits valued by that particular society, including empathy and understanding, and certain technical skills in the field that they are teaching (Swan, Teaching and learning in post-industrial distance education, 2010).

One valid point of contention with more conventional forms of showcase portfolios used for assessment purposes is that of ownership over the material and control over access to the materials (Barrett, 2001; Leslie, 2014c). Similar concerns are voiced over control of curriculum
and content (Strudler & Wetzel, 2008) due to the seemingly restrictive nature of showcase portfolios for assessment. However these concerns tend to veer into administrative issues and are not so concerned with educational issues. In a portfolio approach, any institutional portfolio tool acts as an aggregator only. The contents of the portfolio in the form of documents, reflections, images and so forth are merely embedded in the institutional portfolio, leaving the actual materials in the cloud accounts of the practitioners thus allowing the practitioner to control access. Such access is not merely an ‘off-on’ switch, but a relatively complex set of variables that can include partial access, view or edit access, timed access and selective access. All of these fine-tunings of access allow for a great range of collaboration and construction of knowledge. Additionally, since the practitioner has a greater sense of control over their actual work and documents, they can develop a greater sense of ownership over the work.

1.4. Portfolios as Educational Tools

Gergen (1991) states that the “objects about which we speak are not so much in the world as they are products of perspective” (p. 7). Interestingly, we cannot always be clear about how our work or we as people and professional practitioners are being perceived by our colleagues and our stakeholders. We create representations of ourselves through the willing participation of others. However we often do not have any control or influence over how the other person perceives us, despite what common sense may indicate to the contrary. Similarly, a common discussion in media literacy is the concept that audiences negotiate meaning. Individuals make sense of media and messages in their own unique manner and with their own unique sets of biases. On an individual basis between practitioners, the chances of misunderstanding may be much greater, especially among those practitioners who perhaps are not as self-conscious about their messages.
One associated perspective to the representation of ourselves is through the diverse tools now at our disposal. Just as we have been saturated with technology and media in all its forms, the twenty-first century practitioner is now presented with an overwhelming choice of social media tools and are often expected to use a wide variety of such tools for a myriad range of purposes. The practitioner himself is often at a loss to recall and refer to every tool that they are asked to use. This concern was voiced strongly throughout this research, with many participants commenting that the range of portfolio skills required to actually pursue a portfolio approach may take a long time to develop (Strudler & Wetzel, 2008). In terms of developing efficiencies and 21st century skills, however this is an argument for the portfolio approach, not against. In professional practice, the demonstration of competencies is often a high stakes issue. In terms of the associated skills concept, educators must learn to find efficiencies in their work in order to both satisfy institutional demands and be able to address multiple needs among their students. A portfolio approach allows them to do more than one thing at a time.

Certainly, 21st century students are more than conversant with many of these tools being discussed and this trend will only increase. For example, organizations like Code.org (Code.org, 2014) offer introductory computer programming courses to K1-6 schools. Recently, the Department for Education in the United Kingdom initiated Computing courses for all students starting in primary schools, noting that, “a high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world” (Department for Education, 2015). Similarly, the Nova Scotia Department of Education and Early Childhood has recently initiated a pilot project to introduce Google Apps into all schools (Nova Scotia Department of Education and Early Childhood, 2015). Perhaps if only to keep up with their students, practitioners will benefit from enhancing their skills with these 21st century tools and
welcome the opportunity for lifelong learning. As will be discussed, the portfolio as a working tool may provide opportunities to manage these diverse tools and provide reasons for minimizing the need for such profusion.

Similarly, practitioners are often overwhelmed by the staggering number of ‘tweets’ and ‘mentions’ and other such forms of contact and information that may streammeaninglessly from their devices. In a twist of irony, in recent years there have been a number of articles and opinion pieces in the popular press in the UAE, where this research was conducted, about the dangers of social media. Yet, more recently the ruler of Dubai (The National, 2014) publicly praised and thanked his six million ‘followers’ for all the suggestions they contributed during his campaign to gather public ideas about Education in the Emirate and country. Other forms of social media are equally popular and now many schools are taking to social media to communicate with their local communities. One school with whom I have worked made over 1300 tweets during the 2013-14 academic school year, averaging about 6 per day during the 195 day year.

With the ever-increasing profusion of technology in education, and techniques and tactics that employed to integrate technology into teaching and learning, we face the danger, as indicated by McLuhan (1964) that “the specialized task always [escapes] the action of the social conscience” (p. 73). McLuhan warns that as we become more specialized in our tasks and jobs, the greater the danger that we do not see the larger whole to which we are contributing. Educators, whether in a primary, secondary, or tertiary educational institute, can easily lose sight of the greater program or environment in which they work. This may be considered an ‘ivory tower effect’. The portfolio approach helps them to keep their own contributions more organized, and thus perhaps the collection of teacher portfolios that arise from such an approach may
combine into a program portfolio (Leslie, 2012) that allows all stakeholders to easily see where they fit into the structure.

The portfolio approach to teaching and learning aspires to bring together these disparate voices and give the practitioner tools that will help form coherent narratives and thus bridge the gap between what Ismael (2007) terms the reflexive ‘I’ and the non-reflexive ‘I’. McLuhan (1964) discusses media as a translator and notes that through modern technology we can “translate more and more of ourselves into other forms of expression that exceed ourselves” (p. 63). We can use technology to translate our experiences as practitioners and individuals into forms of media that others can understand. Thus, the form of media used in translation becomes very important in shaping the message. A portfolio approach, it will be argued, will help individual practitioners manage the various translations that they put out about themselves and through a managed approach help others interpret and give meaning to these messages that are not so different than the original intention of the practitioner.

1.5. Process versus Product

Portfolios as an educational tool for students are common in many educational institutions where they are often perceived as a product. However, where there is a greater focus on the process required to develop portfolios, there may come a greater sense of the importance of the process over the product. At Athabasca University for example, they note that, “learners’ cognitive engagement with their learning histories gives rise to new knowledge – of self, of self situated within the trajectory of growth” (Conrad, 2008, p. 142). The guidelines provided by the university give learners direction in their portfolio development and preserve the ‘institutional voice’, but the learning and organization ultimately comes from the learner.
A portfolio approach as process, when pursued in a community of practitioners, affords the educator opportunities not only to see their own work but to see others’ work as well. Conversely, it also allows others to see one’s own work and offer new and different perspectives on what might be considered old and familiar ground. In such ways, the portfolio approach transforms into a way of being: of being an educator. The traditional view of a portfolio as a showcase of one’s abilities becomes, not less important, but rather a by-product of the process. From a social constructionist perspective, the portfolio approach may also be viewed not only as a process that produces an ongoing, ever-ready showcase product, but also as a concept, whereby practitioners are understood to be relational, social beings. Camargo-Borges and Rasera (2013) note that people are “relational by nature” (p. 4) and so it might be that the portfolio approach is an appropriate tool for practitioners who spend their professional lives working with others. In this view, a portfolio as an object may be conceived to be a more complete picture of an educators’ ideas, ideals and practices, within which their arguments and proposals may be viewed in a larger continuity of thought, as shared through their portfolio curations. In terms of a portfolio approach to our teaching and learning, Schon’s (1983) comment that professionals often have no way of "accounting for the artful competence" (p. 19) that they bring to their profession provides a goal to which we may aspire. Bain (2004) provides further motivation for the portfolio approach by noting that great teachers often do not capture the essence of their teaching in any practical way and that, “for the most part, their insights die with them and subsequent generations must discover anew the wisdom that drove their practices” (p. 3).

A point of confusion for many practitioners, and one that creates a tension within the portfolio work is this distinction between process and product. The issue that arises is, how can we represent the processes, in the form of activities and actions, that are performed in the
classroom, or outside of the classroom, with products that may not capture the ‘artfulness’ of the practitioner at work? If we consider the five teaching competencies as outlined by the Higher Colleges of Technology Education program (Higher Colleges of Technology, 2014), each of the five competencies may be generally viewed as processes. Certainly, many of the processes end in the creation or generation of documentation which serves as products, but the competencies themselves still mainly refer to processes.

For example, the first competency is ‘Professionalism’. The products of professionalism may include carefully drafted materials and plans, and a timely set of documents to support decisions or assessments. However, the act or process of creating these materials and documents is what constitutes the competency of professionalism, not the artefacts themselves. Professionalism also may include the ideas or knowledge of being a professional educator. These products may also include representations of the ideas and knowledge of educational theory. However, the ability to create processes which allow these ideas and knowledge to be put into action is what constitutes professionalism, not the representation of these ideas through reports, assessments or other objects.

The second competency is ‘Planning for Learning’. Again, this is clearly a process. The products of this competency include well developed planning documents and supporting materials, but the competency itself is the process of actually creating the plans and working out the process of conducting the class. The remaining competencies include, ‘Managing Learning’, ‘Assessing Learning’, and ‘Reflection’. Figure 2 illustrates the relationship between the process and the product.
Figure 2: Processes and Products. Capturing processes with products.

Figure 2 highlights the route from process to product. The practitioner must try to capture their artful and competent processes in products that may or may not completely represent the process. All of these competencies are processes and herein lies the confusion. For some, the difficulty may be in actually distinguishing between the process and the product. Others may be clear on this distinction, but may still have trouble to understand how to accurately or completely capture processes with products. This last difficulty is highlighted in the following two figures.
Figure 3: Capturing Processes with Products.

Figure 3 highlights the various types of processes that may be at play in any given classroom. Many of the processes are ill-defined, ill-aligned, or non-linear, or might be termed ill-structured cognitive domains (Spiro, Feltovich, Jacobson, & Coulson, 1992). The practitioner must be constantly alert for changes and be able to adapt to developing circumstances in any given class. As shown in Figure 3, there can be great difficulty in capturing the various processes that the practitioner must manage in their daily work. In terms of demonstrations of competency, or sharing their skills in a community of inquiry, much of their artful competence is not fully represented.

However, through a portfolio approach, as this research will endeavor to demonstrate, the practitioner may be able to capture and demonstrate a much greater portion of their competency.
Figure 4: The Portfolio Approach and the Demonstration of Competency.

Figure 4 highlights a main focus and aim of this research in enabling practitioners to better capture and share their competencies.

At this point, it is appropriate to note that throughout the discussions of this research, there is a tension between seeming dichotomies such as process and product that repeatedly springs forth. For example, discussions of the portfolio process in terms of assessment often actually focus on the product that has been produced rather than the processes that the practitioner wishes to display. Similarly, discussions of the process may swing between more technical and detailed explanations as I explain how various aspects of the portfolio approach may be realized through the use of electronic tools, and a much more theoretical tone as I discuss the implications of these processes. Through this research, I hope to bridge some of these tensions and bring new perspectives to such things as assessment of process and the incorporation of technology to support and promote our theoretical discussions.
1.6. **Epistemological Curiosity**

As an educator, one of my goals is to help my students and colleagues to develop a heutagological appreciation in their education where they are self-directed and self-motivated to learn beyond what I have asked them to do. By doing so, I hope to promote “the ethical formation of selves and history” (Freire, 1998, p. 23). In pursuing this goal, I endeavor to help teachers and students focus on the process and nature of their work and hopefully loan to it ‘coherence’. As Freire (1998) notes, we must create for our students and colleagues “the possibilities for the production and construction of knowledge” (p. 30). As practitioners and educators, we must acknowledge, as Freire tells us, that the cornerstone of Education is human curiosity. It is this human curiosity, within its proper bounds of privacy and respect that will lead us to the epistemological curiosity that marks the liberated student.

It may be argued that to satisfy one small curiosity is to create a greater curiosity. A significant aspect of the portfolio approach is that when viewed as a tool to support a community of inquiry, it facilitates the exploration of each other’s work and ideas through community access to the same. Such curiosity does of course have limits with regard to the privacy of others, but by placing our work in the realm of the community we are actively giving permission to others to view and examine our work, with the expectation that the community treats this work with respect.

In the knowledge–based society of the 21st century, concepts such as globalization and lifelong learning (Glastra, Hake, & Schedler, 2004; Hase & Kenyon, 2007) place an increasing weight on the ability of the practitioner to find knowledge and then understand what to do with it. In terms of teacher education programs for example, not only does the teacher or educator need to understand their subject area, but they also must manage the administration of dozens if
not hundreds of students. Additionally, since practitioners are responsible to demonstrate to a variety of stakeholders that they are meeting community and institutional standards and expectations of education, working within this plethora of tasks and responsibilities the practitioner may benefit from a set of processes and tools that can help facilitate and promote curiosity, both their own and their colleagues. The portfolio approach as practiced through my recent career may on the surface seem merely a means of transferring knowledge. However, I will strive to demonstrate that rather than merely serve as a vehicle through which to disseminate my ideas, by putting my comments and ideas out in the world, I am providing a means of promoting the curiosity of others and of course myself in my community.

Gergen (1991) tells us that one challenge of scientific psychology in the twentieth century was to “know thyself” (p. 38). It will be a contention here that one challenge for educators and practitioners in the twenty-first century will be to help each other come to a relational and contextual understanding of each other through the portfolio approach to their teaching and learning. The point is not to try to influence what others think of us and our work, but perhaps the opposite, to offer a space for inspiration and curiosity in which different people at different times and in different spaces might engage. The practitioner can use their portfolio as a concrete presentation of their ideas and invite others in to tell us what we are trying to say and to help us understand our own actions. The portfolio approach may help to monitor and present a coherent range of ‘us’ to others, especially from a professional perspective. It also allows our students and audience to come together to discuss our ideas without us being present. Our students for example, can revisit our work and try to make better sense of the ideas and concepts with which they are expected to interact.
1.7. **Transformation**

Through the portfolio approach, practitioners will be able to take advantage of many 21st century tools to better organize their thoughts and activities. Such organization and the associated curation and reflection that comes with reviewing one’s own work should allow the practitioner to more easily access the information contained therein in order to make better decisions and in fact experience a greater sense of freedom. Figure 5 shows how this process might operate.

![Diagram showing the process of transformation]

Figure 5: The process of transformation.

Figure 5 shows how we can work through the portfolio approach in order to pursue growth in our relational understanding of the world. Freire (1998) tells us that to make a decision is to transform our situation. To do this, we must be able to make informed decisions in order to be able to take risks on the outcome of those decisions. The greater our enriched relational knowledge, based on curated narratives, the greater will be our ability to make informed
decisions, and hence the greater will be our understanding, whether academic or otherwise. The portfolio approach then becomes a means through which we as practitioners can enrich our relational knowledge of ourselves, and our community.

1.8. Potential Learning and Social Construction

“In the banking concept of education, knowledge is a gift bestowed by those who consider themselves knowledgeable” (Freire, 1996, p. 53). This form of education “negates education and knowledge as processes of inquiry”. Students become “objects” of the education process (p. 54). Conversely, Gergen (2001) asks, “What are the pragmatic potentials of the forms of life to which students are exposed in our schools” (p. 121)? In many cases, the education process removes the content of a particular subject from its context and relational meaning. In this way, the intent of the knowledge in a larger context is often lost. “Educators extract bodies of discourse (and a limited number of instantiations) from the professional disciplines and pass these extractions on to those beneath them in the hierarchy” (Gergen, 2001, p. 125).

Indeed, “the tradition of individual-centered education is ill-suited” (Gergen, 2009, p. 244) for the 21st century educator. Crook (1994) discusses similar issues, noting that individual-centered or student-centered learning activities are in contrast to Vygotskian views on how we learn, and “obviate” (p. 69) the social aspect of learning. If we consider that practitioners as well as their students are ‘individuals’ in terms of individual-centered education practices, they risk losing the connectedness that exists between disciplines. Similarly, much of educational theory focuses on students as individuals, and so practitioners must be careful to maintain the social nature of their own practice and learning between themselves, their colleagues and their students.
“Whatever exists simply exists … however, in the process of co-action whatever there is takes shape as something”. (Gergen, 2009, p. 37). Social construction focuses on how our interactions with others create our understanding of ourselves. “The utterance has no commanding presence in itself. Its meaning is revealed only in the manner of my response” (Gergen, 2007, p. 366). Similarly, the responses only have meaning in relation to the utterances themselves. In the 21st century, we often talk about the information age or the knowledge society. However the real power that new technologies have brought to Education, if not the world is not access to information but more directly access to each other. (Garrison, 2011).

Can it be argued that the use of a portfolio approach to one’s life allows us to control parts of our life that we do not know we are already sharing? What can people tell from our ‘data’? Ismael (2007) discusses the concept of the non-reflexive ‘I’ and wonders how we can influence that representation of our selves. How can that gleaned knowledge help us, or help others to help us, or help us to help others? We are engaged in co-constructing our own self with those around us (Gergen, 2011). We are active in our own development. How can we capitalize on this development to help each other realize potential, not become subsumed by interactions?

1.9. Research Objectives and Research Questions

This section will propose three questions that will provide the focus for this research. In order to account for and help manage the many often ill-defined and ill-aligned processes that are occurring during educational activities, the portfolio approach by necessity is a large and multifaceted set of activities and disciplined procedures. Participants in the research on the portfolio approach often displayed confusion over the profusion of processes and tools that they dealt with daily. As this research developed, the data and feedback from the participants indicated that the portfolio approach may be best viewed through the different intentions or purposes that the
practitioners have for both the range of content that they hold within their portfolio and the various processes that they pursue in their professional lives. Given that much of this research, as will be discussed later, follows a participatory action research model intended to provide guidance and methods of practice, input from the participants was paramount.

Over the lengthy time span of this research emerged the notion that there are three ‘spheres of intentionality’ within the approach; the personal sphere; the community of inquiry sphere; and the demonstrations of competency sphere. These spheres may be seen as overlapping intentions of activity within one portfolio. By viewing their portfolio activities in terms of their intentions, the participants were able to make much better sense and thus better use of their portfolios to manage the complexity that they face in their teaching and learning activities. The spheres of intentionality also highlighted for them how their intentions can influence both the content being shared and the media used to share that content.

In order to present the research questions in their proper, relational context, they will be posed in relation to the three spheres of the portfolio approach. From the outline of each sphere arises the potential for this research. Within each discussion, the various areas of overlap between that sphere and the other two will also be highlighted in its various forms with attention to the intentionality of the practitioner.

I will argue that the intentionality of the process and the creation of knowledge informs and shapes the knowledge to be created. It also shapes and directs the possibilities for interaction and impacts on the relational construction of knowledge that may be achieved. If our ultimate goal as practitioners is to foster curiosity and learning, and thus work toward Freire’s (1998) pedagogy of freedom, then the clearer we must be in our own intentionality in order to promote the
freedom we want our students and communities to enjoy. In this way, the combination or overall collection of tools and processes combines to produce a powerful way of being a practitioner.

1.9.1. Personal sphere.

The first research question to be asked arises out of a general focus provided by McNamee (2004). “How can our forms of practice engender collaborative partnerships where diverse voices, competing ideologies, and opposing traditions can all be heard and respected” (p. 406)? This research will explore how a portfolio approach to learning can help the individual practitioner begin to develop his own forms of practice that will allow him to make better sense of his ill-structured knowledge domains and thus express his ideas more clearly first to himself and then secondly to his communities of inquiry. By practicing and developing the various processes that allows him to shape and refine his ideas according to his own intentions, the individual practitioner will be able to more effectively collate his work into organizational forms that allow him to make sense of his own work and develop his ideas over time. This intentional, reflective process then allows the practitioner to share better crafted ideas with a community of inquiry, which should be able to more readily comprehend these ideas. The intentional building of a personal portfolio for the purpose of sharing their ideas with their students, colleagues and stakeholders allows individual practitioners to reflect on and direct their own growth as a practitioner.

This intentionality in the personal sphere will eventually allow each practitioner to both actively and passively create partnerships in a community of inquiry where he can be a diverse voice among others and yet be respected. Similarly, this research will explore how we can present ourselves and repurpose our work into demonstrations of competencies for others in a manner which helps us to further develop our potential along lines that we want, rather than
along lines that others may guess or press upon us. This is not inconsistent with the notion of allowing others to tell us who we are and what we should become, but rather it is a proactive response to that knowledge in an attempt to maintain a voice in our own development and respect the wider community of which we are a part.

McNamee’s (2004) question provides a clear focus from which to start on a personal journey of practicing the portfolio approach to one’s own teaching and learning. I will demonstrate that one form of practice will be to wrestle with the myriad ill-structured domains of knowledge that they encounter in their daily professional life and employ what Jacobson and Spiro (1993) term, ‘cognitive flexibility’ to put their ideas into an accessible format that can be viewed and shared by other people. McLuhan and Powers (1989) also discuss a similar concept in which they differentiate between visual knowledge and acoustic knowledge. They discuss the idea that visual knowledge, which they view as more traditional, is linear, connected, and best represented by the printed word. Already in 1989 in our modern world of electronic media, they argued that knowledge is more acoustic in that it surrounds us from all sides and is “simultaneous, discontinuous, and dynamic” (p. 14). The portfolio approach strives to help the practitioner manage these acoustic forms, understand them and begin to both actively and passively share their ideas more readily and easily with their community of inquiry and, almost as a by-product, and with little tampering but lots of intention, provide a high-stakes showcase of competencies.

Additionally, I will demonstrate that the use of a portfolio approach to one’s professional practice allows us to control parts of our life that we do not know we are already sharing. This may be part of Ismael’s (2007) non-reflexive “I”. From our passive representation, what can people tell from our ‘data’? How can that gleaned knowledge help us, or help others to help us,
or help us to help others? Regardless of what we do, we are engaged in co-constructing our own self with those around us (Gergen, 2011). This may be seen as acts of “populating the self” (Gergen, 1991, p. 68) whereby we promote ourselves to different stakeholders in different manners. The direct supervisor will want to know different facts or view different results than will the parent as stakeholder, who will want to know just what the practitioner is doing with their children. Through a portfolio approach, we can be more proactive in our own development by presenting better focused curations to our varied audiences.

This is the personal sphere of the portfolio approach and requires sustained, individual effort. The research question for this sphere asks, what are the range of skills and processes that will allow practitioners to present their own unique voice to their community of inquiry and their stakeholders?

1.9.2. Community sphere.

The second research objective is to investigate the community of inquiry. Gergen (2009) provides a focus for this objective by asking the question, “How could collaborative activities among teachers for example be used to enhance the relational process within classrooms, or between classrooms and the world outside” (p. 269)? How can a portfolio approach afford opportunities for practitioners to go among each other’s work and find their own knowledge and new learning from that collection?

In order to participate in a community of inquiry, once the practitioner has developed their own voice through the intentional development of their own ideas in their portfolio, they must be willing to share their ideas and be prepared to both explain them, change them and be transformed. In the process of epistemological curiosity, the practitioner can employ a portfolio
approach that allows opportunities to “assemble relevant abstract conceptual and case-specific knowledge components” (Jacobsen & Spiro, 1993, p. 3), better explain or organize those knowledge components, and then hold and examine them, almost as concrete objects, before putting them out into the world. This is the point where the personal sphere of the portfolio approach overlaps with and interjects into the community sphere. The intention between the two spheres is evident in the goal of the practitioner. To whom is the practitioner directing his ideas?

When considering whether new forms of media can alter our ways of thinking, we can reflect on McLuhan’s (1964) argument that the “medium is the message”. How do the new possibilities of social media and web 2.0 technologies influence our ability to share ideas? With 21st century tools, practitioners can now not only be more efficient in sharing their ideas with their community, creating possibilities for growth, but they can perhaps be more creative in using media to help shape the messages that they are sharing.

From my perspective working in an international community of inquiry, we must also consider how we can create a sense of community among practitioners who may come from a wide range of backgrounds (Cleveland-Innes & Garrison, 2010). In the school system of the UAE, and in international schools around the world, students are exposed to many different customs and beliefs even if implicitly or passively shared through the simple act of being with each other. How can the portfolio approach allow practitioners to understand the wider collection of customs that may be both in their classroom and in their staffroom? Through the passive representation of oneself as will be explored, how can we positively influence those potentials to make the most of our time together?
Thus, the research question that investigates the community of inquiry is, what processes and skills must we develop as practitioners in order to participate in communities of inquiry and benefit from each other?

1.9.3. Competency sphere.

We move from the community sphere into the competency sphere, and back to the personal sphere by asking the question, how can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace?

In other words, how can the portfolio approach allow principals and mentors work with faculty and mentees to direct and guide development and meet institutional needs while preserving the voice and individuality of the participants? In the competency sphere, the intentions of the practitioner are two-fold. On the one hand, the practitioner wants to demonstrate to the various stakeholders that they are capable of the expectations and responsibilities placed upon them. On the other hand, the practitioner also has, as Freire (1998) notes, “to accept as a duty the need to motivate and challenge the listeners to speak and reply” (p. 104). How can the practitioner help the audience of stakeholders to give feedback and let the audience know that the feedback is wanted and will be well-received?

This section will explore the most common and perhaps more traditional use of a portfolio as a showcase for the demonstration of competency. Though the competency sphere may have a seemingly confusing overlap with the personal sphere and the community of inquiry sphere, the high stakes nature of being able to demonstrate that outcomes have been met, or that competencies are consistently delivered, makes the competency sphere an integral and necessary
part of the portfolio approach. Herein lies the overlap with both the personal sphere and the community sphere. Within this sphere where the showcase portfolio might be viewed as a static collection of artefacts, there are processes and tools that permit ongoing demonstrations that can be updated regularly, and in some cases, automatically.

In pursuit of Gergen’s (1991) contention that “each truth about ourselves is a construction of the moment” (p. 16), it is argued that our demonstrations of competency are inherently temporal and temporary. As we grow and can demonstrate that growth to ourselves and to others, ‘truths’ about ourselves do in fact change and develop. Similarly, as our audience changes from day to day, their interpretations of us change and we may indeed change for the audience. When sitting with my students, I become a teacher and may even take on a different persona in which I assume the role of leader or ‘wise old man’. When I am with my colleagues, I become an equal and a peer. This is the nature of the relational being.

The potential of this research will be to explore how a portfolio approach to teaching and learning can support lifelong learning in order to bring people closer together and support a community of inquiry. Specifically, this research will examine the three spheres of the portfolio approach and investigate how each sphere can contribute to the growth of the individual practitioner and how, in turn, the practitioner can then align their growth with the needs of their communities, stakeholders and their own professional goals.

1.9.4. Summary of Research Questions

For clarity and ease understanding, Table 1 collects the three research questions together.
Table 1:

*Collected Research Questions*

1. What are the range of skills and processes that will allow practitioners to present their own unique voice to their community of inquiry and their stakeholders?
2. What processes and skills must we develop as practitioners in order to participate in communities of inquiry and benefit from each other?
3. How can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace?

1.9.5. **Associated skills of the portfolio approach.**

As a secondary, but necessary aspect of the research, I will examine the concept of ‘associated skills’ that are required to develop a portfolio. The skills required to effectively design a portfolio and participate in a portfolio approach are much the same skills that are required to function as a practitioner in the 21st century, and be able to ‘keep up’ with the 21st century student. In the world of Web 2.0, in which all participants are able to create their own content and share it with the rest of the world, 21st century skills are esteemed to be those that allow us to format and communicate our ideas (See Appendix A for a detailed discussion of technology). The advent of increasingly powerful cloud storage tools adds further technological support to the portfolio approach.

The portfolio approach is not about technology, yet is supported at every turn by technology. The tension mentioned earlier between technology and philosophy or theory is evident here. The technology serves merely as tools in our pursuit of epistemological freedom and the social construction of knowledge. However, the ability to use these tools is crucial to our
pursuit of the portfolio approach and its goal of epistemological freedom and the social construction of knowledge. Hence, while the research questions in particular do not mention technology and not reliant on any specific tool, the portfolio approach is well served by examining some of the associated skills that have been used by the participants in this research.

Table 2:

*Portfolio Approach and Associated Skills*

<table>
<thead>
<tr>
<th>Sphere</th>
<th>Intentions</th>
<th>21st Century Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>Manage ill-structured knowledge domains</td>
<td>blog / online platform</td>
</tr>
<tr>
<td></td>
<td>Reflect on ideas</td>
<td>social media tools</td>
</tr>
<tr>
<td></td>
<td>Construct new knowledge</td>
<td>text editing tools</td>
</tr>
<tr>
<td></td>
<td>preserve ideas for future transformation</td>
<td>image editing tools</td>
</tr>
<tr>
<td></td>
<td>present ideas</td>
<td>video editing tools</td>
</tr>
<tr>
<td></td>
<td>promote active representation of self</td>
<td>cloud storage for documents, videos, images, presentations</td>
</tr>
<tr>
<td>Community of inquiry</td>
<td>establish social, cognitive and teaching presence</td>
<td>discussion board</td>
</tr>
<tr>
<td></td>
<td>facilitate and participate in social construction of knowledge</td>
<td>social media tools</td>
</tr>
<tr>
<td></td>
<td>direct and increase exposure of ideas</td>
<td>cloud storage tools</td>
</tr>
<tr>
<td></td>
<td>promote both active and passive representation of self</td>
<td>community portal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>synchronous and asynchronous communication tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>learning management platforms</td>
</tr>
<tr>
<td>Competency</td>
<td>Showcase work</td>
<td>blog / online platform</td>
</tr>
<tr>
<td></td>
<td>Guide professional development</td>
<td>community portal</td>
</tr>
<tr>
<td></td>
<td>Provide points of contact in power relationships</td>
<td>media editing tools</td>
</tr>
<tr>
<td></td>
<td>Promote passive representation of self presentation</td>
<td>communication tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td>archival tools and cloud storage</td>
</tr>
</tbody>
</table>
Table 2 highlights the spheres of intentionality, their associated teaching and learning practices, and constructivist pursuits, and links them to a variety of 21st century tools. This list of tools is intended as examples and is not an exhaustive list. Between the three spheres can be seen a considerable overlap of skills and tools. The individual practitioner can collect their ideas, reflect on them in order to better present these ideas to their audience. Through communities of inquiry, practitioners, students and stakeholders can better understand the needs of those around them and contribute more meaningfully to the growth and development of all participants. From the amassed curations of ideas and work, the practitioner can present to stakeholders curated collections that represent their best efforts and allow their stakeholders to review and value their work. The information age may be giving way to the knowledge age and the distinction between the two is significant. The use of technology is becoming second nature even to many digital immigrants and there seems to be new acceptance of technology as ‘here to stay’.

1.10. Overview of Chapters

The dissertation is divided into five chapters and supporting appendices. The first chapter serves as an introduction and attempts to provide a background to the portfolio approach, demonstrate how it came to be, and how it will contribute to the social construction of knowledge. It ends with a discussion of how the participatory nature of the action research led to the notion that the portfolio approach can be divided in three spheres of intentionality.

The second chapter is the literature review. Much of the review focuses on lifelong learning and experiential learning. There is a strong focus on heutagogy and the notion that the portfolio approach may promote a greater inclination toward self-directed learning.
The third chapter discusses the methodology and highlights the three sets of participants, myself through an autoethnographic review of my work, my students, and a group of professional primary school teachers.

The fourth chapter discusses the findings of the research divided into three sections based on the three questions and their relation to the spheres of intentionality.

The fifth and concluding chapter discusses the overall findings of the research and offers a discussion on limitations of the various aspects of the research. Also included in this chapter is a discussion of both further avenues of research and suggestions for practitioners who are interested in pursuing a portfolio approach to their own work.

2. Literature Review

The literature review is divided into four sections. As noted earlier in the discussion of the research questions, there is significant overlap between the three spheres of intentionality. However, it is the intentions behind the processes and artefacts that determine their nature.

The first section explores arguments on how the portfolio approach can support and help to prepare the practitioner from an individual point of view. This section generally corresponds to the personal sphere of the portfolio approach.

2.1. Portfolio as Lifelong Learning Tool

Glastra, Hake and Schedler (2004) discuss lifelong learning as an essential element of professional life in the 21st century. They note that with an increase in the ability to work with others and share ideas and experiences comes an increase in individual responsibility for one’s own actions. This perhaps is not a new idea, however it is increasingly becoming an expected
norm as physical barriers of distance and separation between individuals and groups breakdown. “Rather than social or moral conformity, individual distinction is the new postmodern imperative” (Glastra, Hake, & Schedler, 2004, p. 292). They ask how professionals can “learn to deal in critical and innovative ways” (p. 303) with the changes being faced in the 21st century professional world. Glastra, Schedler and Hake (2004) also note that while people may now work for a smaller proportion of their lives, they are expected to meet ever increasing levels of performance and competency. As well, they attach no less importance to what they do despite the time spent on such activities. The concept of a portfolio approach to learning provides tools that facilitate individual distinction.

There is an argument that in any event, we are all lifelong learners regardless of our awareness or acknowledgement of this fact (Bouverne-De Bie & Piessens, 2004). Lifelong learning as a focus of research has been gaining prominence for several years as a consequence of globalization and the spread of ICT and technology (Glastra, Schedler, & Hake, 2004). Many companies and institutions now require their workforce to be much more flexible in terms of their capabilities and styles of work. Projects are more common as companies and institutional reputations are built on innovation and ‘newness’.

Similarly, educational practitioners will require new skills and will have to demonstrate to a widening audience their competency to manage the 21st century classroom effectively. Educators need practical processes that allow them to adopt and master new methodologies and blend them into their existing schema. The use of a portfolio approach to one’s own lifelong learning activities may help to provide such processes. The reality in many workplaces and schools is that activities are often not systemic and orderly and so the reflective journal, as an example, may help to give order to the unordered (Gitterman, 2008). Spiro, Feltovich, Jacobson,
and Coulson (1992) describe the concept of ill-structured cognitive domains as an application of knowledge that requires the “simultaneous interactive involvement of multiple wide-application conceptual structures” and that each interaction “varies substantially across cases nominally of the same type” (p. 60). This notion is highly relevant when considering the range of possibilities for the dissemination of ideas through the portfolio approach, or indeed through any form of media that may not be completely formed, and in consideration of the wider purposes to which a portfolio may speak.

If we are to participate in our educational world as equal, distinct and productive members, we should be able to inspire confidence in ourselves through the presentation of our abilities and skills, and the portrayal of our work. The concept of ‘Biographicity’ (Alheit & Dausien, 2002) loans itself to a portfolio approach to teaching and learning and to lifelong learning. A resume or CV has always been a portrait of one’s life, albeit the professional life. However, in terms of lifelong learning the biographical nature of a CV is more evident as the traditional lines between professional and personal life increasingly become blurred (Dwyer, Hiltz, & Passerini, 2007). Social networking, as an example keeps an educator in contact with their students for a much greater percentage of the day. Additionally, self-disclosure in social networking sites has begun to shift what spaces, time, and information individuals consider to be public versus private (Dwyer, Hiltz, & Passerini, 2007).

Vanwing and Notten (2004) also discuss the concept of biographicity in terms of Europe’s lifelong learning policy and its three types of continuous learning: personal or expressive learning; social, moral or participatory learning; and technical or functional learning. These three types of learning loosely correspond to the three spheres of the portfolio approach. One item upon which they focus is the importance of detecting the needs of the learner. With lifelong
learning, among educators for example, the needs of the learner are much more variable than those of a cohort of students progressing through a set degree or diploma program. Although individual students will have individual needs, the learning outcomes provide a predictable set of needs for all students. With educators as lifelong learners, the portfolio approach provides opportunities for interaction between practitioners and managers or other stakeholders. Going beyond the more traditional view of portfolios as demonstrations of competency, the portfolio approach perhaps affords the practitioner a controlled method of exposing where competencies need to be developed further. It may be that social and economic purposes of lifelong learning can be reconciled through a portfolio approach where the practitioner demonstrates communicative competency to stakeholders by displaying a highly technical photostream intended for family and friends, or indeed for their students.

Kelchtermans (2009) argues that the visibility with which an educator contends everyday has a deep impact on the nature of the teacher’s competence and work. He notes that being a teacher is comparable to being in a ‘fishbowl’. Much of a teacher’s work is derived from their ‘essence’ as a teacher and that their self-esteem is deeply tied to their competency as a teacher. This would seem to be yet another argument for the necessity of maintaining a portfolio of content practices and ideas. Teachers do need to justify themselves on a regular basis to many different stakeholders and a systematic and orderly portfolio greatly contributes to this. One criticism often leveled at teachers is that once the door to the classroom is closed, they are operating without any external controls. In many ways, this can be quite demanding and the teacher, armed with a collected sense of themselves and their work could go into that classroom much more prepared and indeed come out of the classroom with a better sense of what they did while in there.
The use of a portfolio approach allows the practitioner to better capture what is happening in their classroom and allow stakeholders and mentors greater insight into their strengths.

### 2.1.1. Cognitive Apprenticeship

Gergen (2009) discusses the concept of cognitive apprenticeship and its role in mentoring new educators. Cognitive apprenticeship may be viewed as an extension of lifelong learning in that both the apprentice and the mentor are engaged in lifelong learning activities. The fact that the apprentice is still at the beginning of their lifelong learning journey is all the more reason to engage meaningfully through a portfolio approach. A portfolio approach can contribute to such apprenticeships by offering glimpses of tasks that are “representative of authentic skills” (Dennen & Burner, 2008, p. 426) through the artful demonstrations of competency to be found on the practitioners’ portfolios. From both perspectives, those of the mentors and institution, and of the mentees or apprentices, a portfolio approach to their lifelong learning or perhaps their on-the-job training, allows apprentices that opportunity to put their own experiences in the context of more experienced faculty.

Researchers (Nichol & Turner-Bisset, 2006; Kopcha & Alger, 2014) have noted that the format of professional development activities is often insufficient to simply cause a ‘value-added’ effect on the participants. The view that such development activities would ‘add value’ seems a simplification of Freire’s (1996) banking method of education where we put something in and expect to get it out later. Nichol and Turner-Bisset (2006) discuss the concept of the “expert teaching protocols” (p. 155) in which a lesson is described in minute detail as an analytical commentary on the activities conducted during a lesson, the point being to provide apprentice teachers with sufficient information to be able to fully understand the manner of the lesson. Oriol, Tumulty, and Snyder (2010) discuss a similar approach, termed “talking aloud
protocols” (An apprenticeship framework for teaching online, para. 1) in which the mentor exemplifies problem solving techniques through discussion of the relevant issues in a particular problem.

Such commentaries would need to be available, ideally with the commentator linked and easily contacted through the protocol in order to provide discussion either synchronous or asynchronous through the use of discussion boards or other such web 2.0 tools (Oriol, Tumulty, & Snyder, 2010). Furthermore, through the portfolio approach model, such commentaries would be recorded as part of a teacher’s regular demonstrations of artful competency. An apprentice may inspire an expert faculty to write more in-depth reports in order to model certain styles of lesson, but would also provide a wide range of less detailed experiences and lessons through which to support the apprentice. The resulting body of portfolio showcase materials would be a rich resource for any program providing supervisors with feedback on their program, but also apprentices with sources of inspiration and colleagues with models of good practice and shareable ideas.

