

Cultivating Community: Constructivist Online Learning in a Teacher Leadership Program

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Abstract

In this self-study, our goal is to shed light on what constructivist teaching and learning looks like in an online environment. We first explore the characteristics, goals as well as the limitations of more traditional online teaching. The next part examines constructivist learning theory as well as the impact that this theory has had on issues such as teaching, learning and assessment in online environments. We then illustrate the unique features of a constructivist online learning community in a Master's in Teacher Leadership program at Quinnipiac University's School of Education while providing data to evaluate the workings of this community. We conclude this essay by briefly reflecting on some of the advantages of constructivist online learning communities in comparison to more traditional online learning.

Keywords: online learning, teacher leadership, constructivist, teaching, community

Introduction

In the past couple of decades, we have witnessed a significant increase in the use of online instruction among colleges and universities across the United States. As Kebritchi, Lipschuetz, and Santiago note in their literature review article (2017) “the accessibility of the internet and flexibility of online courses have made online education an integral part of higher education” (p. 4). In addition to the accessibility and flexibility that online instruction provides, many institutions of higher education have turned to online programs due to the cost saving that such programs offer. The increase in online programs in the last few decades has also coincided with the advancement in the technology used to deliver instruction in both on-ground and online environments. Thus, virtually all courses today are taught with the help of a Learning Management System (LMS) like Blackboard or Moodle and many instructors that teach online courses utilize technology such as discussion boards, blogs, video conferences, and social media to enhance their students’ learning.

The growth of online instruction across the United States and in many other countries has brought to the forefront the need to address the issue of the quality of the educational experience that students are receiving in these programs in comparison to more traditional face-to-face learning. To date, several empirical studies have already

been done that compared student learning outcomes in face-to-face, online, and hybrid courses. In a recent literature review analysis that evaluated these three teaching formats, Nortvig, Petersen and Balle (2018) concluded that neither one of these formats in-itself produced significantly better learning outcomes. Rather, the authors demonstrate that what leads to either better or poorer learning outcomes “is not the format itself, but is circumstantial and context-dependent” (p. 48). Nortvig’s, Petersen’s and Balle’s analysis suggests that the quality of learning in online learning environments depends on many contextual factors such as the presence of the educator, the interactions among teacher, students and content, and the purposeful connections between online and offline activities.

Other researchers that have investigated the quality of online education have focused less on how it compares to on-ground learning and more on the extent to which it can lead to a specific educational objective. For instance, in a study that explored the way in which taking online courses in higher education affects student engagement, Dumford and Miller (2018) noted that “those students taking greater numbers of online courses were more likely to engage in quantitative reasoning”. However, these researchers also reported the same students” were less likely to engage in collaborative learning, student-faculty interactions, and discussions with diverse others compared to their more traditional classroom counterparts” (p. 452). Summarizing the results of their study, Dumford and Miller assert that although there appear to be some cognitive benefits associated with engaging in online learning, there may also some important educational objectives and practices that cannot simply be adapted to an online environment.

In this self-study, we do not wish to replicate the existing research that compares student learning outcomes in online, face-to-face and hybrid formats. Nor do we attempt to examine any of the cognitive or social impacts on learners who are involved in online courses. Instead, our goal is more modest: to illustrate what constructivist teaching and learning looks like across an entire online program. In what follows, we first explore the characteristics, goals as well as the limitations of more traditional online teaching. The next part examines constructivist learning theory as well as the impact that this theory has had on issues such as teaching, learning and assessment in online environments. We then illustrate the unique features of a constructivist online learning community in a Master’s in Teacher Leadership program at Quinnipiac University’s School of Education while providing data to evaluate the workings of this community. We conclude this essay by briefly reflecting on some of the advantages of constructivist online learning communities in comparison to more traditional online learning.

Traditional Online Teaching

By “traditional online teaching,” we mean a model of teaching that is teacher-centered, includes largely predefined subject matter, and is focused on content delivery and assessment of student comprehension throughout the duration of the course. In their article “Issues and Challenges for Teaching Successful Online Courses in Higher Education,”Kebritchi, Lipschuetz and Santiago (2017) note that

In a majority of online courses, instructors teach with predefined content. In these courses, instructors face the issue of lack of empowerment. In such situations, the role of instructors in creating, shaping, and integrating their own experiences into the content of the courses has been downplayed. (p. 11)

Traditional online teaching generally offers instructors a rather limited role in designing the course content and in shaping the interaction between themselves and their students and amongst the students. In such cases, the autonomy and creativity of the instructors are greatly diminished.

