Empowering Learners to Engage in their Authentic Online Assessment

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Abstract:
The purpose of this chapter is to share an assessment practice that utilized an authentic online activity as both a learning activity and an assessment item. The assessment required students to identify their best contributions in the learning activity and submit those items for assessment. This shift in assessment required students to reflect on their learning, to identify evidence of their learning, and fostered further develop their metacognition skills. Gulikers, Bastiaens and Kirschner's (2004) five-dimensional framework for authentic assessment was used to examine how authentic instruction and authentic assessment were aligned in the online activity. Three recommendations for research and practice are presented.

Introduction

Nationally and internationally there has been a rapid expansion of online and blended learning. Allen and Seaman (2011a) reported in the USA that 6.7 million higher education students are enrolled in at least one online course. They noted that "[t]he proportion of all students taking at least one online course is at an all-time high of 32.0 percent" (p.4). With the increased demand for online and blended learning, attention should be given to the assessment practices used within these learning environments.

The purpose of this chapter is to share an authentic assessment practice that was used for an online and blended course which utilized an online task as both a learning activity and an assessment item. The assessment required students to identify their best contributions in the activity and submit those items for assessment. This shift in practice, required students to reflect on their learning, to identify what they believed counted as evidence of their learning, as well as, provided an opportunity for them to further develop their metacognition skills.

Blended and Online Learning

There are diverse definitions used for the terms blended learning and online learning. Allen and Seaman (Allen & Seaman, 2006, 2010; 2011b) have defined blended learning as a course with 80% of the content being delivered online; with a blended course being one where 30% – 79% of the content is delivered online alongside face-to-face sessions. Masie (2002) defined blended learning as "the use of two or more distinct methods of training" (p. 59). The terms blended learning, flexible, mixed mode, or hybrid delivery are often used interchangeably. Graham, Allen, and Ure's (2003) reviewed many definitions of blended learning and came up with three common themes: combining instructional modalities or media; combining instructional methods; and combining online and face-to-face instruction. Graham (2005) then created the definition: "Blended learning systems combine face-to-face instruction with computer-mediated instruction" (p. 5).

The terms online learning and e-learning are often used interchangeability. E-learning "represents a shift from the ideal of autonomy and the industrial production of prepackaged study materials characteristic of mainstream distance education. E-learning represents a distinct educational branch with its roots in computer conferencing and collaborative constructivist approaches to learning" (Garrison, 2011, p. 2). Further, Garrison (2011) has argued "[o]nline learning integrates independence (asynchronous online communication) with interaction (connectivity) that overcomes time and space constraints in a way that emulates the values of higher education" (p. 3).

The challenge is that many instructors do not have the skills to design or redesign their face-to-face courses to take advantage of the opportunity provided in an online space for learners to gain a deep conceptual understanding of the content through interaction, engagement, collaboration

and critical thinking. Learners need multiple cognitive opportunities to connect theory and practice by "engaging in attention, enactment, reflection, critique, adaptation, [and] articulation" (Laurillard, 2000, p. 136). Blended and online learning approaches provide multiple opportunities to facilitate engagement and interaction, to present information and to represent theoretical concepts in different forms to assist learners in their processes of knowledge connection, deconstruction, and re-construction.

Dialogue for Learning

Dialogue is a result of collaborative knowledge generation (Misanchuk & Anderson, 2001). Romney (2003) has suggested that "[d]ialogue is focused conversation, engaged in intentionally with the goal of increasing understanding, addressing problems, and questioning thoughts or actions. It engages the heart as well as the mind" (p. 2). Dialogue provides an important contribution to learning in higher education. The OECD's guide for *Higher Education Institutions*, stated that "[s]tudent engagement is most powerful as a driver of quality teaching when it involves *dialogue*, and not only information on the student's experience" (Henard & Roseveare, 2012, p. 21). This idea is supported by a number of researchers (Aminifar & Bahiraey, 2010; Bereiter, 1992; Hoskins & Van Hooff, 2005; Schallert, Reed, & the D-Team, 2003) who have suggested that dialogue, collaboration, interaction and engagement are key to learning and teaching which promotes deep learning and higher order thinking.

Online and blended learning environments provide opportunities for both synchronous and asynchronous communication. Dialogue can provide a visible demonstration of students learning or understandings (Bernstein, 2009). When speaking or writing their ideas and making them available to others during the learning process it is easier for the instructor to diagnose and respond to misconceptions both at the group and individual levels because the group meaning is then interpreted by individuals (Stahl, 2004). In many situations, students' misunderstandings are only available at the point of assessment. At this point, it is often too late to improve their learning and course results and many students take limited opportunities to learn from feedback provided at the end of the semester. It is more effective to support students' learning during the learning process rather than at the completion of the semester.