Kopcha & Alger (2014) discuss the concept of technology-enhanced cognitive apprenticeships (TECA) in which the student practitioner is supported by the expert teacher or mentor through the use of various technologies. Such technologies are the supporting technologies for a portfolio approach. If a college were employing a portfolio approach where their practitioners and educators were already detailing their own work and reflections through the various web 2.0 and showcase tools, the apprentice would already have a rich collection of materials to review, not only from their individual mentor, but also from the wider range of practitioners from whom the apprentice may have or is taking one or two supplementary courses to their teaching practice or core courses. Kopcha and Alger (2014) note that there are “three
essential elements of cognitive apprenticeship: the methods, content, and social aspects of learning” (Introduction, para. 5). These three elements closely correspond to the three elements of the Community of Inquiry (Garrison, Anderson, & Archer, 2000), Social presence, cognitive presence and teaching presence, which have been put forward (Leslie, 2012) as an underlying and supportive model for the portfolio learning approach. By applying the community of inquiry model to activities through an apprenticeship and by extension through a portfolio approach, such elements as knowledge of self-efficacy (Kopcha & Alger, 2011) can be better monitored and discussed with a mentor.

2.1.2. “Time Span of Discretion”

Kolb (1984) introduces the concept of “the time span of discretion” (Jacques, 1979, p. 125) in order to support a discussion that higher order work requires a greater “integrative complexity” (p. 131) and “adaptive flexibility” (p. 213). Higher order work, which considers or involves greater time periods or impacts larger numbers of people, requires a greater integrative complexity in terms of the experiential learning model. In this example, the concept is being used as a determiner of the rate of pay in that the greater the time span of discretion, the higher the rate of pay is for that individual, but the concept can easily be transferred to the concept of portfolio learning and the social construction of knowledge.

In terms of a portfolio approach, the time span of discretion may provide a guiding concept to the educational practitioner. The greater the time span of their portfolio collections and curated experiences, the greater the range of experiences that practitioner will have to draw upon. As the practitioner becomes more adept at their work and achieves a higher level of integrative complexity, they in turn need to develop a greater adaptive flexibility, or a higher tolerance for ambiguity in their work. In other words, they need to be able to overcome gaps in their
experience (affective complexity) which in turn may lead to gaps in their reflective and symbolic complexity. A certain tolerance for ambiguity however still enables them to act with behavioral complexity despite these gaps in their experience. As their tolerance increases, they are able to maintain, and perhaps achieve a greater integrity in their work since they can better compensate for their experiential gaps.

In a discussion of the assessment of qualifications, McGhee (2004) discusses the concept of the “Volume of Assessed study” (p. 15). Similar to the time span of discretion, this concept examines the longitudinal aspect and frequency of meeting an outcome. The author suggests that in order to meet an outcome, the student must do more than demonstrate a particular competency or skill only once, or in a narrow fashion. They must make any such demonstrations in a manner suitable and appropriate to the competency being demonstrated.

A ‘continuity of curation’ within a portfolio approach to their learning and practice would support and allow practitioners to better grasp the ‘bigger picture’ of their work and promote a tolerance for ambiguity since they are able to fill such gaps with related experience and knowledge. This ability to bridge such gaps in experience becomes stronger as individuals gain greater experience, however it will be argued herein that a supportive and thoughtful portfolio approach will further enhance what is generally termed, ‘experience’. The value of experience is often found simply in the amount that a person has accrued. Certainly, rates of pay are often based on little more than the years that one has worked at a particular job. Anecdotal evidence includes reflections from individuals who have compiled large collections of ‘things’ over a long period of time. The collection is often more important than the collected items. In terms of the medium being the message, the time span of the collection is more important to the person than the actual contents of the collection.
2.1.3. Portfolios for Lifelong Learning: Heutagogy

Heutagogy is the study of self-determined learning (Kenyon & Hase, 2010). In a heutagogical approach, the practitioner seeks knowledge as part of their professional role or daily routine and then is motivated to reflect on that activity to learn from their ‘mistakes’ and improve their skills, very much in the manner of Kolb’s (1984) experiential learning model. Such motivation comes from a combination of the right circumstances and is usually the result of “meaningful experience” (Kenyon & Hase, 2010, p. 167) and the quest for a pedagogy of freedom (Freire, 1998).

The heutagogical aspect of learning is precisely what inspires people to love learning and to embrace activities that lead to learning or that are in some way intrinsically learning activities. The need is one of knowing how to learn. Canning and Callan (2010) discuss some prerequisites for a heutagogical approach including the need to be self-aware of the benefits of learning and be willing to adopt an attitude of persistence toward learning. Importantly, learners need to develop an intrinsic motivation to their learning and have an ability to be self-directing.

Figure 6 describes a process whereby learners can become more independent and more motivated terms of their ability to direct their own learning. A heutagogical approach does not mean that the learner, or practitioner, is no longer learning from others or is now working independently. The suggestion is merely that the practitioner, from experience, is now better able to make sense of what they are learning, order their learning in better ways, and make greater contributions to a community of inquiry. Even the most experienced practitioner will have a set of peers with whom to work, stakeholders to answer to, and younger colleagues to whom he or she may act as a mentor or teacher.
Figure 6: Independence and integrity.

In Figure 6, a distinction is made between pedagogy, andragogy and heutagogy. Pedagogy generally requires more input or guidance from a teacher or mentor and may be described as ‘learning then doing’. In a pedagogical model, even within what may be considered constructivist approaches to learning, the curriculum goals are set by stakeholders such as a school board, and students may be guided towards discovery within a curriculum framework and timeline. From the point of view of the portfolio approach for learners, the learner is still very much directed by the teacher and curriculum in order to progress through the educational system. Certainly there is a desire that students at this stage become more independent and develop intrinsic motivation, and they often do so, but yet they may lack the experience to be fully independent and self-directed, and so any portfolio-oriented tasks may seem to the learner to be merely another assignment to be completed.

In an andragogical approach as described by Knowles (1998), the teacher or instructor still has an important role, but the adult learner often has a greater intrinsic motivation to achieve specific goals because these goals might be directly related to their life and career goals, as
opposed to strictly academic goals, perhaps provided by a school or academic system. To the adult learner, or perhaps young practitioner, the portfolio approach offers a way to track achievements and progress towards goals, and manage one’s time and efforts. It also offers community support that will help the young practitioner to find their way and gauge their work by that of others. In this manner, the portfolio approach may support activities that might be described as ‘learning by doing’.

Knowles (1998) discusses the concept of andragogy which provides a set of assumptions (See Table 3) about adult learners. In an andragogical approach, the adult learner is given much more control to set their own goals and timelines, while still within a learning environment delineated by curriculum or workplace demands.

Table 3:

**Summary of Key Assumptions about Adult Learners (Knowles, 1998)**

1. The need to know: Adults need to know why they need to learn something
2. Learners’ Self-concept: Being an adult means that you take responsibility for your own learning.
3. Learners’ experience: By virtue of being older, adults have more experience upon which to draw.
4. Orientation to learning: Adults are motivated to learn in order to survive or better themselves.

In a heutagogical learning environment, a portfolio approach may support the independent learner or practitioner, and contribute to their motivation by providing a platform against which they can gauge their own capabilities and learning needs. In many cases, and certainly with student or professional practitioners, their learning environment might still be clearly guided by
stakeholders and institutional requirements. Professional practitioners pursuing higher education degrees for example, still need to meet the requirements of their respective degree programs. Many institutions also promote professional development plans for their faculty that may involve goal setting based on institutional needs and requirements. In any of these cases, they will be supported by a portfolio of readily accessible information, examples and models that they can store and access at any given moment. A portfolio approach and the access to their own information may help inspire people because the mere activity of collecting and curating their work can provide hard evidence that they are learning and allows them to more easily relate their experiences to their own logic system of events (Gitterman, 2008). Mobile devices and ubiquitous access make this type of system more practical and useful than it may have been in the past. (Blaschke, 2012).

In this approach, a portfolio of evidence and processes greatly contributes not only to the lifelong learner but to the experienced stakeholder or educator who can view a portfolio and see where the practitioner’s skill set is and where they may be going. The portfolio in its essence is often not a showcase of best examples but rather a series of processes that allow the learner to reflect more readily, access specific information more readily and move forward.

Throughout these three stages of learning, a portfolio approach offers a structure that could support a range of learners, from new learners to adult learners to the professional, reflective practitioner. Practitioners in particular often need to learn how to make connections between their real life experiences and the theoretical background that explains or puts those experiences into a comprehensible and explanatory light (Gitterman, 2008). By being able to share their experience with a community of inquiry, they are able to find a voice and gauge their progress by that of others. This may not be the ideal measuring stick as we hope that we can measure
ourselves against ourselves, but there is usefulness in external measures that come from support
groups, communities and indeed from assessors and stakeholders of whatever venture in which
the learner or practitioner is engaged. (Blaschke & Brindley, 2011).

Anderson (2010) discusses the pedagogy of nearness as a concept that demands
consideration when thinking about new technologies and their impact on the learning process.
We have access to so much information and can communicate with each other either face to face
or virtually and do so with increasing ease. This concept may help to explain the growth or a
heutagogical approach in which learners are given increasing control over their own purposes.
Although practitioners may be required to meet certain competencies, those competencies can be
laid out in conjunction with supervisors. The practitioner is in control of her destiny but is
nevertheless working in a group or a team and so needs to consider the needs of others in her
choices. For professionals, those choices may be aligned with their institution. It may be
advisable to the supervisor to find win-win arrangements where the practitioner’s goals may be
simultaneously met with those of the institution.

Anderson (2010) also discusses the concept of connectivism. In this theory, he discusses
how in the information age, it may be more important that we have the ability to find new
information and continue to learn rather than be able to know things generally. This is supported
by the notion, attached to the concept of associated skills, that instructors and educators need to
be familiar with the tools that their students may bring to the 21st classroom (Carrier, 2010).

2.1.4. Experiential Learning

“Learning is the process whereby knowledge is created through the transformation of
experience” (Kolb, 1984, p. 38). The experiential learning model is ideally suited to the portfolio
approach. In support of the processes involved in a portfolio approach, Kolb (1984) states that “the emphasis on the process of learning as opposed to the behavioral outcomes distinguishes experiential learning” (p. 25).

Within the concept of experiential learning, there are numerous strands that should be considered. In one instance, there is the concept of prior learning and the development of methods to assess prior learning. Kolb (1984) discusses this growth as a result of the trend towards changing careers. In the 21st century, when educators discuss the idea that we are educating students for jobs that do not exist, the need to somehow track, monitor and assess experience becomes so much more essential. The concept of a portfolio approach becomes more necessary in order to prepare students for this uncertain professional future.

For professionals now, it is more essential to track their experience and record it in some manner that allows them to make more sense out of what they are doing. From a stakeholder point of view, when students or practitioners at any level are increasingly engaging in project-based activities or experiential learning activities including apprenticeships, “the demand for quantifiable measurements” (Ascough, 2011, p. 45) to assess performance is increasing.

Kolb (1984) notes that, “researchers and practitioners in this area are more concerned with what people learn” (p. 7) than with how they learned. Focus is on the measurable outcomes of learning. This is reasonable and a task for assessors. The process of how to record what has been learned, make sense of what has been learned and reflect that learning in relation to required skills and talents is the role of the learner, practitioner or person with something to demonstrate or prove. To apply this to portfolio learning, the concept is that in behaviorist or empiricist points of view, learning consists of acquiring discrete objects of knowledge. We can then be tested on
our ability to represent these objects of knowledge in a test, exam, project or other method of assessment. In a portfolio approach to learning, the focus is shifted from the discrete objects of knowledge that we are expected to acquire, to the value of those objects, to our ability to make sense of how those objects influence each other and us. The focus becomes one of understanding the relational value of those objects, not just the objects as discrete items.

Thus, when we ‘learn’ something, we may consider ourselves to have acquired knowledge of that item. However, when we experience something and record that experience we may then begin to develop a deeper understanding of how that item changes in relation to its surroundings and our ability to interact with that fact, process or item. This is how the portfolio approach can support social construction.

Figure 7: Experiential learning supported by portfolio approach. Based on Kolb (1984).
In Figure 7, the concepts of dissonance between our current understanding of the world and new experiences that we are receiving in the form of conversation, observation or other means can be measured, recorded and shared with our community of inquiry. In much of the educational practitioner’s work, the knowledge of how to interact with others is the essence of the task. Kolb (1984) discusses the importance of making professionals aware of the process of socially constructing knowledge as, “It makes sense to distribute educational experiences throughout adult life” (p. 207).

In terms of the use of a portfolio to support development of professional educators, the portfolio provides an on-going ubiquitous self-designed learning platform that can be highly individualized and used for multiple purposes. When we consider that the practitioner would be better able to demonstrate their ‘artful competence’, we can begin to see answers to the first question of this research: what are the range of skills and processes that will allow practitioners to present their own voice to their community of inquiry?

At this point, the literature review examines arguments that support the portfolio approach in terms of the community of inquiry sphere. Educational practitioners work in a relational and social atmosphere where they need to be aware of their community and act in a manner that promotes the quality of the community.

2.2. The Community of Inquiry Model

From our 21st century perspective, the use of collaborative technology can allow a community of practitioners to more readily share the wealth of knowledge that exists in any such community. Certainly this concept is not new, however the methods at our disposal are more
powerful than previously and in another example of ‘the medium is the message’ (McLuhan, 1964), we may ask how can we use the technology tools at our disposal to help provide people an outlet to develop and share their voices? We are certainly interested in the messages that are being shared amongst professional practitioners, but we are also, equally interested in the medium by which they share this information. Social media tools as one example allow for public displays searchable by anyone. Therefore, we must be cautious simply of the medium in order to preserve the privacy of participants in our community. In this way, the medium influences the message. It also sends a message by virtue of its public-ness that its users are an open community, perhaps a welcoming community.

Whether we are discussing a group of students in pursuit of a common course and set of outcomes or a group of educators bound together from shared goals and purpose within a school or institution, the concept of a community of inquiry can greatly enhance and provide clear guidelines for that community. “A community of inquiry is shaped by purposeful, open and disciplined critical discourse and reflection” (Garrison & Vaughan, 2008, p. 14). In any educational institute, both the students and the teachers are, at any given time, engaged in a variety of activities, all of which can be seen to support a vibrant community of inquiry.
Figure 8 shows the community of inquiry model which underpins and illuminates the three main presences of a successful community that share common learning goals. Although the model was originally designed to explain and clarify relationships between members in online communities, recent research has been conducted discussing the efficacy of the model for blended learning environments as well (Vaughan, Cleveland-Innes, & Garrison, 2013).

Practitioners demonstrate social presence through acts of a social nature including using others’ names, showing empathy, and making emotional comments. This presence is generally the first manner in which practitioners announce themselves to the community and establish themselves as members of that community.

Cognitive presence is demonstrated through the contribution of ideas and is the practitioners' attempts to share their ideas and participate in the social construction of
knowledge. Instances of this presence often increase after practitioners have asserted their social presence and feel welcome to the community.

Teaching presence refers to participants’ efforts to guide the discussions and activities and to encourage each other to contribute. Teaching presence can take the form of design and organization of the experience, facilitating discourse, and direct instruction. With the context of actual classroom environments, various authors have suggested that teaching presence is mainly provided by teachers (Ke, 2010; Arbaugh et al, 2008). However, other research argues that teaching presence, as an integral part of the community of inquiry, comes from “students, content and instructors” (Morgan, 2011, p. 11) or any other participants and are as much an integral part of a course as are the instructors (Haughey, 2010; Leslie, 2013). In the interests of efficiency, and indeed reality, the students are capable of, and in fact must contribute to the knowledge and abilities of their peers in their community of inquiry. Similarly to the teacher-student relationship, fresh perspectives on data and information presented in a specific form by one student may be reassembled by another into new meanings that had not occurred in the first instance. How can the technology tools within the portfolio approach make such opportunities happen with greater regularity?

The community of inquiry model is often applied only to a community of learners within a specific course. In some instances as with teacher education courses, the students may be part of a cohort that spans numerous courses. In any of these instances, however the community of inquiry is often limited in scope and duration, and so thus limits the application of the model. One consideration with 21st century learning is that the practitioner benefits not so much from the access to greater information, but from access to other like-minded individuals, and indeed to different-minded individuals (Garrison, Anderson & Archer, 2000; Crook, 1994; Ash & Clayton,
2009; Thatchenkery & Chowdry, 2007; Scardamalia & Bereiter, 2010). The community of inquiry model then can offer the portfolio approach a structure within which practitioners can participate in directed conversations and receive intentional feedback from stakeholders (Leslie, 2014b).

Similarly, Gergen (2009) discusses the concept of circles of participation and how they provide a context for different matrices of relationships. As technology allows us to communicate with ever-widening circles of people, it may behoove us to take greater pains to manage those relationships in order to gain greater learning opportunities. It may be that through a portfolio approach in which the lifelong learner is intentionally pursuing opportunities, a focus on the various groups within which we may find ourselves could help to widen our opportunities to share our ideas and learn from others. Further circles may include the learning environment external to the classroom, the community and indeed the world. In terms of a community of inquiry, the members of any community are also members of other communities and they may bring evidence and experience of these external communities into the community of inquiry. In fact a well-designed community should demand that the members draw upon their experiences outside of the community of inquiry and draw in that experience to share and exhibit in front of their community members. The portfolio approach greatly facilitates this and, as with any form of media, allows the audience to draw their own conclusions.

In a discussion of constructivist learning in a learning centered arena, Swan (2010) notes that since, “all learning is unique to the individual” (p. 115), each of those individuals will have a unique perspective on the learning experience in any particular classroom. This is true for any lifelong learners including students or educators. A portfolio approach that incorporates a community of inquiry model can support such learners through providing a community that
acknowledges the individuality of learners and allows them the opportunity to demonstrate their competencies and new learning through their own showcases, getting feedback from a variety of stakeholders. They may even participate in more than one community of inquiry and perhaps overlapping communities. Even several years ago it was noted that, “more than 700 million people worldwide have profiles, or collections of information about themselves, on SNSs” (Bateman, Pike, & Butler, 2011, p.79). Swan (2010) also notes that students and lifelong learners need to receive continuous feedback or at least be able to interact with others and reflect on how others view their work. The portfolio approach offers learners the opportunity to receive and give more personalized feedback to and from other participants.

Garrison and Vaughan (2008) discuss how the community of inquiry model is built on two notions, one of which is community, and the idea that learning is a social activity. The other is inquiry. Higher education and the concept of lifelong learning is in essence based on the notion of inquiry and research. They state that, “the educational experience is a commitment to scholarship” (Garrison & Vaughan, 2008, p. 16). In defence of communities of inquiry and the use a various web 2.0 tools to communicate, they note that the written word is easily referenced and allows participants in the community to see exactly what has been said. Additionally, they note that online communications may allow for greater honesty especially when dealing with power relationships between stakeholders and practitioners.

Garrison and Vaughan then discuss a series of principles that may help to support a community of inquiry. These have been summarized into Table 4.
Table 4:

**Principles of a Successful Community of Inquiry (Based on Garrison & Vaughan, 2008)**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Plan to establish a climate that will encourage open communication and create trust.”</td>
<td>(p. 33)</td>
</tr>
<tr>
<td>“Plan for critical reflection, discourse, and tasks that will support systematic inquiry”</td>
<td>(Garrison &amp; Vaughan, 2008, p. 35)</td>
</tr>
<tr>
<td>“Sustain community by shifting to purposeful, collaborative communication.”</td>
<td>(p. 39)</td>
</tr>
<tr>
<td>“Encourage and support the progression of inquiry”</td>
<td>(p. 40)</td>
</tr>
<tr>
<td>“Manage collaborative relationships to support students in assuming increasing responsibility for their learning.”</td>
<td>(p. 42)</td>
</tr>
<tr>
<td>“Ensure that inquiry moves to resolution and that metacognitive awareness is developed”</td>
<td>(p. 43)</td>
</tr>
<tr>
<td>“Ensure assessment is congruent with intended learning outcomes.”</td>
<td>(p. 46)</td>
</tr>
</tbody>
</table>

Although the principles noted in Table 4 were intended to inform a community of inquiry, they are readily transferable to a portfolio approach within an educational institute. Consideration of the final principle concerning assessment can help to facilitate the creation of faculty goals, which are often used as professional assessment and measures of growth and success for the professional. This principle also provides a link between the community of inquiry and the competency spheres through the idea that demonstrations of competency are forms of assessment for the professional.

This review of the community of inquiry as a model of interaction through online tools is intended to highlight how the community of inquiry sphere of the portfolio approach can be managed and focused. In both cases the intent of the community is to share ideas through a
directed process involving the three presences; social, cognitive and teaching. Whether the community is comprised of students, students and teachers, or teachers alone, it will still be comprised of lifelong learners who are united by common goals. At this point, it may be appropriate to reiterate the second question of this research: what processes and skills must we develop as practitioners in order to participate and benefit from each other?

The next section of the literature review will now focus specifically on the competency sphere of intentionality.

2.3. Demonstrations of Competency

Schon (1983) discusses the concept of ‘reflection-in-action’ as the ability to ‘find your groove’ as discussed by baseball pitchers and by musicians. They are able to think about what they are doing while they do it. He also distinguishes between reflection in action and reflection on action. How can we capture the sense of reflection on action which occurs after the fact? What types of artefacts for different professions would sufficiently capture what a person is doing and allow them to see where they go wrong and what they can do to better themselves? Hase and Davis (2002) note that there is a general assumption that people will have a better working life if they are able to, or allowed to be “deliberately and systematically involved in their future” (Perspectives and Theoretical Frameworks, para. 8). The vision of a portfolio approach as a two-way process involving practitioners and stakeholders allows a wider range of input into not only a practitioner’s future, but to the workings of a company or school where the administrators and managers are able to build a constructed vision of the potential of their workplace, drawing on the strengths of the participants in that workplace.
Schon (1983) poses the question; when confronted with a new situation that does not fit known cases, how does the professional practitioner continue? He discusses the idea of a ‘repertoire’ of ideas and skills in which the professional is able to dissect a new problem and then find examples from the repertoire that allow the creation of new understanding. The portfolio model is designed to do exactly this. One of the prime concerns is that there is a tendency for people to fit new problems into existing known structures. It might be that a solid repertoire of actual artefacts might help to alleviate this tendency. “Because the experience of practice is inevitably fragmentary and partial, the very mechanism of devising and compiling a portfolio is intended as a means through which participants can begin to see and present a more integrated whole” (Trevitt & Stocks, 2012, p. 254).

In an ideal world it may be that the portfolio approach is solely intended to support our growth as people and as professionals. However, we do need to demonstrate a wide range of competencies to a wide range of stakeholders. Educators have no less than their Academic Chair, their students, often the parents of their students, board members, ministry officials, colleagues, and accreditation boards. According to UN (UNESCO, 2012b) data, “a large number of teachers … are unqualified or underprepared to meet the educational demands of the 21st century”. If these statistics are to be relied upon and considered by educators, then there is a clear need to demonstrate that we are capable of a wide range of skills in order to be relevant in the 21st century classroom.

The portfolio approach also empowers the development of showcase portfolios. By virtue of taking the time to keep one’s work organized and shareable through web 2.0 tools, an educator can easily prepare showcase portfolios for specific audiences in order to give each stakeholder the information and demonstrations that they need. This highlights the value of the portfolio as
process. Assessors use the term “Discipline Audit Trail” or DAT (McGhee, 2004, p. 27) as a tool to allow various auditors or stakeholders to ‘keep in touch’ or refresh their viewpoint on educators in preparations for further audits or assessments. A range of educator portfolios and even a program or institutional portfolio can lend credit to the “confidence judgments” (p. 32) of the assessors.

Table 5:

*Competencies for the Learning Professional*

<table>
<thead>
<tr>
<th>Competency</th>
<th>Skills</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching</strong></td>
<td>Supervisor</td>
<td>Observation</td>
</tr>
<tr>
<td></td>
<td>Educator</td>
<td>Interviews</td>
</tr>
<tr>
<td></td>
<td>Content Expert</td>
<td>Lesson plans</td>
</tr>
<tr>
<td></td>
<td>Classroom manager</td>
<td>Materials</td>
</tr>
<tr>
<td><strong>Partnership</strong></td>
<td>Deal with:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>parents &amp; care-givers</td>
<td>Letters &amp; emails</td>
</tr>
<tr>
<td></td>
<td>Colleagues &amp; school management</td>
<td>Responses to directives</td>
</tr>
<tr>
<td></td>
<td>Stakeholders</td>
<td>Feedback</td>
</tr>
<tr>
<td><strong>Learning</strong></td>
<td>Lifelong learner</td>
<td>Journal Entries</td>
</tr>
<tr>
<td></td>
<td>Innovator</td>
<td>Forum entries</td>
</tr>
<tr>
<td></td>
<td>Researcher</td>
<td>Certificates</td>
</tr>
<tr>
<td></td>
<td>Independent learner</td>
<td>Personal Learning Plan</td>
</tr>
<tr>
<td></td>
<td>Reflective Practitioner</td>
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</tr>
</tbody>
</table>


Table 5 provides a sample of the types of competencies that educators might need to demonstrate to stakeholders (See Appendix B for competencies for professional practice from the Government of Western Australia, 2004, p. 8). In this table, the competencies are described generally in terms of holistic skills. To assess a practitioner’s performance through a portfolio,
the stakeholder has to consider the practitioner’s ability to present themselves as professionals through these skill sets. Such presentations do require practice and a certain skill set of their own. In many instances, this type of showcase portfolio brings with it high stakes and pressure to deliver the required evidence and demonstrations.

A behavioral model based on more clearly delineated skill sets is used by the Ministry of Education in Sharjah, the United Arab Emirates (see Appendix C for an overview of behavioral competencies from the UAE Ministry of Education). In this example, the Ministry (Federal Authority for Government Human Resources, 2008) has created a “Behavioral Competency Framework”, defined as, “an inventory of anticipated skills, knowledge and behaviors, that lead to excellence on the job. It describes competencies in behavioral terms, using indicators to help recognize the competencies when individually demonstrated” (2.4. What is behavioral competency framework).

Figure 9: Competency management through the employee performance management system (Federal Authority for Government Human Resources, 2008, Section 4).
Figure 9 highlights the competency management process as envisioned by the Federal Authority for Government Human Resources (2008). The framework is intended to produce a showcase portfolio although the overall process may be more valuable than the product and so more closely related to a portfolio approach. There are a number of processes, including goal setting, mid-year progress reviews, on-going coaching and feedback, all of which contribute towards the development of a yearly employee appraisal, indicated by the final, “Annual Performance review and Reward Decisions”. The ‘reward decisions’ serve to underscore the high stakes nature of this process for the employee or educator.

The Ministry also supports their process by highlighting the benefits for the employee as well. One notable benefit, commented upon earlier is the view that this process can help employees to “understand the organization’s goals and align their performance to support the same” (Federal Authority for Government Human Resources, 2008, Section 2.5. Benefits of using competencies in Human resource Management).

There is the issue of “contrived collegiality” (Meeus, Van Petegem, & Engels, 2009, p. 404) as practitioners strive to present themselves in the best possible light. Perhaps it may be argued that the very skills required to present oneself in a portfolio are drawn from the skills required to present any other kind of information thus the portfolio itself may become a training ground and example of the teacher’s skills. This is related to the concept of associated skills development in that if a practitioner were pursuing a portfolio approach to their work, the presentation of their work would not need to be contrived. The process of teaching and recording their processes would be, in themselves, the portfolio.
Similarly, Trevitt and Stocks (2012) discuss the concept of authenticity in portfolio development. Conversely to assumed requirements in assessment, they comment that subjectivity and not objectivity is a “signifier of authenticity” (p. 251), stating that, “the candidate has grappled with and come to an understanding of his or her particular context”. This captures the notion (Freire, 1996; Crook, 1994) that portfolio artefacts need to reflect the context within which the artefacts, reflections or other items are connected to the world. Barrett (2008) further supports the notion of authenticity through subjectivity, noting that, “In a few examples, where students demonstrated extreme creativity in their e-portfolios, the content was focused on their passions, while not necessarily emphasizing their academic work.” (p. 21).

This review of the high-stakes nature and importance of the demonstration of competencies is reflected in the third question of this research, which is reiterated here for context: how can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace?

This final section of the literature review will provide a sense of completeness to the review and attempt to demonstrate how the many concepts put forth herein interact and combine to support the research project itself.

2.4. Intentional Constructivism

Freire (1996) said, “Human activity consists of action and reflection” (p. 106). This statement is very much in agreement with Kolb’s (1984) experiential learning model in which we have experiences, and then reflect upon them to learn and build on what we learned. From a social construction point of view, we may benefit not only from our own experiences, but from
those of others. In many ways, this is the essence of the Vygotskian model of learning. As we grow into self-determined lifelong learners, a portfolio approach will help to piece together our reflections and actions into a lifelong story of learning and competency. The ability to more readily manage documentation and ideas and benefit from the 21st century tools that this management entails should allow greater success which in turn might promote a greater sense of heutagogy among individual practitioners.

Without a portfolio approach to piece our artefacts and processes into a coherent whole, we may be in danger of viewing the various artefacts of a practitioner’s story, in Freire’s (1996) words, as merely, “contents, detached from reality, disconnected from the totality that engendered them and could give them significance” (p. 52). The greater the time span of a practitioner’s discretion, the better the story that practitioner will be able to tell us. Freire (1996) then tells us that the truly reflective and liberated educator, “presents the information to the students for their consideration, reconsiders her own considerations as the students express their own” (p. 62). The greater the sense of breadth and ‘totality’ that both the practitioner and their students can get from the portfolio curations, the more rewarding will be both the reflective process and the relational process of examining those ideas in the context of the focus of any particular course of study.

This form of cognitive apprenticeship, as discussed earlier, also allows the students to take their rightful place in charge of their own education and allows them to participate in a community of inquiry that is full of other participants who are united in the community by purpose. I have argued that teaching presence, or the direction of the learning conversation, must come from all participants in the community (Leslie, 2013). The portfolio approach allows even the more inexperienced practitioners to make sense of their world and then contribute to the
community. Again, this promotes a heutagogical approach where the practitioner or lifelong learner finds their own motivation through the desire to learn for themselves and pursue their own interests.

A portfolio approach from a heutagogical perspective also supports an appreciative inquiry attitude towards one’s work. In the desire to grow as individuals, it may be argued that most people want to learn about their strengths and grow in the competency areas that are exciting and interesting to them personally and professionally. Through an appreciative inquiry approach, “conversations are invited, for example, about times in which relations have been productive” (Gergen, 2007, p. 376).

If stakeholders are able to better understand the nature of a practitioner’s world through their portfolio of experiences, and the collected portfolio of a program or institution, the socially constructed reality of these worlds may be just that much more reflective of the practitioner’s experiences and competencies. The wide variety of the practitioner’s world may shine through more clearly by allowing the stakeholders a deeper glimpse into the range of experiences shared in a school or institution. It may be that the portfolio approach allows each practitioner a voice and the ability to distinguish themselves from their groups and postures in order to truly show themselves to each other. The portfolio approach may allow us to represent ourselves as individuals with a relational community. We may be able to shift focus from “principles to participants (Gergen, 1991, p. 257) and be able to view each other as individual practitioners rather than simply ‘the teacher’.
3. **Research Design and Methodology**

3.1. **Research Design**

The research design followed through this dissertation is descriptive and based largely on a participatory action research model. Part of the theoretical grounding of this research draws upon the work of Freire (1996; 1998) and his notion that as educators we lay out our ideas for our students and others to see and then consider the feedback that we get from others. Many of the portfolio processes described and examined have been developed through a longitudinal and iterative approach. This research design emerged over time in response to the developing portfolio processes which form the focus of the dissertation. This cyclical and developmental design model is highly suited to the goals of this research, which include providing practical methods of incorporating 21st century tools into teaching and learning and using a portfolio approach to manage these tools and the many diverse skills and processes that are involved in teaching and learning.

This research has been conducted in three different, overlapping phases, relating to the three spheres of the approach as described in the research questions. While the three spheres are seen as integrated parts of a whole approach, it is possible that each individual sphere could be practiced on its own. However, in these instances, I would argue that they are not practicing a portfolio approach, but rather following a series of processes that may still be very valuable, but suffer from the lack of integration by not providing the full possibilities that come from the relational pursuit of teaching and learning as defined in the portfolio approach.

Some of the work for this research was done prior to the start of the actual research project and initially acted as an inspiration. For example, the concept of the portfolio approach was
developed in a research paper conducted for the Higher Colleges of Technology e-Journal on Education (Leslie, 2012). This paper has already been cited in the literature review of this research project. Based on feedback received from this paper, I conceived of this current research project and was encouraged by offers of support from my teaching colleagues, supervisors and my educational institute. Over the span of this research project, I have been able to produce several more related papers on aspects of portfolios that have contributed to the success of this research project.

The next sections will provide an examination of each sphere based on interviews, observations and quantitative analysis of the contents of selected portfolios. Each sphere will be represented through a different set of experiences as seen by myself, various cohorts of my students and experienced primary school teachers from several schools.

In the discussion for each sphere of the portfolio approach, greater attention will be given to the specific details of the research methodology for that sphere, including how the raw data was collected and analyzed. This extended analysis will be given at the beginning of each section in order to facilitate the reading of the each sphere and allow the reader to more easily refer to the methodology of the data collection and analysis. However, in order to provide a holistic overview of the research, the context and the individual participants will be discussed more generally in the next section.

3.2. Methodology

A common theme that will arise from each of the three spheres of the portfolio approach as defined in the first chapter will be concerned with how others perceive us and our work, and how much control do we have over those perceptions. Ismael (2007) asks the question, “How do we
get from the purely reflexive 'I' of the individual thought to the 'I' of the temporal continuant” (p. 167). In other words, she asks, ‘how can we know ourselves and represent ourselves to others, when we are constantly changing?’ In doing so, she outlines a process of learning and reflexive construction that strikes through the first two spheres of the portfolio approach and prepares us for the demonstration of competencies that result as a by-product of the interactions that have been taking place. The question she poses is perhaps the most elemental version of the questions being posed in this investigation. An extension of this question may ask, how do we move from the reflexive 'I' of the temporal continuant to the non-reflexive 'I' that we as practitioners put out into the world of our community and stakeholders?

To move this initial question from the personal and community sphere to the competency sphere, we may also add this question: ‘why is this important?’

3.2.1. Context of the studies

This research has been conducted in the United Arab Emirates (UAE). The UAE enjoys a relatively high standard of living, ranking 40th on the UN Human Development scale and has earned the status of “very high human development” (United Nations Development Programme, 2014). The UAE is a multi-cultural country in which just under 1 million of the 7.3 million people are Emirati.

Approval for the various strands of the research has come from the patronage and technical support of the Sharjah campus of the Higher Colleges of Technology (HCT). The HCT is a government funded higher education system comprised of 17 gender-segregated campuses across the country serving 18,000 students as of 2013 (National Media Council, 2013, p. 177), all of whom are Emirati citizens. The HCT offers a wide range of programs including Applied
Communications, Business, Computer Information Sciences, Education, Engineering Technology and Science, Health Sciences, Foundations, General Studies, and Graduate Studies (Higher Colleges of Technology, 2014). The Education program is comprised of approximately 800 students across 6 of the women’s campuses.

One significant element of this research is that virtually all of the participants, except for myself, are women. This population includes the students who will be primary subjects of the community sphere and the professional teachers who will comprise the subject body of the competency sphere. This is particularly significant in the United Arab Emirates because although it may be considered a progressive country with liberal attitudes, women are still ‘protected’ through a variety of means, including strong family and regional customs. Interestingly, women make up about 70% of all Emiratis in higher education (National Media Council, 2013, p. 169) and account for 66% of the public sector. One strong reason why many women are encouraged to go into Education is not necessarily because it is a desirable occupation or that women are perceived as caregivers, but also that a career as a school teacher will ensure that the woman will not have to travel very far and thus risk being exposed to outside influences. Another reason is that the likelihood of coming into contact with men is also greatly reduced since schools are segregated by sex after the age of about eight.

As a result of these issues and the gender-segregation in schools, the participants initially showed a great concern for the security of personal data, including images and contact information. While this concern would be normal in any country and is to be encouraged, especially among younger students, this concern is particularly strong here as the effects are far ranging and can involve the parents and guardians of the students and the families of the adult teachers. All participants signed permission waivers allowing me to access their portfolios for the
purposes of observation and study. To ensure proper access to data, all participants were fully briefed at recurring intervals on the security risks, or lack thereof, that they were taking with the various electronic tools during the various parts of the project. As will be highlighted later, these discussions would eventually lead to interesting manipulations of the tools and as a result, the participants’ attitudes towards security and sharing of materials online would change dramatically as the project progressed.

A point of interest that helps to explain the almost total reliance on women in Education is that Emirati men view the education profession as a low value job. The general argument for this phenomenon is that salaries for teachers, especially in the K-12 sector are low compared to what an Emirati man can expect to earn as a salaried government official in non-educational sectors of the government. In fact, the participation of Emirati men in the private sector is also extremely low, due to a perceived lower salary range, but also due to a real and significant difference in remuneration packages which include extensive holiday time and relaxed office hours. Generally, Emiratis number only about 20,000 people of the 4,000,000 employed in the private sector, thus comprising 0.5% or about half of one percent (Swan, 2014).

Another factor to consider here is the fact that in Dubai Emirate, 58% of all Emiratis attend private schools (National Media Council, 2013, p. 177), thus again demonstrating a low expectation and confidence in their own school system. How this influences attitudes towards education, especially in men, is unknown but may be viewed as detrimental.

Nevertheless, there are a number of government initiatives aimed at improving the quality of instruction in government schools across the country. One such initiative that will have a significant impact on the use of technology and perhaps promote interest in a portfolio approach
to teaching and learning based on leveraging technology in the classroom is the Sheikh Mohammed Bin Rashid Smart School Initiative (Government of Dubai Media Office, 2012). This five-year plan aims to place a range of technology into schools across the Emirates including learning management systems, classroom hardware and software, and a will provide a range of training initiatives for teachers. In this atmosphere, the projects conducted for this research were very well received among the students at the Sharjah Higher Colleges and by the teachers and administration at the participating schools.

3.2.2. Participants in the study

I am the principal investigator for this research, however I am also a subject of the research. My own participation in the project arises from my long usage and success with technology leading to a strong background in educational technology. I have worked in the Higher Colleges of Technology for almost 12 years, with the exception of a two-year hiatus when I returned to Canada to work in ‘Canada’s Portfolio College’, and have benefited from strong support towards the use of technology in education. This includes a range of professional development activities in web and multimedia design, database driven web design, and enterprise portal systems. I have also been active in various roles as an IT coordinator, trainer and data manager for various programs over the past many years, and currently serve as the academic coordinator for educational technology across all six campuses of the Education Program. I have also taught web design, HTML and CSS coding, and file management. So, my own predilection towards the use of educational technology in my career has been very strong and well rewarded.