Several researchers that have looked at college professors that have made the transition from on-ground to online instruction have concluded that in many cases the instructors did not shift their original pedagogy to accommodate the new learning format. For instance, Sharon Stoerger (2010) cites a number of studies that have found that “the technology alone will not cause educators to move away from teacher-centered practices that draw from behaviorist ideals” (p. 2). Stoerger goes on to explain that the research she analyzed suggests that it is quite easy to reproduce traditional hierarchies of learning in online educational spaces. One example is PowerPoint presentations, which can be enhanced with voice-thread recordings and embedded as lectures that students need to view and memorize in online courses. The studies reviewed by Stoerger suggest that simply situating a course in a virtual platform will not automatically convert a teacher-centered classroom into one where constructivist ideals are the norm.

Much like in face to face classrooms, in traditional online learning the instructor is in control of the course content, the activities that students engage in, as well as the assessment of student learning. The content of traditional online courses is typically comprised of a set of modules that students need to progress through while working asynchronously on their own to complete these modules. Similar to on-ground courses, the content in traditional online courses includes a significant amount of new information that students need to familiarize themselves with through reading articles, reports and other texts that are posted for them on the LMS. Of course, many traditional online courses include content besides reading material such as videos, podcasts and various web-based material. Still, like their on-ground counterparts, the emphasis in traditional online courses is on becoming acquainted with and the mastery of the new material so that one can do well on the assessment at the end of the course. The role of the students in traditional online courses is to proceed independently through the different modules and tasks that have been set up for them by the instructor with relatively little, if any, interaction with the other students who are enrolled in the same course. Thus, even when students respond to their peers' posts in online discussion boards or wikis, they are generally doing so individually, at their own time and pace.

After instructors in traditional online courses set up the course on the LMS, their responsibility is to monitor learners as they progress through the modules, evaluate their assignments when they are submitted, and provide them with feedback and grades for their work. This is the reason that some researchers have argued that the role of the instructor in traditional online courses is largely reduced to that of evaluating or assessing student work. For example, in a collaborative self-study conducted by Fletcher and Bullock about the former's online teaching, Fletcher noted in a journal entry that

One of the things that I have noticed I am spending far more time on in the teaching of online courses is assessment and evaluation. In one of my courses it might be more apt to say that my teaching is assessment and evaluation – I feel that I do little more than that in my interactions with students and their learning. (Fletcher & Bullock, 2015, p. 699).

Fletcher and Bullock's self-study also indicates that since teaching in traditional online courses is largely reduced to assessment, other important roles that instructors can play—like facilitating a conversation or demonstrating the significance of an important concept—get pushed to the margins. Ultimately, Fletcher and Bullock discovered that such a reduced role for the instructor of online courses seriously undermines the quality of the relationships that can be developed between teachers and their students.

Much like their on-ground counterparts, in traditional online courses the relationship between instructors and students can be characterized as unidirectional. This means that instructors are the ones that are vested with authority over the students while the latter are required to follow the formers' instructions and meet all of the expectations that were set up for them. Such learning environments include very little meaningful dialogue between instructors and students and among the students themselves. To be sure, students in traditional online courses have the opportunity to ask the instructor questions through email or by using other virtual tools. However, those questions typically tend to be about issues such as the due date or the expectations for a specific assignment rather than more substantive questions about the concepts of the course, ones that could potentially lead to a dialogue between the instructor and students and perhaps even to some unexpected insights.

Constructivist Learning Theory

In the past several decades, a constructivist worldview has emerged as a very powerful theory for explaining how knowledge is produced in the world and how students learn. For constructivists like Joe Kincheloe, knowledge about the world does not simply exist "out there", waiting to be discovered, but rather is constructed by human beings in their interaction with the world:

The angle from which an entity is seen, the values of the researcher that shape the questions he or she asks about it, and what the researcher considers important are all factors in the construction of knowledge about the phenomenon in question. (Kincheloe, 2001, p. 342)

To assert that knowledge is constructed rather than discovered implies that it is neither independent of human knowing nor value free. Indeed, constructivists believe that what is deemed knowledge is always informed by a particular perspective and shaped by a specific ideological stance.