Asynchronous online communication provides an extension of time for dialogue. It also allows students to review the information provided, reflect on the ideas presented by others, and research additional information before responding to others. Further, using asynchronous dialogue in an online space, offers a number of other advantages for example: it is not time nor place dependent, there is more time to respond, the participants can respond by sharing different media types, the air time can be shared by all, and participants can decide how, when and how often they participate because they do not need to wait for others to contribute (Henri, 1992; Stacey & Gerbic, 2007). Access to the conversations, using asynchronous communication, means that students can go back to them as often as they like as they de-construct, re-construct, and co-construct knowledge.

The technology affords students the opportunity to communicate with numerous people beyond the traditional teacher-student interaction. Communication with others provide a variety of information sources; multiple perspectives; a diversity of explanations and understandings; a range of prior experiences and knowledge to draw from; and opportunities for disagreement, debate and the testing out of ideas. Shallert et al. (2003) have found that "online conversations are far more complex and students' experiences are much less predictable than we had expected" (p. 105) and require a high cognitive processes. "By externalising thinking processes, students make statements and counter statements, defend and challenge each other's assumptions, all of which are processes leading to higher-order thinking" (McLoughlin & Luca, 2000, p. 7). If the contributions lead to substantive conversations which are extended and focused, these conversations would include "indicators of higher order thinking such as making distinctions, applying ideas, forming generalizations, raising questions, and not just reporting experiences, facts, definitions, or procedures" (Newmann & Wehlage, 1993, p. 10).

When researching blended learning, Stacey and Gerbic (2007) established that "online discussions helped all the students to learn, reading the online posting prompted engagement, writing the postings aided deeper understanding, [and] the need to communicate to peers clearly and persuasively also aided their understanding" (p. 5). Dynamic student engagement and focused dialogue requires a cycle of posting and responding to others to keep the discussion going rather than individuals posting disconnected or integrated monologues. This requires thoughtful design to support dialogue, as well as, purposeful facilitation.

The role of the online facilitator is a crucial and complex one including tasks such as creating ground rules, generating activities or questions that promote high level dialogue, and ensuring effective time management to keep the discussion productive (Spector & de la Teja, 2001). It has been suggested by Muilenburg and Berg (2004) that "asking the right questions is almost always more important than giving the right answers" (p. 10). Lipman (2003) believed that "if the question is a meaningful one and the questioner does not know the answer, the classroom discussion that follows will likely demand that each participant think more and more judiciously" (p. 117). Larreamendy-Joerns and Leinhardt (2006) have elucidated that "successfully orchestrating a dialogue demands fairly sophisticated skills. … The outcome of this complex appraisal is a sense of the amount and quality of the guidance that specific contributions and the conversation as a whole require to support learning" (p. 591).

Authentic Assessment

If something in education is thought of as being authentic it is often thought of as being or mirroring 'real world' activities or being useful or relevant beyond the classroom. The term authentic assessment has been interpreted in various ways with a range of different meanings and is implemented in a variety of ways. "[T]here is not always agreement as to the important elements that make an assessment authentic" (Frey, Schmitt, & Allen, 2012, p. 1).

From a review of the literature (Herrington, 2006; Herrington & Herrington, 1998; Herrington, Reeves, & Oliver, 2010; Newmann & Wehlage, 1993; Schmidt et al., 2009), the following are some common themes or characteristics of authentic assessment:

- The activity or context of the activity is realistic or connected to the real world.
- The task is performance based, cognitively complex and ill structured allowing for multiple responses.
- The students collaborate with others to complete the task and justify or defend their solution or product.
- The criteria or indicators for mastery of learning or task completion are valid, reliable and known to the students.

Authentic assessments, according to Reeves (2011),

> "require students to deal with realistic situations or problems-that is, situations or problems that occur outside classrooms and schools. The more closely a performance assessment matches a task that people do in 'the real world', the more authentic it is said to be" (p. 110).

Reeves (2011) goes on to say that in the world outside of school, people "usually have time to think about problems, consult with others, and review the product they create" (p. 110). This is in contrast to a traditional form of assessment where there is only one chance to demonstrate what a person has learned.