Each of the phases of the research involves two sets of participants along with myself as participant and stakeholder. One set of participants includes several cohorts of female Education students in a teacher-training program, who have respectively two years’ and three years’
experience with the approach by virtue of being my students, and as members of the Bachelor of Education Program in which I am a faculty member. All participating students are Emirati and were enrolled at the Sharjah campus. The other set of participants includes professional teachers from several primary schools, also located in Sharjah Emirate. The teachers are all female, however while there are many Emirati teachers, there are also a significant number of non-UAE teachers involved as well from other Arab countries including Egypt, Jordan, Iraq and Lebanon.

All participants involved in the various phases of this research received extensive training in the approach generally and in the use of a wide variety of software tools. It should be noted here that in the development of the various processes of the approach, I have strived to use accessible tools both in terms of ease of use and of cost. I have also strived to keep the approach free from ties to any particular software brand or package. Although I do promote certain tools, these preferences are personal only and at all times, participants were free to choose tools different from the ones I proposed. I must also distinguish between types of tools and brands of tools. For example, one of the principal tools is a blog, or web log. While I advocate Blogger (Google, 2014) for most people, virtually any other blogging software would do just as well. In the instances where participants did choose a different tool, they still received full support.

The student-practitioners received training mainly as part of their general program studies. Their training included both technical training in the use of educational technology in the classroom, and also in the educational and learning theory. In particular, they are very familiar with the community of inquiry (Garrison, Anderson, & Archer, 2000) as a theoretical model of interaction and concept of the relational construction of knowledge as a result of the community of inquiry. The research benefited from the longitudinal aspect of their participation both as practitioners of their own portfolios and as student-teachers instructing their own students and
internship colleagues on how to manage portfolios. Each semester for up to three years, the students’ portfolios were assessed for performance on various tasks performed through the semester and on tasks performed during their teaching placements, which also happened every semester. Thus, their portfolios contain a rich collection of reflections, work and usage in terms of time spent organizing and reorganizing.

The professional practitioners in the various participating schools also received extensive technical training on the tools needed to manage their electronic portfolios. The Ramaqia teachers in particular received training through weekly sessions over an entire academic school year. On top of these weekly sessions which often extended for several hours and included many one-on-one extra help sessions, they also participated in workshops to explore the concepts of the relational construction of knowledge as practiced through their portfolio approach. As discussed throughout this research, the use of 21st century tools is central to the portfolio approach and a grounding in both the technology and the concepts behind the technology are considered essential to the approach. As a result, all participants indicated that they felt they had a significant degree of familiarity with the approach, although some of the teachers expressed doubts as to their ability to train or support others.

All of the Ramaqia teachers also participated in focus groups at two points during the development project. Their portfolios were also reviewed for content, and ease of use and access by other teachers. Additionally, they participated in a number of surveys throughout the year, including one that was conducted with almost 400 other teachers from across the country (see Appendix D). This survey was written in conjunction with a partner from the school and served a dual purpose of providing information for this project and feedback for the school in hopes of
developing this or a similar project in the future. The work and experiences of the student cohorts also contribute to this sphere.

While the participants experienced all three spheres of the approach and partook in discussions and feedback on all three, as I discuss each sphere, I will focus primarily on how one group was able to demonstrate the principles of that particular sphere. However, since there is extensive overlap between the three spheres, I will also draw upon the experiences of the other groups as well within the discussion of each sphere. Of course, my own portfolio also serves as an example in this sphere with a significant portion of the contents designed solely for the purposes of demonstrating competency for a wide variety of stakeholders.

3.2.3. Overview of participants and research methodologies

Given the profusion of participants and the diverse data collection, Table 6 presents a summary of the methodology, participants and to which research question or questions the data collection was applied.

It should be noted again that due to the overlapping nature of the research, the data collected may not have been used exclusively for the sections of the paper indicated. In certain instances, such as the focus groups for research question 1, the focus group questions covered the students’ interactions with my own portfolio and with their student portfolios and so the data collected is relevant to more than one research question.
Table 6:

**Summary of Methodologies and Participants**

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Participants</th>
<th>Research Question (See Section 1.9.4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoethnographic review</td>
<td>Principal researcher</td>
<td>1</td>
</tr>
<tr>
<td>of own portfolio</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>40 student-teacher portfolios developed over 3 year span and repeatedly</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>examined each semester for 6 semesters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>20 student-teacher portfolios developed over 2 year span and repeatedly</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>examined each semester for 4 semesters</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 student-teacher portfolios developed over 1 year span and repeatedly</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>examined each semester for 2 semesters</td>
<td></td>
</tr>
<tr>
<td>Analysis of individual portfolios</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 primary school teacher portfolios developed in 2 cohorts and examined</td>
<td>2, 3</td>
</tr>
<tr>
<td></td>
<td>repeatedly over 1 year (2013)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 primary school teacher portfolios developed as 1 cohort and examined</td>
<td>2, 3</td>
</tr>
<tr>
<td></td>
<td>repeatedly over 1 year (2014)</td>
<td></td>
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<tr>
<td>Focus groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 groups of students per semester X 4 semesters</td>
<td>1, 2</td>
</tr>
<tr>
<td></td>
<td>2 groups of primary teachers X 2 semesters</td>
<td>2, 3</td>
</tr>
<tr>
<td>Interviews</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 primary school principals</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>8 primary school teachers from 2 cohorts (2013)</td>
<td>2, 3</td>
</tr>
<tr>
<td></td>
<td>10 primary school teachers from 1 cohort (2014)</td>
<td>2, 3</td>
</tr>
<tr>
<td></td>
<td>6 student-teachers per semester from same 2 cohorts X 6 semesters</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td></td>
<td>6 student-teachers per semester from same cohort X 4 semesters</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td></td>
<td>6 UAE College Education faculty formally and informally over 3 year span</td>
<td>2</td>
</tr>
</tbody>
</table>
4. Discussion of Findings

The following section will discuss the three spheres of intentionality supported by examples from the research.

4.1. Spheres of intentionality

The notion of the spheres of intentionality emerged from the myriad processes being investigated, which, in a positive feedback cycle, influenced and reshaped the initial research questions. By viewing their portfolio activities in terms of their intentions, the participants were able to make much better sense and thus better use of their portfolios to manage the complexity that they face in their teaching and learning activities. The spheres of intentionality also highlighted for them how their intentions can influence both the content being shared and the media used to share that content.

Arising out of the participatory action research conducted for this paper, the portfolio approach was divided into the following spheres of intentionality: the personal sphere; the community of inquiry sphere; and the demonstrations of competency sphere. Figure 10 indicates how each sphere represents specific intentions of the practitioner.
In any of the three spheres, the practitioner could still be working with the same portfolio collection of work. However, the original intention of the work and content will direct and influence the curation of the work, and may cause it to be represented or displayed differently than it might have been should it have been intended for a different purpose. If the practitioner is designing a presentation that is intended to be used for teaching, then the nature of that artefact in the internal organization and progression of ideas may be quite different that it would be if the practitioner merely wanted to demonstrate to a stakeholder that they were capable of performing a particular task or explaining a particular concept. In either case, the artefact or collection of ideas could be used for cross-purposes, and it is possible that the practitioner would design their
artefact to meet both intentions. However, it may also be that in doing so, the usefulness of that artefact as an effective tool for either purpose is diminished.

Figure 11 shows my own personal portfolio site. This figure highlights the personal sphere of the portfolio approach, which is the first of the three spheres of intentionality. This figure will be examined thoroughly later in the discussion of the personal sphere, but will serve now to highlight certain aspects of the approach.

Figure 11: The home page of www.paulleslie.net: My personal portfolio of work (Leslie, 2014a).

In this figure, the home page shows links to blogs that support all of my classes, a calendar, document library, an archive for the last five years of classes, support and online lessons, links to supporting websites, associated social media, images of classwork and links to literature, among
other items. In short, this site represents my entire body of relevant work from the last five years, all exposed and freely available on the internet for better or for worse.

In order to fully realize that education is a community affair, I also use an open-source portfolio platform which provides my education community access to each other and our work. Figure 12, which also will appear later in the discussions of the research, highlights the second and third spheres of intentionality that together comprise the portfolio approach: the community of inquiry sphere and the demonstrations of competency sphere. This figure shows an example of the highly flexible and editable individual profile page that each member of the education community site has for their own use.

Figure 12: Mr. Paul’s profile page in the Sharjah Education Community portfolio site.
In this figure, links to several social media sites can also be seen. Embedded in the page are image feeds from popular media sites, RSS (really simple syndication) feeds from my personal profile, information for my colleagues, for my students, and links to my communities of inquiry, the first link of which can be seen at the bottom left of the figure. At first glance these two figures may seem saturated with data and information and in fact, that is true. However, as will be closely examined through this research, these tools enable processes that have allowed me to spend a greater percentage of my time with my students and community, comparatively free from many of the administrative burdens of the education profession. These tools also allow a great range and depth of interaction between my community members.

Figure 13 shows the interaction between the three spheres of the portfolio approach and highlights some of the processes involved. The three spheres not only overlap in terms of the content and the intentionality of the practitioner, but can be shown to coalesce into a process through the practitioner can move if motivated and equipped with the proper tools to do so.

Figure 13: The portfolio approach as process: The three spheres of the portfolio approach.
The processes as outlined in Figure 13 are shown as linear processes but in reality are non-linear and often ill-defined. As the practitioner works through the personal sphere of collecting and curating their work for the audience, which generally will be their students, they build a collection of artefacts and use a variety of media to present their ideas. The figure shows content in the form of teaching goals and philosophy, reflections and journals, and teaching ideas. It also shows media in the form of video, imagery, documentation and text. As the practitioner begins to use their portfolio, one overlap appears in the form of the community. From the personal sphere, much of the intent is to organize one’s own work and prepare it for use with students. However, once that curated material is moved out into the public domain for use by the students, these students become part of the practitioner’s community. The students are able to comment and give feedback on the work, often simply in the form of how well they are able to work with the content and media. Since much of this work is conducted in a blended format in which the participants, including both students and teachers interact online and face-to-face often simultaneously using whichever interactions suit the moment, much of the feedback is verbal and thus not recorded.

The practitioner’s community of inquiry however, while overlapping with the personal sphere, is more intent on working with colleagues and being able to share cognitive load among a team or set of colleagues with common goals at an institution. While they may be showing the same or similar materials, the intent of the interactions is to get feedback on the material. As indicated in the figure, the practitioner is then able to incorporate the feedback back into the materials and work. In a similar process that highlights the overlap of the demonstrations of competency sphere with the two other spheres, the practitioner can present curated collections of work that can be easily and often automatically updated for a variety of stakeholders.
Figure 14 shows how the same content might be repurposed for different audiences, or simply repackaged for another audience.

By curating content using 21st century tools, the practitioner should be able to reach a wider audience and present to that audience a more coherent and complete portfolio of work in the form of curated collections that are easily edited and re-edited, much like a pop-art representation of oneself, to fit the immediate needs of any particular audience. Once members of the community have interacted with the practitioner’s content in some manner, feedback is often given to the practitioner which can then be incorporated into the curated collections in a rapid feedback cycle. At any given time, any other stakeholders including parents or administrators can also view work intended for the other spheres and offer feedback. As will be
discussed later, a school principal can monitor individual practitioners and offer timely feedback that is beneficial to both the practitioner and the institution.

The following sections will examine each of the three spheres individually.

4.2. The Personal Portfolio Sphere of Intentionality

I have been pursuing a portfolio approach to my own work for a number of years, although this pursuit has changed and developed over the years to become much more defined and rigorous than at the outset and first ideas of this approach. The personal sphere of the study is primarily based on my own accumulated work and experience as the researcher and practitioner of the portfolio approach. I have reviewed my portfolio of work and made extensive observations about the use and experiences of the personal portfolio over a five year period. These observations were highly reflective in nature as I examined my own work routinely to assess its quality and usefulness. These observations also took place in the classroom as I gauged and observed students’ reactions to the writings and their ability to understand what I was trying to convey. My portfolio has been my primary teaching tool over these years and so I have had daily feedback from students through their ability to interact with the various features of the site. I also relied on the community of inquiry model to gauge the focus of my writing. Although this model is intended to guide community interactions, it also provides guidance on the nature of the communications and helps the reflective process by categorizing the nature of the writing and contents of the portfolio into the three ‘presences’; social, cognitive and teaching.

As part of this cyclical, iterative process, the feedback from students and colleagues, either explicit through discussion and interviews, or implicit through the quantity and ease of access of the various parts, contributed to the design of the portfolio site. Over time, the site developed
into its current form, guided by real time use and statistics. In this aspect of the research, the analysis is based, then, on extended use by a range of stakeholders who provided feedback both directly and indirectly. As a result of the passive representation of self, these reflections have themselves been recorded in the portfolio and thus also comprise part of the contents. I hope to portray my own development over time and simultaneously highlight the development of the portfolio approach itself as I moved through various iterations of my own processes and forms of reflection.

Discussions of this personal sphere of the portfolio will be complimented by the interviews and feedback from the various cohorts of students, and with various other end users of the portfolio, which serves as a working tool for the benefit of colleagues, students and stakeholders. The interviews and focus groups with the various cohorts span more than three years and include their use as learning tools by the students and as assessment tools in my classes. Most of the formal data collection was performed through focus groups, generally of willing participants, rather than targeted individuals, and were completed at the end of each semester. These interviews and focus groups asked questions about their use of my portfolio as a teaching and learning and with their own portfolios as a learning tool. Thus, they overlap with the discussion of the community of inquiry discussion of findings which will follow this section. The focus groups were provided with sets of questions in advance in order to allow them to reflect on their answers and, since the college operates in an English medium which is not the student-practitioners’ mother tongue, prepare some answers in advance. In all cases, the interviews were recorded and then coded to identify themes and common experiences as they emerged from the interviews. Given the nature of my position in an all-female college, individual interviews with student practitioners tended to be more informal, anecdotal and sporadic.
In my research with the student practitioners and the professional practitioners, many of the themes were reintroduced to the groups for verification and extended comments. The nature of my relationship with both groups, which included extensive contact over extended periods of time allowed me to discuss many of the identified themes with them and get further feedback. Also, the extended relationship I enjoyed with the various groups allowed me to have numerous and frequent informal discussion with the participants individually, in small groups and larger groups to further verify the emerging themes.

I will repeat here that the term portfolio refers specifically to an ‘e’- portfolio and so my portfolio is in fact a website that employs a wide range of online or web-based tools and features. I will give some detailed explanations of technical processes in order to highlight how these tools helped to support and facilitate the portfolio approach. The discussion of technical processes also includes an extensive analysis of usage statistics provided by statistical tools embedded in the portfolio tool, the hosting company site management software and by an external site tracking software service provided by the hosting company. These statistics include numbers of page hits, or how many times a person actually visited or opened a particular page in their browser, and over what time span.

One significant finding from the span of time involved in my portfolio of work is an awareness of the accumulated wisdom and access to ideas that is absent and from which even experienced practitioners have not benefited. In a recent conversation with a colleague about the process of developing portfolios with students, the colleague commented that, “Even I can't exactly remember what I did last semester so how can I expect my students to remember?” This perhaps is one of the best advertisements for the approach. Similar to the concept of the time span of discretion (Jacques, 1979) discussed earlier, the longer the span of time over which a
practitioner can capture and access their work through their own portfolio, the more beneficial will be that work and portfolio. As Ishmael (2007) notes, “It isn't until a network of pathways is set up between pockets [of information] that the full potential of the additional structure is realized.” (p. 5).

In this next section, I will pursue a form of autoethnography in which I review my own work and simultaneously review my reactions to my work. An autoethnographic form of research supports a social constructionist view of the portfolio approach. As noted by Ellingson and Ellis (2008), an autoethnographic approach to any research can emphasize the “lived experience, intimate details, subjectivity and personal perspectives” (p. 450) of the researcher in relation to the topic being researched. This approach does not negate or diminish the need for methodological rigor, nor does it ignore the conventions of the educational institutions to be discussed. To the contrary, I will highlight just how the requirements of the institutions such as course and program outcomes have informed and shaped my portfolio over the many iterations and cyclical development periods spanning the last five years. Specifically, in the following section, I will review my current portfolio format and discuss how past experiences have influenced the current iteration. I will also examine how the portfolio supports institutional requirements yet allows me as the practitioner to maintain my voice and present my ideas to my stakeholders.

These reflections and significant developments will be further reflected in the portfolios and development work completed by the other participants in the community of inquiry and competency spheres of the approach.
4.2.1. Profile of a personal portfolio structure.

For my own portfolio, I have employed a robust open source software platform called Joomla (Joomla!, 2014), which I host on a commercial web service for a small monthly fee. I have been using this particular software and hosting service for over eight years. However, I have only been using it consistently as a portfolio of work for the last five to six years. Joomla is actually an enterprise level software that could hold thousands of users and serve as an intranet, if so desired, but yet serves individual needs equally well. Since I am far more interested in the purposes to which I can put the software, I did not spend a significant amount of time to review a wide range of packages. I simply reviewed a handful that were readily available and then went with the package that seemed the most popular of the few reviewed. While there are certainly differences in quality, I believe that a wide range of different platforms would most likely serve equally well.

It is however important to note here that one of the most important criteria that I had for selecting this platform was the level of ownership and control that I could exert over it. The issue of ownership is highly relevant given the amount of work that has been captured and amassed over the years. I have had numerous experiences in the past of investing time and effort into a platform only to lose the work due to reasons beyond my control. In some cases, the work had been completed in an institutional platform from which it was difficult to extract work once I left the institution. In other cases, the ‘free’ platform suddenly become a paid service from which I could not extract my work without significant cost compared to the value of the service. Thus, paying for my own hosting service was one essential aspect of any new platform (see Appendix A). There are many good quality hosting companies and a quick review in a search engine will turn up many similar services with comparable rates. The use of an open source software meant
that I would not have to ‘ransom’ my work back from a ‘free’ platform service. The issue of control includes who has access to the work and who has the power to grant or revoke access. With certain institutional platforms, the institutional web masters have the ultimate control and more than once I have experienced a sudden and complete loss of access to my own work, either for limited periods, or in one case, permanently. The issue of ownership will arise again in the work done with the teachers. Thus, when managing the platform the other two spheres of the research project (community of inquiry and competency), an open source software package was also chosen.

Access to this platform is not behind any password or other restrictive controls and so anyone at any time is free to view the entire contents of the site. I am, however, the only contributor to my personal portfolio platform. At the moment, there is no facility for people to leave comments. While I believe that comments would greatly enhance the use of my portfolio, for a variety of issues around maintenance and security, I have shut off the comments features in my platform. With the use of the community platform which will be discussed in the community of inquiry sphere, comments can be much more easily managed there. In its current usage, the platform serves as a personal portfolio and as a demonstration of competency, and while there is significant overlap between all three spheres, the construction of knowledge that these two purposes serve are either individual, as will be discussed, or face-to-face. Interactive features will be discussed more thoroughly in the other two spheres (community of inquiry and competency).

One of the most important features offered by this software is a blog tool. The site describes this feature as ‘articles’ which can be contributed by any users who have been granted authority. These articles can be categorized, with each category serving in effect as an individual blog. Articles can be cross-categorized for ease of access and to make them more readily
available to the appropriate users. Each category can then be linked and further organized through a variety of menus. At the time of writing, my portfolio contained 74 categories including individual categories for each class I taught dating back several years, and 587 individual posts.

4.2.1.1. Contents: Top menu.

While the contents may be best described through their use and function, an initial impression and overview will help to form a picture of the site. Figure 15 shows the home page of the portfolio site (Leslie, 2014a).
Figure 15. Home page of http://www.paulleslie.net.

As can be seen, the page contains several menus of links to various content. Across the top of the page is a ‘top menu’ containing links to all student-related work. This menu is updated regularly every semester to reflect my current teaching responsibilities and support information. Included in the menu are links to a semester calendar, course blogs, document library, imagery and an annotated links collection. All of these data sources are stored in my own personal cloud storage accounts, as noted in the discussion on technology.

Starting from the left of the menu after the ‘Home’ link, is a calendar, which is in fact a Google (Google, 2014) product as are several other features. Figure 16 demonstrates how easily the calendar embeds into the site and so provides a practical access point.

Figure 16: Embedded calendar.
The calendar is a very powerful administrative tool for use with students and for stakeholders at all levels. For example, the calendar is used to monitor teaching placement visits. Permission to edit the calendar has been shared with the members of the various student cohorts so that they are able to make appointments for me to visit them in their placements for formal, assessed observations. Since this calendar is publicly available, other students can see the calendar and appointments. They can then more easily plan their own dates for me to visit and in many cases, negotiate with students at other placements to arrange the schedule to their benefit. Similarly, be having my teaching schedule public available, I am also less bothered by emails from students wondering if I am free. An added features of using the web calendar is that I can share and the ‘push’ the calendar to my students’ mobile devices in order to remind them of various activities that fall outside of our regular classes.

Other faculty with whom I regularly share teaching duties also now use this calendar to coordinate our activities. My supervisor also has access and since I use the calendar for all of my professional duties, I can provide a level of transparency to my actions that inspires confidence and trust. In fact, throughout the department in which I teach, the faculty have adopted a centralized calendar in order to manage these activities much more readily and to add a greater ease to collaborative activities. Shared calendars in themselves are not a new phenomenon and are common in company and institutional intranets. However, at a personal level, they are often a much underused tool from the fact that most people have nowhere to readily access such a shared calendar. The portfolio answers this need through providing a common platform where the calendar can be easily viewed. This simple tool reduces my administrative load considerably allowing me to spend more time in pursuits that are more productive or perhaps more socially constructive. All at one time, it supports the personal sphere by showing my students when and
where I will be, facilitates the community of inquiry sphere by allowing greater presence through tracking my activities, and promotes the competency sphere by leaving behind a record of my classes, teaching placement visits and extra activities around campus.

The series of numbers in the menu represent my classes, and each of these menu items links to a blog dedicated to that class. The class blogs operate in a standard blog format, placing the latest post at the top of the page for that particular blog, and pushing the last blog post down. Generally, I create blog posts weekly, but often update posts mid-week to reflect or add the ideas and constructions that were achieved during our class time. For example, Figure 17 shows part of an entry for a 4th year class: EDU 4203. In this example, I have captured some of the classroom discussion in the board notes that were created during the discussion. These notes were photographed using a smart phone and, through one of the many applications, the images were automatically uploaded to an image library. In a matter of minutes, the images were cropped, resized, brightened, and inserted into the post as a record of the discussion. As can be seen in the figure, the images are quite small in order to allow a better display on various screen sizes. Students merely have to click on the image to see a full screen sized image. This feature works on most devices including smaller tablet and smart phone screens.
Students are then free to return to the blog at any point to review the notes or access comments that may have been explained during the class time. While the screen shot in this instance may show a seeming paucity of detailed information, the blogs can be as detailed as the practitioner prefers or has time for. The board notes, which have been co-created in the classroom, may also serve to trigger a greater recollection of classroom discussions and that co-created knowledge. Each post can also hold downloadable documents or other files.

The overlap of the personal sphere with both other spheres is evident through this example. Although I initially created the entry as a lesson plan and guide for the week’s activities, it is immediately repurposed through the uses made of it by the audience. This non-reflexive use of the blog entry forces me to consider what others will make of my work and what interpretations they will take away. Additionally, the face-to-face component of these interactions, referred to
commonly as ‘blended learning’, combined with the ease of editing these posts allows me to answer questions and get instant feedback from the students, and recreate the contents when some instructions or descriptions are not quite clear. Board notes as well can then be taken and repurposed while the comments and confusion of the students is still fresh in one’s mind.

As an example of the last point, while discussing elements of this research with students, I developed the following set of board notes. Figure 18 displays board notes that describe the time span of discretion as discussed in the literature review. These notes were created in class with the students watching and asking questions as I developed the diagram. Interestingly, the original concept and the current board notes are the result of cohorts of students questioning, as is their right, the necessity of doing a portfolio in the first place. In order to help justify the extended emphasis I was placing on the portfolio as a tool in relation to the weighting it received in the overall course grades, I began to investigate further the notion of ‘experience’ from the point of view of the value of the experience rather than just the quantifiable number of years that someone has been doing something. The results of this investigation are present in the literature review.

In this particular case, the students with whom I developed these board notes are a cohort that I have only just begun to teach. Hence, their previous instructors, while perhaps asking for a portfolio, certainly did not ask for a process or insist on a long term developmental portfolio approach, but rather would have simply asked for a showcase portfolio, most likely on paper, or in a set of PowerPoint slides. This cohort’s experience with portfolios would have been in stark contrast to the experience of previous cohorts of my own students, one in particular which I taught at least one course in every semester of their entire four year degree program and so who
would have had an extensive experience with the portfolio approach and who figure prominently in the next section of this research.

Figure 18: Board notes from class discussion on the time span of discretion.

As indicated, these notes were photographed and added to an online ‘board-notes’ photo album and then embedded in the blog post for that week. However, since this topic is of particular importance, especially for many faculty, the board notes were transformed into a more coherent, or at least more readable format, as shown in Figure 19.
In this figure, the relationship to the original board notes can be clearly seen. Much of the text is identical and the overall concept of the original map is clearly evident. This diagram can then be shared with the students and used in a blog post for other students. In this manner, the social construction and development of this concept is clearly highlighted and documented. The students can also see the progression of an idea that was developed communally and perhaps take some pride of ownership. If they do not, they will certainly understand it more readily for having been the originators of some of the language in the notes and subsequently in the diagram. These blogs also contribute to, and may comprise a subset of the professional commentaries that support cognitive apprenticeship (Kopcha & Alger, 2014; Oriol, Tumulty, & Snyder, 2010).
Following the course links, is a link to files that are shared with the audience using Google Drive (Google, 2014). Although this example highlights a Google product, there are a number of similar cloud storage products that are freely available. One advantage of Google, as is discussed in the technology section of this research, is that they offer a suite of cloud products that help the less technically inclined users minimize the number of different accounts and tools they need to master. Figure 20 shows the current files available through the portfolio.

These files include journal articles, administrative documents including assessments and course guides, and various other documents. One benefit of using cloud storage to make these documents available is that they are then available all the time, or at least until they are removed from the library. As shown in Figure 20, one of the folders is an archived folder from the previous semester. These archived folders are very useful for all concerned, especially the practitioner in order to provide them ready access to these materials during class time. Also, most cloud storage tools allow a synchronized copy to exist on the document owner’s computer.
Thus, while there was some effort to create and make links to the library, once these initial tasks are completed, any of the documents therein can be edited from the convenience of the owner’s laptop, or from any access point to the cloud library. Once the edits are saved, they will automatically synchronize to the cloud library and thus update the embedded library on the portfolio site. Such documents could also be group edited with a class or with groups of students and the resulting, co-created documents saved to the library. Similarly, because the library or folders within the library are already embedded in the site, any such documents will almost immediately appear and be available to the rest of the students. This is often a missing element in many such activities where students co-create documents or produce knowledge in some format or other, but then often do not have the means to effectively share their own work with their colleagues or receive their colleagues’ final products. From both the practitioner’s and the students’ points of view, this is a significant benefit and savings in time and effort.

A side benefit of these features of cloud storage is the ability to easily share assessment documents with students in an ‘assignment drop box’ arrangement. The instructor can simply make a folder in Google Drive and then share that folder with students. The students then create a folder inside the main folder and share their folder only with the instructor. The result is a password secure assignment drop box that show the date and time of the last edit or addition to anything inside the folder. Figure 21 shows how this arrangement would look.
As can be seen in this folder shown in Figure 21, the last entry to each of the folders was by me returning assignments and assessment feedback documents to each of the students in the class. The anomalous entry dates refer to students who did not complete the program. Although I can see all of the student folders in my view of the parent folder, the students would only see their own folder. As with the folders discussed previously, this assignment folder could also be shared through an online portfolio or portal. In this case, I have not added this folder to my portfolio because the groups was sufficiently small enough that I could notify them easily that work had been returned. However with larger groups, an instructor might find this a convenient manner to notify their students that there had been an entry to their folder.

The next link in the top menu takes the user to imagery that is produced either in class as board notes, or for classes in the form of concept maps or other graphics. Again, these images are
stored in the cloud, in this instance, using a photo storage service called Flickr (Yahoo, 2014). Figure 22 shows the interface for the photo storage.

![Image of Flickr interface]

**Figure 22:** Graphics and images embedded in the personal portfolio platform.

This library holds the board notes for all the classes. Since not all board notes are translated into multimedia images as demonstrated earlier with the Portfolio time span of discretion example, the rest of the notes can simply be stored in a ‘Board Notes’ album, that is available to the public. The strength of this process is that much of it is automated and can be done in one or two minutes with most photo storage services and with the use of a smart phone or web-enabled tablet. Once the photo is taken with a smart device, most photo storage services provide an app that can be installed on the device and that will automatically upload the image to the storage service. In this case, the storage service app loaded the image to a generic album. Once at a
computer terminal, usually a personal laptop, the practitioner can edit the image (e.g. crop and brighten) if need be and then add the image to a ‘Board Notes’ album. Since the album has already been embedded in the portfolio, it will automatically and instantaneously update with the new images. This feature also provides the practitioner with an instant recall of notes made in previous classes or tutorials, which can then be called up during class time for further support when explaining a topic. The fact that the students can see the actual notes made in class helps to trigger memories and understandings created during that class time. Also, the implied knowledge which may not always be present in graphics that are prepared outside of class may be barriers for students. By being able to access these images, the practitioner can much more easily help students make connections between ideas that have been presented over time.

As will be seen in the discussion of the community of inquiry sphere, this use of the cloud image library has been widely copied by all of the participants in the study. As with many of the tools used in this research, the cloud image library, in this case provided by Flickr (2014), is designed specifically to share photos and images and allow the embedding of cloud libraries, as shown here, into other personal or professional websites. However the application of the library to these multiple purposes loans the portfolio approach greater visual power. The adoption of this approach by all participants speaks to the efficacy of the tool as a conveyor of both ideas in the personal sphere, discussion points in the community of inquiry sphere and demonstrations of the quality and quantity of the board notes in the competency sphere.

The top menu also includes a link to annotated web links that have been accumulated through several years of teaching in this program. Reference lists, bibliographies and lists of web links are nothing new, but in this context at least they are consistent and familiar to the students. As many of the students have accessed this list before, they have become familiar with it and can
benefit more readily from it. Often these lists go unnoticed and many faculty in my experience do not provide such lists. When links are shared, they are often in a paper-based course guide or distributed by email, both of which are easily lost or deleted. By maintaining a personal list of links, the students can become familiar with many of the sources and perhaps in this manner benefit more widely from the list. Another benefit from being able to access the same lists between semesters and among different courses is that the students might be able to see more readily the links between concepts as they are encountered in between courses.

In my past experience as a curriculum designer for an adult learning program, one common complaint by teachers about their students was that they often were unable to make links between concepts. One example came from the Physics teachers who complained that the students were unable to transfer their knowledge of concepts explored in Math classes to Physics problems. Additionally, the ease of access to this list and the ability to highlight the links with additional annotations and visual clues as to the contents of the links allows students to more easily navigate the lists. Such a list could easily accept student contributions as well, although in this case students are not able to contribute.

This section serves as a simple demonstration of the passive or non-reflexive representation of ideas. Figure 23 shows that the page has been hit 2935 times since it was first created in September, 2012.

Figure 23: Web links page hits: 2935 times in two years.
This instance is simply an example of a practitioner supplying their students with information and resources needed to be successful. However, in the larger context of the portfolio as a process, it is one more tool that allows students easy access to those resources. For the practitioner, it is another tool in the electronic tool box that contributes to the overall success of the portfolio approach. As noted earlier, Wortham and Jackson (2008) comment on the disparate effects of highly enabling and highly constraining educational processes. The web links feature is an example of how the portfolio approach can become a highly enabling process given the large number of hits to the page. One might argue that providing links to students might be constraining in that they will not proceed past the links provided. This is certainly a possibility. However, if the links are persistent and access to the links continuous, then students will have access to not only the immediately applicable content, but to a much wider range of content that might appear on the same page as the initial content.

Issues surrounding hits to websites are discussed further in Appendix A. However, in order to add perspective to the number of hits, on average for each page we can subtract a small percentage from the number of hits showing on the page. In my own editing, I would have visited each page from 1 to 10 times additionally to either edit the page or open it in class to use it for discussion. In the example of the web links page, I would actually be adding the links from the administrator end of the web site and so would have minimal hits on the page myself.

4.2.1.2. Contents: Main and side menus.

On the left side of the portfolio home page are three menus, including the main menu. These menus, as with the top menu, are flexible and easily edited as the practitioner progresses through an academic semester or year. The organization of the menus are highly subjective and
individual practitioners may choose a different organization. However, during this research and through extended use over the past five years, these menu items have proven to be the most effective and most highly used menu items as indicated by site usage statistics.

The first item under this menu is the ‘home’ link, and as the name implies, is the first page to open whenever a visitor opens the site. The home page can be set to any section or page in the site. In this case, the home page link is set to open a category of blog posts that represent personal reflections and explanations of topics that are relevant to my teaching. I make an effort to create posts that are timely and applicable as possible to the general theme of what all of my students are doing. This is more or less difficult depending on the semester and my particular contingent of students. Generally, when I have a smaller number of cohorts, I have more time with each, and when I have a larger number, I have less time. Given the focus of my personal studies over the last number of years, I have created a significant number of posts about the use and design of portfolios.

Figure 24 shows the home page of the portfolio site, with a post on the time span of discretion. The home page is set to display the category, “Education is a Community Affair - 2014 - 2015 - Paul Leslie”. This category reflects my current teaching philosophy, which also happens to be a particular focus of our Education program this year. Also included are the year and my name, to ensure that all visitors know who they are looking at. This category is updated every two weeks or so, depending on what else is happening at that point during the semester. When our teaching practice sessions begin and all students go out to schools simultaneously, then many of these posts will be concerned with various aspects of their practice and include helpful advice for interacting with students, references for assignments or other related information.
In this example, the topic is again the time span of discretion and the graphic is the very same that was co-created in the class with students who were being exposed to the topic for the first time. This topic had thus been under scrutiny by me and my students for some number of days. It originated as a set of board notes developed in response to questions from one class about the relevance of the portfolio work to their overall teaching experience. From there, the board notes were added to the class blog and then reexamined in that same class to ensure that not only did the students understand the content and concept, but that I reflected their ideas and context accurately. Once this was established, then the concept was translated into a more formal graphic map. This map was added to the class blog, where upon it was viewed by other students indicating that the concept was of interest to a wider audience than the original class. Eventually, it found its way on to the main page along with a supporting discussion.
A historical look at the home page articles reveals that in the 2013-14 academic year, I made 21 posts on various topics including a number about the Ramaqia project, which is a part of this research investigation. In light of a 32 week academic year, that is an average of .65 posts per week, or a new post every 1.5 weeks. Figure 25 shows the top 10 posts with their titles, cross-listed categories and the number of hits. Some of these posts were actually saved in categories other than the home page category for that year: “Paul Leslie – Articles 2013-2014”. In these cases, the posts were deemed more suited to that category, but then cross listed with the home page category in order to have the post show on the main page. It should be noted here that simply opening the site does not add a ‘hit’ to the counter. To count a hit, a visitor to the site needs to actually click on the link to open the full post.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Category</th>
<th>Created</th>
<th>Modified</th>
<th>Hits</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPads on Wheels: LEDs @ IPOW</td>
<td>Paul Leslie</td>
<td>Publications, Presentations &amp; Awards</td>
<td>01/09/2013 - 14:56</td>
<td>10/05/2014 - 20:53</td>
<td>1524</td>
</tr>
<tr>
<td>Ramaqia Project @ GEF 2014 - Dubai</td>
<td>Paul Leslie</td>
<td>Publications, Presentations &amp; Awards</td>
<td>06/03/2014 - 07:32</td>
<td>10/05/2014 - 20:43</td>
<td>1429</td>
</tr>
<tr>
<td>Ramaqia School Portfolio Project - Step 3 - Meet the Teachers</td>
<td>Paul Leslie</td>
<td>Ramaqia Project</td>
<td>27/10/2013 - 04:59</td>
<td>28/10/2013 - 07:47</td>
<td>1238</td>
</tr>
<tr>
<td>Portfolio Learning and Assessment</td>
<td>Paul Leslie</td>
<td>Paul Leslie - Articles 2013-2014</td>
<td>13/09/2013 - 12:07</td>
<td>20/09/2013 - 12:00</td>
<td>1107</td>
</tr>
<tr>
<td>Ramaqia School Portfolio Project - Step 2: Competencies</td>
<td>Paul Leslie</td>
<td>Ramaqia Project</td>
<td>20/09/2013 - 06:02</td>
<td>10/05/2014 - 20:33</td>
<td>1067</td>
</tr>
<tr>
<td>Ramaqia School Portfolio Project - Step 1</td>
<td>Paul Leslie</td>
<td>Ramaqia Project</td>
<td>19/09/2013 - 00:40</td>
<td>10/05/2014 - 20:33</td>
<td>929</td>
</tr>
</tbody>
</table>

Figure 25: Top ten posts in the home category for 2013-14.

The number of hits are indicative of the audience that the posts are reaching. The flexible nature of the medium can be seen through the columns for the ‘created’ date and the ‘modified’ date. The ability to edit and update the content in response to the context of the moment, including feedback from students or from colleagues, adds another degree of usability and enabling functionality to the portfolio approach.
In 2012-13, I made 26 reflective posts over 32 weeks for an average of .81 posts per week, or a new post every 1.2 weeks. Figure 26 shows the top ten posts for that academic year.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Category</th>
<th>Created</th>
<th>Modified</th>
<th>Hits</th>
</tr>
</thead>
<tbody>
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<td>Collaborative Consumption</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>04/01/2013 - 11:02</td>
<td>05/01/2013 - 22:07</td>
<td>2472</td>
</tr>
<tr>
<td>Portfolio as LRS - Learning Resource System</td>
<td>Paul Leslie</td>
<td>Teas-Tilburg PhD Program</td>
<td>10/06/2013 - 00:59</td>
<td>02/09/2013 - 20:24</td>
<td>1967</td>
</tr>
<tr>
<td>Portfolio as Social Process</td>
<td>Paul Leslie</td>
<td>EDUC 486</td>
<td>08/05/2013 - 14:20</td>
<td>08/05/2014 - 08:11</td>
<td>1935</td>
</tr>
<tr>
<td>Reflection in Teaching Practice</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>03/03/2013 - 18:17</td>
<td>08/02/2014 - 07:33</td>
<td>1548</td>
</tr>
<tr>
<td>Relational Constructionism</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>15/02/2013 - 22:10</td>
<td>17/02/2013 - 20:26</td>
<td>1215</td>
</tr>
<tr>
<td>21st Century Learning</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>17/04/2013 - 08:40</td>
<td>30/04/2013 - 17:33</td>
<td>1212</td>
</tr>
<tr>
<td>Ipad on Wheels - AKA Mobile Learning Unit</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>19/01/2013 - 17:25</td>
<td>23/01/2013 - 08:33</td>
<td>1173</td>
</tr>
<tr>
<td>Why use learning platforms</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>03/02/2013 - 02:43</td>
<td>09/03/2013 - 11:43</td>
<td>1136</td>
</tr>
<tr>
<td>Knowledge Building</td>
<td>Paul Leslie</td>
<td>Articles 2012 - 2013</td>
<td>19/09/2012 - 05:02</td>
<td>19/09/2012 - 21:49</td>
<td>1121</td>
</tr>
</tbody>
</table>

Figure 26: Top ten posts in the home category for 2012-13.