Informed by the insights of theorists such as Piaget, Vygotsky, and Freire, constructivism has helped to shift the way in which knowledge is understood and assessed. Piaget believed that to understand the nature of knowledge, “we must study its formation rather than examining only the end product” (Kamii & Ewing, 1996, p. 260). His developmental theory demonstrates that the way in which one arrives at knowledge is equally, if not more, important than being able to identify the correct answer. Vygotsky’s (1978) concept of the “zone of proximal development” enables us to realize that human learning, development, and knowledge are all embedded in a particular social and cultural context in which people exist and grow. Writing about Vygotsky, Kincheloe notes that

Since mental activity, he maintained, takes place in a social and cultural context, thought will operate differently in diverse historical situations. Cognition thus is shaped by the interactions among social actors, the contexts in which they act, and the form their activities assume. (Kincheloe, 1999, p. 9)

Freire (1994) insisted that knowledge is not a gift or a possession that some individuals have and others lack. On the contrary, knowledge is attained when people come together to exchange ideas, express issues and problems from their own perspectives, and construct meanings that make sense to them. It is a process of inquiry and creation, an active and restless process that human beings undertake to make sense of themselves, the world, and the relationships between the two.

In light of the insights of Piaget, Vygotsky, and Freire, a constructivist approach to education is one in which learners actively create, interpret, and reorganize knowledge in individual ways. According to Richardson (1997), in constructivist classrooms “individuals create their own new understandings, based upon the interaction of what they already know and believe, and the phenomena or ideas with which they come into contact” (p. 3). Mark Windchill (1999) echoes Richardson’s view noting that students’ intellectual transformations occur when they “reconcile formal instructional experiences with their existing knowledge, with the cultural and social contexts in which ideas occur, and with a host of other influences that serve to mediate understanding” (p. 2). In this view, teaching should promote experiences that require students to become active, scholarly participators in the learning process. Windchill goes on to note that “such experiences include problem-based learning, inquiry activities, dialogues with peers and teachers that encourage making sense of the subject matter, exposure to multiple sources of information, and opportunities for students to demonstrate their understanding in diverse ways” (p. 2). To summarize, constructivist-based education programs typically agree on the following four principles formulated by Marlowe and Page (2005, pp. 7-9):

1. Constructivist learning is about constructing knowledge, not receiving it.
2. Constructivist learning is about understanding and applying, not recall.
3. Constructivist learning is about thinking and analyzing, not accumulating and memorizing.
4. Constructivist learning is about being active, not passive.

Constructivist Online Learning

How has the constructivist worldview presented here impacted curriculum and instruction in online higher education programs? There is a growing body of literature that suggests that constructivist teaching and learning practices are gaining a larger foothold in online higher education programs across the nation (e.g. Odin, 2002; Brown, 2014; Lee, 2018). The shift from more traditional to constructivist teaching and learning practices can be attributed to a number of reasons, not least of which is the desire among many instructors to design “their online courses to foster the kind of deep learning that might be achieved in face-to-face courses” (Hambacher, Ginn & Slater, 2018, p. 151). This shift has also come about because many instructors who teach online have realized that the success of their courses hinges on a number of the central tenets of constructivist theory—their students’ ability to take control of their own learning and interact meaningfully with their peers, the instructors’ willingness to embrace the role of a facilitator or guide, and their proficiency in cultivating a vibrant learning community in a virtual environment.

A number of studies have looked at the benefits for students that can arise when instructors create a learning community in online courses. Citing DiRamio’s & Wolverson’s 2006 study, Brown (2014) claims that these researchers believe that distance learning works only when an online learning community is established (p. 3). Moreover, Hambacher, Ginn and Slater (2018) noted in their review of the impact of establishing learning communities in online courses that

the asynchronous and connective nature of the online learning environment provides the learner with both interactive and independent experiences, which foster both social and cognitive presence. Thus, some of the defining characteristics of online learning align closely to the features of higher order thinking: reflective inquiry, self-direction, and met cognition. (p. 152)

In addition to these cognitive benefits, the literature review conducted by Hambacher, Ginn and Slater indicates that the establishment of learning communities in online courses can provide a space for meaningful connections and professional collaboration among pre-service teachers.

Some researchers have looked at specific ways to establish learning communities and enhance student participation in online courses. For example, Stearns (2017) investigated the impact of one way (Thematic Analysis) to encourage students to read and engage with the majority of their peers' online discussion board responses. Stearns' research demonstrates that the students who were exposed to the Thematic Analysis assessment she had created were able to advance on a number of the central tenets of the social constructivist model of learning. Specifically, when Stearns surveyed the students that were exposed to the Thematic Analysis method she found that this methodology had helped them grow in terms of engaging with a variety of peer perspectives, reflection and clarification of ideas, and authentic applications of the material. Summarizing the results of her study, Stearns notes that her analysis of her students' survey responses suggests that "the use of this learning tool encouraged them to think critically and that their learning occurred primarily through many of the tenets of social constructivist theory" (2017, p. 69).