Gulikers, Bastiaens and Kirschner (2004) suggested that authentic learning will result in increase transfer of knowledge and is a result of authentic instruction and authentic assessment. They also revealed that the "dimensions can vary in their level of authenticity" (p. 70) and we should consider authenticity as being on a continuum rather than being authentic or not (Newmann & Wehlage, 1993). Gulikers et al. (2004) developed the five-dimensional conceptual framework for authentic assessment which shows how authentic instruction and authentic assessment can be aligned. Their five dimensional framework provides as a lens to be used to unpack the authentic assessment and authentic instruction of our project which is based on professional practice. Table 1 provides a description for the dimensions, along with a guiding question for each dimension.

Table 1
Summation of the Five-Dimensional Conceptual Framework for Authentic Assessment

Dimension	Question	Description
Assessment task	What do you have to do?	Needs to be relevant and valued to both the student and others, it should be complex and requires authentic content or prior knowledge and the integration of knowledge from multiple areas.
Physical or virtual context	Where do you have to do it?	Needs to be relevant, includes scaffolding, relevant information and resources and takes consideration of time.
Social context	With whom do you have to do it?	Should be similar to a context which takes place outside of school, and includes both collaborative and individual aspects.
Assessment result or form	What is the result of your efforts?	Should include a product or performance which demonstrates relevant competencies across an array of tasks and the work should be presented to others.
Assessment criteria	How will what you have done be judged?	The criteria/standards should be explicitly provided prior to beginning the task.

Adapted from Gulikers et al. (2004) five-dimensional model.

Gulikers et al.'s (2004) five-dimensional framework is used to present the learning activity and assessed discussed previously. The sections below will examine and discuss the experience in terms of the alignment of authentic instruction and authentic assessment.

Learning Context and Project Design

Pre-service teachers (students), teachers (experts) and academics were engaged in a six week cross-institutional online collaborative activity as part of a Middle Years curriculum and pedagogy course. The course was taken by students in their second year of a four year teacher education program or the first semester of a one year graduate diploma at a regional university in Australia. The course could be taken in either online or blended modes. The online task being described for this chapter was designed using a constructivist framework to provide the students with an opportunity to live the experience of being online collaborators inquiring into real-world teaching and learning issues in a digital global classroom. Although asynchronous discussions played a critical role in the activity, synchronous communication was also used.

The students participated in a three-phrase initiative which required them to engage in online discussion with their peers and with experts in various discipline areas. The first phase involved students introducing themselves to their peers, to read a novel related to one of the key themes (ESL and cultural diversity, bullying, Indigenous perspectives, and special needs). The novels were used to stimulate thinking and discussion related to the key themes. An example of one of the stimulus novels is Hadden's (2002) book *The curious incident of the dog in the night-time* which related to the special needs theme. The students then worked in teams to provide an overview of the book relating it to curriculum and writing inquiry questions focused on pedagogical implications. Phase two involved students responding to inquiry questions related to the pedagogical implications they provided in phase one. Also in phase two, students interacted synchronously and asynchronously online with teacher experts from Australia and Canada in the key theme areas. The third phase required students to respond to an authentic scenario and to reflect on the learning they gained through the activity and the learning processes they had engaged in during the activity. For each phase multiple forums were available related to each of the themes.

The students' inquiry, engagement and assessment formed part of the general learning activity within the online learning environment, meaning they were assessed directly on their contributions to the learning activity and not as a separate assessment task. The students' participation in the activity formed 40% of the overall assessment for the course. At the completion of the three-phase activity, students self-selected their best online discussion posts to be submitted for assessment. The evaluation of their work was not based on a quantitative perspective (e.g., how many times they posted) but on the quality of their online contribution to the dialogue. The criteria for this assessment reflected the learners': timeliness of posts; constructive and supportive responses to others; ability to participate in sustained professional dialogue; ability to promote deep discussion with clear efforts to make personal and group meaning; integration of ideas from variety of sources; and reflective synthesis of key content and pedagogical issues from one of the themes and their personal learning.

In preparing students for the online discussion component, they were provided with de-identified online posts from previous semesters for the purpose of analysis. As they analyzed the posts, they provided such feedback in terms of readability, likelihood of reading it, and structure and made recommendation for ways to improve the posts. The goal of this task was for students to identify qualities of good online discussion posts and then for them to mirror those qualities in their own work; it also made them familiar with the criteria for their assessment.

There have been several iterations of this authentic learning and assessment activity project. The focus of this chapter is based on the design and implementation used for one semester in 2012 where 65 students participated. This chapter provides a narrative analysis of the student reflections and the instructor experiences during this one semester. The five dimensional framework for authentic assessment (Gulikers et al., 2004) provides a lens to report on the lived experience of both students and instructors, with the focus on students.