In this academic year, the number of hits is significantly higher than for the more recent year. If a similar audience is assumed, this may indicate that these posts continue to receive hits well after their original posting date. Since they are on the home page and every time a new post is created, every 1.3 weeks, the previous post disappears from the page, the audience must be surfing through the site looking for such posts. The potential for the relational creation and co-creation of knowledge in this manner is significant. From my perspective as the author, it is highly motivating to continue to post reflections in this manner.

When considering these posts from the perspective that, although I am the author, I am not in control of the meaning taken from my work by the audience, I do have a limited ability to discuss and chat with the students about these ideas. For example, I could possibly discuss any given post with a maximum of four cohorts of students, and more generally may only discuss a post with one or two cohorts of students, thus personally reaching 20 to 40 students. However, as
seen, many posts have been viewed thousands of times thus extending the reach of the content. Among these anonymous masses I have no control over their interpretation of the content. Armed with this knowledge, I am motivated to ever improve my writing and try to discuss every post with at least one cohort in order to get some indication of how they are interpreting the ideas. These discussions may show synchronous co-creation of new knowledge, but the overwhelming majority of knowledge is created asynchronously.

In this way, many of the ideas in this investigation have first started as a post on my portfolio site. The ideas are discussed, reformulated, edited, discussed again, perhaps with a different class and then refined even further before they are added to the appropriate section of this research. By putting my ideas on full display to my students and anyone who cares to look, I am inviting what Kelchtermans (2009) describes as “discomforting dialogues” (p. 270) about my work. I am constantly yet pleasantly surprised by the interpretations that students and other colleagues attach to my work. As often as not, I am corrected or enlightened more so than my audience.

After the ‘Home’ link is another to all class blog and Education post archives. Figure 27 shows the first few items:
This page contains links to all previous class blogs for the past five years. This spans the entire college career of my initial cohort of students. They might not be going back to check this work regularly, but I have had comments from a number of students who were surprised to be able to find old notes and copies of documents or board notes from classes that were held years ago. However, these notes are a source of great support for me. I regularly copy and then update notes from previous semesters for reuse and repurposing. In this sense, the archives are a clear demonstration of the social construction of knowledge in that the original posts, as discussed earlier, were written and then rewritten in conjunction with feedback from students in a blended learning environment. From that point they were left behind as the semester progressed. One year later, or two or three in many cases, as the same or similar courses are taught again, it is possible to browse the links and actual progression of ideas and discussions that took place in the
classroom. This may be an example of co-creating knowledge with a previous version of myself. For topics that I have not taught for some time, the progression and sequence of ideas is invaluable in trying to piece together a new lesson or set of activities to introduce a project. When recycled into my current classroom, the new interpretations again go through the blended learning cycle and are edited and co-created into current, contextualized knowledge.

The archives also serve as a demonstration of competency and are of great interest to myself as a repository of work and to my various stakeholders as collections of evidence. This is also a demonstration of the time span of discretion. The longer the span covered by the portfolio, the more resources there are to draw upon. It is oddly ironic that a tool that is supposed to be a model of 21st century educational tools also provides evidence of a permanent record as long as the actual site itself is not deleted. The physical evidence of what was actually written one, two or three years ago is often jarring in comparison to the remembered version of what was written or recorded.

In both examples described above, the practitioner could go through similar processes with more traditional paper based records or even through electronic files stored in a coherent manner. However, through the portfolio approach, these archival documents become part of the overall portfolio process for the practitioner. These examples are part of an accumulation of evidence and practices that contribute to the approach. The ease of access to these archives is unparalleled and the contributions to my lifelong learning and artful competency is incalculable.

The next menu item is a link to the Ramaqia Project. Much of the research for the demonstrations of competency sphere and showcase portfolios was conducted at the Ramaqia Boys School in Sharjah, UAE. In this instance, the portfolio served as tool and object of study.
Figure 28 shows the final blog post for the ‘Ramaqia Project’. It should be noted here that the project extended well beyond the date indicated in the figure, as we progressed to interviews and final, individual sessions to polish the showcase portfolios for their annual review.

In this image, several items can be noted. When the Ramaqia Project link is clicked, a contextual ‘Portfolio – How to…’ menu appears containing more than 20 blog posts written in response to the needs of the project members. One of the benefits of this software is this ability to create such contextualized menus and other features that appear only when the user enters certain sections of the site. This helps to minimize confusion with the menus, which can become overloaded with links. Similarly to the class blog posts, the ‘how to’ posts and the Ramaqia
Project posts were used in sessions with the Ramaqia school teachers and feedback was taken into account as the teachers tried to follow the concepts and directions contained in the posts.

In another example of the co-creation of knowledge, the general concepts and uses of the portfolio software were discussed in the weekly sessions and the posts updated accordingly through the duration of the project. By the end of this phase of the research project, the ‘Ramaqia Project’ category contained 20 posts delivered over the course of one academic year. The combined total number of hits for the 20 posts was 12,803. These posts contained a wide range of concept maps and explanations of various sections of the competency sphere portion of the portfolio approach. This would seem a clear indication of a social construction of knowledge considering that the number of direct participants included only the initial 10 teachers, three student-practitioners who were posted to the school in the first semester, and three who were posted there for the second semester, plus me as the principal researcher. Many of the other hits would have come from the other participant schools and the student-practitioners who conducted limited research projects related to the portfolio approach.

An added activity of the Ramaqia project was the fact that the teachers as participants were compelled to learn new software which may have been outside their normal purview. This was apparent as many had virtually no electronic skills beyond checking email and surfing the internet. So, the development of a ‘How to’ library of resources arose naturally out of discussions and the needs of the community. These posts were also used extensively by my students in their own research projects at other schools. By the end of the project, 22 posts were written describing various processes related to the portfolio approach and the use of the Mahara platform and associated skills, garnering 13,469 hits. Figure 29 shows the breadth of topics and page hits.
Over the course of the year and in conjunction with the student-participant research projects, many of these posts were copied, translated into Arabic and then shared with the project participants through a variety of means. The translated pages help to account for the disparity in hits of the various topics. Some of the more popular topics actually received fewer hits because of these translations, which were then hosted on the student-practitioners’ own portfolios in
similar blog systems. Further discussion of this section of the portfolio will continue in Demonstrations of Competency.

The following two menu items are also related to the Ramaqia Project and the development of portfolio profiles. However, these two links, one to a series of ‘how to’ posts just discussed, and one to a series of videos that also demonstrate how to achieve certain tasks, were deemed sufficiently relevant to other students that the links should be placed directly on the main page. As noted many of my final year students conducted similar, albeit scaled down versions of my own research project, in most cases using my materials and taking advantage of our college-hosted portfolio software for their own purposes.

The final link on the main menus is to my own showcase portfolio. It should be noted here that although I promote and am researching the concept of a portfolio approach and wish to promote the portfolio as a concept and series of processes that in their sum total represent an approach, currently many of my colleagues still view the idea of a portfolio mainly as a showcase of competencies. Again, this is an overlap with the competency sphere, but as will be discussed, the public nature of the portfolio and the ready availability of it literally in front of my students every day brings it into the community and personal sphere as well. Figure 30 shows the initial page of the showcase portfolio section.
In this section of the portfolio, many of what might be termed ‘standard’ features of a showcase portfolio are highlighted. Certain of these sections contain historical data such as the progression of professional goals through the years. The goals post has been used for a variety purposes well beyond the obvious use as a professional development and performance analysis tool. In these examples, the goals document is very important as a demonstration of competency, but goals as a part of the portfolio approach will be discuss in that section. The goals posts can also be opened in class to provide the basis for a rich discussion and thus serve as teaching tools for my students. The feedback that I have received in the past through doing this has allowed me to be more confident in achieving these goals, especially those that directly relate to what I am
doing with my students. The students themselves also may see me in a more humane light and feel empathy towards me. Whenever students complain to me about their workload and make comments such as, “You don’t understand, sir”, or “This isn’t our only course; we have other assignments as well”, I can open my goals and indicate to them that in fact most professionals have pressures to perform and that the goals may be viewed as assignments or tasks that should be met in order to demonstrate competency. The fact that the goals post for 2012-13 has been hit 3625 times since May, 2012 (see Figure 31), attests to the strength of such uses in terms of creating knowledge. In this case, the portfolio also serves as a community tool in that it clearly provides such a rich basis for discussion.

In fact, many of the posts in the portfolio section have been hit thousands of times. Out of the 90 separate posts in the portfolio category and subcategories, only one has been hit less than 100 times, and that post was made in April of 2014, just a few weeks before the end of the last semester. Of the remaining, 64 posts have been hit more than 1000 times, three have been hit more than 900 times and the remaining 22 have been hit between 100 and 800 times.

Figure 31 provides a list of the top ten most visited pages in my general portfolio category and sub-categories.
Figure 31: Top ten pages in the portfolio category.

Five of these posts have been hit more than two thousand times with the most popular one having 6625 hits.

4.2.2. Discussion of the personal portfolio.

4.2.2.1. Reconciling reflexive and non-reflexive representations of ourselves.

The number of hits on each of these various pages provides strong evidence of how the portfolio approach can significantly raise the proportion of non-reflexive representation that exists within our work. Given this almost overwhelming number of hits and views to the work, how do we combine the view we have of ourselves with the view that others have of us? Ironically, in the quest to pursue our portfolio approach to represent ourselves more clearly to our students and to provide a more thorough and relational view of our work, have we
inadvertently offered a singular view of ourselves to thousands of people that we do not know? Of course, it is most likely that the same individuals recorded hits on various pages, not just one. Certainly, some of my students have possibly recorded hundreds of hits over the course of several semesters. It is in this arena of relational interactions that some value may be found in the portfolio approach in the personal sphere.

As I mentioned in the introduction to the personal sphere of the portfolio approach, Ismael (2011) discusses the difficulties that we have of trying to reconcile reflexive and non-reflexive views of ourselves. She considers how it might be that we can be constantly changing over time, yet still be the same person. She then asks how it is that we can know ourselves, and if we cannot know ourselves, then how can we represent ourselves? She cites Kant who comments that he knows himself “only as I appear to myself, not as I am” (p. 170).

When transposing these concepts to the portfolio approach, they serve to help us understand how we are creating knowledge. In the reflexive view, we are consciously putting our ideas out into the world though our personal portfolios in the belief that we know what we are saying and that we understand what we want to convey to others. The reflective act of writing and reviewing the number of posts in these various categories describing previously allows for a progressive and developing ability to better represent ideas. The media does transform the message and by gaining experience through so many posts and receiving feedback from a significant number of students and other stakeholders, better choices can be made about which media and how to transform the media to better convey our messages. The ‘message’ as McLuhan (1964) points out is the “change of scale or pace or pattern that it introduces” (p. 8). By allowing me to reach thousands of viewers as indicated by the hits to my pages, the portfolio
as a medium allows me to interact with this enlarged audience, and more specifically allows the audience to interact with my ideas without the nuisance of having me there to get in the way.

However, from the non-reflexive stance of Ismael’s argument, we also have the reactions of the audience to our work and the understandings that they create about our ideas, without our input and further explanation. In the personal sphere where there are thousands of hits by people who are viewing my posts and ideas without me present to explain exactly what I mean, there is the development of the non-reflexive ‘I’ that Ismael discusses. Thus her question, “How do we get from the purely reflexive 'I' of the individual thought to the 'I' of the temporal continuant” (Ismael, 2007, p. 167) gives greater importance to the personal sphere. The ‘temporal continuant’ she mentions refers to the portfolio collection of ideas that continue to exist through time, as distinguished from our immediate thoughts that we can explain and reconfigure as we discuss them face to face with our audience. How do we reconcile our thoughts with our writings? This is the heart of the personal portfolio and is the center of the social construction of knowledge which starts with us and within us through our thoughts and then moves outward as we share these thoughts through the portfolio and get feedback.

One of the ways that we reconcile the reflexive and the non-reflexive ‘I’, is through the ability to edit our thoughts. Apart from such philosophical musings, we also have the reality of my portfolio and the myriad postings and representations of self, some of which are directly intended to represent myself in particular lights through my resume, cover letter or lists of publications and presentations. Other postings are intended for other audiences and may be less carefully prepared, or more carefully. Some of have been edited numerous times after the fact, while others, such as the most visited post shown in Figure 31, have never been edited, and in fact have not even been read by me for some time. In these circumstances then, the reality of
representing ourselves to the world may be questioned even more. In the midst of these postings, one question might be: how do we represent ourselves in a way that is true to our own perceptions of ourselves? However, perhaps a more telling question might be: In a relational world, how do we represent ourselves to different people in a way that is coherent and consistent to our own perceptions of ourselves?

A precept of social construction is that the individual exists in relation to others. Who we are is irreducibly related to those around us. The practitioner can be a teacher, a colleague, a team member, a subordinate, or member of the institution depending on who is asking after the practitioner. In this manner then, part of the power of the portfolio approach is that the practitioner is able to more readily prepare or curate representations of themselves for different audiences. This issue will arise in the discussion of competency, but within the personal portfolio sphere, this ability to affect the perceptions of others towards yourself may be seen as an empowering activity. From my own experiences, I am able to bring a much greater emphasis to much of my work and am able to promote my ideas and assertions, in many cases on the spot.

In a recent class in which quiz results were being returned and discussed, a slight altercation arose between myself and a number of students who performed poorly on the test. As I tried to explain what may have gone wrong and why they may have performed poorly, one of them suddenly accused me of not giving them any information about the test nor providing any review, content or other indication. I was able in mere seconds to pull up a class post from several weeks earlier in which I clearly went over the contents of the quiz and provided a number of links to resources. Supporting this post, was the following week’s post, which outlined a process for reviewing and preparing for the quiz, including the formation of groups for the purposes of peer teaching some of the basic concepts of networking at a school or college.
system. This post had been updated with an image from the board containing the groups, individual members’ names, and assigned topics indicated. The next post, among other things, contained the schedule for the group presentations, also subsequently updated with links to some of the presentations and with indications of where the class could go to find the presentations listed in the students’ own portfolios. In this instance, I was able to refute an unfounded non-reflexive representation of myself through the artefacts and information stored on the site.

In this last example, such overwhelming force was not required to disprove the student’s erroneous and unfounded claim, but nevertheless the recorded information in the series of posts speaks to the reflexive representations of self on several levels. In the first instance, the student had made a claim about my actions that was unfounded and so required a refutation. Through the use of my portfolio collection of work, this claim was easily dispelled to such a degree that the student thanked me. On another level had I not been there and had the students set about to discuss this issue on their own, what conclusions might they have come to? It is hoped that someone in the group would look for evidence of this claim and go to the portfolio collection to review the notes. Had they come to yet a second erroneous conclusion as a group that in fact I had not sufficiently prepared them, they might then have gone to my supervisor to complain about me. At this point, the supervisor would hopefully have referred to my portfolio collection in order to verify the claim.

In each instance above, a different relational construct was in play, causing different reactions and interpretations of the existing representations. And, in each case I was unable to influence the results of the relational interaction between the students and my representations of these classes in the form of the blog posts. In reality, a number of other students quickly stepped in to support my comments and the presentation of past blogs as outlined above was more of a
demonstration of the usefulness of the portfolio that any required refutation for this particular instance.

Similarly, Shotter (2003) discusses the issues surrounding the act of remembering and asks the question, “How do we in fact check that our claim to have remembered something is correct?” (p. 137). He adds that, “At some point, reference to activities in daily life at large is necessary, for that is where judgments as to right and wrong take place” (p. 137). In the preceding example, rather obviously, we can in fact go back and check a record of the proceedings at a given time. It may be that the recording is incomplete, or still open to interpretation, but at least we not simply trying to remember what happened or engaging in mere speculation. A portfolio of one’s work can take the practitioner a long way towards being able to represent one’s work to their colleagues. At the same time, it is evident that the portrayal that may exist in the portfolio, and apparently merely in the mind of the practitioner, is not always the reality experienced by the audience.

Another, striking example can be drawn from some common, yet diverse observations made by colleagues towards my portfolio and collection of work when viewed for the first time. In one common observation, colleagues who have a background in technology and understand the initial view of what they are looking at have commented that I must be a very organized person due to the highly organized state of my portfolio. It may be that my technical skills and time span of discretion in using the portfolio have allowed me to arrive at a satisfactory and easy to use outline for my portfolio. I have also used my technical skills and knowledge of hypertext to “[provide] non-linear access to multiple representations of a domain content” (Strobel & Jonassen, 2008, p. 69). However, from my own perspective, this use of the technology and the portfolio tools are born out of a deep sense of disorganization that I have often felt held me back
as a practitioner. I am merely using what Jonassen (2006) would call ‘mind tools’ in order to save myself the effort and time of performing routine or mundane tasks. This in turn has allowed me to devote greater time to the organization of my thoughts and ideas and to better share those thoughts with my community. The resulting passive representation of this aspect of myself is almost diametrically opposed to the active representation of myself that I would share with others in a face-to-face situation. Again, the notion of the medium being the message is very apparent here. My colleagues make such comments about the organization of my work without really looking at what information is being presented. They can see at least the apparent organization just from the actual look of the interface and by reading a few of the categories to get a sense of what is contained therein.

Conversely, in another common observation made by colleagues and acquaintances who are not so technically aware, when previewing my portfolio they have looked at me with a rather blank expression and clearly wondered, in a polite manner, just what it was that they were supposed to be seeing. The passive representation being conveyed to this group of viewers is very different to the first group described and again to my own self-perception. It is ironic as well that neither of these representations are what I was hoping to achieve nor indeed expecting for an initial response to the portfolio.

These initial interpretations might be considered misinterpretations. They may also be considered alternate interpretations. If we are took through the lens of these particular audience members, what they see about me is their reality of me. My belief in what I think I am may also be somehow a misinterpretation. For example, does the ability to organize my work through the use of these various tools make me an ‘organized person’? Does the term ‘organized even refer to me, or does it refer to my work? I would most certainly agree that my work is organized,
however when the audience members commented on it, they came to the conclusion that ‘I’ was organized. It is oddly curious as well my own reaction to be considered ‘organized’. One might assume it is a highly positive and admirable quality, but there is a clinical sense to the adjective that does not appeal to me.

The relational constructionist learning to be taken from these exchanges is the perception of what ‘organized’ means. According to my audience, it is a desirable trait that apparently applies to me. Clearly I had a desire to be organized and I believe that my work should be organized, or I would not have tried to organize it so thoroughly. However, despite the fact that I did not think it applied to me as a person, it is a characteristic that others are giving me. Perhaps, it may not even be relevant if I agree with the characterization of me as organized, for the characteristic has been ascribed and so it is outside of my control. Together with my audience we both reflect on my actions and arrive at different descriptive adjectives that can be applied to me and thus create a somewhat more complete representation of me. The portfolio approach allows this to happen and the relational constructionist approach allows me to accept and learn from it.

4.2.2.2. Non-reflexive relational construction.

These benefits extend well beyond the individual practitioner and out into our community. Despite being within the personal sphere, these acts of representation extend outwards through our community of inquiry and into our demonstrations of competency as practitioners for the benefit of our stakeholders. From a non-reflexive perspective where we do not have control over the perceptions that others develop of us, the fact that any given practitioner is not pursuing a portfolio approach in order to collect demonstrations of competency for the rest of us to peruse may be construed by a community of inquiry as in some way irresponsible, especially when
considering that the practitioner is an educator. I argue that the number of hits being garnered by my posts is evidence that my community finds some value in those posts. Thus, as a member of that community and as a member of other overlapping communities, I believe that there are other members who also have great reflections and competencies that I would be very interested to see and have access to for my benefit and that of my students. If they are not capturing those reflections for the rest of us to view at our leisure, then we are the worse for this lack of sharing.

It may be asked what proof is there of social construction when the audience is more or less mute and the conversation is one way. While I believe that the number of hits demonstrate value to the audience though the content of the ideas, the proof is a difficult question. However, the act of having the information available and ready for consumption is a necessary first step. If a practitioner is to present either fully-formed ideas or partially formed ones that will be presented to wider audience for feedback or consideration, that person must first somehow employ a medium to present the information.

The power of the passive representations extends well beyond the individual encounters and occasional viewings. As discussed earlier, some posts have been hit hundred if not thousands of times over the span of a few years. The possibilities of relational construction of knowledge are endless from this starting point. The fact that a post, as seen in Figure 32, was directed at a small audience of conference attendees and 20 students in a 4th year education program was 'hit' 1731 hits in the span of three months may be an indication of the wider audience that can easily be reached.
Figure 32: Blog post showing 1731 hits in three months.

In this instance, the primary audience was comprised of attendees at a conference on mobile learning held in Dubai. This would account for an initial number of hits from the small audience and a few follow up hits perhaps to download the notes. The attachment download counter shows 275 downloads, so that accounts for a corresponding number of hits. However, the post was also cross-listed for a cohort of 4th year students who were finishing their capstone project and this post contained information about their final project. If each student hit the page three times a day, which would not be unusual, multiplied by 20 students for 20 days each as they wrapped up their work, then the post would easily garner more than 1000 hits. As can be seen in the figure, the post is in fact cross-listed in five categories and so anyone who was looking through the site for demonstrations of competency or to share some work through a community of inquiry, would be able to find this post listed in five different places on the portfolio site. So, the remaining number of hits can most likely be accounted for through these various means.
Again, in this example the instances of non-reflexive relational construction are rife and include the audience of personal, known colleagues, unknown audience members, conference attendees who simply viewed the post and presentation. Also included are my own students, plus others from the same program that had similar assignments and may have found something useful in the presentation. At the end of the actual presentation, one of the audience asked further questions about one of the slides, similar to Figure 7, which appears in a previous chapter. In an instance of what Gergen (2009) calls “audacious theorizing” (p. 81), I had put forward a new interpretation of a theory commonly espoused in our mutual institution. The colleague then shared some thoughts and doubts that we had in common about the theory. Perhaps I gave him permission to take his own ideas further. I would like to think that he returned to my presentation notes in order to reaffirm or to work further on his own ideas.

In any case, the portfolio approach allows me to challenge common perceptions in a more open, less inhibited manner. I suppose that many of my colleagues and stakeholders in my institution might expect that I pursue the more traditional realms of peer-reviewed journals or other such sources. However, I would argue that the portfolio allows me the chance to challenge current thinking and put ideas into the world, without the need to conform to wider sensibilities about what is right. Indeed, from a socio-political point of view, it is precisely this freedom that has so many governments trying to block or otherwise censor social media – the message goes out unfiltered by any controlling forces, and perhaps much more in line with social norms and ideas than the mainstream, edited media versions of events could ever be. I argue that the portfolio approach helps to provide what Freire (1998) calls methodological rigor by providing a space for the “production of the conditions in which critical learning is possible” (p. 33).
Likewise, the portfolio allows an unfiltered view to go out. Clearly, such social media is not always accurate, or filtered by acceptability, but this maybe the price of freedom. Gergen (1991) discusses the issue of “inauthentication by perfection” (p. 203). He notes that the demands of mainstream media, which may be construed to include our own academic, peer-reviewed journals who have vested interests in preserving a level of constancy and moderation, enforce their own concepts of acceptability on us. Once these ideas have been challenged by others as in this instance with the audience member during my presentation, I can then have more confidence myself to pursue similar lines of thought.

It may be thought that the portfolio is not necessary for this transaction to occur. The meeting and interaction through the conference would be sufficient to allow for the initial exchange. However, I would argue that while the initial exchange might yet have happened without the portfolio, the following interchanges between myself and the 1731 other hits and visitors to the page would not have happened. I cannot say with certainty that I have learned from and honed my ideas as a result of these visitors, however the possibility is evident. Also, for whatever reasons, the visitors were able to find the page and ideas and benefit from them. As I alluded in the opening paragraph of this section, I would like to think that there is an obligation to be ‘audacious’ and to make our thinking explicit and visible by putting our ideas out for all to see. This sort of ‘pedagogy of freedom’ has a liberating influence on our ideas. Certainly, the knowledge of ‘audience’ is a very powerful motivator to continue to publicly share my work, as I have noted in previous research (Leslie & Murphy, 2008), and to continue to pursue the portfolio approach.
4.2.2.3. **Ill-structured knowledge domains.**

To support the argument of putting forth less than fully-formed ideas, we may consider the concept of ill-structured domains as described by Spiro, Feltovich, Jacobson, & Coulson (1992). Spiro and DeSchryver (2009) cite teaching as a prime example of a profession that characterizes ill-structured domains. For example, teaching practices and classroom management techniques are as varied and individual as the teachers who implement them, and the students whom the teachers are attempting to manage. In these cases, the portfolio approach has enabled students to put their own reflections and journal entries out into the community in order to help determine the best course of action in a given circumstance. However, it has been noted that reflection in approaches to teacher training is often left to the end, or is limited to the few artefacts that have been requested as evidence of learning. This is also true of the experienced practitioner, as will be examined later in the discussion of demonstrations of competency. In many school systems where the practitioner is expected to produce a portfolio for a demonstration of competency, the act of compiling that evidence is often left until the last possible moment, thus reducing the benefit of the portfolio merely to an exercise in rapid presentation. Even the institutions that may want to examine these demonstrations often leave the examination to a point at the end of the teaching period or leave the practitioners very little time to manage their demonstrations, thus devaluing the entire process from both sides: the practitioner and the stakeholder. By practicing an on-going portfolio approach that values the process as well as the final product, the individual practitioner can seize control of external interpretations of their own work and add that value back into their work.

Additionally, reflection is often highly guided and focused around expected outcomes rather than from the overall learner experience. Kwon and Jonassen (2011) provide an extensive
list of reflective activities, all of which certainly have merit and are effective for portions of the overall learning experience. However, in each case the learner or the practitioner as learner, is then restricted somewhat in their reflection. This is doubly true if the portfolio is left as a project to be completed as a showcase at the end of the teaching practice period, rather than being incorporated into the ongoing work of the learner. Such an approach also tends to reduce the level of risk that the practitioner must take to put their reflection out into the world. This is often construed as a positive development, especially by the practitioner. However, as noted earlier, Freire (1998) tells us that “Proper to right thinking is a willingness to risk” (p. 41). This is not to imply that the good reflection has no direction or common elements, but rather the practitioner must be free to reflect, receive feedback on that reflection, act in the classroom, and reflect yet again. In this manner of critical reflection, with the critical feedback provided by stakeholders, practitioners can hope to make greater sense of their ill-structured domains of teaching and learning. The process of ongoing reflective practice so valued in the teaching profession is not a practice if left until the end of a semester or teaching period. It becomes just another task. Here again can be seen clear overlaps with the spheres of community and competency, initiated first by the personal sphere of reflecting and sharing ideas out into the community of inquiry, which includes stakeholders interested in demonstrations of competency.

There is no doubt that to a new teacher in training, there are myriad ill-structured knowledge domains that compete for attention. In many cases, there may be numerous, immediate and ill-defined, yet separate demands on a teacher’s attention ranging from students’ comprehension, to administrative issues of students not completing their homework, to the planning and documentation needed by the school or supervising mentor teachers of the teaching practice. Some of these issues are fleeting, as in the case of student insouciance, whereas some
are far more demanding such as outright student defiance to someone who is not the ‘real teacher’. How does a student teacher track and manage these diverse demands and issues? The portfolio approach provides that on-going support and record of happenings, that then build into a body of experience as a whole that the student-practitioner, or even the experienced practitioner can then reflect upon in a more holistic manner. The guided reflections that are given to student-teachers are still valuable activities, however these tasks may be then conducted on a much wider body of evidence, and can be pursued in a much more timely fashion.

In a discussion of student-authored hypertext systems, Strobel and Jonassen (2008) investigate the student authoring of hypertext systems, or web-based platforms of pages and information that can be navigated non-linearly, or non-sequentially. They discuss the need to design a system that allows for the construction of knowledge through links between “perspectives, themes and cases” (p. 71) and that allows users to both create links and navigate between those links. They highlight the importance of ensuring that every user contribution was visible to all other users in the system. In their study, they note the evolution of their hypertext system into a “collaborative knowledge construction environment” (p. 83). The use of 21st century tools in this instance changed from a student design project, and hence a product, into a knowledge building activity highlighting the importance of the process. If the focus of the activity was in the first place to build knowledge rather than produce a preconceived project, the evolution that took place might be much greater. As they note, “Learning environments that are richly conceived with the best of learning intentions often are less successful because of the misguided assumptions that we make about learners and their dispositions” (p. 84).

The approach toward the design of these hypertext systems is similar to the journal writing activities assigned to our student practitioners during their teaching practice experiences. Every
semester, starting from semester 1, year 1 of the program, all student practitioners must complete a teaching practice placement in a school. Each semester, the number of days on a teaching placement increases and the tasks become more detailed, and quite often, more ill-structured. While they are required to teach during these placements, during the first year of the placements, they in essence are merely watching and observing the mentor school teacher (MST) going about the daily activities of managing the class and implementing teaching and learning activities. The student-practitioners are required to keep detailed logs of everything they see and try to make sense of the varied activities and the interactions between all members of the classroom community. They are also expected to complete a number of tasks at the placement that have been assigned by different faculty through their range of courses. While efforts are made to align these activities, in some cases they are rather diverse and separate from each other. The student practitioners are challenged to make sense of the various tasks and try to find efficiencies in their work. Such ill-structured domains are much better served by a hypertext system as developed in a portfolio approach.

The student practitioners’ efforts to document their teaching placement experiences are discussed further in the next two spheres of the portfolio approach (community of inquiry and the demonstrations of competency). However, it is helpful to note here that student practitioners are required to make reflective entries following loose guidelines, and using both online discussion boards and blogs. In both activities, they are also required to comment on each other’s work. As will be discussed, the student practitioners noted that the feedback from their peers was the single most useful input in their teaching placements. The social construction that arose from these activities could only come from other people who were experiencing the same circumstances of being young, inexperienced teachers in unfamiliar territory.
4.2.2.4. **Social construction of the self.**

McNamee and Hosking (2012) tell us that all inquiry can be viewed as a narrative and state that, “the inquirer is literally engaged in the process of making self an inquirer in relation to particular others” (p. 49). In this light, the portfolio approach as a narrative of our individual journeys through the relational and social world of education can also be seen as a biographical activity that is infused with relational being. Camargo-Borges and Rasera (2013) comment that, “individual rationality is not conceived of as an attribute of individual thinking but as a consequence of cultural convention” (p. 2). That is, our individuality gains appreciation and value to others through their interpretations of our ‘being’, not through our own interpretations of ourselves. However, that does not mean that the individual has no control over others’ interpretations of our actions. Rather, we can use the tools at our disposal to help others see and understand our work from the perspective that we believe it deserved. As was discussed earlier, if we then are informed by others that for example, we are ‘organized’, then we can grow from this relational influence and come to appreciate ourselves even more.

Consequently, the portfolio approach and its demonstrations of ideas and content as described so far in this investigation is a product of our interactions with each other. Even if we are producing our portfolio collection of work and ideas seemingly on our own with no visible input from others, our thoughts and ideas that go into this work are the product of our daily interactions with each other. As noted in the discussion of class notes for example, ideas are shared with the class who then bring a diverse range of comments and interpretations to the dialogue. The process of explaining these ideas to the class and tailoring the answers and explanations to the needs of the class at the time adds a richness to the resulting notes and collection that could not be achieved if working in isolation.
Camargo-Borges and Rasera (2013) discuss constructionist principles of research and knowledge construction and highlight a series of ideas around knowledge construction in the post-modern era that can be applied to the portfolio approach. Firstly, they discuss the notion that these principles allow a reflexive and critical view of current knowledge. What they term to be a “hybrid toolbox” of dialogue and interactions can exist in the collected reflections and comments of the reflective practitioner that highlight the “interconnections and mutual influence” (p. 4) of the practitioners’ shared and common experiences in the classroom and the school environment. As noted, the discussion of ideas with students in the face-to-face classroom supported by notes created on a whiteboard in response to the discussion allow for a wide and rich interpretation of ideas that arise from the community. While face to face interactions may be preferred by many including me, the professional life of the practitioner can be a lonely one and so the connections that start from the personal sphere of the portfolio approach are invaluable. This aspect of the approach will be discussed further in the community of inquiry sphere.

The interactions that arise from the posting of reflections supports the idea that such knowledge is generative (Gergen, 2009) by leading us to new ideas that are not simply the traditional ideas passed on from texts. The portfolio approach allows the practitioner to work within and account for the contextual relationship between the author, the audience or community, and the knowledge being created. In the example provided earlier concerning the time span of discretion, the concept was generated through my research over a period of years. As I tried to convey the information and concept to my students, their questions clarified the gaps in my explanations and so guided me to include examples that contextualized the concept in a format to which they could relate, and which directly referenced situations from their experience. This information was then captured in its full essence, represented in the portfolio for
review and further discussion, finally resulting in the graphical reproduction of knowledge to be
saved for future reference and the edification of others.

Relational construction requires the actions of a community, however when viewed
through a traditional portfolio, often what is captured and represented is only the author’s
constructed artefacts and reflections. Educational settings are highly social places in which large
numbers of people still come together to share their ideas and learn from each other. In the face
of this ongoing social environment, the portfolio approach as a continuous, on-going process is
sometimes difficult to perceive when the actual conversations and processes of interaction are
directly visible and occurring at that moment. The value of being able to return to these
interactions at a later date is sometimes difficult to discern, especially in those practitioners who
do not regularly reflect on their actions or who are not regularly engaged in lifelong learning
activities. Thus, the time span of discretion is one aspect of the portfolio that poses a barrier for
many until such time as they amass their own span of time within their portfolios. A related
concept that is strongly supported through the portfolio approach and that seems to be more
accessible be easier to discuss and outline to practitioners is the concept of biographicity, as
discussed in the literature review.

We can make ourselves more visible to our students and stakeholders by capturing our
work and ideas in a more concrete and accessible form that will remain available long after the
initial conversations and activities have finished. This initial, active representation of my ‘self’
leads to a passive representation that exists beyond our awareness. Clearly, we are aware that we
have put ourselves out there for others to see but we are not aware of what sections of our
representation have been accessed by which stakeholders. While this in itself does not lead to a
better understanding of ourselves through others, the knowledge of what we are doing, and the
ability to do it, that is to represent our self in a controlled and contextual fashion, does allow us to have a greater control over that representation. It allows us to be more actively reflexive in our work. As noted in the literature review, Freire (1996) notes that the truly reflective and liberated educator, “presents the information to the students for their consideration, reconsiders her own considerations as the students express their own” (p. 62). As shown in the example of the board notes for the time span of discretion, the reflexive educator presents themselves to their students and adjusts and reacts to the reactions of the students. There is nothing false in this notion. It is not sufficient that we go through life with the attitude that ‘I am who I am’, and not act based on the reactions of others. If we are to strive to be better, then we must strive to grow.

As we encounter non-reflexive representations of ourselves from others, if we have been diligent in our reflexive work and recording our ideas, we may be able to better understand why another may have developed particular ideas about ourselves. We also can become more reflexive by giving ourselves a means through which we can more readily see our own larger context, and thus be able to influence the picture that others develop of us. As we get feedback from others, we can better see how our work may give incorrect or perhaps imperfect views of our work to stakeholders such as our students. Such a dialogical process allows us to realign our own ideas and then more accurately project ourselves out into the world.

Kelchtermans (2009) argues that “It matters who the teacher is” (p. 258). This statement conveys the message that the teacher as a person is explicit and separable from the content being taught. The teacher is literally face-to-face with their students on a regular basis and while perhaps it may be that in certain subjects, the content is there and immutable, in teacher training, and in many other disciplines, the content is entirely subjective, contextual and relational. Kelchtermans also argues that teachers face a range of personal considerations in their
profession. These may include issues of self-esteem, the result of being in front of an audience every day and in effect being on stage performing for their students. The concept of “historicity” (p. 263) also weighs heavily on the teacher as a focus of who we are. The idea of the reflexive teacher as being aware of ourselves is very much the product of our history. It may also include our aspirations and influence our actions through the routes that we take to achieve various tasks. These routes also take on moral and political aspects when we consider how many decisions, large and small are made every day in the representation of information. Every teacher is expected to make decisions for their students in terms of what is important, ‘what is on the test’ or ‘what will be on the test’. In light of these myriad decisions at many levels of the moral spectrum, the idea of reflection as a conscious act on the part of the practitioner is brought into consideration. Kelchtermans (2009) states that,

“Critical and deep reflection further implies a contextualized approach in which the particularities of one’s working context are carefully taken into account, whilst also being fundamentally questioned. Reflection should aim at understanding one’s actions in the context of that particular school or institute, at that particular time, in that particular social, political and cultural environment” (p. 269).

The portfolio approach in the personal sphere can offer the practitioner the ability to achieve that degree of critical reflection. It allows the practitioner to put their ideas out for the world to see and to comment on. It provides the practitioner as starting point in the classroom from which to launch their daily comments and to keep track of their trains of thought over time. From the time span of discretion, as the practitioner develops a range of captured experiences in different contexts and time periods, they may become better able to present to their own student practitioners better examples of what may be acceptable responses to particular experiences. As I
have experienced in my own mentorships of my various students, I can not only draw on my own experiences of teaching in different situations, I can draw upon the experiences of my other students in what are often closer circumstances than my own. In a crossover with the community of inquiry, my own experiences are that of a western man who speaks a different language. To be able to point my students, who are women in a Muslim world and in girls’ schools, to other female practitioners’ portfolios, is a great advantage. I often tell my students that although we learn from our mistakes, sometimes it might be better to learn from others’ mistakes.

Through the use of the portfolio approach, I am able to put my ideas out on display for my students and colleagues to view and question. Since all my classes are on display at the same time, I am able to better put my work into a context for the students. In many cases, I am teaching any particular cohort more than one course and can at times provide greater context for the students than might otherwise be possible. Figure 33 shows an entry for ‘week 5’ in which I am placing aspects for three different course in one entry for their benefit.
Again, the image for the time span of discretion appears, but in the wider context. Since the students have had a direct hand in this image and have encountered it more than once, they can then much more easily adopt it into their existing ideas and schema, and put their work into the context of some of their other courses. This group will soon be going out on a teaching practice experience and so will want to be as prepared as possible. Part of the context of their work also includes their past work. As can be seen in Figure 33, although this work is for year four students as indicated by the course numbers, the year three courses are also available. Both year groups can see the courses that they have either taken, or will take.

One of the points of resistance that I have faced when trying to start a project is the belief that once a faculty member leaves a position, he or she will take with them the skills needed to manage a particular project. Thus, some projects have been left unpursued due to the concern
that such institutional knowledge is not permanent. However, through a portfolio approach in my own case, all of my work towards my studies and for my students is readily available for them to go back and see at any given time. This sense of institutional knowledge is invaluable in saving time for those pursuits which drew us to this profession in the first place. Students too are able to use my portfolio to suit their own needs and to make sense of their academic world. This ability to bridge gaps in experience becomes stronger as individuals gain experience, however it is argued that a supportive and thoughtful portfolio approach will greatly enhance what is generally termed, ‘experience’. This is a clear overlap with the demonstrations of competency. As the practitioner relies on his experience to solve problems and function in their day to day work, they are also building their level of competency. Capturing their work in a portfolio allows for apprentices and indeed any other stakeholders to benefit from that work or examples. The practitioner can preserve their own ideas for themselves, for their colleagues and students to learn from and to demonstrate their particular skills.

4.3. The Community of Inquiry Sphere of Intentionality

At the Higher Colleges of Technology, all Education students are required to develop and maintain an e-Portfolio and so all students have developed a familiarity with the portfolio concept. However, across the program, and especially between campuses, there is a wide disparity between the teaching methodologies applied to portfolios. Much of the students’ portfolio development is of Barrett’s (2007) first instance of portfolio development which is that the portfolio is intended purely for showcase and assessment purposes. In this manner, for most students and indeed for most faculty, the portfolio is simply another project to be completed at the end of the semester. Much of the benefits described so far in terms of the personal portfolio are not realized with these students and faculty.
I have been working with a number of cohorts of students, and consequently with other faculty, over a period of five years. Out of the cohorts that I have worked with, I have been able to follow the progress and maintain a consistency of approach with three of them. In one case, I worked with a cohort for five semesters over three years, and in another case, I worked with the students for 7 semesters over four years. The final group has had three semesters over two years and is still on-going. There are a number of other cohorts with whom I have worked and to whom I have introduced the portfolio approach. However, in these separate cases, I have not had a sustained contact with them and although I have counselled their faculty and offered numerous training sessions over a period of years, their familiarity and exposure has been patchy. Nevertheless, they provide a ‘foil’ of sorts against which to discussion those students who are more familiar with the approach.

The community sphere has largely been explored through the above described student-practitioners’ experiences with their own portfolios as assessment tools and as tools for sharing their work while out on teaching placements. Students from the various cohorts have been interviewed individually, and have also participated in focus groups. Over the span of several years, a significant number of focus groups have been conducted with groups of students from each cohort. Given the crossover of these cohorts as both students and student-practitioners, their experiences encompass the personal use of their portfolios as teaching and learning tools, the use as community tools for sharing their work through their portfolios with their classmates, and as high-stakes demonstrations of competency as they use these portfolios for end of semester and internship assessment presentation tools. Since these students use technology for much of their work, a short, paper-based survey was conducted with each cohort in order to provide insight into their general use of social media apart from their use in portfolios and regular classwork.
They may be viewed as possibly having the most complete, well rounded experience of the portfolio approach.

Artefacts from all e-portfolios of each cohort were examined, initially for assessment purposes and subsequently for this research. Artefacts include document such as lesson plans used for teaching practice internships, materials and handouts to be used in their classrooms, assignments and reports prepared for various courses, statements such as teaching philosophies and reflections on internships, personal development plans, curriculum design units, and contributions to online discussion boards and public journal entries. In all cases, these artefacts are available with varying degrees of permissions to most stakeholders.

The artefacts themselves were examined for a variety of purposes. One issue is to note how much effort each participant made to show how the artefact contributed to the overall demonstrations of competency. These were tied closely to portfolio assessments that are conducted in every semester of the students’ academic career to support the assessment of their experiential learning while out on teaching placements. Although this aspect of the work might seem to be belong to that particular sphere, it is relevant here as a form of benchmarking and sharing for their wider community. As part of their portfolio work, they are expected to make efforts to place the artefacts in some semblance of order to promote the development of the higher sense of integrity as described by Kolb (1984). As noted earlier with the personal portfolio, there is significant overlap between the community of inquiry sphere and both the personal portfolio and the portfolio as demonstration of competency. This distinction merits further discussion at this point. Both in contrast to, and paradoxically overlapping with the personal portfolio sphere, the intent with the community of inquiry is to share ideas and get
feedback. The personal portfolio is also intended to share ideas and get feedback, but as has been discussed in the previous section, that is not the primary motivation for those activities.

The artefacts and the portfolios as a whole were also examined to note the continuity of use. A key factor in the portfolio approach is the ongoing use of the portfolio as a tool for reflective use and for sharing with others. If the practitioner is not contributing to, and visiting their portfolio regularly to view and update, then they may not be benefitting fully from the approach. As part of the assessment procedures for the student portfolios, they are guided to make reflective journals posts at specified times such as after visits by their supervising college faculty, which is many cases was me. In cases where there was another supervising faculty, that person was interviewed and indeed had regular conversations to provide feedback on the perceived success of the students in maintaining their portfolios.

The community sphere with the students also includes the results and quantitative analysis of discussion boards which serve as repositories of knowledge and tools for the social construction of knowledge. These boards have been extensively analyzed for social presence, teaching presence and cognitive presence by counting the instances of each presence over a period of time and comparing the instances according to familiarity with the community of inquiry model using the descriptions and analysis tool designed by Akyol & Garrison (2008). In all cases, the portfolios of the students have been extensively reviewed for content and usage trends. Some of the reviews of these student portfolios have already been analyzed and serve as the basis for research papers (Leslie, 2013; Leslie 2014b).

The community of inquiry model as described by Garrison, Anderson, and Archer (2000), and discussed earlier in the literature review of this research, provides a basis for the following
discussion of the portfolio approach. The community of inquiry model was originally intended to provide means of monitoring and guiding the development of online communities. However, it has been adopted in this research as a means of defining more generally interactions between members of a cohort of students both in online and face-to-face interactions. More commonly now, the concept of blended teaching methodologies is becoming the norm and the use of technology for activities including class discussions often have their start in an online forum and then continue in the classroom in a face-to-face setting. However, the concepts behind the community of inquiry translate very well between both online and face-to-face conversations.

The community of inquiry sphere provides support for the notion of teaching presence, which gives purpose and direction to the narrative of the community. While the specific purposes of the narrative changes, the purpose of the teaching presence in the community remains constant in its role to encourage, promote and attempt to satisfy epistemological curiosity. Within any given cohort, the students are driven by the common purposes of completing courses and progressing through their program and in this sense it may be argued that the teaching presence that comes from all participants provides an on-going impetus for the narrative. The teaching presence also allows for variations on the narrative as different students contribute their own perspectives on each other’s’ work.

However, the real value of the teaching presence comes to the fore when specific goals for a particular span of time have been defined in the form of assessment tools and the students are then focused on those tasks. As Freire (1998) notes, “One of the essential tasks of the teaching process is to introduce the learners to the methodological exactitude with which they should approach the learning process” (p. 33). In this sense, the intent then of the participants in the community of inquiry approach to their work is to explore their ideas and activities with the
participation of their community. They are encouraged, and in fact expected to provide teaching presence to the other specific participants and to the community in general, and are actually graded in their ability to provide such presence. Simultaneously, they receive the benefits of others’ teaching presence in support of their original intentions to explore and develop their own cognitive presence. They are there to absorb, to learn, and to develop. Freire (1998) also tells us that students must act in the context of a “rigorous methodological curiosity anxious to explore the limits of creativity, persistent in the search, courageously humble in the adventure” (p. 33).

Through these observations on the nature of the pedagogy of freedom, students in the community of inquiry are directed through the methodological exactitude to be curious and creative, and to perhaps take from their experiences as much as they can, and then leave as much of their reflections and narrative as they can. Although they may be working alongside their teacher and in the case of my students, interacting with my portfolio and ideas both online and face-to-face in the classroom as described earlier, they may never be aware of the full extent of their presence in each other’s narratives. This may be viewed as another example of the non-reflexive impact of our actions. Nevertheless, the community is driven by the common intent to transform and hopefully be transformed by our experiences, both individual and shared.

When working within a community of inquiry, we can become aware of the differences in our abilities and interests. One of the more powerful features of the portfolio approach is that it allows community to take advantage of these differences through the concept of cognitive apprenticeship. From our guiding research questions, this section will investigate how we can focus our social construction of knowledge. In terms of the community, the apprentice is a part of the community. In a more traditional version of an apprenticeship, the apprentice and the master may form the extent of the community however with the use of 21st century tools, that
community can be greatly expanded. The teaching presence, which in the traditional model would come from the ‘master’, can also come from the other apprentices as they solve problems and share the answers with their colleagues. The discussion board format is one way in which this can occur. With the proper tools the discussion board contents can be preserved and shared through an individual’s portfolio to contribute to a demonstration of competency and can also serve as a record for the person themselves or for other apprentices or students. A portfolio approach can contribute to such apprenticeships by offering glimpses of tasks that are “representative of authentic skills” (Dennen & Burner, 2008, p. 426) through the artful demonstrations of competency to be found on the practitioners’ portfolios.

Such ‘situated cognition’ (Brown, Collins, & Duguid, 1989) allows students to benefit from each and become part of a larger community. It may be that some students might not actually benefit from this type of leveling influence, but it may also be that the overall influence of a community engaged in trying to be and do their best can only be ultimately beneficial to all members.

4.3.1. Profiles of student portfolios.

Over the time span encompassed by this investigation and discussion of portfolios, the actual portfolio platform has changed due to various issues, not least of which include technicalities beyond my control. For example, at the beginning of one academic year, there was change in the management of a platform that the college had been using for several years, and which I personally had been using with students for more than 10 years across three campuses to which I have been attached. Due to the change in management, previous agreements with the college stakeholders intended to preserve the longitudinal aspect of the portfolios were no longer relevant and so literally overnight three years of portfolio development for three cohorts of
students was wiped out. This experience led to one important revision in the process which was to take greater advantage of cloud storage technologies.

Cloud storage is a generic term for any form of data storage that keeps data on centralized servers, and not on the user’s computer. There are many variations of this service and many types of data that may be kept. Consequently, there are many definitions of exactly what constitutes ‘cloud storage’. For our purposes, I will use it liberally to include storage of any form of information that a single user can retrieve from more than one device. Access to view the information might be public as in the case of Twitter tweets or Instagram images, or may be private as in the case of ‘webmail’. Access to edit the information is limited to the user and available through personal accounts. Other sources of cloud storage include blog posts, documents, spreadsheets and images in cloud ‘drives’ or galleries, discussion boards and a variety of other formats that may overlap or have particular access restrictions. One problem with using so many different types of storage, which generally then require different accounts, and thus potentially different usernames and passwords is that they may be difficult to remember and for visitors, difficult to retrieve or otherwise find. For the purposes of portfolios, the use of myriad accounts has the potential to render the process and approach almost unusable.

However, this problem is overcome with the use of an aggregator platform. Such sites have been around for numerous years and generally operate through the use of RSS feeds and other similar technology. Commercial sites that offer aggregating services may be called ‘mash-up’ sites. Institutions and large companies often use similar sites, popularly referred to as ‘portals’, where employees can access different information, check company email, follow discussions, or retrieve documents relevant to their work. However, one important difference between these types of aggregator sites that will be investigated shortly is the fact that the content for these sites
is determined by the site owners and therefore reflects the needs and interests of the owners, not of the audience.

Currently, the online platform in use with students and the participant teachers, is called, “Mahara” (Mahara, 2014). This is an open source software and so is free to download. To install and run this platform, a web server and database are required. These can be obtained through most higher education institutes, or access to the hardware and services can be purchased for relatively low cost. In this instance, the platform is sponsored and hosted by the author’s home institution and managed by the author. Mahara provides a robust platform that can support multiple user accounts and allows each individual user to link to their various cloud storage accounts for the purposes of displaying or sharing information.

Each user has a profile page that acts as their personal portfolio. Within this profile page, the user can embed examples of, or link to a wide variety of work and can display that work in multiple ways. Figure 34 (shown earlier as Figure 12) highlights my profile page and demonstrates the range of cloud technology that can be incorporated into the site. In this manner, Mahara can act as an aggregator of content. While I will discuss samples from student pages, for privacy I will use my own profile for an overview of the site in order to demonstrate the wide range of applications that can be incorporated. In the case of the students, each student is free to arrange their profile page in their own personal manner. Nevertheless, they are also given many suggestions as to what might be considered good display protocols. As noted in the literature review, Mayer (2009) provides a number of principles that guide multimedia design. These principles form a significant contribution to the portfolio approach.
Figure 34: Mahara profile page: “Mr. Paul”.

From this page, the aggregation of cloud technologies is readily apparent. Each section of the page is called a ‘block’ and serve to provide links to various types of information. At the top left, the ‘Competencies Model’ block shows a series of links to a variety of documents that are stored in a cloud drive. In this case we use Google Drive (Google, 2014). Beneath this model are two additional blocks that provide RSS (Rich Site Summary) feeds to different blogs. The ‘Portfolio Approach’ is a set of links to a blog that displays a series of my posts about the progress of my research, as described in the previous section about the personal portfolio sphere. This block is in a closed or ‘retracted’ position. The next block, labelled ‘Professional goals’, is open and shows links to the individual blog posts. In this instance, the audience do not need to see the content of each post and given the nature of the posts, the interest in these will be restricted to supervisors or curious colleagues.
In the center of the page, the ‘Board Notes from Class’ block displays cloud-based image library, which in this case is supplied by Flickr (Flickr, 2014). As noted in the personal portfolio, the photos taken of board notes in class are automatically uploaded to a Flickr album, which displays in my personal portfolio site. The images are then also automatically displayed here in the Mahara profile page. It is important to note that any of the cloud storage features can be displayed simultaneously in as many different locations as deemed necessary. Below the board notes, another block displays my Instagram account (Instagram, 2014), which is yet a different image library. These two image libraries are equally popular, but for different reasons. In a further example of ‘the medium is the message’, the format and function of the medium strongly dictates how the message is conveyed and hence how we will interact with the message.

Displayed under the Instagram link is another RSS feed from the main section of my personal blog. As can be seen, the RSS feed displays the latest post from any personal blog site. As opposed to the ‘Professional Goals’ block in which only the post titles were shown, in this case the full post content is displayed. This allows me to highlight the content and more easily direct traffic to my posts. It is possible to show up to ten full length posts, although I generally show only one since each post tends to be rather long.

Looking in the right hand column, the ‘TP Placements’ map, ‘Paul on LinkedIn’ and ‘Twitter’ are all embedded media from the respective sites. This column provides strong examples of how the portfolio can provide information for multiple audiences. For example, the placements map shows the locations of virtually all schools in which our Education program places students. At the same time, the place marks for each school link to a database that provides not only factual information such as contact details and exact GPS coordinates for various types of GPS units, we can also share further information with our colleagues on the ease
of working with the school and its faculty. Figure 35 demonstrates how this information can be accessed on a smart phone through the Mahara site, which formats very well on a mobile screen.

![Spreadsheet preview on smartphone](image)

**Figure 35: Preview of spreadsheet on smart phone.**

Once the practitioner has the spreadsheet open, they can click on the ‘directions’ link and open a Google Maps app, as seen in Figure 36, which provides directions to the school.
The ‘LinkedIn’ profile is useful for various stakeholders including my direct supervisor. It provides a professional profile within which the portfolio profile can be linked, allowing two-way traffic between the two profiles. Regardless of which end of the two-way connection the audience starts, they are able to find a richer collection of information about me. The twitter account is also a very useful tool for communicating with students, and the usefulness of Twitter specifically, and of cloud storage generally can be highlighted through its use here. While looking at articles and journals at any level, from newspapers to educational journals, the article can be readily ‘tweeted’ from the original source simply by clicking on the ‘Tweet’ icon which can be found in many media sources. It is not necessary for my audience to actually look for my tweet on Twitter to benefit from this action. The tweet will appear here and then become a permanent link in my profile. One of the benefits of Twitter’s 140 character limit is that each tweet takes up such minimal space that Twitter can keep every post I ever make. A secondary
benefit is that the 140 character limitation forces conciseness and is good practice for practitioners and students alike. In this instance then, the portfolio profile as aggregator allows for an extremely easy sharing of these ‘finds’ and interesting articles.

In every case of cloud storage, including documents, images, reflections in blog posts, profiles, maps and various other information, the accounts and associated data can be managed from those accounts. For example, whenever I choose to write a new post for my students the Mahara profile page will automatically update with the latest post. Whenever I add a new photo of board notes to the board notes album, the embedded album in Mahara will automatically update. This process of automated updating is very similar between any of the cloud storage tools. One value of the Mahara site is in providing the aggregator functionality. The wide variety of tools available can render certain communications very difficult to maintain within communities. Trying to monitor all of these channels would be most difficult. Additionally, trying to find a single tool that can effectively provide all of these features is also very difficult. The Mahara site thus offers a middle ground that allows user to enjoy the best tools that suit their particular needs yet places them in one place for their community to access.

The distinguishing feature of Mahara and of the community sphere of the portfolio compared to the personal portfolio is the access to a community that is provided by this platform. While the features of the personal portfolio software allow for multiple users and in many ways mimic the features of Mahara, the latter is intended for use as an eportfolio system and so naturally loans itself to use as such. Figure 37 shows the ‘groups’ list.
Each group can be managed through a wide range of parameters including open or closed admission, default public access, or the ability to contact members within the groups. In most cases, the permissions are intended to protect or limit access to the members of the individual groups rather than limit permissions within the groups. If a participant is in a group, they generally have full access to the other members. There would be little purpose in limiting access of one group member to another. Each group then acts as a community for the members. Each group as a community also is a member of the wider community as well. As the usage of the system increases and rolls out to all cohorts in the program, the members will have an increasing platform of work and examples from which to draw upon and create a true model of situated cognition.

As members of the community, the students can still use their portfolio as has been discussed in the personal sphere, although their original intent for their portfolio is to be able to participate in the community. They are also able to use their portfolios as demonstrations of competency and we will return to this use later. One aspect of the community of inquiry is the
ability to share ideas through discussion boards and other social media features, all of which exist in, or can be linked to the Mahara site. Whether these tools exist inside the portfolio, or are linked to the portfolio, artefacts from the discussions can be stored in the portfolio, and the portfolio can be used to support work and comments being discussed in the boards.

There is some concern over the level of privacy in the use of portfolios. However, privacy exists along a continuum. Lowenthal and Thomas (2010) note that many people view, “‘public’ versus ‘private’ as simple binaries when in fact they are much more complicated” (Privacy). Additionally, despite the seemingly individual nature of a portfolio, various sources (Barrett, 2008; Barrett, 2007; Bateman, Pike & Butler, 2011; Lowenthal & Thomas, 2010) suggest that portfolios, even as showcase portfolios, in essence are a communal activity, where students readily share their work. The use of discussion boards within a community of inquiry may help to promote honesty (Bateman, Pike, & Butler, 2011) and encourage individual growth. Rather than facilitating plagiarism, the open format can actively discourage such practices. Other strategies such as assignments requiring reference to students’ individual experiences can also inhibit the ‘lending’ of work to other students (Lowenthal & Thomas, 2010, Other Objections). Additionally, if a student's work has been displayed in an open forum, then teachers and other students should be able to more easily notice if students have borrowed ideas without proper reference.

4.3.2. Discussion of the community of inquiry.

4.3.2.1. Discussion boards as interaction and construction of knowledge.

Many of the cohorts being discussed and examined in this research have participated in formal, assessed discussion board activities. While the assessment aspect of the activities may
recommend them to the demonstrations of competency sphere, the intent of the activity was to enable community members to share ideas and knowledge about specific topics. I regularly use discussion boards for assessment and require that students not only post their response to a specific question, but that they make meaningful responses to their classmates’ posts and so exert their ‘teaching presence’ (Garrison, Anderson, & Archer, 2000), to the community. To promote the success of these discussion board entries, the students are exposed to the community of inquiry model through their portfolio activities, classroom-based direct instruction of the model and repeated discussion board activities. Eventually, students become familiar with the process and begin to make significant contributions to their respective communities.

Through a review of ‘presence’, in graded discussion board forums, the following discussion examines whether students, if given clear guidelines on how to assert their ‘teaching presence’, can improve the quality of their contributions to their community of inquiry. Three different discussion board assignments were analyzed for ‘presence’, using a predefined tool as shown in Table 7. Examples of posts and comments displaying each presence are provided in the following discussion.
Table 7:

Operational Definitions of the Presences (Akyol & Garrison, 2008)

<table>
<thead>
<tr>
<th>Elements</th>
<th>Categories</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(examples only)</td>
</tr>
<tr>
<td>Social Presence</td>
<td>Open Communication</td>
<td>Learning Climate/Risk-Free Expression</td>
</tr>
<tr>
<td></td>
<td>Group Cohesion</td>
<td>Group Identity/Collaboration</td>
</tr>
<tr>
<td></td>
<td>Personal/Affective</td>
<td>Self Projection/Expressing Emotions</td>
</tr>
<tr>
<td>Cognitive Presence</td>
<td>Triggering Event</td>
<td>Sense of Puzzlement</td>
</tr>
<tr>
<td></td>
<td>Exploration</td>
<td>Information Exchange</td>
</tr>
<tr>
<td></td>
<td>Integration</td>
<td>Connecting Ideas</td>
</tr>
<tr>
<td></td>
<td>Resolution</td>
<td>Applying New Ideas</td>
</tr>
<tr>
<td>Teaching Presence</td>
<td>Design &amp; Organization</td>
<td>Setting Curriculum &amp; Methods</td>
</tr>
<tr>
<td></td>
<td>Facilitating Discourse</td>
<td>Shaping Constructive Exchange</td>
</tr>
<tr>
<td></td>
<td>Direct Instruction</td>
<td>Focusing and Resolving Issues</td>
</tr>
</tbody>
</table>

These definitions of the three presences is supported by Swan et al. (2008) who give descriptions of each of the presences in their discussion of a validated tool for analyzing the quality of online discussions. They note that teaching presence is crucial in “bringing the [community of inquiry] experience together for the students” (p. 8), and comment that the role of students in providing teaching presence needs further exploration.

Two of the discussion board assignments were given to the same cohort of first-year students, spaced approximately two months apart. The third discussion board assignment was given to a cohort of third-year students, who have had sustained exposure to the community of inquiry model, and who have been participating in discussion board assignments with their cohort over a three-year period. In all three assignments, each post and comment was rated for instances of each type of presence and then the instances were tallied. Initial posts in each thread
were counted as one instance of cognitive presence. However, in each response, separate instances of each presence were counted individually provided that they were either separated by another instance or if they were clearly separate instances of the same presence. Table 8 shows a comparison of the number of posts and the instances of each presence. In each case, the average responses per student is similar because the rubric specifies a minimum of 8 responses, plus their own initial post.

Table 8:

*Data Collection Chart*

<table>
<thead>
<tr>
<th>Instances of Presence</th>
<th>Discussion boards in order of student familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st year cohort</td>
</tr>
<tr>
<td>Total Posts</td>
<td>256</td>
</tr>
<tr>
<td>Participants</td>
<td>28</td>
</tr>
<tr>
<td>Average responses per student (Standard Deviation)</td>
<td>9.1 (5.82)</td>
</tr>
<tr>
<td>Social presence</td>
<td>241</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td>163</td>
</tr>
<tr>
<td>Teaching presence</td>
<td>26</td>
</tr>
<tr>
<td>Total instances of presence</td>
<td>430</td>
</tr>
<tr>
<td>Average instances of presence per post (Standard Deviation)</td>
<td>1.7 (0.66)</td>
</tr>
<tr>
<td>Range (lowest to highest number of instances per post)</td>
<td>1 to 3</td>
</tr>
</tbody>
</table>
It is interesting to note that the standard deviation of average responses per student declines substantially between the first and third samples, reflecting a greater consistency across the student body as each student becomes more adept and comfortable with the process.

The average instances of presence per post also highlights that as students become more familiar and comfortable with the process, they tend to make more contributions to the community. The range of instances also increases substantially with numerous students writing posts that contain up to 6 instances of presence.

Additionally, their contributions shift from a preponderance of social presence to a more even distribution, as shown in Table 9.

Table 9:

<table>
<thead>
<tr>
<th>Discussion boards in order of student familiarity</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>1st year cohort</td>
<td>1st year cohort</td>
<td>3rd year cohort</td>
</tr>
<tr>
<td>Social presence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instances</td>
<td>241</td>
<td>321</td>
</tr>
<tr>
<td>%</td>
<td>56</td>
<td>50</td>
</tr>
<tr>
<td>Cognitive presence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instances</td>
<td>163</td>
<td>247</td>
</tr>
<tr>
<td>%</td>
<td>38</td>
<td>38</td>
</tr>
<tr>
<td>Teaching presence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instances</td>
<td>26</td>
<td>80</td>
</tr>
<tr>
<td>%</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>
In any community, whether face-to-face, blended, or online, participants may be expected to spend their initial encounters becoming familiar and comfortable with their peers. The following example of social presence highlights the generally supportive nature of the community: “Good job Marwa, I like the link you put it was interesting (sic)”. In each discussion board, cognitive presence remained at a similar level. This may be attributed to the measurement of each initial post as an instance of cognitive presence. Students were also instructed to agree or disagree with the post and either try to offer other information related to the post or ask a question. In either case, instances of cognitive presence were produced. The following is a reply to a question in the discussion board that demonstrates both social presence and cognitive presence, “Hi Maryam, "enhance listening skills " I mean that reading story for the children will improve and develop their listing skill, which will make it strong (sic)”.

The most significant shift is from social presence to teaching presence. As student familiarity with the process and each other increases, they spend less time on group cohesion and affective responses, and more time on facilitating discourse and organizing the interactions. In this example, the student dispenses altogether with social presence and displays both teaching and then cognitive presence, “You're explanation on cognitive presence its correct, a lot of young students don’t care about the usernames they create, however older people think multiples of times before selecting a username (sic)”.

Perhaps the most striking difference between the exchanges of the Year One students and the Year Three students is in the quality of the exchanges. Beyond the increase in teaching presence noted earlier, the exchanges become longer with more information passing between participants in the community. The Year Three discussion board contained prolonged exchanges with clear questions and very mature responses. For example, one student, in her initial post,
raised the question of using real names in social media. She was then questioned extensively on the subject by her peers, prompting measured responses to specific comments in the feedback.

In subsequent exchanges, this particular student pursued the question of social identity repeatedly in response to others’ initial posts, thus including a wider range of students in this particular issue, and so arguably producing a more informed body of knowledge. This was an intriguing display of her process of discovery, and the development of her and her classmates’ ideas on that particular topic. As with social and cognitive presence which must come from all participants, one teacher cannot hope to provide sufficient teaching presence and hence instructional guidance for all participants. In a portfolio process, the responses and guidance which comprise a teaching presence need to come from all participants as much as from the teacher. Similarly, in any classroom, the students are as much an integral part of a classroom or a course as the faculty or the resources (Haughey, 2010).

Students were also given guidance on how to improve the quality of their reflective posts, thus not only making them more rewarding to write, but also making them more enjoyable for others to read. One form of guidance employed with the fourth year Education cohort was to provide a range of examples for reflective comments and map these examples to Bloom’s Taxonomy. Students were able to review their own writing more thoroughly and avoid giving a simple recitation of facts and events. Deeper analysis of their experiences also provided greater opportunities for feedback from colleagues.

“To establish and maintain a community of inquiry requires a thoughtful, focused and attentive teaching presence” (Garrison, Cleveland-Innes & Tak, 2010, Conceptual Framework). The increase in the instances of presence in the discussion boards as measured in Table 9 and the
corresponding increase in the richness of the contributions seems to be a result of students’
greater familiarity with the format of the community of inquiry model. This familiarity is seen as
a result of greater teaching presence on the part of the instructor. The shift in students’ instances
of presence from social to teaching, as shown in Table 9, may be evidence in support of the
importance of teaching presence in the community of inquiry. It has been previously
hypothesized that a lack of a strong teaching presence resulted in a “limited progression towards
dissonance” (Leslie & Murphy, 2008, Conclusion).

4.3.2.2. Portfolio approach to learning through social media.

“[D]ifferences in assumptions generate different forms of practice.” (McNamee &
Hosking, 2012, p. 17). The assumption for online presence in social networking is that people do
not act like ‘themselves’ and that they pretend to be someone different. This assumption often
leads to negative opinions on the use of social media in educational settings. To investigate this
assumption, I conducted a survey with one cohort of student-practitioners to investigate their
behavior while using social media sites. One of the survey questions asked the students if they
act differently on social networking sites than they do in face-to-face situations. While 75% of
the students responded yes, all responded, against common assumptions, that they actually feel
free to be ‘themselves’. The implication is that when in face-to-face interactions, they are not
being ‘themselves’, and in fact are comfortable to discuss issues and problems they were having
when doing so in an on-line format. One respondent wrote, “In real life, I don’t like to argue with
someone about my opinion but in social sites, I say my opinion.” Another wrote, “Online, people
are more open to what they say. We can ask anything without having to be shy.” These responses
strengthen the argument that the distance social media provides enables greater freedom of
expression. In support, Swan (2010) states that “online learning provides opportunities for
critical discourse without the obligation to necessarily conform, which sometimes happens in a face-to-face context (p. 151).” In support of this survey question, it should be noted that when these students discuss how open they feel to sharing their thoughts, they are not hiding behind an anonymous ‘nom de plume’ or user name that masks their identity. They are fully aware that their identity is known to their audience. When using discussion boards for example, they know that they will see face-to-face the people to whom they have exposed their thoughts. When using other forms of social media they know that a wide range of their friends and colleagues will see their comments and ideas through their portfolios.

This format allows them to feel free from the constraints of social conformity and pressure to be perceived as ‘normal’. Furthermore, from focus groups, the students revealed that they learned more from being able to see how their colleagues were handling specific situations and how other classmates were responding to those comments in order to get a wider range of options and background in order to learn how to deal with various situations. These uses of the discussion board as a personal tool also highlight the overlap between the personal portfolio and the community of inquiry. Perhaps the portfolio approach, through the management of social media including discussion boards will allow students and teachers a more focused and thus greater voice in their own affairs, without the influence of power structures interfering with a person’s desire to say what she really thinks.

Another question from the same survey asked students, “What percentage of time do you spend interacting through social networking sites versus face-to-face interactions?” 80% of the respondents said 50% or more with at least 20% of this group stating more than 80%. “[Students] can create arenas for the precious experiences of motivated argument and reflection” (Crook, 1994, p. 116). Perhaps, social media and the distance it provides empowers students to have a
greater say in their educational relationships. A telling statement indicates that students were willing to use their social media platforms to present alternate explanations and ideas, different from their colleagues: “I notice that my classmates are becoming more independent from each other and are becoming different.”

Overwhelmingly, the focus group discussions and responses centered on the social aspects of the portfolio process. Throughout the focus groups, students repeatedly referred to social media as positive tools for their portfolios, making comments such as, “’When I saw your tweets on your site, I thought, ‘yeah, I want that’”, or, “It would be great to have a time when we can all go online at the same time.” Considering that these students met each other every day in the classroom, the enthusiasm displayed for online communications speaks to the desire for some socially leveling distance between classmates. A collaborative inquiry approach suggests that “students are agents of their own learning, work toward goals of collective knowledge advances, and treat ideas as real things that can be improved by means of discourse” (Hui & van Aalst, 2009, Introduction, para 1). A 21st century approach to learning encourages students to share their ideas openly and then build their own understanding of the world around them (Lowenthal & Thomas, 2010).

The fourth year students also commented extensively on their use of discussion boards and other forms of social media. One stated, “We want more communication in our tools. Discussion boards are good because you can see more people’s comments more easily.” When students are given guidelines on how to pose questions to their classmates, they are in effect given permission to question their classmates – an act they might otherwise be reticent to do. These improved questions greatly enhance the teaching presence. This has two significant results. One is that substantive feedback is very motivating. “They are looking at our work and doing their work
according to your own work and this is very motivating to do more work.” The other is that knowledge is more readily constructed. “We got valuable feedback from the comments that others left on our site and posts.” These comments also reflect that the overall construction of knowledge is a two way process and that the students were both providing teaching presence and receiving or benefitting from it.

The Educause 2012 report on Undergraduate Students and IT (Dahlstrom, 2012) states that 70% of students surveyed report that they learn best in a “blending of traditional and non-traditional learning environments” (p. 7). Social media provides students with a wider audience and peer group within which they can share ideas and discover differences of opinion. The public nature of online discussion boards encourages everyone to push themselves further to give better answers and better responses. Students can find deeper meaning in their own ideas through the responses they receive from others to their ideas and posts (Gergen, 2011). The notion of social constructionism strengthens the importance of dialogue, engagement and participation in students’ own learning. I have noted previously (Leslie & Murphy, 2008), that communities of inquiry are supported by the “desire for students to express themselves socially and attract attention to themselves” and that this “encouraged greater involvement in the online community” (2008, Implications).

“We really benefit from viewing our colleagues portfolios and see how they are displaying their work and what they are displaying and this will give me great ideas about how to display my own work.” Similarly, another student noted, “If I could see my old ideas, I can expand on them and make myself better. I can see other students’ work as well and expand on their ideas.” Consequently, the processes involved in the collection and curation of these products takes on greater significance. The value or importance of these products is determined in relation to the
processes that they are supporting, the people involved (humanistic), the time and place (longitudinal), the location (situational), and the local culture.

In discussing the value of a personal portfolio site or tool, one student stated that, “I shared a lot of my work and my calendar so that my friends knew what I was doing and when”, while another commented that maintaining her journal, “will help other people see the same problems that I had and how they can avoid the problems.” These comments outline how the portfolio approach allows students to readily view each other’s work and benefit from that constructed knowledge. A fourth year student discussed how she can, “go to the site and see if anyone else is online that might answer my question”. This underlines not only the benefits of a portfolio collection, but for an aggregator site to act a hub for various groups or sections of students, allowing participants to find each other’s work. Such a site would become even more important for professional teachers who are often isolated in their classroom and who may not have many opportunities to engage face-to-face with their colleagues. Similarly, “If it is an e-portfolio, everything can be shared easily and even students and parents can see parts of the work and materials.” This statement highlights how the portfolio process invites parents and the wider educational community into the conversation about their children’s education.

4.4. The Demonstration of Competency Sphere of Intentionality

Through the effort to compile, collect and curate one’s own materials into a selection of best practices, practitioners also create a repository of shareable materials for the benefit of colleagues and the wider educational community, allowing others to see this work and offer us new and different perspectives. In such ways, the portfolio learning approach helps transform us into a new way of being educators and teachers, not only of students, but of each other. The traditional view of a portfolio as a showcase of one’s abilities becomes not less important, but
rather one aspect of the wider portfolio approach where we are participants in each other’s portfolios. Gergen’s (2009) statement that, “Education in a relational key is critical to the global future” (p. 243) supports this notion. A portfolio approach can help to frame our thoughts under guidelines that are suitable for different audiences and thus facilitate the wider discussion and make more apparent the relationship between ideas. Indeed, “the tradition of individual-centered education is ill-suited” (Gergen, 2009, p. 244) for the 21st century educator. Crook (1994) discusses similar issues, noting that in contrast to Vygotskian views about the social nature of learning, individual centered or student-centered learning activities “obviate” (p. 69) the social aspect of learning.

Through the portfolio approach as discussed in the personal sphere, and supported by a community of inquiry model (Garrison, Anderson, & Archer, 2000), practitioners can transform their traditional portfolio showcase product into a portfolio learning process and approach, enabling the educator to produce numerous showcases depending on the particular audience, thus producing better focused showcases. The ability to communicate with people worldwide allows our community of inquiry as a supporting aspect of the portfolio approach, and within which we interact and grow, to take on global proportions. These various overlapping audiences can then offer greater teaching presence to each other and to us as individual practitioners. Helping all members to provide greater degrees of teaching presence through a portfolio approach gives greater direction to the community and its shared purposes as a whole. The demonstrations of competency also allow other stakeholders to inform and provide guidance to us, not always to teach us, but rather the help us understand their own needs and to then better answer those needs.
4.4.1. Ramaqia project and the demonstration of “artful competency”.

The competency sphere is explored primarily through the experiences and portfolios of the participating principals and teachers. The participants’ initial objective was to design electronic portfolios in an attempt to save time and become much more efficient in the design and compilation of these portfolios. As compensation for the time spent on learning the wide variety of tools employed in the portfolio approach, these groups of teachers were relieved of the necessity of producing the traditional paper portfolio.

All teachers in the Ministry of Education within the UAE are required to maintain a professional portfolio for promotion and professional assessment purposes, comprised of a profile, two sets of competencies - behavioral and technical – and a yearly set of professional goals, built on a selected subset of the competencies. The manifestation of this portfolio varies between education zones. Then, as noted in the documentation for the portfolio as provided by the Ministry of Education, ideally the principal would be able to monitor those goals as they progress through the year. However, in reality, this has proven to be very difficult, mainly hampered by the use of paper-based portfolios which did not have the flexibility and the accessibility that can be provided by the use of electronic tools. In more obvious cases, the principal can observe the completion or participation towards certain goals, but in the case of the Ramaqia Boy’s School, with over 40 teachers on staff, this type of observation was very limited and many teachers would go unnoticed throughout the entire year. Thus, one goal of the portfolio process as envisioned by the school and local Education Zone, and enacted through a paper portfolio process, was unrealized.

Additionally, because the teachers produced paper-based portfolios, which due to the high stakes nature of the portfolio, became very unwieldy through the inclusion of virtually every
document and piece of evidence that had even a remote connection to the annual goals of the individual teachers, the process was more or less broken even though all participants dutifully continued to go through the process. It should be noted here as well that the process itself of what to include was not carefully monitored nor explained, thus contributing to the collection of an overwhelming amount of evidence which was unfortunately unusable.

Through conversations with one of the principals, to be referred to as ‘Principal Amna’, we determined that a suitable project for the schools would be to trial various aspects of the portfolio approach including an electronic portfolio platform. Principal Amna had commented to me that while she thought the idea of a portfolio, including a paper based one was very useful and a process that she greatly encouraged, she was unable to find even one benefit from the process that they were pursuing. From the ruinous expenditure on ink and paper, she was left with portfolios that she could not even lift and carry to her car to take home for the night. She even joked that she needed to buy a wheelbarrow for the school in order to move the portfolios around the office. Unfortunately, when I actually looked at some of the paper portfolios, I could see that she in fact was not joking. Additionally, she noted that the process, which she felt should be motivating and a learning experience, turned into a laborious chore from which nothing was really gained. The sheer weight and size of the individual portfolios only motivated other teachers to put more documentation into their own portfolios.