Authentic Nature of the Work

From the analysis, the following five key themes emerged related to authentic learning and authentic assessment that aligned with Gulikers et al. (2004) five-dimensional framework for authentic assessment.

Authentic task and authentic content.

From the activity and assessment, there were three factors that influenced the authenticity in terms of the content. First, the key themes of the activity and assessment: ESL and cultural diversity, bullying, Indigenous perspectives, and special needs; mirror those issues that teachers deal with everyday in their classrooms. Through the stimulus novels, students were confronted by issues that are real and relevant in their professional practice. The issues under inquiry were complex and the student responses required them to integrate information and experience from multiple sources.

Second, "the use of stimulus novels laid the foundation for a shared experience designed to trigger online dialogue and provide an anchor for preservice teachers when new ideas were introduced or challenged" (Lock & Redmond, 2011, p. 21). The plot and characters were realistic and mirror real-life incidences, as such they could be used in the discussion but also this was the place where students began to make connections to their own experiences and brought in information and resources related to the topic or issue. Further, they asked additional questions that extended and deepened the discussion. One student commented, it "made me more informed and aware of the issues that occur in almost every school". This highlights that the students were able to identify the relevance of the content to their professional lives.

From the start of the work, the students were asked to identify and share online their own inquiry questions. A selection of these questions was used to prompt further facilitated online discussion. The student questions were the focus of the online discussions and further inquiry rather than questions provided by the teacher. As they advanced through the phases of the activity, students were able to choose which discussion forums they wanted to engage in, as well as, what topics they wanted to explore and to what depth. The students drove the nature and the direction of the learning based on their perceived gaps in knowledge. As noted by one student, "Being able to interact with many other students exposed me to some great information that I may never have learnt otherwise." A second student comment, "This project has been a very interesting experience. Being able to express my own opinions and read the opinions of other students has opened my eyes to many ideas and concepts I had not previously considered."

Having students consider the pedagogical implications and questions resulting from their experience, reading and discussion and then respond to a real life scenario mirrors that work completed by teachers. Part of each synchronous session involved the examination of a real-life

scenario. Each scenario was based on the theme from one of the stimulus novels but contained elements of what teachers encounter in classrooms. With the presentation of each scenario,

> "preservice teachers and experts engaged in discussion to come up with strategies for addressing the situation. Out of this experience, preservice teachers identified areas they needed to learn more about and were encouraged to develop professional growth plans identifying elements of pedagogical practice and classroom application" (Lock & Redmond, 2011, p. 22).

As one student commented, "This assessment has generated many key points which are of great important not only to middle year's learners, but a school as a whole". The synchronous learning event enabled the participants to explore a range of responses to the scenario with a practicing teacher who could comment on the proposed resolutions from their extensive practical in-school experience.

Teachers are reflective practitioners and reflection on learning is a daily activity. As such, the students in this initiative were required to reflect on the learning outcomes and processes of the activity integrating their learning from the content and tasks. The tasks were authentic to their professional practice and also to their learning processes.

Virtual context.

Teachers, as practitioners, often use online forums or online communities to discuss professional issues and pedagogical quandaries relevant to their day-to-day work. For the student work, the authentic learning and assessment tasks were held within an online space where information was provided and dialogue was afforded at a time and place selected by the students. The challenge when working in an online space is to provide the necessary structure and scaffolding that is needed to foster dialogue, not monologue. A key factor noted by Muilenburg and Berg (2000) is "asking the right questions" (p. 10) that will engage people to explore the topic beyond a surface level. Lipman (2003) goes on to say that if it is a meaningful question that is taken up through discussion it will require students to think deeply and in more thoughtful ways. It is through careful facilitation and creating the expectation of dialogue that will result in meaningful learning.

During this learning and assessment activity, students engaged in authentic discussion with topics and processes imitating teacher professional conversations and including teacher professionals in the conversations. The authentic discussion in this work is recognized in three ways. First, students drove the nature of the conversation through asking questions and exploring issues that were relevant to their personal learning and were student-centred.