Comments from another principal, to be referred to as ‘Principal Badria”, also noted that while she believed in the portfolio as a useful tool, in the paper format she could not see any benefit since no one was going to look at them. She said that she herself did not want to look at them since the overwhelming size of the portfolios as concrete objects was intimidating. She also added that one of the Ministry goals, as noted in the Competencies section of the literature
review and in Figure 9 was that the portfolio would serve as a tool to support a mid-year review. However, since the teachers perceived the portfolio as a product, this review was not possible as the teachers had not really completed any of the expected collection and curation of documents and evidence.

Herein lies one of the significant differences between a portfolio as a working tool in the personal sphere and a portfolio as a showcase in the demonstration of competency sphere, which will be explored more fully later in this section. In the instance of the personal portfolio sphere as explored earlier, the intentions of the practitioner are driven by internal forces or by an implicit motivation to take advantage of 21st century tools and perhaps save time, be more efficient or achieve other similar end goals. However, the intentions behind demonstrations of competency, especially as practiced in the local schools that participated in this research project, are often driven by explicit or external motivations.

The resulting research project based on the development of professional portfolios as demonstrations of competency was conducted over the course of one school year with a variety of groups, including 10 teachers at the Ramaqia Boys School in Sharjah, United Arab Emirates (UAE). A cohort of student-teachers, in preparing for a 10-week internship at a variety of schools across Sharjah, Ajman and Umm al Quwain, also went through a rigorous portfolio development process in order to help support the professional practitioners that they would be working within the schools. These students were also included in the cohorts of students that participated in the community of inquiry research phase, and hence were very familiar with the skills needed to develop a portfolio and were also familiar with the concept of a portfolio process since they had participated in previous iterations and studies of this process. In the ensuing
discussion, the term ‘teachers’ will be used to refer to the actual participants in this study and to differentiate between them and ‘practitioners’ in general.

Evidence for this stage of the research project comes from weekly observations, feedback from weekly development sessions, artefacts from the range of portfolios, interviews with individual teachers, focus groups conducted at various points through the process with small groups of teachers and the whole group, and the results from a survey conducted in conjunction with the Ramaqia School with approximately 450 teachers from around the UAE, within which the initial 10 teachers from Ramaqia form a subset. As with the exploration of the personal portfolio and the community of inquiry, this discussion and review of the professional portfolio as demonstration of competency will have significant overlap with the other two spheres. It is this overlap that holds much of the social construction of knowledge. There are very few screen shots of the portfolios due to the public nature of the portfolio interface. The participants’ names are spread over much of the sections. A condition of participation in the project was an expectation of complete privacy in their actual work.

In these portfolios, the teachers also used the Mahara Platform for their portfolio development. The features as explained in the community of inquiry section were used for similar purposes in the demonstrations of competency. In most cases, the teachers used the Arabic language for their portfolios and so as a result of this barrier to my ability to read their portfolio content, and thus their intent, much of the research around the use of the portfolio is based on the weekly sessions, interviews, focus groups and general feedback.

Although practitioners in the personal sphere may simply want to prove themselves, in many cases, and certainly in the case of the Ramaqia teachers, their personal intentions are
overpowered by the competency sphere and they become motivated by promotion and external review. The practitioner may be advised by external forces to design their portfolio and contents in certain ways to answer the needs and feedback of their audience. The composition and construction of the portfolio in a demonstration of competency is often, and in certainly in the case of the Ramaquia group, clearly dictated by stakeholders. However, in an enlightened world, the personal sphere and the demonstration of competency sphere construction and uses of portfolios are not mutually exclusive. Principal Amna was very clear in emphasizing that since the portfolio was to be based on individual goals, the content and the format of the portfolio should also be based on individual goals to reflect the individuality of the practitioner. However, the weight of the task overwhelmed the intentions of the practitioners and the stakeholders rendering the intentions of both less valuable.

This project included a significant amount of training in various software tools and social media, in weekly, one-hour sessions over most of an academic year. As noted, these sessions often lasted much longer, especially near the end when the teachers were trying to focus their attentions on demonstrating that they had met their professional goals. The starting base-level of e-skills varied between participants, but all were motivated by the prospect of learning the skills required to make the eportfolio and by avoiding the perceived long hours of toil required in the past to create a paper-based portfolio. In keeping with the general theme of the research, the entire proceedings of the project were kept on a publicly available blog, which also forms part of my own portfolio, and which provides some of the data and evidence for this research. All participants were aware of the public nature of the portfolio project and signed consent forms. Additionally, at regular points through the research project, the public nature of various aspects of the project were discussed and reviewed to ensure that all participants were fully cognizant of
the degree of exposure they had to the public. As will be discussed, one intriguing development was the degree to which attitudes towards publicness and sharing changed over the course of the project.

During this study, one key to the popularity of the platform was that the contents of the portfolio in the form of documents, reflections, images and other formats are ‘embedded’ in the portfolio, not actually stored there, allowing the practitioner to control and if desired, remove access to any section of the portfolio. Such access is not merely an ‘off-on’ switch, but a relatively complex set of variables that can include partial access, view or edit access, timed access and selective access. All of these fine-tunings allow for a greater range of collaboration and construction of knowledge. This characteristic was discussed in the community of inquiry sphere, but deserves repeating here. The professional practitioners in this instance were highly conscious of their time and wanted to be sure of some sense of permanency in their work. It may be argued that although they were unfamiliar with the concept of the time span of discretion as it applies to portfolio development, they were creating a new interpretation of the time span through their efforts to ensure that their work would persist in the tools being offered to them.

The high stakes nature for the teachers of these showcase portfolios pushed the teachers to simultaneously work towards their goals in a collaborative manner yet also caused considerable grief and frustration among participants. That the process was transformative may be demonstrated through the discussions with the principal of the school and sponsor of this project. In one interview about the teachers’ progress conducted near the end of the project, Principal Amna noted that at various points through the project, singly and in groups, every member of the project had come to her and requested that they be released from the project. When questioned
on why they wanted to leave the project, the general answer was that they were experiencing too many different processes and were having difficulty keeping up with the project.

It is interesting to note here that the teachers had a high level of performance expectancy in that they wanted to immediately benefit from the time efficiency from using electronic portfolios and associated tools that was promoted to them in my initial discussions. The tension discussed earlier that tends to separate ideas into dichotomies, is prominent when change is involved, as noted by Wessels and Kotze (2012), who discuss a divide that is created between those who are able to deal with change and those who are not. These participants might be described as early adopters of technology since they did volunteer for the project and were already using technology to varying degrees in their teaching. However the initial ‘learning curve’ that often comes with any new technology seemed to be quite steep for many of the teachers. Nevertheless, focus groups later revealed that most of the participants experienced great pride when viewing their final products. As will be discussed, this pride was promoted to a significant degree by the social construction of knowledge that supported and helped to develop the proper use of the various technology tools that were introduced during the project.

Principal Amna also expressed great confidence in her teachers and great surprise in not only how much time she was able to save but in how much better she felt she was able to counsel and guide her teachers. Hase and Davis (2002) note that there is a general assumption that people will have a better working life if they are able to, or allowed to be “deliberately and systematically involved in their future” (Perspectives and Theoretical Frameworks, para. 8). As noted, the ability to conduct a mid-year review was a goal of the original Ministry of Education directives on portfolios.
Of the participants, 10 teachers at the Ramaqia School felt that they had ‘completed’ their professional portfolio for the year. In these instances, they all acknowledged that one of the goals of the project was to attempt to see the portfolio as an approach and thus as a general set of processes that could help to guide their general practices. Nevertheless, they also felt a sense of completion with their work. This was no doubt influenced by the fact that the school year had come to an end at the time of the interviews and they had already been through their performance evaluations with their supervisor, in these cases, Principal Amna. This sense of completion was also complimented by the fact that their goal for their portfolios, in contrast to my own, was to demonstrate competency. This done, they felt they were finished. This sense of completion also highlights the difference between the intentions behind the personal sphere of the portfolio as a tool for teaching and learning and the intentions of a practitioner who is creating a portfolio as a demonstration of competency. In the former case, the portfolio is clearly seen as an approach and so not something that can be finished. In the latter case, the portfolio is seen as an object, or a project to be started and finished.

The research participants offer numerous examples of these interactions. Several teachers made some striking use of tools such as Instagram to include parents and the wider community into their teaching and learning. In professional practice, the demonstration of competencies is personally a very high stakes issue. Educators must able to address multiple needs among their students, and are expected to demonstrate a wide variety of disparate competencies. The strength of this demand is evident across the school system in the UAE. In the aforementioned survey of UAE teachers, although over 72% of the more than 300 teachers who answered this question believed that e-portfolios were not compulsory, 69% said that they plan to use e-portfolios in the future and 70% said they felt e-portfolios were worth creating. However, 69% noted that they
felt they needed training to be able to develop an e-portfolio. More importantly for a portfolio process, 73% said that they felt e-portfolios will create opportunities for them to incorporate more technology into their teaching.

4.4.2. Discussion of practitioners and demonstrations of competency.

The portfolio approach has been divided into three spheres. In the following section, the final sphere, the demonstrations of competency, will be discussed on its own through the eyes of the teachers for whom these demonstrations of competency were a high-stakes matter. Three clear sets of overlapping processes within the demonstrations of competency have been discerned.

For the teachers, one set of processes centered around their ability to demonstrate that they were meeting their goals and to reflect in their actions and artefacts their ability to respond positively to criticism and feedback was closely linked to performance reviews and that in turn led to promotions, pay increases or indeed simply to retain their position. These demonstrations of competency were heavily reliant on feedback from their immediate supervisor, the principal of the school.

A second set of processes highlighted their desire and motivation to continually develop their skills are a result of the feedback and incentives provided by the principal and the wider institution including the Ministry of Education. The third set of processes surrounds their willingness and desire to share their ideas with each other and help each other to be better. This third section highlights the links between the demonstrations of competency sphere and both the personal sphere and the community of inquiry sphere.
4.4.2.1. Competency.

The portfolio as an object is in a state of constant development and renewal. As the portfolio is developed, the educator is constantly curating the collection of work in order to create ‘curations of you’. As observed with the different pilot groups of teachers, all were keenly interested in each other’s work, but not in its entirety. As members of the different groups, they were able to indicate to each other their particular interests which were then highlighted though the showcase tools available in the portfolio tool. Feedback on these sections then contributed to further portfolio development in a continuous process.

One telling comment towards this process came from Principal Amna. During interviews, she noted that many of the teachers were surprised at how quickly and easily the feedback and review sessions progressed. In previous years, these sessions often took hours per teacher and were to be considered very laborious. According to Principal Amna, the sessions were very difficult for her since they had to be repeated for each of the teachers. In past years she had to sometimes overlook or ignore certain issues because there simply was not enough time to review the work. She also noted that in many cases that she could not track everyone all the time and that there were many instances where she noted that teachers had not performed according to expectations. She felt that if she could have seen what they were doing earlier in any given process or event, she might have been able to intervene at a much earlier stage. This led her to believe that in many ways the system was failing the teachers rather than the other way around. When considering the social construction of knowledge, this aspect of the portfolio approach may be one of the most essential aspects. As noted in the literature review, the Ministry of Education guidelines recommend that principals give intermediate feedback at checkpoints.
through the year. Through the portfolio approach and the integration of 21st century tools, this process was now greatly facilitated.

Principal Amna was now able to review her teachers’ work much earlier in the process. When faced with her teachers’ surprise at the ease of the new process, she generally responded to them by saying, “Do you think I waited until now to see what you were doing?” For her, the ease of reviewing the sheer quantity of work and not only being able to spread that review and supervision out over the school year, but to provide timely support and feedback was invaluable. As with any punishment and reward system from a behaviorist perspective, the reactions to the work are much more effective if the recipient of the feedback can see immediately the context of the feedback. From the interviews, it was clear that many of the teachers were very concerned that the principal knew that they were doing their best to participate and live up to the expectations placed upon them. This concern was a significant contributing factor to the success the teachers had with the portfolio approach. Once they realized and had confirmation from feedback and comments, for example on their Instagram account, they became much more confident in the process.

Similarly, Principal Badria noted that she was quite proactive in her reviews and regularly met with her teachers to review their progress. She did have fewer teachers to manage than Principal Amna, and so more time to devote to the review process. She noted that she was able to give much more specific feedback on the progress and activities of her teachers than previously because she was able to view the activities and portfolio artefacts in the temporal context of their occurrence and so had a clearer idea of the impact of any particular activity. This does not negate the time span of discretion and the need for longitudinal distance to truly appreciate the effects of many activities, but in Principal Badria’s context, she could give immediate feedback and guide
the teachers more appropriately for the next activity. She also noted that the ease in viewing the artefacts allowed for the viewing of more artefacts which in turn opened up greater opportunities for interaction and discussion. Having the artefacts immediately available allowed for more frequent interchanges. The teachers also felt more comfortable to discuss and debate with Principal Badria because the artefacts provided talking points for them to actually highlight in their conversations.

Based on such timely feedback and support from stakeholders and assessors including the school principals and college instructors, participants were able to create curations that reflected the demands of particular assessments. In both groups, feedback from the assessors was regularly and vigorously incorporated back into the portfolio either in terms of personal development on specific competencies, or more simply on the presentation of existing competencies. The ability to see specific curations of work in a larger context that is not part of the curation allows the stakeholders to get a much better understanding of the educator’s plans, goals and reasons for specific actions. This contributes greatly to confidence in the educators and allows for more constructive feedback. The portfolio learning process also incorporated feedback from the school through the goals documents. Yearly goals are set by each teacher in consultation with the principal. By having the a greater and more accessible view of the teachers’ existing skill sets and ambitions, the principals are able to better gauge and influence the future direction of the school through a more focused development of skills. Such quality assurance processes can be greatly influenced in this manner.

When actually preparing artefacts for presentation, the teachers and student practitioners were exposed to a wide range of media as they tried to determine the best tools for particular artefacts and competencies. In interviews, the participants related the time spent to determine
first the best way to represent the goals that they had set with their supervisor and then to determine the media to use to demonstrate that goal. The process usually began with a discussion of how each of the specified competencies as provided by the Ministry of Education and highlighted in Table 10 could be framed into a goal.

Table 10

<table>
<thead>
<tr>
<th>Core Competencies</th>
<th>Customer Focus</th>
<th>Delivery Focus</th>
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<td>Results</td>
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<td>Resource Management</td>
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<td>People Focus</td>
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<td>Teamwork / Networking</td>
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<td>Leadership</td>
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<td>Competencies</td>
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<td>Driving Change</td>
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<td>Strategic Thinking</td>
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The teachers reported that they spent considerable time to determine just the exact media to use to demonstrate their various competencies. As has been seen repeatedly, this again is an example of, ‘the media is the message’. In these example, the media in itself is a demonstration of competency as far as it shows their ability to use media to display various messages. They were also very clear in their descriptions of how they wanted their work to be perceived. As was discussed in the personal portfolio sphere, the teachers were highly cognizant of the non-reflexive potential of the portfolio. They were aware that others would view their work without them present to explain the various features of processes involved in the work and so went to great efforts to ensure that the work represented their intentions as clearly as possible.
From the focus group discussions with the practitioners, I was able to devise a general process of determining the correct media to fit the competency and goal. Figure 38 shows the process of working within a particular competency to determine how a goal fits with the competency. From this, the teacher then picks the best media to house or otherwise show off the evidence.

Figure 38: Demonstrating a competency.

The teachers developed a very clear set of rules for demonstrating the various goals. Firstly, they determined that the evidence for any particular goal must not be dispersed through the portfolio. Stakeholders must be able to see the competency, goal, and evidence all at once. This highlights the need for the correct or best media for this purpose. The teachers were very concerned that they were able to demonstrate how they had applied the goal to their work. They seemed very conscious of the fact that they were not just demonstrating a competency for the sake of demonstration but that there was a very ‘real-world’ consequence of this demonstration. They were anxious to show this applicability of their work to the quality of their teaching and learning. They clearly felt that the clearer the demonstration, the better and more effective would
be the demonstration, and hence they would receive a better review or feedback. Given the high-stakes nature of demonstrating these competencies, it is very interesting to note the attention to these details.

It is also important to note that this process was socially constructed over a period of time through the development of associated skills. They were determined to make the process easy in order to focus on the demonstrations of competency and not on the media. They were clear that the competency determined how the media would be chosen and used, and that the media would not determine how they demonstrated the competency. From these discussions, the practitioners exhibited remarkable growth in their skills. In a positive feedback cycle, the more adept they became at manipulating the media to their goals, the more motivated they became to learn about the media tools in order to give themselves better options for displaying their competencies.

They were also very careful to indicate that there is a separation between the competencies, the goals and the evidence. Figure 39 show how they worked within a hierarchical process to set goals, plan actions to reach the goals and then determine the required media to best highlight or showcase the evidence. Their focus was on demonstrating how they had reached a particular goal through the best combination media and tools. In many cases, this selection was limited by their ability to use 21st century tools and forms of media. They also felt that their ability to organize their work was in itself also a demonstration of competency even though this particular skill was not specified in their general competencies. There was a certain overarching sense of responsibility that to truly demonstrate ‘competency’ as a general description of themselves as competent practitioners, they had to reach an overall clear, organized portfolio. To this end, as will be discussed shortly, they were greatly inspired to learn new tools to be able to better highlight their work.
The teachers at Ramaqia were also very interested to discuss the principal and their vision of how she could and did monitor their work and provide feedback. Given that these portfolios are demonstrations, there of course needs to be an audience for whom to demonstrate competency. Much of this discussion automatically deferred towards discussion of how the principal could leave feedback for the teachers. Although the idea of feedback is central to the entire process of the demonstration of competency, much of the literature on the topic points toward the process being mainly one way. In the case of the paper portfolios, the principal had noted that she often only gets to give feedback to many of her teachers in a very limited manner and very seldom if it all over the course of the academic year. Casual feedback and generic feedback is easy to give at any time, but more meaningful feedback based on careful consideration of a body of work is more difficult to achieve and with the paper portfolio, often
impossible. It was very interesting then to see that the teachers seemed to be focused specifically on this aspect of the process.

The use of pictures to capture evidence of specific types of activities in the classroom was not new to the teachers, however the media now available to them to share and manage the pictures was something of a revelation and a revolution in the process. One discussion centered on the use of Instagram not only to capture evidence of the activities, but seemingly more importantly, they were focused on how Instagram could allow the principal to leave better feedback for them on their activities. This speaks highly of their professionalism and their desire to build their own competency and also speaks highly of the review process itself that it allows the teachers to think in this manner. This is another example of the powerful ability of the portfolio approach to support this level of co-construction of knowledge and the ability of the teachers to employ the principal as a mentor by providing a means for her to give more timely advice and feedback, or indeed any feedback at all as compare to the paper portfolio where they generally never received feedback except for the final review.

As a result of the individual success many teachers had with these various tools, groups were formed to investigate how to use the media more effectively, both for individual purposes and for group purposes. This can be seen as a form of the institutional portfolio that began to emerge from the portfolio approach. Certain teachers were deputed to capture school wide events and post images and descriptions to social media including Twitter and Instagram. These deputations had a motivating effect on the teachers for two reasons. In the first instance, the images from the events become further proof of their own participation in that they could share the imagery with their colleagues and put some of the artefacts on school social media sites as well as include them in their own personal portfolios. In the second instance, one teacher at
Ramaqia School pointed out to me that she had been entrusted with being the photographer at school events. She felt honored that Principal Amna trusted her sufficiently to take on such a role and commented on how much effort she put into this task in order to show her appreciation and that she deserved the trust.

Some teachers questioned the process and wondered how Principal Amna could provide continuous feedback. The fact that she was doing it seemed to be a different question, rather than the other side of the same question. It may be that the novelty of the process for some teachers was rather a revelation that they were being observed from afar through these means. One issue with the use of these 21st century tools as will be discussed shortly is that it leads to a wider public exposure, which I would argue is a good thing, but for many is not. And, it might be argued that their use demands that the teacher participate in a lifelong learning.

In a discussion that quickly turned into an analogous discussion of the teacher and her students, some of these teachers wondered for example, how does the principal follow 50 teachers? The question quickly became, how does a teacher follow 60 students? The answer to both was found in wide ranging discussions of media and 21st century tools. One teacher in particular was quite adamant that the principal could not follow all of them all of the time and so this fact, to her, seemed to render the portfolio process less effective. As I watched, the rest of the teachers in this particular focus group worked through a number of the arguments that I might have put forth to support the process. One teacher stated bluntly that, “this was the principal’s job, to make sure the teachers were doing their best for the school”. Another noted that they were working through a process and so they were not expected to put everything all of the time. What they were expected to do, was to work through their goals and focus on what they thought demonstrated progress towards their goals. In an insightful point of social construction
and distributed cognition, one teacher noted that, “if you can put your goals as you go along you can make the principal’s job easier and then you can reach your goals easier, especially if you get feedback earlier”. Another teacher was able to tie the portfolio process to the successful use of media, noting that these tools “allow us to more easily focus on specific goals because we can manage the data and information for the goal more easily. Then the principal can see our goals more easily and earlier and then give better feedback.” At the end of this point of questioning, there was a clear consensus that the portfolio approach and tools greatly facilitated the demonstrations of competency and made the portfolio process as envisaged by the UAE Ministry of Education as a tool for professional development more achievable.

The teachers felt that the portfolio process was a prime motivating factor for them to learn new tools and skills. As they sometimes felt strongly encouraged or even forced to learn new skills to develop their potential and to demonstrate their abilities more thoroughly. As they began to see demonstrations from their colleagues, they became increasingly aware of the potential not only to display their competencies, but to develop their competencies in directions previously unknown. Many noted the satisfaction of simply learning new tools which came after being ‘forced’ to do so, perhaps against their will. Principal Badria stated that in her opinion the development of new skills among her teachers was justification enough for the portfolio approach. This sentiment was echoed at the Ramaqia School when one teacher noted that, “Using the portfolio to display goals allowed us to develop skills as sometimes we are forced and motivated to learn some new skills to make our work stand out. The skills themselves are enough to make the work worthwhile in terms of the help to my own work and improvements to my way of working.”
4.4.2.2. *Lifelong learning.*

Following on from the comment in the previous section, Glastra, Hake and Schedler (2004) consider lifelong learning as essential to professional life in the 21st century. They note that with an increase in the ability to work collaboratively comes an increase in individual responsibility for one’s own actions. Such responsibility, while not new, is becoming increasingly noticeable as physical barriers of distance between individuals and groups break down. Conversely then, “rather than social or moral conformity, individual distinction is the new postmodern imperative” (Glastra, Hake, & Schedler, 2004, p. 292). They ask how professionals can “learn to deal in critical and innovative ways” (p. 303) with the changes being faced in the 21st century professional world. To participate in such circles as equal and distinct members, we should inspire confidence in ourselves through the presentation of our work. The concept of ‘biographicity’ (Alheit & Dausien, 2002) loans itself to portfolio learning. A resume or CV has always been a portrait of one’s professional life, and now these features can be embedded into a portfolio as demonstration of competency.

However, in terms of lifelong learning the biographical nature of a CV becomes more evident as traditional lines between professional and personal life become increasingly blurred. Social networking, as an example not only keeps an educator in contact with their students for a much greater percentage of the day, but also presents a larger portion of the educator’s life and activities to other stakeholders and colleagues. Instagram, as will be discussed, allows the educator to bring the parent into the classroom, or conversely allows the parent to see the classroom at their convenience at home.
Vanwing and Notten (2004) also discuss the concept of biographicity as a means of detecting the needs of the practitioner. Going beyond the more traditional view of portfolios as outward demonstrations of competency to stakeholders, the portfolio approach provides greater opportunities for inward interactions and feedback from stakeholders to practitioners. Practitioners gain a controlled method of exposing to stakeholders where their own competencies need to be developed further.

We are all lifelong learners regardless of our awareness or acknowledgement of this fact (Bouverne-De Bie & Piessens, 2004). Lifelong learning as a focus of research is gaining prominence as a consequence of globalization and the spread of ICT and technology (Glastra, Schedler, & Hake, 2004). Many institutions now require their workforce to be much more flexible in terms of their capabilities and styles of work. In educational settings, issues surrounding the increasing reliance on technology include concerns from student-teachers who tried to use portfolios for reflective thinking while at the same time trying to develop the skills needed to do so, and ended by doing neither well (Strudler & Wetzel, 2008). From an educational technology standpoint, educators need to both learn the technology, and learn the application of the technology to their work. A portfolio approach can provide a context for this application.

As each member of the groups involved in the study became more familiar with their own needs, they developed a greater sense of community as evidenced from discussions, anecdotal evidence from the weekly meetings and classroom instruction, and reviews of the individual portfolios. Many of the members were able to contribute a greater teaching presence to the group, complementing the social and cognitive presence already present. These contributions
were most evident during the face-to-face meetings which often resembled collaborative workshops.

One example, which highlights the overlapping processes involved in the portfolio approach and the demonstrations of competency, was the ability of members to share their success in integrating tools further into their portfolios. While these activities are best described in this sphere of the portfolio approach, there are clear links to the communities of inquiry sphere as well through the sharing of ideas and feedback to each other for common purposes. The two-fold learning that arose from these successes included both the skill of using the tool and integrating it into the portfolio, but also, and perhaps more importantly, new ideas about the use of the tool for educational purposes. During one instruction session, a math teacher in the Ramaqia group successfully embedded her Instagram (Instagram, 2014) photo stream into her portfolio. At first, the group discussed the process of embedding the Instagram feed, with the math teacher leading the discussion and offering her teaching presence. However, the group then quickly switched to discussing the use of Instagram as an educational tool. At this point, members of the group, by directing the discussion through specific questions on the actual content of the Instagram feed, also demonstrated a depth of teaching presence. The portfolio showcase collection of work provided a starting point for a discussion about an educational tool, giving a context for the work and offered the math teacher valuable feedback on her use of the tool.

Subsequently, the use of Instagram became the subject of several capstone research topics by my undergraduate students on the efficacy of social media to allow parents a greater participation in the academic lives of their children while at school. The initial use of Instagram arose as a demonstration of competency. Following my example of photographing board notes
for the future reference of my students, some of the Ramaqia teachers began to use Instagram for a similar purpose. In their case, they wanted to show their principal that they were doing their best to provide extra support for students by tracking classroom activities on the board and offering further support to weaker students through enhanced instructions or explanations. This use quickly transformed into picture of students completing activities, which were intended again to show the principal what they were achieving in the classroom.

In the following weeks, another teacher took the Instagram tool one step further and created a project in which her native Arabic speaking grade 5 students each created a backpack of objects. They were then video recorded individually, with parental permission, taking objects one by one out of their backpacks and describing, in English, what it was and what it was used for. The teacher then made 15 second clips of each student and put them on Instagram for their parents and other community members to see. The response she had was overwhelming as evidenced by the comments left on the video clips. Of course, she also ended up with a significant artefact which she could include in her portfolio as evidence of her students’ development and of her own teaching technique. The students were thrilled with the result as well since they were able to show their parents how well they could speak in a second language, and the teacher received lots of feedback from her community of inquiry in terms of changes or variations she might try for the next iteration of the project.

When students began to ask to see the Instagram images and videos and then told their parents about this, the parents became intrigued by the activity and left comments on the Instagram photos. Within a few weeks, the practice had spread to all of the teachers in the Ramaqia group and was taken by the student-practitioners to other schools that were participating in the portfolio work. By the second semester of the academic year when the
student practitioners were commencing their own capstone research projects, at least three chose topics related to the use of Instagram as a means of improving teaching and learning.

One such project concerned itself with the use of Instagram with kindergarten children to increase their exposure to upcoming topics in the classroom and to provide parents with information on how the parents and children can interact with the topic at home prior to that topic being discussed in class. The feedback and comments received from this project were overwhelming. The students loved being able to show their parents the work and then when they came to class, they were bursting with ideas about the topic from their parents. The comments left by parents on the Instagram photos over the 10 week span of the capstone project indicated both a great interest from the parents in the topics and suggestions for further topics. These comments also indicated that the parents took great interest in the forms of interaction and were very willing to tell the teachers via the Instagram photos either what they did with their children or what the next form of interaction should be. Such parental involvement was unprecedented in this school.

The link from Instagram to portfolios may seem tenuous at this point of the discussion, but nevertheless they are still significant. Beyond the fact that the whole project began through discussions over how best to demonstrate certain forms of competency, the Instagram photos are embedded in the portfolios of the teachers. This highlights the benefits of using cloud storage. Parents and teachers can access the Instagram images from their smart phones or laptops eliminating the need for the portfolio, but the portfolio is what allows the teacher to link the Instagram feed, not only as a demonstration of competency, but now as an activity from the personal sphere. It will also continue to serve as a record of the work being done.
Similarly, a discussion about how to best present evidence for the ‘artful competency’ the teachers hope to demonstrate through their showcase portfolios led to a greater presentation for all teachers. A discussion arose about how granular the demonstrations should be – should they link a folder of documents or a single document? Should they link several smaller documents or one larger document? By being able to actually view examples that the various group members had showcased, they were able to compare the styles and arrive at a rather complex combination of documents and folders, which was eventually presented to the school Principal for her approval. The arrangement is one that could not have been predicted or preplanned, but arose from the situational and contextual arrangement of examples.

The concept of associated skills in portfolio development arose from the development of skills seen in the Ramaquia group. Many of the teachers, by their own admission had very limited technical skills and thus even more limited knowledge of the educational value of these various tools and skills. Once the group had developed a range of embedded tools, a review of the student portfolios helped to derive the following collection of skills, as shown in Figure 40.
Figure 40: Associated skills of portfolio development.

Some of these skills are purely technical in nature while others are much more demanding in terms of the cognitive and relational skill required to produce quality artefacts. The development and employment of such skills during the portfolio development contributed to numerous examples of ‘spontaneous innovation’. In one case, while exploring the technical side of Google Drive in order to embed ‘goals’ documents, several of the participants spent considerable time over a period of weeks exploring the sharing features of the cloud document library. Once they made a number of independent discoveries about how the cloud library worked, they began to ‘invite’ each other to view their work. In this case, to invite someone
means to allow them access to your cloud stored documents. The collaborative potential of these tools was such that they immediately could see the value of the portfolio interface as a means of allowing each other to not only share the work, which may be seen as merely one step in the overall process, but to find work to share in the first place. One point that was raised by the participants was that in many cases, the participants were surprised to discover the value that other colleagues put on their work. They may view a particular document as an unfinished piece of work, where another colleague would view that same work as highly inspirational and even if they did not use the work contained therein as it was, the inspiration was invaluable to co-create new knowledge in the form of new teaching practices.

As a side benefit to this work, the faculty then applied their new skills to the school document administration system to develop an online filing system for both academic and administrative documents including lesson plans that previously had been shared only in hard copy. Certainly, the cloud storage system was designed for purposes such as these, but this cohort of teachers made their own links between processes and initiated a sharing process suited to the particular needs of that environment. This use also stretches somewhat beyond the individual portfolio approach as a demonstration of competency, but speaks to the community of inquiry sphere of the portfolio approach in that the teachers are required to complete administrative forms and documentation regularly. Displaying these documents in an accessible location and with examples and reference documents stored in cloud libraries, the concept of a program or institutional portfolio arises.

As with the innovations using Instagram, another time-saving process evolved out of the portfolio approach and the use of cloud storage at a neighboring school. The attendance procedure at many schools is quite laborious and fraught with opportunity for mistakes. The
principal of the school had approached me and one of my research students to discuss how the portfolio approach and the cloud storage tools could be leveraged to save time and make the process more useful. Absenteeism is an issue at many schools and in a recent, highly publicized incident, a student went missing only to be found dead on a school bus that had been parked in the full sun. The attendance procedure at this school is very lax and it is not unusual at many schools for the existing process to take more than a day to report a student absent. In fact, at that school and with many schools, parents are not even notified until a student is absent for more than a day (Carroll, 2014). In this example, we reviewed the existing procedure, and then recommended that as part of a school portfolio of documents and administrative document library, we should develop an attendance spreadsheet for all students based on their class. The teachers could then take attendance using the cloud-based spreadsheet which would immediately update in the school administrative library. The responsible person could then very easily flag missing students without having to actually look for them. The document was designed to allow for automatic notification of absent children. In this case as it was a small school, the parents could then be called individually. At large schools, different methods could be used for contacting parents including email or instant messaging.

Yet again, the purview of this particular example goes beyond the demonstrations of competency which were the original intent, but yet the use of the tools was inspired by the portfolio approach and access to the documentation could be through an institutional portfolio of documentation.

One solution offered by a portfolio approach is that artefacts can be used for multiple purposes including multiple assessment purposes. This in itself presents efficiencies in that practitioners are able to see bigger or higher level connections between instances of their work.
This lends a sense of integrity (Kolb, 1984) to the work. With a greater skill-set than the Ramaqia teachers, the student-teachers were able to create curations of their work to serve a variety of assessment requirements for different teachers. These different curations overlapped and some of the work was included in more than one section. From the assessor’s perspective, having different curations available on the same profile, and being able to scan the curations that were not so relevant to a particular assessor or stakeholder nevertheless gave the whole work a greater context by relating the individual components more completely to the totality of the work and to the ‘biographicity’ of the practitioner who created the collections of work.

The goal of the training sessions and ultimately of the process is to motivate teachers to be self-determining in their own learning and development as well as to invite them to share their ideas with each other and count on each other in the learning process. Embedded within a portfolio learning approach is a heutagogical approach (Blaschke, 2012; Kenyon & Hase, 2010) to lifelong learning. The central tenet of heutagogy is that the learner becomes more aware of their own needs and thus develops a greater motivation and becomes more self-determining in what they want or feel they need to learn. The community of inquiry that arose from the shared purposes of the portfolio and within the confines of associated skills for assessment and demonstration of competencies pushed each member of the group to further examine their own needs as they benchmarked themselves against each other. The training sessions for portfolio development followed an andragogical approach which draws on the rich experiences of the adult learners - the teachers. While both the Ramaqia group and the student-teachers participated in training sessions on the use of the tools, the demonstrations of competencies were discussed openly, with all members able to provide meaningful examples of what they actually did in the classroom or institution to demonstrate a particular competency.
McLuhan (1964) notes that the myth of Narcissus helps to explain why people are “fascinated by any extension of themselves in any material other than themselves” (p. 45). It is intriguing that in both the common misinterpretation of the myth and the actual interpretation provide very strong support for why the portfolio approach appeared to be so successful. In the common misinterpretation, Narcissus saw himself reflected in a lake and fell in love with himself. This might help to explain why people like to see themselves represented in various media, and perhaps explain the recent popularity of the ‘selfie’. However, the actual interpretation is that he fell in love with what he thought was another person or being. The fact that he did not realize it was his own reflection means that he was unfamiliar with the concept of a mirror. This interpretation loans support to the fact that many of the participants enjoyed looking at their colleagues’ portfolios and were inspired to make the most of their own portfolio efforts to have something similar to show off. A shared comment from the Ramaqia team noted how proud they felt when they knew that others were viewing their work. It may be that the eportfolio as a form of readily available media makes the practitioner much more visible than previously possible. The fact that the practitioner can put themselves out in the public eye and get feedback, especially positive, adds an element to the portfolio that transforms the process and the practitioner into a more reflective act and person.

As the group began to be more comfortable with the process of demonstrating their work through the portfolio, they also began to use their profiles as tools or perhaps an interface for their work with their students and with the wider community. This is an area of overlap with the personal sphere.
4.4.2.3. Sharing.

The notion of using the portfolio to share work between colleagues was also very strongly debated and tested with the professional practitioners in the various schools that participated in the research, including the Ramaqia School. The notion of sharing work clearly highlights an area of overlap with the community of inquiry. However, there was a sharp distinction between the openness towards sharing among the student practitioners who at points were being graded on their ability to share, and with the faculty who had a greater stake in displaying their own competency, especially when part of that display might be in relation to that of others. When the element of competition is introduced without the proper support from exposure to the community of inquiry model, the attitude towards sharing changed dramatically. Teachers at individual schools were in many cases quite adamant that sharing within the school was not only acceptable and expected, but even required.

However, this attitude was not always the same when discussing people from outside the school community. The community with which the teachers were willing to share materials, commonly in the form of word documents and presentations, was very clearly delineated. There was an expectation of some form of other contact that seemed to be required first. One teacher commented that, “if we have not seen the other school first, then we cannot share our work with them”. The teachers themselves were not quite aware of what they expected or in what form this contact might take, but nevertheless there was a requirement that members of the community had to have a recommendation of some sort. They also noted curiously that having the portfolio as a tool that they could show someone, either through the laptop or through a mobile device such as a smart phone or tablet allowed them greater confidence when approach new or unfamiliar colleagues at professional development days or conferences. To have talking points readily
available and to have the breadth of talking points as were collected and curated through the portfolio gave a greater sense of professional self to many.

In all cases, the teachers felt that seeing other teachers’ work was very important. They commented about how much they learned from each other by viewing their style of work, and the content of their documents. This interest in others’ work also had a community aspect to it. Not only did they get a sense of what others were doing, but they were keenly interested to see what other schools accepted as standards of work. This perhaps came from sense of benchmarking themselves against other communities, but it is very intriguing that the sense of curiosity towards the other schools arose from individual teachers rather than from a community sense or from community leaders. At each instance the curiosity was between one person and another person’s work. One teacher commented that she wanted to know that the work was there “at the moment when I want to look at it”. This seems to come from a desire to standardize their work, and have the confidence that comes from such benchmarking. However the attribution of greater significance to that work was common. It is not clear that this attribution was misplaced, however it is clear that the significance attached was real for the practitioners.

It is also clear that for the practitioners, this was a positive development in their use of the portfolio. As their connections grew and their colleagues placed more work ‘in full view’ of each other through their shared libraries, there may have been a progression towards some form of social saturation due to what Gergen (1991) may call the “expansion of inadequacy” (p. 76). However, they indicated that they in fact learned from this access and were excited to have the opportunity to normalize their work. The sense of accessibility was clearly both ways as well. Practitioners were clearly pleased to see other people’s work and expressed the sense that as they showed their colleagues their work, the utility of being able to download the work was clearly
reciprocated. Many of the participants noted that colleagues who were not participating in the study were so pleased to have access to the wider range of work and to see that these artefacts do not have to be buried in their larger body of work, but that these collaborative tools made their work so much more accessible.

It was very interesting to note as well that the practitioners were concerned from a professional point of view that while they felt the sharing should be both ways and that all colleagues should be willing to share their work, they did note that it was the obligation of the practitioner to make sure their work was available for sharing by others. It is doubly curious as well that there was so quickly established a fairly comprehensive set of protocols for working within the portfolio process and the actual online site.