In phase two, the online discussions based on the thematic areas were taken from the inquiry questions students posted in phase one. The student questions launched the discussion of the topics and the exploration of the issues that they wanted to examine as part of the work. In phase three when they had the opportunity to dialogue with experts, again the questions came from the students relating to real-world teaching and learning issues. One of the students made the following remark, “The discussions have prompted me to look further into issues that I otherwise could have passed over.” Another comment was that “The discussions have also allowed me to view the gaps in my knowledge.” Second, students engaged in conversation with experts in the field, real teachers who encounter such issues in their day-to-day practice that students were investigating. “The opportunity to interact with students and staff around the globe has been interesting and is a way in which this project has clearly utilised a strength of ICT integration.” Third, these were real discussion driven by interest in the topic rather than by assessment. Students shared their experiences and resources as they engaged in conversation around the topics and considered personal responses to the scenarios.

The students were learning with and from others through the online discussion which resulted in the co-construction of meaning. As noted by one student, “Without the input of the forum members, and being required to work through their findings, I would have been unaware of many of these insights, issues and resources.” Another student noted,

> I enjoyed participating in the forums, and looked forward to checking back to read other peoples responses. I found that much of what we were discussing related to other subjects I have been studying concurrently (it is all interlinked!). I found my classmates and the experts to be very supportive and I felt comfortable to express my opinion for academic discussion.

Social context.

In real life, teachers often work both with others in groups and individually. They regularly contact other teachers to gain knowledge and tips regarding issues within their classrooms. The book overview task required the students to work in a collaborative team, however all other items were individual, relying on the cooperation from others to keep the dialogue going.

Students engaged and interacted with multiple others who are situated in different social contexts because the students and the teachers were based all over the world, have different educational experience themselves as learners, and had different professional experience placement experiences to draw from. As one student suggested,

> the collaborative and pluralistic nature of the project, I enjoyed seeing the different ways in which different student developed such diverse options regarding and

> responses to the same material, which definitely gave me a good deal of food for thought in more than one instance.

Another benefit that emerged from this experience was that of a learning community. The idea of learning with and from each other was an empowering learning experience for some students. As noted by one student, "Our group continues on as a study group, supporting each other's learning and helping overcome frustrations or lack of understanding." Another student comment, "this experience has illustrated to me the benefits of providing an online community in both a learning and teaching capacity."

Within this social context, students were able to vicariously test ideas or share their thoughts on how they may deal with some of the issues under discussion. This ongoing feedback from people with different experiences should broaden the students' overall learning and enhance their practice.

Assessment result or form.

"It is clear that students must perceive participation in e-learning discussions as a major component of the program of studies. Thus, assessment activities must be integrated within the e-learning activities" (Garrison & Anderson, 2003, p. 95). Within this work, the assessment was embedded in the day-to-day online discussion. The form of this assessment was for them to self-select their best participation in the learning activity over the seven week period. There were guidelines and minimum requirements but students had the opportunity to show their best work. One student revealed that "I also like the idea of an ongoing assessment, to allow students the opportunity to not leave the entire piece to the end of the period."

As in real life, participating in the online discussion students received ongoing feedback on their ideas and questions both from peers and from the experts. The work was set up as a form of continuous assessment, also assessment *for* learning rather than *of* learning. In describing assessment as part of the learning journey, one student spoke of how the "on-going nature reinforced learning." Another student noted that through this process they received

> immediate and ongoing feedback on ideas. The ability to gain instant feedback on an idea is very important, yet much of the assessment we are often required to do unfortunately fails in this regard. As such, I see this project's encouragement for the ongoing germination of a single idea or focus to be a recognisable strength.

From the student reflections, it is clear that there is authentic longevity of their learning. The activity was designed to be a professional learning experience where students could explore in depth real-world educational topics and issues that were relevant to their own learning needs. Students valued the direct linkages between the activity and assessment and their future professional lives. As one student commented, "The information I have gained from this project

will drastically influence my pedagogy" and another revealed, "This has been an interesting assessment piece and has been a great experience that can be applied to me future teaching career."

At the completion of the activity, students were to identify their own next steps for what they needed to learn and how they would learn this so to prepare them for their future classrooms. "This project has given me some great ideas for starting this, but more than that it has shown me the areas where I need to be more vigilant in monitoring and preparation of the use of technology as a tool," commented a student. Another student commented, "I am grateful that the staff has taken on this difficult assessment task when they could have easily sat back and assigned a single report questions."

One student remarked, "Having to constructively build information and use it, instead of simply pool it to a 'bucket' that may or may not get used." This statement is interesting, in that the nature of the learning required students to use information as a means of knowledge construction. What they were doing in this work required them to use and apply their new understandings. It was not a matter of memorizing information which may or may not be used in their work. As in the real-world, a person needs to be able to use new information to make meaning and apply in it new situations.

Criteria.

The criteria and standards for the assessment were provided to the students at the beginning of the semester. In addition, students were provided with the opportunity to unpack the criteria and align practice posts to the criteria enhancing their understanding of the expectations and standards. From this work, they would have developed a clearer understand of the level of performance expected to guide their ongoing participation. The students suggested that having the criteria however did impact on the nature of their participation. One student suggested that "[h]aving the posting style publicised as a marking criteria has resulted in some interesting and irritating posting conventions."

"The primary difficulty in making any assessment of an asynchronous discussion forum is the huge volume of data that are available to be assessed" (Andresen, 2009) . To overcome this issue, the course instructor asked students to self-select a number of strong examples of their online posting to be used for assessment which aligns with the published criteria. (D. R. Garrison & Anderson, 2003) "argue that it is possible to have students present their own evidence of meaningful participation in e-learning activities" (p. 98). This self-selection required the students to carefully consider what they valued in terms of quality postings. As a result, each student had to take ownership of the selection of the work that showed what they have learned, how they have learned, and why it was important for their learning.

By providing clear criteria for quality participation and prior posts for student participants to analyze, they were able to reflect on their contributions to the online discussions and make improvements to their contributions through the length of the activity. Further, students were required to reflect on the quantity and quality of their contributions, the process of the learning activity and the knowledge outcomes of their participation.

Having students self-select their best posts supported the development of metacognition in two ways. First, it required them to develop a greater self-awareness of their own knowledge. Second, they needed to have awareness of the quality of that knowledge. As noted by Sawyer (2006) "[a]rtuclating and learning go hand in hand…In many cases, learners don't actually learn something until they start to articulate it- in other words, while thinking out loud, they learn more rapidly and deeply than studying quietly" (p. 12).

Significance to Teaching and Learning

The authentic learning activity was also an authentic assessment task for the course that involved the student asynchronous discussions and other artifacts and reflective items to be graded. One of the techniques that have proven to be successful with this activity has been to have the students self-select their best contributions in the asynchronous discussions to be assessed. This is a major shift away from the former assessment practices of asynchronous communication where an instructor provided a grade based on counting the posts or a grade was provided based on the degree of participation in the online discussion. Or, another way of assessment was to provide a grade based on all their contributions which have been unmanageable to track over several weeks.

By shifting the practice to allow the students to self-select their best contributions in the online discussion, this empowered students to self-assess their online discussions. Through viewing their contributions to the various discussions forums, they were able to make thoughtful decisions about what counts as evidence of learning and to what degree they had engaged in the nature of the discussion. Further, by examining their own inquiry, they were able to identify and reflect on their depth of understanding of the topic.

At the same time by using this practice, it showed the students what was important in terms of learning and how they should approach learning. This provides an opportunity for the students to engage in self-regulatory cognition. Through this work, they become active learners of their own learning and further develop their ability to reflect on their learning and own knowledge. According to Sawyer (2006) "articulation is so helpful to learning is that it makes possible reflection or *metacognition* – thinking about the process of learning and thinking about knowledge. Learning scientists have repeatedly demonstrated the importance of reflection in learning for deeper understanding" (p. 12).

Implications

Three implications emerged from the work. First, in higher education, how do we better assist instructors to create assessment practices within online environments that support assessment *of* learning and assessment *for* learning? A shift needs to move from summative assessment practices and/or testing at the end of the work. Rather, when developing authentic learning tasks, it requires appropriate assessment practices that not only evaluates the performance but provides ongoing feedback to inform the work.

Second, how can authentic assessment practices be used in online learning environments? Support needs to be in place to help instructors to design online courses to create meaningful authentic learning tasks and to ensure appropriate assessment practices are in place. Conceptual frameworks such as that provided by Gulikers et al. (2004), Newman and Wehlage (1993) or Herrington et al. (2006) must be shared with educators wishing to plan and implement authentic learning and assessment.

Third, structures need to be in place to support learners in understanding what they are learning through self-regulatory cognition. Sawyer (2006) noted that a "central topic in the learning sciences research is how to support students in educationally beneficial reflection" (p. 12). They need to be supported in how to develop their metacognitive abilities but also to have the necessary scaffolding in place to support meaningful reflection.