In the case of the portfolios themselves as artefacts, many of the practitioners claimed a great sense of pride that they were the source of someone else’s comfort and the object of others’ searches. The notion that someone was actually reading their work and leaving comments for them was highly gratifying. The concomitant sense was that those people who did look at your work should make every effort to leave behind a comment, even if only to let you know that you had a visitor. A Ramaqia teacher stated that it was “not a question of do we share and get feedback, but they must give feedback. I want to get better and better and this is the way to do that”. This comment highlights two aspects of the social nature of the work. Firstly, they were very concerned that the feedback was given. I have encountered this phenomenon previously (Leslie & Murphy, 2008) and cite a student who claimed that writing her journal entries and not getting any feedback on the entries was like “life without water” (Social Presence). That someone would actually use their work was an even greater success and all participants claimed that they would be proud and happy to know that their work was beneficial to another person.
Secondly, the Ramaqia teacher was instinctively noting that we learn socially from each other and that in fact for her, this was a primary source of her learning and development.

While perusing others’ work, many also said they felt a sense of trespassing and that somehow they felt it necessary to tell the other person that they were looking. This form of reciprocal professional respect is not surprising since we would hope that it is practiced in other areas of one’s profession. However, it is interesting since it arises from a potentially anonymous situation. The individual practitioner can peruse others’ work through the portfolio system without needing permission and without the other person even knowing that they are being observed in some sense.

The teachers shared the feeling that if someone has put work on display in their portfolio, then through this act they have also given permission for others to visit, look and possibly download that work. However this again is an instance where the feedback from the visitor to one’s site is so important. There was an overwhelming and perhaps very gratifying sense that this portfolio approach was a means through which to improve their own skills and competency. It may be in this instance that they believe that since they are going to go through a portfolio process every year, and indeed that have been going through the process for many years already, they have a strong desire to make the most of the challenge. It may be viewed as an opportunity to be the best that you can be. The opportunity to get such arrange of feedback from like-minded individuals can be overpowering.

From this realization and acceptance of the process came a motivation to make their work more accessible. In a positive feedback loop, the sense of feedback and a chance to better oneself motivated the teachers to increase the chances of getting this feedback. The process of making
their work more accessible included organizing and labelling it much more clearly. Other examples include the use of social media. Practitioners were very keen to make the most of features in the various social media including Instagram for example to ensure that their audience was able to understand the point of the image or media shared. A teacher commented, “I want them to see the process of my work and I want them to see it better the one time. This means I must be better at my one post than putting five posts”. They commented that overall they wanted to improve their documentation skills and use the wide range of skills more effectively. One teacher in particular was very concerned not only that colleagues could find the work and be impressed by it, but that they were able to appreciate the processes involved, including preparation, curation and presentation. The end product of sharing the work was not enough. This comment returns us to the demonstration of competency and the idea that the demonstrations themselves are indications of competency, or in other words, that the medium is also the message.

Discussion of the potential for sharing also included the necessity of making sure the process was easy for others who were not participating in the project to follow. Similar to the desire for all members of the community to be able to share their work, the teachers were very concerned about the ability of their colleagues to be able to find and download their work. They were aware of their ability to control access to their work and to control the range of access from viewing only to downloading to editing the original documents. However, feedback from their colleagues who were not on the research project indicated that further training was needed for these teachers to fully access the work.

One issue that arose out of this discussion was the need to receive almost continuous training. Several teachers noted that rather than feel gratified, they felt intimidated by the sheer
amount of training they had completed. They were concerned about how they might be able to transfer this knowledge to their colleagues so that all could benefit. One request was to simply make everything easier to use. This particular discussion is very difficult to respond to since there needs to be a willingness on the part of participants to learn. They had indicated this willingness over the course of the project which spanned an entire academic year. However, it may be a case that they themselves were still in the process of reflecting on their work and had not fully digested the import of their work and the knowledge they had acquired. This issue may be part of the notion of the time span of discretion that has been discussed at various points. The teachers need time to see how their skills reflect in their work. Often this noticing of development needs to be done in comparison to colleagues who act as a benchmark to their own development.

A final discussion of sharing work centered on the idea of the portfolio as a community portal. This of course is a central tenet of the portfolio approach – teachers must be able to find each other and find each other’s aggregation of work. The overlap here with the personal portfolio is quite striking. In the case of the personal portfolio review conducted on my own work, the portfolio itself acts as an aggregator of work, however my portfolio stands alone outside of any other connected community. There is free and open access to it but only if you have the address. With the practitioner group, they were quite adamant that the community aspect was essential to the process and felt that the ‘double aggregator’ effect was far too important to ignore.

Conversely, they also insisted that they must have their own ‘web sites’. When pressed to determine what they meant by this term, they were vague. However the functionality of the Mahara portal seemed to provide much of what they wanted. Nevertheless, there seemed to be a
personal element to their request for a web site that the Mahara did not fulfill. I have noted this
desire before among study participants (Leslie & Murphy, 2008) to be able to personalize the site
enough to make it distinctively ‘theirs’. This desire seemed to be in conflict with their desire to
be a member of the community. They were left with a rather existentialistic question: How do we
know you exist?

5. Conclusion

5.1. Transformation through the Portfolio Approach

Freire (1998) concludes that the practice of Education is a “permanent exercise in … the
development of the autonomy of both teachers and students” (p. 128). The portfolio approach
aspires to promote the freedom all those engaged in their own pursuit of lifelong learning to seek
out new ideas and to transform themselves. In this instance, by using the word freedom, I hope to
convey the idea that the practitioner is being given permission to explore their own ideas and to
grow with their institutions and communities. In my many years as an educator and practitioner,
I have found that my peers and students are often hemmed by the fear of offering unwanted
advice, or perhaps worse, offering advice that does not fit the wider context of the recipient’s
professional life. They are also often directed by their institutions to participate in training and
development that is not suited to their skills or their own aspirations. If stakeholders cannot
clearly see where a practitioner’s competencies lay, they cannot advise or suggest future
directions. The processes being put forth in the portfolio approach are based on the expectation
that we build our worlds together and that we embrace the relational construction of our ideas.
We are given permission, for example, in the communities of inquiry and the concept of teaching
presence to question our peers and to drive them forward with our questions. By highlighting the
processes by which they can do this, we can encourage all to feel free to question each other and by extension to question ourselves.

By examining the approach through the three spheres outlined in this research, and three associated questions, I have attempted to provide a series of non-linear, overlapping processes that allow the practitioner to be more efficient, more effective and thus gain greater freedom and time to pursue their own epistemological curiosities about the world in which they live and work. The portfolio approach lends itself to the practitioner and their on-going work from the perspective that the world of education is ill-defined, enabling yet constraining, complex and fraught with opportunity for disaster (Jacobsen & Spiro, 1993; Freire, 1996; Freire, 1998; Wortham & Jackson, 2008). The approach offers a means to make sense of one’s world and be able to share that sense with others.

5.1.1. Personal sphere.

My first question was inspired by McNamee (2004), and asks, what are the range of skills and processes that will allow practitioners to present their own unique voice to their community of inquiry and their stakeholders? This question provides not only a direction for the personal sphere of the portfolio approach, but offers a telling glimpse of the interaction between the personal sphere and the community of inquiry and demonstrations of competency spheres. In my experiences, by approaching my own work through the medium of the portfolio as described in this research, I have put myself in the position of being able to share my work at the touch of a few buttons with colleagues, students, stakeholders and occasional workmates at the various schools I visit throughout the academic year. Thus, my form of practice in the portfolio approach has provided me the means through which to start collaborative relationships with these diverse
groups of people. Should they choose to also pursue such an approach, we would both be the richer.

The relational potential of sharing our work through this approach is greatly strengthened through practice. While practice does make perfect, in this instance the value of the practice is the experience of learning about ourselves through the interactions and reactions others have with us actively through our own interpretations of our work as we discuss and share the contents of our portfolios, perhaps most often with our students, and passively as others peruse our work silently and from afar. The concept of the time span of discretion helps to illustrate how the practitioner must gain the experiences of both being a practitioner and of pursuing the portfolio approach before they may really begin to understand the power that arises from understanding yourself from your own perspective and from that of others’.

From these interactions supported by an intentional presentation of our work and the resulting feedback and insights, we can grow to understand and accept the ‘diverse voices’ with which we are constantly surrounded. We may come to understand that sometimes, the best way to do something is ‘my way’. We also may come to better understand that to others, our way of doing things is merely one of the ‘competing ideologies’ that exist in our relational world. In other words, we can be more accepting of the ‘opposing traditions’ that those around us may hold. We need the time span that comes from seeing that even in our own practices, sometimes different actions still may result in desirable outcomes.

I argued earlier that the portfolio approach can create the conditions in which we can pursue what Freire (1998) labels “critical learning” (p. 33). In the personal sphere, the critical learning starts with ourselves as practitioners who are trying to understand our own ideas and
reflections of the world. If we are to understand and accept others’ differing ideas, then we must first understand our own.

Through the time span of discretion, we can also see that a series of narratives begins to grow as we compile our work, share with our students and colleagues and get feedback on that work. The portfolio approach allows us to see our own narrative emerge from our work. As we present our work, edit it as a result of feedback and comments from our audience, we build a narrative of our own growth. The very notion of the time span of discretion began as a business concept and through repeated discussions with colleagues and students over a period of time, a clearer picture of how it can help to explain the portfolio approach emerged. As I worked with the time span of discretion, the ill-defined nature of the concept changed into a narrative that allowed a sense of growth and transformation, which then facilitated a greater understanding by my students and colleagues.

When considering the concept of narrative more literally as storytelling, the portfolio approach again facilitates its development. Having this range of content and materials readily at hand, especially after a lengthy span of time resulted in a considerable amount of materials, I have been able to form much more powerful narratives to go along with the concepts and ideas that I am trying to explain or convey to my students. The power of the portfolio can bring the larger picture of how often diverse and disparate ideas relate to each other and how we relate to the ideas and to each other through these ideas.

From these greater narratives also emerges a greater sense of our own identity as a professional. The distance between us and our work is essential to developing a more reflective approach to our practice. Schon (1983) discussed the issue of how do we provide evidence of the
‘artful competence’ that we display every day in our work. One way of providing this evidence is through a greater array of narrative. In discussions of competency and apprenticeship, we have seen that various professions may rely on the collection of case studies that allow them to build a bigger picture of how they should react in new circumstances. The reflective practitioner can build these collections of their own practice through the portfolio.

5.1.1.1. Community echo.

One interesting concept that arose out the year-long project with the school was the concept of ‘Community Echo’, a term coined by one of the project participants. The concept provides an interesting connection between the demonstrations of competency and the personal sphere of the portfolio. When discussing the idea that many people might be viewing our work and gaining access to it through the various media that we can employ to share the work, the participant noted that she started to receive feedback from community members whom she was not aware were looking at her work. Some of the feedback was in the form of invitations from local companies to come to the school to offer workshops. Other feedback came through the various social media she had embedded on her portfolio, either offering advice or asking for more information.

As the community members, including many parents and others that she would not normally have considered part of her particular community, were drawn to her various media sharings, they were also exposed to other forms of media on her portfolio that provided samples and examples of her work. She felt very proud that even unknown people were drawn to her work. This type of notice gave her a genuine sense of value because it arose naturally out of
unsolicited responses to her work. This seems to be a significant relational narrative because of the spontaneous feedback that it prompted.

5.1.2. Community of inquiry.

The second question that guided this research was inspired by Gergen (2009), and asks, what processes and skills must we develop as practitioners in order to participate in communities of inquiry and benefit from each other?

This question differs from the first in that this one starts from the perspective of ‘relational processes’ whereas the first question started from the perspective of our own individual practices. In both instances, the practitioner must be open to transformation through interaction with their audience. However the intention of the practitioner in the personal sphere is to share their own ideas for particular instructional and administrative purposes. The audience may be the same and the medium may be the same, but the intention is not. In the community of inquiry sphere, the practitioner is intentionally engaging and eliciting responses from a specific audience as identified through the community of inquiry within which they are interacting.

Any community may be defined as a group of people joined together by a common purpose or goal. One of the defining features of the community of inquiry as defined by Garrison, Anderson, and Archer (2000) is that the community is united by a common educational purpose or goal. The different groups of participants in the community of inquiry sphere research were joined by a variety of goals and so might be seen as belonging to more than one community. One of the benefits of the portfolio approach and the use of an aggregator site such as Mahara is that the communities can be in some fashion self-forming. A simple request to the administrator can allow new groups to form as need be. In fact, the site can be arranged to allow
individual members to create their own groups. This feature is not unique to the Mahara site, and so any aggregator tool that is used for this purpose can allow self-forming groups. Whatever the tool, given that the practitioners are starting from a common purpose already since they are members of the portfolio site, the new groups that are created would have much greater intentionality and purpose.

The common purposes that unite the community of inquiry come from the teaching presence that is found in the community. In fact, in the absence of teaching presence, the community of inquiry loses its purpose and becomes merely a group of practitioners engaged in casual interactions (Leslie & Murphy, 2008). To push a community of inquiry beyond the initial stages of social interaction and the casual discussion of ideas, practitioners need to be given permission to question each other and encouragement to push each other further in their individual activities within the community. In this manner, each member of the community will in turn be encouraged to contribute to the community, and do so more meaningfully. Just as with any face-to-face educational community as might be found in the classroom, many members will need to be encouraged to contribute and overcome latent fears that their ideas might not be valued in the community. Being asked to contribute a specific idea through directed questions from another member of the community is highly encouraging to the community member to participate. The advantage of the online community is that the community member has the luxury of time to consider their answers and make a contribution that they are comfortable with. Any community of inquiry that hopes to be successful, needs to include some means of instructing its members on how to provide teaching presence to their community.

Even without a robust interaction between community members, the enhanced presence of the members through their portfolios of work creates an atmosphere of situated cognition.
Brown, Collins, and Duguid (1989) use examples of vocabulary to show how knowledge of a word often depends entirely on the situation in which it is used. ‘Tomorrow’ can only be understood in reference to ‘today’, which in itself is entirely dependent on the context of its use. Similarly, other forms of knowledge only make sense when presented in a coherent, larger context of use or existence. Through the community of inquiry sphere, practitioners can have access to a great range of situated cognition through their group members. Adding to the power of this community, the concept of social presence and the fact that we strive to make each member feel valued, we can go ahead and contact the members of our community for more deeply situated cognition.

Access to the community allows us to benchmark our work much more easily with other members of our community. This benefit has been noted before (Leslie & Murphy, 2008), however in the practitioner’s community of inquiry sphere, the ability to share and compare our work also contributes to a greater methodological rigor and resulting epistemological curiosity. As we are able to benefit from the situated cognition of our colleagues, we are challenged to keep up, or to answer the questions of our colleagues. As many of the participants in the study noted, they were very excited to know that others were reading their work and were highly flattered to be asked questions. Rather than view the questions as challenges, they were viewed as acknowledgement of their knowledge and abilities. Knowing that others do not know a thing, may allow practitioners to be able to admit more readily that they themselves do not know this thing. Once this admission has been made, only then will a combined and communal quest for greater knowledge be possible.

Practitioners found that using the aggregator software for the community allowed them the ability to use their own tools for particular purposes. In the case that only one or two tools are
being used, then for a community to be able to function all members need to use the same tool. However through the use of an aggregator site such as Mahara, practitioners were able to have greater freedom in the use of other tools. This led to the detailed discussions about finding just the right tools for any particular use. This purposeful and intentional search of tools is a great example of the medium being the message. Again, the format of the situated cognition being demonstrated and presented in the portfolio is greatly enhanced, or conversely reduced, by the choice of media.

5.1.3. Demonstrations of competency.

The third question to guide this research arose out of the need to bring together the personal sphere of the approach and the community of inquiry sphere. Now that we have established processes for the first two spheres, the concept of portfolios for demonstrations of competency now has a much greater context in which to operate and so can bring much greater benefit to the practitioner.

Portfolios for demonstrating competency is not a new concept. However, when supported by a personal sphere in which the practitioner is actively compiling and curating materials for use in their professional lives, and when this personal sphere is supported by a community of inquiry in which fellow practitioners are working together to support each other and pursue a greater epistemological curiosity, the demonstrations of competency sphere becomes a powerful tool to answer the third question.

The third question, then is, ‘how can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace’?
As noted in the research, all teachers in the Ministry of Education in the UAE are required to maintain a portfolio, which serves as a basis for their annual performance review and as a platform for goal setting and review. Between schools, there are a wide number of iterations of the paper based portfolio, and in some cases as revealed in the nation-wide survey, no portfolio at all. As a result of the inconsistencies in practice and the lack of commonalities in practice, the portfolio as a demonstration of competency has not been successful. However, at the Ramaqia School for Boys, the practitioners have found success with their portfolios and so the portfolio approach seems to have offered them a way forward.

The high stakes nature of the portfolio for the practitioners who participated in the project focused their intentions in working on their own portfolios. They were highly motivated to pursue a range of learning activities and experiment with a variety of media in order to better demonstrate their competencies. The distinction between the personal sphere and the demonstration of competency sphere is quite evident at this point. One striking difference is that with the personal sphere, the portfolio is viewed as simply the place where we do our work. Thus, it is ongoing and unending. However, the Ramaqia practitioners clearly indicated that they had finished their portfolios. At this point, they were clearly working within a demonstration of competency.

Nevertheless, the intention of this work did begin to overlap with the personal portfolio sphere as the practitioners experienced the ‘community echo’ and realized that they were attracting a wider audience than they had believed possible. For many of them, the echo was the first time they had experienced a sense of the non-reflexive representation of themselves and they found it to be highly motivating. It is at this point that the overlap of the demonstration of competency sphere and the personal sphere is most evident.
The intentions of the Ramaqia Practitioners were focused and refocused by several factors. At first, they had an external motivation to create a demonstration of competency as required by their institution, and upon which their annual review would be conducted. Once they had embarked on this particular journey, the experience of the community echo added further impetus, as they realized they were attracting a wider audience. They were further inspired by success with ‘spontaneous innovation’ as they applied their new portfolio skills to the rest of their work. They were becoming increasingly adept at demonstrating their artful competency which in turn contributed to a further desire to improve. It may be hoped that such success building on success will eventually lead to a habit of lifelong learning, and the development of a culture of heutagogy in the school.

The Ramaqia practitioners became very keen to share their knowledge in a great example of situated cognition, and in a clear overlap with the community of inquiry. As they become increasingly competent with the wide variety of media employed in their portfolios, they became increasingly competent in creating their own voice while still remembering and displaying the institutional voice as desired by the school. Further counseling by the principal over how they should be pursuing their goals and consequently developing their portfolios contributed to a greater sense of achievement through the portfolio process. The practitioners were able to unite the institutional voice with their own. This raises an important consideration around change management in the motivation of the practitioners. In this research project, the motivation originally was external in the form of a directive from the ministry and then more directly from their direct supervisor. To participate in the project, they were offered further external motivation in the form of a promise of a good review by virtue of participating in the project. However, once
they were involved, the motivation clearly shifted to an internal form as they began to experience success with the various tools.

Increasingly, they began to share their ideas for how to use the media to both create their demonstrations of competency and also how to use these tools for their own personal sphere of work and for sharing with the community of inquiry. In this way, they provided an example of biographicity as well through their use of the portfolio to hold the range of media that they employed. They discussed at length how they were able to determine the shape of their message, made surprising insights into the use of media to shape their messages.

In this manner, the portfolio approach has enabled us to provide a means for practitioners to sound their own voice in their communities of inquiry, yet preserve the institutional voice that is required for them to be successful in their communities. The use of 21st century tools to create these voices were complimented by the use of technological ‘permissions’ which helped the practitioners to determine who could see which curations of their work and who could borrow that work and offer feedback on it. These permissions also allow the practitioners to carefully consider the rights of their institution to view their work and share control. Once the practitioners understood the related security and privacy issues that come with the portfolio approach, they demonstrated a significant and positive change in their attitude towards sharing their work. This benefits their communities and the institutions who then have the ability to preview the work that is being completed and conducted in their name. This is one aspect that often is not considered by practitioners. We believe in our own freedom of speech, yet often overlook the fact that when we speak professionally, we are often speaking on behalf of our institutions. This is particularly true when presenting work to our students and even more so when assigning grades. Under these
circumstances, the institution has significant rights and responsibilities to ensure that the institutional voice is being heard.

5.1.4. Summary of responses to research questions

This section offers an overview of each of the three research questions. Given that the three spheres of the approach overlap and complement each other, the answers to the questions within each sphere overlap somewhat with each other. Additionally, much of the portfolio approach is entwined with the associated skills that have been investigated along with the approach itself. These skills have been detailed in the discussion of findings for each section. However, since the focus of the investigation was not to detail technology, but rather to highlight the benefits of following the portfolio approach, the actual technical, associated skills are not included in the summary tables.

The following tables attempt to consolidate and reduce the answers into concepts, actions and results. Given the complexity of the answers, each research question will be summarized into a separate table for ease of formatting and reading.

Table 11 provides a summary of the first research question relating to the personal sphere of intentionality.
Table 11:

**Summary of Answers to the Personal Sphere of Intentionality**

<table>
<thead>
<tr>
<th>Sphere</th>
<th>Concept</th>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personal</strong></td>
<td>Time span of discretion</td>
<td>Intentional sharing of work through medium of portfolio</td>
<td>Appreciate ‘competing ideologies’</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Critical learning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Understand own work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relating disparate and diverse voices</td>
<td>Narrative of growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Array of narrative</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Community echo</td>
</tr>
</tbody>
</table>

Table 12 provides a summary of the second research question relating to the community of inquiry sphere of intentionality.

Table 12:

**Summary of Answers to the Community of Inquiry Sphere of Intentionality**

<table>
<thead>
<tr>
<th>Sphere</th>
<th>Concept</th>
<th>Action</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community of Inquiry</strong></td>
<td>Transformation</td>
<td>Share work with different communities through media tools</td>
<td>Relational construction of knowledge</td>
</tr>
<tr>
<td></td>
<td>Teaching presence</td>
<td>Question each other in relation to common goals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Situated cognition</td>
<td>Relate own knowledge to others through portfolio</td>
<td></td>
</tr>
</tbody>
</table>
Table 13 provides a summary of the third research question relating to the demonstrations of competency sphere of intentionality.

Table 13:

**Summary of Answers to the Demonstrations of Competency Sphere of Intentionality**

| Question: How can we work with other educators and students to allow them to determine their own voice without abandoning the institutional voice that comes from learning outcomes, program outcomes and the demands of the professional workplace? |
| --- | --- | --- | --- |
| Sphere | Concept | Action | Result |
| Demonstrations of Competency | Curation | Presentation for annual review |
| | Spontaneous innovation | Lifelong learning |
| | Situated cognition | Manage and merge personal and institutional voices |
| | Biographicity | Display growth and development |

5.2. **What Does the Portfolio Approach Offer?**

When considering the portfolio approach to teaching and learning and the impact of the profusion of technology that the approach incorporates, I would like to draw upon two significant influences on this work. In the first instance, I turn to McLuhan (2003). One notion that arises from his work is that the ‘time is ripe’ for a portfolio approach. He notes how with many innovations, rather than arising from a need and so therefore following a ‘cause and effect’ process, arise as a cause from the effect. As an example, he discusses the radio and the television. When these apparatus were first introduced, many people thought they would have only limited application. However, once they were in place, only then did people start to devise
uses for them. Similarly, we now have a wide range of remarkably powerful 21st century tools that, while still very much in development and undergoing rapid change, are sufficiently developed that they can be used widely and for free by virtually anyone with an internet connection and access to web-enabled devices.

I now propose that the ‘time is ripe’ for the portfolio approach to teaching and learning to be built upon 21st century tools. The portfolio approach can support the individual practitioner to develop with ease a portfolio of work, ideas and processes that can be shared with their community of like-minded individuals who are tied together by common goals of academic inquiry and lifelong learning. The time is ripe for the individual practitioner to be able to put their ideas out into their varied and overlapping communities of inquiry in order to build a relational knowledge of their work and worlds. The portfolio approach will provide processes and means by which they can grow and develop with their communities whether they be formally the teacher or the student, or informally both teacher and student. The portfolio approach will also work with the constructed academic world of the practitioner to ensure that the lifelong growth and development of the practitioner is guided, focused and informed by the practical needs of the multiple stakeholders of their academic environment.

McLuhan (2003) also discusses the idea that, “one of the peculiarities of the electric age is that we live simultaneously in all of the cultures of the past. All of the past is here and all of the future is here” (p. 213). This is particularly true with the portfolio approach. Through the time span of discretion, we can see much of our professional past and that of our community and colleagues. The reflective process ensures that we continually look back to see where we were, what we did, and where we were successful. Through demonstrations of competency and the setting of goals informed by our stakeholders, we can also see and share our professional
aspirations for the future and in a healthy community of inquiry, contribute to not only our own, but our colleagues’ futures.

McLuhan (1964) comments that, “the personal and social consequences of any medium … result from the new scale that is introduced into our affairs” (p. 7). In the portfolio approach, the ‘scale’ that is being introduced refers to the range of activities pursued by the practitioner in their work that are influenced by the approach. The portfolio approach influences and improves teaching and learning by supporting the many processes of teaching through the personal portfolio, learning through the community of inquiry, and assessment through the demonstrations of competency. The scale of the influence that the portfolio approach can have on the individual practitioner is one of changing their way of being – of being a practitioner. By providing tools to help manage all areas of their work. The practitioner can be constantly reminded of the social nature of their work and be able to both put into their community and take out of their community the knowledge and ideas that they need to be ever more successful at their practice.

Hundreds of pages later, McLuhan concludes that, “As the age of information demands the simultaneous use of all our faculties, we discover that we are most at leisure when we are most intensely involved, very much as with the artists in all ages” (p. 379). The practitioner will be most thoroughly aware of the relational power of their work and best placed to take advantage of it when they are most aware of the interconnectedness of all of their ill-structured domains and the opinions of stakeholders towards those domains. By more fully engaging in their work through the new 21st century tools and media, the practitioner can get closer to the essence of their work by seeing through the linearity and single-minded perceptions of individual ideas and putting together greater understandings of their work and of others’ interpretations of that work.
To balance this enthusiasm, I also consider one of Gergen’s (1991) themes in which he argues that the growth of technology is leading to a saturation of our ‘self’ through the abundance of input from the plethora of media with which we are surrounded. We are so constantly faced with information and input that we risk losing ourselves and our views as a result of the constant stream of data.

With the spread of post-modern consciousness, we see the demise of personal definition, reason, authority, commitment, trust, the sense of authenticity, sincerity, belief in leadership, depth of feeling, and faith in progress. In their stead, an open slate emerges on which persons may inscribe, erase, and rewrite their identities as the ever-shifting, ever-expanding, and incoherent network of relationships invites or permits” (p. 228).

The stream of data may be seen to wash away our modernist realities and rationalities because we are always getting new data to refresh and update our knowledge. In our own identity, we are able to update, change and refresh our ideas and in fact are expected to do so in a relational quest for growth. An example that provides an interesting overlap with McLuhan, are the politicians who daily barrage the public , especially during election time, with their platform, agenda or views. What we often remember of these offerings are not the actual messages conveyed, but the passion and the sincerity upon which the messages were given. Thus, the medium of the message is far more important than the message itself.

However, Gergen (1991) also discusses the “fascinating play of potentials and an increased sense of relational reality” (p. 229) that comes from the post-modernist consciousness. There is a value in being able to rewrite ourselves and reinvent ourselves as we mature and grow. Indeed,
we often talk about the concept of transformation and hold this notion as an ideal to which we must always aspire. As an educator and practitioner, we seek opportunities for transformative experiences and endeavor to put our students in the way of these opportunities. In the portfolio approach to teaching and learning, the practitioner is inviting others to make their own interpretations of their work and allows their stakeholders to give the input they feel they need to give, and take away the value that they are looking for. It is important to note here that these curations may be very different from each other yet still be entirely coherent as a whole. In one sense, it may be argued that the practitioner is living in the post-modern world by sharing differing curations of themselves to suit the audiences that they have, whereas their audience may be allowed to remain in the modernist world by accepting the curations intended for them as rational and measured accountings of their actions and ideas.

McLuhan (1964) states that one difference in our electronic age and with our new media that separates us from previous ages is that our new media gives us the potential to “store and translate everything” (p. 64). This notion extends beyond what we as individuals can store to include our relational environment. To avoid the narcissistic trap of being caught in an endless cycle of ‘selfies’, the portfolio empowers our community to reflect with us, on our experience and allows us to reflect with our colleagues and community on their experiences. Being able to present ourselves to our various audiences through the portfolio approach provides our audience the ability, through the gift of time and silence, to respond in meaningful ways and allows the practitioner or the speaker, as Freire (1998) notes, “to hear the question, the doubt, the creativity of the person who is listening.” (p. 104). In my own practice, I require time to reflect upon what I have seen and in my own experiences of the portfolio approach I regard the time given to me by students and colleagues to be able to see my work in a larger context, as time to digest the new
ideas. As I noted in my discussion of the personal portfolio, I often go back and edit my posts, especially those intended for specific classes. Once I have delivered a class or a workshop, the notes and feedback from students is incorporated into the portfolio, becoming part of the relational construction of ideas.

Bruner (2006) talks about the distinction between ‘knowing how’ and ‘knowing what’. This discussion is similar to arguments put forth by McLuhan (1964) in which he discusses how our technological society has led to a separation between knowledge and its use in the world. Once we began to write our knowledge down, we began to separate knowing how to do something from the knowledge required to do that same action or thing. From this point, we were then able to refine that process in order to create more generalized knowledge that could be applied to a wider range of activities. The portfolio approach may be able to help the practitioner put these two types of knowledge back together by providing the context for how and where things can or should happen. The ability to combine multiple forms of media into presentations that support our ideas, and in the context of the teaching profession, to be able to show how ideas about teaching and learning actually play out in the classroom through video and imagery, the ‘knowing what’ to do can be graphically displayed in the portfolio as a demonstration of competency in ‘knowing how’ to do it. That these demonstrations are on show for all of the practitioner’s colleagues and the wider community to see brings a power to the portfolio approach to open up possibilities of new ideas that cannot be imagined.

5.2.1. Practical recommendations for educators and educational institutions.

I have argued that the time is ripe for the portfolio approach to help educators and students alike to make better use of the tools at our disposal. In my work with colleagues, students and the Ramaqia teachers, I found that the first question to answer is, ‘Why?’
In response, it might be useful to point out to practitioners some of the more general or perhaps global reasons for wanting to pursue a portfolio approach. Bain (2004) discusses “the learning university” which requires the “creation of a community in which professors and students are engaged in rich intellectual conversations” (p. 175). I also draw upon Kelchtermans’ discussion of the ‘scholarship of teaching’, which he notes “rests on at least three key attributes: becoming public; becoming an object of critical review and evaluation of the members of that community; and, members of that community beginning to use, build upon and develop those acts of mind and creation” (Kelchtermans, 2009, p. 258). These three attributes are clearly supported by the portfolio approach and would be greatly facilitated by the use of the appropriate technology tools.

More specifically to technology, UNESCO cites the need for improvement to both teacher quality and to teacher quantity (UNESCO, 2012) and discusses the use of mobile technologies to reach greater numbers of students, especially in developing areas. As was noted earlier, various government Education departments are introducing a wider range of computer studies and electronic tools into schools (Department for Education, 2015; Nova Scotia Department of Education and Early Childhood, 2015).

In this light, for educators, I would argue that the recommendations start with themselves. If we consider that many of their students might be termed ‘digital natives’, educators will need to keep up with their students and be able to communicate with them through media that their students understand. I have commented already that the first step towards a relational construction of knowledge is to be able to understand our own thoughts through what Freire (1998) called “critical learning” (p. 33). In the summary of answers to the first research question in Table 11 the time span of discretion figures prominently as the main concept. This implies that
the educator must give themselves time to adopt new strategies and adapt their work processes to incorporate these associated skills. The Ramaqia teachers found that the initial processes were demanding and even these proponents of change were hesitant to proceed.

For many educators, the introduction of electronic portfolios and the associated tools that are employed in the development of the portfolios as noted in the discussion of findings are elements of change. Educational institutions, then must be aware of the consequences of introducing change to their organizations. Wessels and Kotze (2012) discuss the issue of change within organizations and offer methods of dealing with that change. They discuss the notion of “story” (p. 87) as a means of helping people to understand the impact of change on their workplace and work lives. Even the Ramaqia teachers, as proponents of change, struggled with the very change that they were offering to their colleagues through their participation in the project. Perhaps ironically, the introduction of portfolios as a ‘narrative of learning’ is in itself a means of adapting to change.

When adopting new strategies, I often counsel my colleagues and students that to be successful, they must have a certain ‘tolerance for ambiguity’ and allow themselves to accept a certain level of uncertainty in their work. Paradoxically, I believe it is this tolerance for ambiguity in the beginning that will allow a greater certainty over the reflexive ‘I’ as defined by Ismael (2007).

I point out to colleagues and students that they already perform much of the work that would go into creating a personal portfolio of work as outlined this research. For example, they already make notes for lectures and plan for classes. They already create quantities of documentation which they need to share with their students and peers, and they already use some
form of electronic storage for those documents. Certainly in the UAE at all levels from kindergarten teachers to university professors, they are already expected to demonstrate their competency repeatedly for supervisors in order to maintain their positions and they will be expected to share their work with others.

What I am adding to their teaching and learning strategies is an intentionality that will help to create curations of work that can be viewed more readily and easily by all concerned. A first step towards this intentionality is to begin to make our work and our thinking more visible. I have highlighted a number of technologies in Table B1 and indicated for which purposes they may be best suited. For each purpose, there might be numerous tools available that will serve. I recommend to practitioners that they try to use tools that firstly, provide them final control over their work. There will be documentation that is done for specific purposes and which will be stored on institutional drives and sites, however the practitioner must be careful to retain control over both their own work and the selection of tools to control that work. The next step in choosing tools is to consider what our colleagues are using and choose complimentary tools that will allow easy exchange of documents and data between practitioners. A final recommendation over the choice of tools is to use ‘suites’ of tools. I try to minimize the number of passwords, interfaces and systems that I need to be familiar with in order to achieve my goals.

5.3. Limitations of the Study

The personal sphere of the portfolio approach is heavily dependent on an autoethnographic review of my own work. Such a review brings forth the issue of bias towards my own work and the selection of items based on my interpretation of what was important. I do believe that the extensive nature of the review is a means of providing rigor and mitigating the reviewer bias. Additionally, while autoethnography is by definition an individual investigation of oneself, such
factors as the number of views or page hits speaks to the relative importance of the various parts of the portfolio and act as indicators for the review.

When investigating the community of inquiry sphere through focus groups and interviews with participants, given that I was not only the researcher, but also their teacher, the issue of a power relationship arises. Students may have been tempted to provide favorable answers to me for various reasons such as to gain favor in some fashion. To answer these issues, I tried as much as possible to have the focus groups and interviews after grading periods or through assurances of impartiality. Also, the nature of participatory action research meant that the students were aware that their answers concerning their own portfolios and other related activities such as the discussion boards would contribute to improvements in the processes, which would be to their benefit.

A limitation to the analysis of individual portfolios in certain cases was the fact that these analyses were often conducted for formal assessment purposes. While efforts were made to be impartial and to look at the overall portfolio, especially with those portfolios that spanned several semesters, the assessment rubrics for the portfolios were designed by committee. Thus, even though I was a member of those committees and in certain cases the principal architect of the rubrics, these rubrics do impose a filter on the portfolio reviews that may affect some of the analyses.

One significant limitation to this study stems from the fact that the portfolio approach to teaching and learning is highly dependent on the use of technology to achieve its goals. Thus, the resulting need to provide training to the Ramaqia participants at the beginning of the competency phase of the research limited the ability of those participants to develop the sense of the time
span of discretion that is central to the development of the portfolio approach. Although there seemed to be ample external motivation for the inclusion of technology into all aspects of teaching and learning at the Ramaqia School, the variety of tools available generally to the practitioner can prove overwhelming. Ideally, the selection of tools should be a personal choice allowing everyone to choose tools that fit the rest of the technology usage in their practice. However, many of the Ramaqia practitioners simply were not sufficiently familiar with the functioning of individual tools and so were unable to make informed choices.

Additionally, during the course of the research project at the Ramaqia School, several of the tools used were changed and several processes that had been described and shown to the practitioners also changed. In some cases, the rapid advance of technology and updates to the various tools simply changed the interface or the functionality of the tool literally overnight disrupting the development of portfolios. In other cases, through the process of spontaneous innovation, one participant or another would discover a better way to perform a task. While this might be considered desirable, to many of the participants, it simply meant that they had to either undo something or learn a new trick.

Another limitation to the research is the fact that I am the only male participant. All of the student-practitioners and professional practitioners are female. This was not by design and so was not a focus of the study. One point to note about the education system in the UAE is that from about the age of 8, all schools and students are separated by gender, and in so many cases the primary schools simply separate by gender from the beginning grade. Compounding this point, I teach in a women’s college campus, and so the education program is comprised entirely of females, who mainly go to girls’ schools. Ramaqia School is a boys’ school, but since the
boys did not specifically participate in the project, they cannot be said to have been a significant factor.

On the other hand, the community echo came from both genders, especially from the parents. Also, many of the Ministry of Education officials are men. The ministry official who gave permission on behalf of the ministry to conduct this research is a man and noted to me that he was particularly interested in the use of technology in the schools. Many of my colleagues at the college where I teach are also men and my original supervisor and the college official both of whom gave permission for this research on behalf of the college and the program were men.

A further limitation of the study can be found in the longitudinal aspect of the study. While the student-practitioners had several years’ exposure to the project, and were highly familiar with the tools required to produce the portfolio and function within the community of inquiry, the Ramaqia teachers spent only one academic year in the study. Given that this research was largely participatory action research, longer involvement would allow a greater time span of discretion among the Ramaqia teachers hopefully leading to more insights and positive results in terms of their own use of the approach for the personal sphere. In the one year period of their participation, I noted in the findings that they were very innovative in their use of media for demonstrations of competency. However, they were limited by their own notions that the portfolio was a finite product for a specific purpose. If they had another year perhaps to look back upon their work and acquire a greater time span of discretion, they may have been able to start to use their portfolios as a personal tool for their own personal knowledge management and so bridge the research gap between the three spheres of the portfolio approach.
In contrast, the student practitioners, with whom I was able to work over a period of years thus allowing them to develop a greater range of technology skills, were much more adaptable to changes in the technology and were able to benefit from the overall approach much more thoroughly. In particular, the older cohorts of students were able to reflect upon three years of portfolio development and thus better experience the concept of the time span of discretion.

Feedback from the group clearly indicated that motivation derived from success with the portfolio approach can be easily disrupted by any perceived lack of support or switching of tools. The Ramaqia practitioners commented on the time invested in learning these tools, time which was taken from other duties and tasks. Thus, the portfolio approach may have benefited from a participants who had a greater level of technological prowess and greater willingness to try new tools and processes. Nevertheless, it may also be that the Ramaqia group form a representative groups of practitioners. They did in fact volunteer to partake in the study, even if they tried to remove themselves from the study later on. This indicates a predilection towards technology.