Recommendations for Research and Practice

Gulikers et al.'s (2004) five dimensional framework provided a lens to deconstruct the authenticity of the assessment that learners were involved in as part of the project. As noted by Gulikers et al.'s (2004) framework for authentic assessment there needs to be an alignment with authentic instruction and authentic assessment. The authenticity of the activity was validated by the teachers, as experts, and also by the student participants, rather than only by the course instructor. "Authenticity is subjective, which makes student perceptions important for authentic assessment to influence learning" (Gulikers et al., 2004, p. 69). The learning activity and assessment described in this chapter provides an example of constructive alignment between content, pedagogy and assessment (Biggs, 1996) and resulted in leaning within an authentic context and the use of authentic assessment.

The online or blended environment affords users various opportunities that allow them to engage in learning in new and innovative ways. Yet care must be taken in the design of the authentic learning task and to ensure the necessary scaffolding is in place to support students as they learn through the online dialogue, but also learn about their learning through using an authentic assessment practice that allows for further development of their metacognitive abilities.

From the study, three key recommendations are to be considered. First, structures need to in place to guide students when selecting examples of their contributions that provide strong evidence of learning. They need to be aware of criterion that helps them to determine what makes a valued online contribution. Then they need to be given the opportunity to use such criteria to assess their work and to select contributions that they feel best reflects quality. Their articulation of why such contributions are quality provides insight into their learning.

Second, instructors need to clearly articulate criteria that will be used to assess student asynchronous discussion contributions. These criteria will need to be used to help students in making decisions with regard to their selected contributions. Such criteria can be research informed, as well as, co-created by the students. However, they need to be developed and shared at the start of the work so that students have guidelines to help them in their ongoing online discussions but also for what posts they will select to be assessed.

Third, research needs to be conducted to examine the impact this assessment practice has on student metacognition in online learning environments. Careful selection of appropriate methodology and methods needs to be conducted so to evaluate what is the impact and the degree of impact it has on a student's metacognitive ability.

Conclusion

With the shift to online learning, greater attention needs to be given to assessment. The evidence from this authentic task demonstrates how the students were empowered to participate in authentic assessment by selecting their contributions to be assessed by their instructor. They have taken on an active role in their assessment but have also used this opportunity to learn about their own learning. As such, the challenge is for online instructors to find meaningful ways to create authentic learning opportunities supported through the use of authentic assessment practices.

References

Allen, I. E., & Seaman, J. (2006). Making the Grade: Online Education in the United States, 2006. Retrieved May 14, 2012, from http://sloanconsortium.org/publications/survey/pdf/making_the_grade.pdf

Allen, I. E., & Seaman, J. (2010). *Learning on Demand: Online Education in the United States, 2009*. Needham, MA: Sloan Consortium.

Allen, I. E., & Seaman, J. (2011a). Going the Distance: Online Education in the United States, 2011. Retrieved January 4, 2013, from http://www.onlinelearningsurvey.com/reports/goingthedistance.pdf

Allen, I. E., & Seaman, J. (2011b). *Going the Distance: Online Education in the United States, 2011*. Newburyport, MA: Sloan Consortium.

Aminifar, E., & Bahiraey, D. (2010). *Online Learning and Teaching at Higher Education.* Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications, Toronto, Canada.

Andresen, M. A. (2009). Asynchronous discussion forums: success factors, outcomes, assessments, and limitations. *Educational Technology & Society, 12*(1), 249-257.

Bereiter, C. (1992). Referent-centred and problem-centred knowledge: Elements of an educational epistemology. *Interchange, 23*(4), 337-361.

Bernstein, J. L. (2009). Introduction: Making Learning Visible to Whom? *The Scholarship of Teaching and Learning at EMU, 2*(1), 2.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*, 347-364.

Frey, B. B., Schmitt, V. L., & Allen, J. P. (2012). Defining authentic classroom assessment. *Practical Assessment, Research & Evaluation, 17*(2), 2.

Garrison, D. R. (2011). *E-learning in the 21st century: A framework for research and practice* New York: NY: Routledge.

Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century: a framework for research and practice*. New York: Routledge Falmer.

Graham, C. R. (2005). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). San Francisco, CA: Pfeiffer.

Graham, C. R., Allen, S., & Ure, D. (2003). Blended learning environments: A review of the research literature. *Unpublished manuscript, Provo, UT*.

Gulikers, J. T. M., Bastiaens, T. J., & Kirschner, P. A. (2004). A five-dimensional framework for authentic assessment. *Educational Technology Research and Development, 52*(3), 67-86.

Hadden, M. (2002). *The Curious Incident of the Dog in the Night-time*. Toronto: Doubleday Canada.

Henard, F., & Roseveare, D. (2012). Fostering Quality Teaching in Higher Education: Policies and Practices. Retrieved 10 January, 2013, from http://www.oecd.org/edu/imhe/QT%20policies%20and%20practices.pdf

Henri, F. (1992). Computer conferencing and content analysis. In A. R. Kaye (Ed.), *Collaborative Learning Through Computer Conferencing: The Najaden Papers* (pp. 117-136). Berlin: SpringerVerlag.

Herrington, J. (2006). Authentic e-learning in higher education: Design principles for authentic learning environments and tasks. *Proceedings of World Conference on E-learning in Corporate, Government, Healthcare, and Higher Education*, 3164-3173.

Herrington, J., & Herrington, A. (1998). Authentic assessment and multimedia: How university students respond to a model of authentic assessment. *Higher Education Research & Development, 17*(3), 305-322.

Herrington, J., Reeves, T. C., & Oliver, R. (2010). *A guide to authentic e-learning*. New York, NY: Taylor & Francis.

Hoskins, S., & Van Hooff, J. (2005). Motivation and ability: which students use online learning and what influence does it have on their achievement? *British Journal of Educational Technology, 36*(2), 177-192.

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research, 76*(4), 567-605.

Laurillard, D. (2000). The Impact of Communications and Information Technology on Higher Education. In P. Scott (Ed.), *Higher education reformed* (pp. 133-153). London: Falmer Press.

Lipman, M. (2003). *Thinking in education* (2nd ed.). Cambridge: Cambridge University Press.

Lock, J. V., & Redmond, P. (2011). International online collaboration: giving voice to the study of diversity. *One World in Dialogue, 1*(1), 19-25.

Masie, E. (2002). Blended learning: The magic is in the mix *The ASTD e-learning handbook* (pp. 58-63). New York: McGraw-Hill.

McLoughlin, C., & Luca, J. (2000). Cognitive engagement and higher order thinking through computer conferencing: We know why but do we know how? *Teaching and Learning Forum 2000.* from http://lsn.curtin.edu.au/tlf/tlf2000/mcloughlin.html

Misanchuk, M., & Anderson, T. (2001). Building community in an online learning environment: Communication, cooperation and collaboration. *Middle Tennessee State University Teaching Learning and Technology Conference.* Retrieved July 1, 2011, from http://frank.mtsu.edu/~itconf/proceed01/19.html

Muilenburg, L., & Berge, Z. (2000). A framework for designing questions for online learning. from http://www.iddl.vt.edu/fdi/old/2000/frame.html

Newmann, F., & Wehlage, G. G. (1993). Five standards of authentic instruction. *Educational Leadership, 50*(7), 8-12.

Reeves, A. (2011). *Where great teaching begins: Planning for student thinking and learning*. Alexandria, VA: ASCD.

Romney, P. (2003). The art of dialogue. Retrieved November 15, 2010, from http://romneyassociates.com/pdf/Consulting_Diversity.pdf

Rourke, L., & Anderson, T. (2004). Validity in quantitative content analysis. *Educational Technology Research and Development, 52*(1), 5-18.

Sawyer, R. K. (2006). The new science of learning. In R. K. Sawyer (Ed.), *The Cambridge Handbook of the Learning Sciences* (pp. 1-16). Cambridge, NY: Cambridge University Press.

Schallert, D. L., Reed, J. H., & the D-Team. (2003). Intellectual, motivational, textual, and cultural considerations in teaching and learning with computer-mediated discussion. *Journal of Research on Technology in Education, 36*(2), 103-118.

Schmidt, D., Baran, E., Thompson, A., Koehler, M., Punya, M., & Shin, T. (2009). *Examining preservice teachers' development of technological pedagogical content knowledge in an introductory instructional technology course.* Paper presented at the Society for Information Technology & Teacher Education International Conference.

Spector, J. M., & de la Teja, I. (2001). Competencies for online teaching. *Eric Digest EDO-IR-2001-09.* Retrieved October 7, 2010, from http://searcheric.org/scripts/seget2.asp?db=ericft&want=http://searcheric.org/ericdc/ED456841.htm

Stacey, E., & Gerbic, P. (2007). Teaching for blended learning—Research perspectives from on-campus and distance students. *Education and information technologies, 12*(3), 165 -174.

Stahl, G. (2004). Building collaborative knowing: Elements of a social theory of CSCL. In J. Strijbos, P. Kirschner & R. Martens (Eds.), *What we know about CSCL: And implementing it in higher education* (pp. 53-86). Berlin: Springer Verlag.