5.4. Contributions of the Study

I feel that there are two significant contributions of this study both generally and specifically to the participants.

5.4.1. Relational construction of knowledge

From my work on the three spheres of the portfolio approach as defined in this project, much of the feedback both informal and formal as reported in the findings speaks to the idea of being able to see how sections of our work fits in to our larger body of work and how our own body of work fits or relates to that of our colleagues and the larger realm of knowledge outside of our spheres of influence. I noted in the introduction that, “The utterance has no commanding
presence in itself. Its meaning is revealed only in the manner of my response” (Gergen, 2007, p. 366). Through all three spheres of intentionality, this study has highlighted processes that will allow the practitioner to more readily contribute their ideas to their communities and benefit from the relational construction of knowledge that comes from interactions with others.

5.4.2. Technology and the portfolio approach

One of the complaints I have had and heard from colleagues is that much of professional development, especially in the realm of technology is about the tools and the application is left to the practitioner. Another complaint is that often institutions decide to use a particular tool and offer training on that tool only to change or discontinue the use of the tool after practitioners have invested significant amounts of time to prepare profiles, load documents, or other activities based on that tool.

In my previous roles, I have often been the person providing such training to my colleagues. Part of my background in devising the portfolio approach and creating my own personal portfolio arose out of my own dissatisfaction with just such training as I had been providing. Since starting this research project and working the various groups of participants, I have had numerous opportunities to provide advice and training based on this research. A significant contribution of this study in trying to formalize and document the portfolio approach is that I believe it provides a bridge between the use of technology and the practice of being an educator, or of ‘Teaching and Learning’.

From my own experiences, I have been able to make much better use of technology and move from the attitude of using technology for its own sake, based on my own interests in doing so towards a broader perspective of seeing how technology can support teaching and learning,
and the social construction of knowledge. From this perspective, I have then been able to share this perspective with the participants who in turn I believe will share their own perspectives on how technology can help to improve our practices both in the classroom and out.

The portfolio approach speaks clearly to the concept of personal knowledge management, and I would argue that the approach goes beyond just personal knowledge management to include community knowledge management. The concept of situated cognition, for example as noted in the conclusions, is one that is greatly supported by the approach. By allowing practitioners access to each other’s personal stores of knowledge through intentional means, all benefit and the relational construction of knowledge is enhanced.

5.5. Future Directions

A natural progression of research into a portfolio process could involve the social nature of the portfolio and the concept of the community echo. The development of opinions about people dependent on the profile of evidence that they portray in their portfolios happens almost unconsciously. When questioned about what type of profile they felt they were presenting to the world, many practitioners responded that they had not given much thought to their overall identity. Certainly the development of a portfolio is done with the intention of presenting to the world segments of ourselves in terms of anecdotal evidence, specific documents and images from the classroom, but the overall aspects of one’s personality and general impression as created by the observer, colleague or stakeholder was often not considered. This observation about social identity seemed to hold true for any practitioner regardless of their age. This factor is quite interesting considering that the age of the practitioners in the study ranged from about 19 years in the case of the first year students, to about 45 to 50 for the more experienced practitioners and the principals in the local, UAE schools.
On the other hand, it may be that the observer is only interested in parts of a practitioner’s identity. A student might not be interested, for example, in the quality of rubrics and assessments designed for courses that they are not taking and so would not look at the larger picture presented by the totality of a practitioner’s personal portfolio. Nevertheless, I would argue that supervisors would be more interested in the larger picture of a practitioner’s identity as portrayed in a portfolio as ouwl a practitioner be interested in the larger picture of one of their students.

This lack of awareness or consideration towards social identity is even more remarkable when considering how motivated the practitioners were by receiving unsolicited feedback. I have observed this factor (Leslie & Murphy, 2008) during previous studies and discussed the reactions of various students to the knowledge that others were actually looking at their work. A significant difference between this previous study and the current one is that the students were blogging for assessment purposes and the success of the work was not dependent on feedback. However, in the portfolio approach and the demonstration of competency, the prime intention of the practitioners was to garner feedback. The community echo of unsolicited feedback, or that from unexpected sources is highly motivating. When tied to the idea of helping practitioners increase their teaching presence in the community of inquiry, it might be that we need to carefully consider the interplay between what self-image we think we are presenting to the world, and what image we actual do present to the world. As technology usage increases and practitioners become more adept at manipulating it for their own ends, we may see a greater emphasis placed on the non-reflexive representations of ourselves.

A second and related concept is that of social capital. As certain practitioners establish themselves as better or more thorough portfolio users, what social capital do they develop as ‘go to’ people when others are seeking help. The value of social capital in social construction is that
it may open up new worlds of creativity and collaboration between peers and colleagues whom might otherwise not meet or be aware of each other’s research interests. We might ask two questions: how can we increase our social capital through the development of our portfolio? How does an increase in social capital reflect back on to our work as a motivating factor?

We may also want to consider the concept of social construction of motivation. One of the ideas that arose from the discussions and research is that of motivation from the team. The idea of keeping up with peers and trying to be part of a group is not a new concept, but how might this human tendency be leveraged through the portfolio approach to allow stakeholders to motivate teachers in a positive way rather than in a forced manner?

As the range of technology develops, there will need to be greater emphasis on the development of digital literacy among practitioners. The concept of associated skills development was discussed in this research, but as a means of supporting the development of the portfolio itself. If the approach aspires to be a way of ‘being’, and of being a practitioner, then greater focus must be placed on the development of digital literacy skills. Certainly, as technology generally blends more closely with educational practices, the practitioners themselves must become more comfortable with their own level of literacy.

Similarly, one of the most significant barriers to the development of the portfolio approach among the Ramaqia participants is their ability to manage the technology. As noted earlier, at some point during the project, each of the participants requested to be released from the project due to the pressures of learning how to use the different tools. Tied to the concept of digital literacy, an immediate need might then be to determine an effective means of prioritizing the
training needs of an institution and using the portfolio platform to deliver and maintain a series of help topics.

5.5.1. Program and institutional portfolios.

I have also explored the idea of a ‘program’ portfolio (Leslie, 2012) comprised of the collected portfolios of the faculty and the students. Many colleges routinely require some form of ‘course assessment file’ for assessing the performance of the course, the course as it is taught at different campuses, the program and its overall delivery across campuses, and the entire college. These statistics generally include the work performed by the students, the notes and resources used by the students or provided by the faculty. From personal experience, the compilation of these types of files can be extremely time consuming. When considering the experience of the Ramaqia group, they spend much of their free time simply compiling these documents and trying to put them into a presentable format. To paraphrase Principal Fatima, these documents are almost useless and detract from the teachers’ ability to create innovative new means of teaching and learning with their students. They are compelled to spend more time presenting their work than they initially did on the work itself.

Figure 41 shows how the collection of portfolios as held within an aggregator platform or an intranet, can easily be transformed into a program portfolio.
Figure 41 illustrates the concept of a portfolio process in which each level of the institution from the teacher to the program and upwards is represented by a portfolio, or collection of curated documents, including goals and needs. In this manner, stakeholders at various levels can have access to documents and information that allows for better decision making throughout the institution. As noted earlier, Hase and Davis (2002) comment on the effects of allowing practitioners in any field to be “deliberately and systematically involved in their future” (Perspectives and Theoretical Frameworks, para. 8). The vision of a two-way portfolio process involving practitioners and stakeholders allows a wider range of input into not only a practitioner’s future, but to the future of any school or community that is able to build on the potential of its members.
6. Appendix A:


While much of the actual operation of the portfolio approach leverages technology to facilitate many of the processes, the programs and specific technology itself is discussed only to note the actual tools used for the different portfolios profiled herein, or to the degree necessary to explain how certain processes may work. Many of the processes discussed can be achieved by a variety of types or brands of software and hardware. Thus, while the portfolio approach is supported and made possible through the use of an extensive range of technologies, the focus on this research is not about technology, but about the social and relational construction of knowledge.

As the academic coordinator for educational technology across the six campuses of our education program, I am the recipient of daily complaints and concerns around technology. Sometimes, these are general complaints about the wisdom of using technology at all, and sometimes they are more specific and perhaps valid concerns over particular tools. Common concerns from late adopters of technology often involve questions such as, ‘What happens when the internet goes down?’ Or, ‘What happens when your device stops working or runs out of batteries?’ While these are valid concerns and quite serious even only a few short years ago, technological advances are so rapid that these concerns simply are not relevant anymore. For example, in my experience over the last two years, the internet has never been ‘out’ for more than a few minutes at any given time or at any given location. When I go to a school to observe my students, I always have a tablet and my smart phone, which is in effect simply a computer with a very small screen, and often I also have a laptop or the school has a computer for my use, all of which can provide Internet access.
Other concerns include common refrains such as, ‘I cannot read on a screen’. Often when queried, faculty with this type of complaint have not actually spent much time reading on a screen. Alternatively, they actually mean I do not want to read on a laptop or desktop screen, yet they are perfectly happy to read on their iPad or Kindle. Similarly, I field complaints about specific tools only to discover that there is a confusion of the actual problem. A recent example to highlight this problem arose when a colleague complained about the intranet site that we were using and pointed to a specific issue she was having. When I explained that the problem was actually due to browser incompatibility from her particular set up, she continued to blame the intranet. Even after I helped to resolve the relatively minor issue, her refrain was that the intranet itself was ‘no good’. While it is hard to give specific numbers, I would estimate that 80% or more of all problems are user-related.

6.2. **Cloud Storage**

Much of the technology in the portfolio approach is based on what is generically referred to as ‘cloud storage’. This term refers to the storage of various types of data on network servers, which may be commercial or institutional. One benefit of this type of storage is that the individual user can achieve a greater security for their information than they might by storing such data on personal devices. The greater benefit, at least in terms of the portfolio is that such data can be accessed by the user through any internet-enabled device, and even further can be embedded into the portfolio interface.

Much of this software is also ‘open source’ software. This terms refers to the fact that the software is freely available to anyone who wishes to use it. Open source software is generally designed by consortiums of people, often supported by donations or by educational institutions. Some of the larger open source software packages such as Joomla (Joomla!, 2014) are used by
major multi-national corporations and numerous government institutions and so receive considerable support from these sources. Other packages such as Mahara (Mahara Open Source ePortfolios, 2014) were originally designed through grants from a government agency and then continue to function through further grants and donations. For smaller or individual users like myself, these software packages offer innovative technology and support that empowers a wide range of educational activities, including of course the portfolio approach. While open source software is free, there are associated costs of the hosting service or the hardware and personnel to manage the open source platform. Hence, ‘free’ services that attract many users and educators will often eventually ask for money or offer very limited services.

One significant benefit of using cloud storage is that it allows for sharing of work. Through features that are standard to most cloud storage tools, permissions generally have a minimum of three levels, including ‘private’, ‘view’, and ‘edit’. Within these three levels, there are often sub-levels and overlapping levels including the ability to give ‘view’ permission to only specific audiences or to everyone, let specific people edit but not delete, or give them full control. With certain enterprise level platforms, such as Microsoft SharePoint (Microsoft, 2014), the permission levels are very complex and can be applied at the individual document level, to the library or even site level.

Once a practitioner is accustomed to using cloud storage, they can then with relative ease not only share their work, but embed examples of their work in their online profiles. Figure A1 highlights how cloud storage can benefit practitioners. These benefits will be explored more fully in the community sphere.
It should be noted here that the term ‘storage’, while accurate, may be misleading. When most lay people think about storage, they may imagine documents that are akin to paper files, or perhaps printable files such as spreadsheets and word processed documents. Many cloud storage companies perpetuate this misconception, perhaps innocently, by offering ‘storage’ which only includes the aforementioned types of files. While the term certainly includes these file types, the term also includes any data that can be captured electronically and stored for later retrieval. As shown in Table A1, such data might include blog posts, discussion board entries and other text-based media. It may also include statistical data such as page hits to a blog post, and comments to those posts or to other forms of social media communications with community stakeholders, lesson plans, and images of school activities.

Tools used to access this data include smart phones, tablets, laptops, and desktop computers. On those devices, the software required includes programs specific to certain files, or more general programs including web browsers that can access web pages, within which some of
these data may be embedded or otherwise displayed. The near ubiquitous nature of the internet and the almost universal access to devices that can be used to access the internet and cloud storage in all its forms means that the skilled practitioner can use the portfolio approach to access and share virtually all of their work.

Table A1:

*Examples of Cloud Storage*

<table>
<thead>
<tr>
<th>TYPE OF DATA</th>
<th>TYPE OF STORAGE</th>
<th>EXAMPLES OF STORAGE PROVIDERS</th>
<th>POTENTIAL FOR SOCIAL CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson plans and materials</td>
<td>Document library</td>
<td>Google Drive, SkyDrive, DropBox,</td>
<td>Sharing of plans and resources with other teachers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Institutional shared drives</td>
<td>Demonstration of quality of lesson plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Personal home network drives</td>
<td>Feedback from colleagues who have used the lessons</td>
</tr>
<tr>
<td></td>
<td>Learning management systems</td>
<td>Moodle, Joomla, Mahara</td>
<td>Personal sphere of portfolio approach</td>
</tr>
<tr>
<td>Images of board notes and</td>
<td>Image gallery</td>
<td>Flickr, Google +, Instagram, Twitter</td>
<td>Provide support for online communities</td>
</tr>
<tr>
<td>classroom activities</td>
<td></td>
<td></td>
<td>Community of inquiry sphere of the portfolio approach</td>
</tr>
<tr>
<td>Graphics and mind maps</td>
<td>Image gallery</td>
<td></td>
<td>Preservation of board notes for later reference</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sharing of activities with parents and community</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Easy access during class time</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Personal and demonstration of competency spheres of the portfolio approach</td>
</tr>
</tbody>
</table>
Table A1:

**Examples of Cloud Storage**

<table>
<thead>
<tr>
<th>TYPE OF DATA</th>
<th>TYPE OF STORAGE</th>
<th>EXAMPLES OF STORAGE PROVIDERS</th>
<th>POTENTIAL FOR SOCIAL CONSTRUCTION</th>
</tr>
</thead>
</table>
| Reflective writing | Blog sites               | Blogger, WordPress, Various open source software including Joomla, B2Evolution | Personal reflections  
                      |                                                                 | Sharing with mentors and mentees  
                      |                                                                 | Community of inquiry and demonstrations of competency sphere of the portfolio approach |
| Account profiles   | Web accounts             | Webmail, Instagram, Twitter, Facebook, Google Calendar              | Sharing of special events  
                      | Social Media communications |                                                                 | Public sharing of interests and ideas  
                      | Learning platforms     |                                                                 | Community of Inquiry sphere of the portfolio approach |
|                    | Document library         | Institutional servers or commercial platform such as SharePoint     | Archival documentation, quality control, accreditation, Preservation of institutional knowledge  
                      | Institutional Documents |                                                                 | Community of inquiry and demonstrations of competency sphere of the portfolio approach |
| Statistical Data   | Database                 | Content management systems including Moodle, Joomla, Drupal, Mahara | Access, number of participants, assessment results  
                      | Articles and sources of information |                                                                 | Personal sphere of the portfolio approach |
| RSS feeds          | Most news services, Scoop.it |                                                                 | Share new information and content from external sources including online journals, professional blogs, news sites, video services  
| and embedded media |                                                                 |                                                                 | Personal, community of inquiry and demonstrations of competencies spheres of the portfolio approach |
Table A1:

*Examples of Cloud Storage*

<table>
<thead>
<tr>
<th>TYPE OF DATA</th>
<th>TYPE OF STORAGE</th>
<th>EXAMPLES OF STORAGE PROVIDERS</th>
<th>POTENTIAL FOR SOCIAL CONSTRUCTION</th>
</tr>
</thead>
</table>

Table A1 also highlights the sheer quantity of the data that can be stored and accessed online. All of the data types noted in the table are used regularly in the portfolio approach and the use of each type of data is discussed at the appropriate moments, with minimal reference to the actual technology.

In the case of this research, the technology that supports the personal sphere and my own work includes Joomla (Joomla!, 2014) for the actual platform and the blogs. I used Google products (Google, 2014) for many of the cloud services including document storage (Google Drive), the calendar (Google Calendar), and the maps (Google Maps). I pay a small monthly fee for a private, commercial hosting service. For the community of inquiry and the competency spheres, I worked with my college IT team who provided server space to host the platform. The Mahara Open Source ePortfolio was used as the main platform for both spheres although Moodle was used with the students to provide a more robust discussion board tool. The results are easily exported from Moodle to Mahara. The participants used a variety of other cloud tools as indicated in Table A1.

With the profusion of service providers for all of the various cloud examples, the practitioner should consider using tools that will help to minimize the number of accounts and passwords that need to be integrated. Feedback from participants in this research indicate that this is not a priority issue since many people, and most certainly those who have grown up with
technology are accustomed to using a variety of tools. In the case of the students and younger professionals, they have little problem in managing several different types of tools, sometimes even for the same purposes. For example, some students will use Google drive for storing personal files, and another company service for college files. Nevertheless, it may be helpful to minimize the number of tools to a manageable number.

6.3. Security and Privacy on the Internet

When working with other people on various aspects of the portfolio approach, quite rightly the most common question is concerned with the safety of one’s data. This question actually can break down into a range of issues concerning both privacy and security, which while overlapping, are two separate issues.

The first concern is the security of the documentation and data itself. In the portfolio approach, practitioners are encouraged to take advantage of cloud storage for several reasons. In the first instance, it is a safe place to store all work in the case of hardware failures. It is perhaps becoming more common for practitioners to own external hard drives where they can back up their work. However, in many cases, especially with students, they do not do so, or do not do so regularly. Also, it is not unusual these devices to pick up viruses if they are used between computers or shared with friends and colleagues who may not be regularly updating their anti-virus and malware software.

The second security issue concerns who actually has control of one’s work. One problem with various institutional platforms used for data storage is that the practitioner does not in fact have final control over their own work. Many of the participants in the Ramaqia project spoke of spending large amounts of time building a profile in one platform or another only to have the
platform disappear after some time. In many cases, the work and documentation then disappears along with the platform. If the practitioner has not been diligent in their file management, they may actually lose pieces of their work.

This issue then overlaps with privacy concerns. If the owner of the work has abrogated their own control over the work by loading it to an institutional site or any platform that they do not control, then they are also giving up control of who can see the work. In the relational world of the portfolio approach, the goal is to share all work with everyone, however this is not always advisable and control should always remain with the owner of the work.

A related discussion of intellectual property is also relevant here. A loose distinction can be made between work that primarily belongs to the institution and work that belongs to the individual. Legally, at most institutions of higher learning, any work produced by a practitioner while at work and for students of that institution and using institutional equipment belongs to the institution. I make a similar distinction between such documents and consider that work that I produce for my own use as teaching resources or for reflection are mine and so I store them in my own accounts. Purely administrative documents that I produce for the institution belong to the institution and so these should be stored on institutional document libraries.

Digital tools and media also have the ability to track people’s movements. Despite the dangers of such data being misused, the potential for teaching and learning is great. As was discussed, hits to pages on any website are easy to track. If a platform is being used that allows for user registration such as a learning management system or intranet, than each individual can be tracked to see when they are reading documentation, or even if they have. Clearly, there is a need for digital literacy and such classes are now taught to primary students.
6.3.1. Digital data.

One feature of electronic media is that it has the power to track virtually every interaction that occurs along with a surprising amount of corollary data. This data requires very little space and so can be stored and shared with great ease. In relation to this research project, the hosting company used for my personal portfolio and website tracks a wide range of data including page hits, times of day, and the IP address of the computer that hit the page. Figure A2 shows one table of data for the first week of December, 2014.

![Days of month](image)

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of visits</th>
<th>Pages</th>
<th>Hits</th>
<th>Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>01 Dec 2014</td>
<td>137</td>
<td>700</td>
<td>1745</td>
<td>101.04 MB</td>
</tr>
<tr>
<td>02 Dec 2014</td>
<td>152</td>
<td>407</td>
<td>1013</td>
<td>114.24 MB</td>
</tr>
<tr>
<td>03 Dec 2014</td>
<td>192</td>
<td>423</td>
<td>1005</td>
<td>117.44 MB</td>
</tr>
<tr>
<td>04 Dec 2014</td>
<td>208</td>
<td>366</td>
<td>826</td>
<td>110.10 MB</td>
</tr>
<tr>
<td>05 Dec 2014</td>
<td>207</td>
<td>369</td>
<td>684</td>
<td>108.00 MB</td>
</tr>
<tr>
<td>06 Dec 2014</td>
<td>169</td>
<td>528</td>
<td>1139</td>
<td>111.38 MB</td>
</tr>
<tr>
<td>07 Dec 2014</td>
<td>145</td>
<td>532</td>
<td>1530</td>
<td>84.41 MB</td>
</tr>
</tbody>
</table>

More detailed tables are also available showing the hits per hour, the hits per page, the most popular IP addresses and other more arcane data. From this data, a wide range of interpretations and conclusions may be drawn.

One point that should be noted is the number of hits from web-bots, also known as web crawlers or spiders. These are virtual robots that hit every page on the internet and catalogue it...
for the search engines such as Google. Figure A3 shows the statistics for the latest web-bot hits in the month of December, 2014.

<table>
<thead>
<tr>
<th>Robots/Spiders visitors (Top 10)</th>
<th>Full list</th>
<th>Last visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hits</td>
<td>Bandwidth</td>
<td>Last visit</td>
</tr>
<tr>
<td>Unknown robot (identified by 'bot**')</td>
<td>932,547</td>
<td>488.18 MB</td>
</tr>
<tr>
<td>Unknown robot (identified by 'robot')</td>
<td>888,888</td>
<td>488.76 MB</td>
</tr>
<tr>
<td>Googlebot</td>
<td>831,714</td>
<td>503.12 MB</td>
</tr>
<tr>
<td>Yandex bot</td>
<td>1,778,444</td>
<td>142.07 MB</td>
</tr>
<tr>
<td>Unknown robot (identified by empty user agent string)</td>
<td>1,164</td>
<td>68.97 MB</td>
</tr>
<tr>
<td>BaitOutSpider</td>
<td>1,001</td>
<td>94.39 MB</td>
</tr>
<tr>
<td>Mail.ru bot</td>
<td>249,888</td>
<td>7.74 MB</td>
</tr>
<tr>
<td>Yahoo! Surope</td>
<td>275,909</td>
<td>9.63 MB</td>
</tr>
<tr>
<td>Herdix</td>
<td>212,252</td>
<td>2.77 MB</td>
</tr>
<tr>
<td>Exabot</td>
<td>31,909</td>
<td>1.40 MB</td>
</tr>
<tr>
<td>Others</td>
<td>119,268</td>
<td>6.75 MB</td>
</tr>
</tbody>
</table>

*Robots shown here gave hits or traffic 'not viewed' by visitors, so they are not included in other charts. Numbers after + are successful hits on 'robots.txt' files.

Figure A3: Webbot hits on swc.lesduke.com as of December 9th, 2014.

When a user searches for a term, the search engine does not literally search the internet for that term, it searches its own database of web pages and then provides the last known address of the page being searched. These web-bots may actually hit the site several times in a day. Because of this frequency, they are not included in any hits recorded on the site.
7. Appendix B

Table B1:

*Competencies for Professional Practice (Government of Western Australia, 2004, p. 8).*

<table>
<thead>
<tr>
<th>Dimension 1</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitating Student Learning</td>
<td>Teachers operating within the first phase should:</td>
<td>Teachers operating within the second phase should:</td>
<td>Teachers operating within the third phase should:</td>
</tr>
<tr>
<td></td>
<td>Engage students in purposeful and appropriate learning experiences</td>
<td>Cater for diverse student learning styles and needs through consistent application of a wide range of teaching strategies</td>
<td>Use exemplary teaching strategies and techniques that meet the needs of individual students, and/or classes in a highly responsive and inclusive manner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension 2</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing and Reporting Student Learning Outcomes</td>
<td>Monitor, assess, record and report student learning outcomes</td>
<td>Apply comprehensive systems of assessment and reporting in relation to student attainment of learning outcomes</td>
<td>Consistently use exemplary assessment and reporting strategies that are highly responsive and inclusive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension 3</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engaging in Professional Learning</td>
<td>Reflect critically on professional experiences in order to enhance effectiveness</td>
<td>Contribute to the development of a learning community</td>
<td>Engage in a variety of learning activities that promote critical self reflection and the development of a learning community</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension 4</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participating in Curriculum Policy and Other Program Initiatives in an Outcomes-focused Environment</td>
<td>Participate in curriculum policy and program teamwork</td>
<td>Provide support for curriculum policy or other program teams</td>
<td>Provide leadership in the school by assuming a key role in school development processes including curriculum planning and policy formulation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimension 5</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forming Partnerships within the School Community</td>
<td>Establish partnerships with students, colleagues, parents and other caregivers</td>
<td>Support student learning through partnerships with members of the school community</td>
<td>Facilitate teamwork within the school community</td>
</tr>
</tbody>
</table>
8. Appendix C

The UAE Federal Government has developed an extensive behavioral competency framework which is used to, “define a set of standard competencies for staff at all levels across the UAE Federal Government, to assist government entities in achieving their strategic objectives and to support their organizational effectiveness and culture.” (Federal Authority for Government Human Resources, 2008, 3.1. Introduction). The competencies are grouped into “competency clusters” (3.3. Competency Clusters). Two of these clusters, “Delivery Focus” and “People Focus” (3.3.1. Core Competencies) are considered core competencies, relevant to all employees of the government at all levels. The third cluster, “Strategy Focus” (3.3.2. Leadership Competencies) is applied to senior management roles. Figure C1 illustrates these three clusters and their associated competencies.

![Figure C1: Competency Clusters (3.3. Competency Clusters).](image-url)
The UAE Federal Government then maps these competencies to various roles in order to help delineate the expected performance for each role. Figure C2 shows a mapping tool used to demonstrate how the competencies can be mapped to roles.

![Figure C2: Competency Mapping (3.4. How to map competencies to roles).](image-url)

<table>
<thead>
<tr>
<th>Job Category</th>
<th>Grade</th>
<th>Proficiency Level</th>
<th>Core Competencies</th>
<th>Leadership Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Roles</td>
<td>DG</td>
<td>PL5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>CEO</td>
<td>Special A</td>
<td>PL6</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Senior Management Roles</td>
<td>Special B</td>
<td>PL5</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory Roles</td>
<td>3</td>
<td>PL4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>PL3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>8</td>
<td>PL2</td>
<td>9</td>
</tr>
</tbody>
</table>

Figure C2: Competency Mapping (3.4. How to map competencies to roles).
9. Appendix D

This appendix contains samples from two surveys that were conducted with various participants.

The first set of survey questions were used with several cohorts of students at the Sharjah higher colleges. The second set of survey questions were selected from a larger, broad survey written in collaboration with a representative from the Sharjah Ministry of Education (Samaa Zaki Abdel Ghany, mentioned in the acknowledgements) and conducted with over 400 school teachers across the UAE. Selected answers have been included for interest.

9.1. Survey Conducted with Students at the Sharjah Higher Colleges

Social media:

Q: Which of the following web-based social media accounts do you have and how often do you use them?

<table>
<thead>
<tr>
<th></th>
<th>Don’t have</th>
<th>Have – do not use</th>
<th>Use at least once a month</th>
<th>Use at least once a week</th>
<th>Use almost everyday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twitter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instagram</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private discussion boards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Q: Do you feel that you act differently in face-to-face interactions and in online media? If yes, can you describe how?

Q: Do you feel comfortable communicating through social media?

<table>
<thead>
<tr>
<th>Response</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I worry about privacy and so do not communicate often</td>
<td></td>
</tr>
<tr>
<td>I worry about privacy so share most information privately</td>
<td></td>
</tr>
<tr>
<td>I do not worry about privacy, but simply do not use social media often.</td>
<td></td>
</tr>
<tr>
<td>I do not worry about privacy and but communicate regularly both private and publicly</td>
<td></td>
</tr>
<tr>
<td>I do not worry about privacy and communicate freely.</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Survey Conducted with UAE School Teachers across the Country

Q: Please select all that apply: I am a teacher at one of the following schools:

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madares Al Ghad Program</td>
<td>15.21%</td>
</tr>
<tr>
<td>Mohammed Bin Rashid’s Smart Learning Program</td>
<td>26.24%</td>
</tr>
<tr>
<td>Model Schools Program</td>
<td>41.44%</td>
</tr>
<tr>
<td>Public school that do not follow any of the above programs</td>
<td>20.91%</td>
</tr>
<tr>
<td>Private Sector</td>
<td>12.55%</td>
</tr>
</tbody>
</table>

Q I teach grade....

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1-5</td>
<td>24.20%</td>
</tr>
<tr>
<td>Grade 7</td>
<td>16.37%</td>
</tr>
</tbody>
</table>
Q: How would you rate your current knowledge, skills and experience in using Electronic Portfolios?

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>I never heard about them</td>
<td>16.61%</td>
</tr>
<tr>
<td>I heard about them but have no experience</td>
<td>24.55%</td>
</tr>
<tr>
<td>Novice</td>
<td>9.75%</td>
</tr>
<tr>
<td>Some experience</td>
<td>15.16%</td>
</tr>
<tr>
<td>Somewhat proficient</td>
<td>27.08%</td>
</tr>
<tr>
<td>Power user</td>
<td>6.86%</td>
</tr>
</tbody>
</table>

Q: I know how to divide / organize my own portfolio.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>24.52%</td>
</tr>
<tr>
<td>Agree</td>
<td>38.31%</td>
</tr>
<tr>
<td>Neutral</td>
<td>26.44%</td>
</tr>
<tr>
<td>Disagree</td>
<td>8.81%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1.92%</td>
</tr>
</tbody>
</table>
Q: It was challenging to select the artifacts to include in my portfolio.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>7.42%</td>
</tr>
<tr>
<td>Agree</td>
<td>25%</td>
</tr>
<tr>
<td>Neutral</td>
<td>32.42%</td>
</tr>
<tr>
<td>Disagree</td>
<td>28.91%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>6.25%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Q: I know how to write my educational philosophy / my own vision, mission and educational goals.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>16.48%</td>
</tr>
<tr>
<td>Agree</td>
<td>39.46%</td>
</tr>
<tr>
<td>Neutral</td>
<td>27.97%</td>
</tr>
<tr>
<td>Disagree</td>
<td>10.73%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>5.36%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Q: For my work documentation, I use...
Q: Where do you usually save / access your electronic files such as text files, images, videos, presentations, and PDFs?

<table>
<thead>
<tr>
<th>Hard-printed documentations</th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50.65%</td>
<td>29.87%</td>
<td>13.85%</td>
<td>4.76%</td>
<td>0.87%</td>
</tr>
<tr>
<td>Soft copy documentations</td>
<td>41.88%</td>
<td>21.37%</td>
<td>26.92%</td>
<td>5.98%</td>
<td>3.85%</td>
</tr>
</tbody>
</table>

Q: I plan to use only an electronic portfolio in the future.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>28.97%</td>
</tr>
<tr>
<td>Agree</td>
<td>37.30%</td>
</tr>
<tr>
<td>Neutral</td>
<td>21.03%</td>
</tr>
<tr>
<td>Disagree</td>
<td>9.52%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3.17%</td>
</tr>
</tbody>
</table>
Q: I think it is worth the time to create an electronic portfolio.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>29.44%</td>
</tr>
<tr>
<td>Agree</td>
<td>39.11%</td>
</tr>
<tr>
<td>Neutral</td>
<td>18.15%</td>
</tr>
<tr>
<td>Disagree</td>
<td>9.27%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>4.03%</td>
</tr>
</tbody>
</table>

Q: I will encourage students to use electronic portfolios for their work.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>28.11%</td>
</tr>
<tr>
<td>Agree</td>
<td>45.78%</td>
</tr>
<tr>
<td>Neutral</td>
<td>19.28%</td>
</tr>
<tr>
<td>Disagree</td>
<td>4.42%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>2.41%</td>
</tr>
</tbody>
</table>

Q: I would like to publish my electronic portfolios on the Web.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>13.20%</td>
</tr>
<tr>
<td>Agree</td>
<td>20.80%</td>
</tr>
</tbody>
</table>
Neutral 33.60%
Disagree 26.40%
Strongly disagree 6%

Q: I have been encouraged to use an electronic portfolio.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>12.94%</td>
</tr>
<tr>
<td>Agree</td>
<td>25.10%</td>
</tr>
<tr>
<td>Neutral</td>
<td>23.92%</td>
</tr>
<tr>
<td>Disagree</td>
<td>25.10%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>12.94%</td>
</tr>
</tbody>
</table>

Q: My lack of knowledge about technology is a problem when working with electronic portfolios.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>12.50%</td>
</tr>
<tr>
<td>Agree</td>
<td>23.39%</td>
</tr>
<tr>
<td>Neutral</td>
<td>20.97%</td>
</tr>
<tr>
<td>Disagree</td>
<td>22.98%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>20.16%</td>
</tr>
</tbody>
</table>
Q: I believe that electronic portfolios will create opportunities to use more technology in my teaching.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>32.93%</td>
</tr>
<tr>
<td>Agree</td>
<td>40.24%</td>
</tr>
<tr>
<td>Neutral</td>
<td>17.48%</td>
</tr>
<tr>
<td>Disagree</td>
<td>7.72%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1.63%</td>
</tr>
</tbody>
</table>

Q: I use cloud storage to save my file on the web such as GoogleDrive, Dropbox, SkyDrive, iCloud.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>11.34%</td>
</tr>
<tr>
<td>Usually</td>
<td>15.38%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>19.43%</td>
</tr>
<tr>
<td>Rarely</td>
<td>19.43%</td>
</tr>
<tr>
<td>Never</td>
<td>34.41%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
</tbody>
</table>

Q: I feel I need training on the use of online discussion forums / platforms.
<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>20.25%</td>
</tr>
<tr>
<td>Agree</td>
<td>31.82%</td>
</tr>
<tr>
<td>Neutral</td>
<td>24.38%</td>
</tr>
<tr>
<td>Disagree</td>
<td>15.29%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>8.26%</td>
</tr>
</tbody>
</table>

**Q:** I have been asked to do reflection on my teaching practices.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>8.02%</td>
</tr>
<tr>
<td>Agree</td>
<td>24.05%</td>
</tr>
<tr>
<td>Neutral</td>
<td>24.47%</td>
</tr>
<tr>
<td>Disagree</td>
<td>27.43%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>16.03%</td>
</tr>
</tbody>
</table>

**Q:** I usually give feedback and opinion to my colleagues about their teaching.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>10.79%</td>
</tr>
<tr>
<td>Agree</td>
<td>39.00%</td>
</tr>
<tr>
<td>Neutral</td>
<td>32.78%</td>
</tr>
<tr>
<td>Disagree</td>
<td>13.69%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>3.73%</td>
</tr>
</tbody>
</table>
Q: If so, how do you do that?

<table>
<thead>
<tr>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face-to-face</td>
<td>30.88%</td>
<td>35.78%</td>
<td>26.96%</td>
<td>.43%</td>
</tr>
<tr>
<td>Electronically</td>
<td>6.96%</td>
<td>14.56%</td>
<td>31.01%</td>
<td>22.15%</td>
</tr>
</tbody>
</table>

Q: I accept others’ comments and feedback on my own teaching practices.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>37.24%</td>
</tr>
<tr>
<td>Agree</td>
<td>46.44%</td>
</tr>
<tr>
<td>Neutral</td>
<td>15.06%</td>
</tr>
<tr>
<td>Disagree</td>
<td>0.84%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0.42%</td>
</tr>
</tbody>
</table>

Q: I have my own online space that allows me to save and share my ideas and reflections about my teaching experience.

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>22.41%</td>
</tr>
<tr>
<td>Agree</td>
<td>41.81%</td>
</tr>
<tr>
<td>Neutral</td>
<td>26.29%</td>
</tr>
<tr>
<td>Disagree</td>
<td>8.62%</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0.86%</td>
</tr>
</tbody>
</table>
Q: Do you set up a web-based social media for your school work documentation and communication on your PC or on your smart phone?

<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td>36.92%</td>
</tr>
<tr>
<td>Usually</td>
<td>19.63%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>22.90%</td>
</tr>
<tr>
<td>Rarely</td>
<td>10.28%</td>
</tr>
<tr>
<td>Never</td>
<td>10.28%</td>
</tr>
</tbody>
</table>

Q: If so, who do you communicate with regularly?

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Administration</td>
<td>34.01%</td>
<td>26.90%</td>
<td>21.83%</td>
<td>7.11%</td>
<td>10.15%</td>
</tr>
<tr>
<td>Teachers in my schools</td>
<td>47.78%</td>
<td>29.56%</td>
<td>12.81%</td>
<td>3.94%</td>
<td>5.91%</td>
</tr>
<tr>
<td>Teachers in other schools</td>
<td>23.53%</td>
<td>24.06%</td>
<td>28.34%</td>
<td>11.23%</td>
<td>12.83%</td>
</tr>
<tr>
<td>Parents</td>
<td>16.49%</td>
<td>15.96%</td>
<td>26.06%</td>
<td>15.43%</td>
<td>26.06%</td>
</tr>
<tr>
<td>Students</td>
<td>24.73%</td>
<td>18.82%</td>
<td>23.66%</td>
<td>14.52%</td>
<td>18.28%</td>
</tr>
<tr>
<td>Educational institution</td>
<td>14.69%</td>
<td>16.95%</td>
<td>32.77%</td>
<td>14.69%</td>
<td>20.90%</td>
</tr>
</tbody>
</table>

Q: Do you feel comfortable communicating through social media?
Answers | Responses
---|---
I worry about privacy and so do not communicate often | 19.16%
I worry about privacy so share most information privately. | 31.31%
I do not worry about privacy, and simply do not use social media often. | 11.68%
I do not worry about privacy and communicate regularly both privately and publicly. | 37.85%

Q: Who will you allow to view, share and comment on your electronic portfolio? Please select all that apply:

| Answers | Responses |
---|---
Teachers from my school | 86.43% |
Teachers from another school | 56.11% |
School Principal | 75.57% |
Educational institutions | 52.04% |
Parents | 44.34% |
Students | 42.53% |

Q: What will be your purpose for the electronic portfolio? Please select all that apply:
<table>
<thead>
<tr>
<th>Answers</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reflective learning</td>
<td>58.30%</td>
</tr>
<tr>
<td>Show evidence of growth for appraisal</td>
<td>72.20%</td>
</tr>
<tr>
<td>Job Seeking</td>
<td>49.78%</td>
</tr>
<tr>
<td>Keep records for your teaching career.</td>
<td>89.24%</td>
</tr>
<tr>
<td>Professional Networking</td>
<td>41.70%</td>
</tr>
</tbody>
</table>
10. Reference List


doi:10.1300/jo67v24n03_07


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