Other studies that investigated the impact of constructivist online communities focused on the role that 'teacher presence' played in facilitating student learning. The term teacher presence refers to the extent to which the instructor is actively involved in the dynamics of an online course once it is running and the role that she plays in interacting with and supporting student learning. For instance, Odin (2002) investigated the impact of a constructivist online learning community based on a diverse multi-modal approach to teaching and learning. Odin's study concluded that "the teacher's presence, generated through multi-modal acts, promotes self-motivation and self-direction amongst students as they are guided to actively engage in collaborative learning activities" (Odin, 2002, p. 6). Additionally, Nortvig, Petersen and Balle's literature review article (2018, p. 52) indicates that several studies have concluded that strong educator presence together with quality course content can help facilitate online student engagement and learning.

Based on this brief literature review, it is evident that the surge of online programs in higher education that embrace a constructivist model of teaching and learning makes a great deal of sense. Designing curricula and tasks that require students to become active and scholarly participants in the learning process can help them develop better skills and gain a much deeper understanding of the content than they would in more traditional online programs. Moreover, the creation of online learning communities has enabled students to collaborate with their peers on authentic projects in a way that did not exist in more traditional online courses. In what follows, we extend the current literature on constructivist online programs by illustrating the design and implementation of an online learning community in the Master's in Teacher Leadership (MSTL) program of Quinnipiac University's School of Education. After describing the configuration of the MSTL program, we then share the results of a self-study we conducted to assess the impact of this constructivist online learning community.

An Online Teacher Leadership Program

The MSTL is an online, 30-credit degree program that prepares teachers to assume leadership roles in schools and districts. These roles may be either formal or informal in nature, such as team leader, mentor, curriculum coordinator, content coach, or other leadership positions. This fully online program was designed using a constructivist approach to teaching and learning, in contrast to the more traditional online programs that have historically relied on teacher-centered pedagogies. The MSTL program consists of a sequence of 21 credits of required core courses that examine the role of teacher leadership in education, specifically in curriculum, instruction, and assessment. The core courses enable candidates to explore leadership from a collaborative lens and learn how to use a shared framework to enact change in classrooms and schools in order to positively impact their students and colleagues. The core courses include the following: Teacher leadership to Transforms School Culture; Leading the Instructional Program to Improve Student Learning; Research-based Literacy Practices; Leading School Improvement; and Diversity in the Classroom and School Community.

The final nine credits are distributed across three courses in which candidates are immersed in one of four specialization areas known as the specialty tracks: literacy leadership, mathematics leadership, science leadership, or program improvement leadership. The specialty tracks are designed to support candidates in applying their leadership skills through practical, hands-on activities in their chosen field of interest and culminate in a capstone experience conducted in their own schools. The literacy, mathematics, and science leadership tracks follow the same sequence of courses. For example, the literacy leadership track from which examples are provided in the discussion that follows consists of: Cycles of Inquiry within the Literacy Classroom; Coaching Teachers of Literacy; and Action Research in Literacy Leadership. The program improvement track follows a different sequence than the others wherein candidates take the following courses: Leading Organizational Learning; Educational Program Evaluation; and Financing Program Improvement Initiatives. All specialty tracks end with a culminating capstone experience in the final course.

Candidates are required to establish a team of colleagues in their school or district whom they lead. They also work with the support of an onsite mentor who is a member of the formal administrative staff (e.g. principal, AP, curriculum coordinator). Candidates in the literacy, mathematics, and science leadership tracks lead a collaborative active research study, while candidates in the program improvement track lead a group in writing a grant proposal application.

While the online format provides a convenient platform for our full-time working professionals, the experiences that our candidates are required to complete are authentic and meaningful, thereby enabling them to construct knowledge as opposed to the more traditional assignments and assessments offered by conventional online programs. This means that the coursework needs to bridge theory and practice, engage candidates in authentic activities, develop a collaborative learning environment, and remain flexible. The MSTL program aims to accomplish these outcomes through the course content and through the interactions among the instructor, candidates, their online peers and work colleagues. Recently, we decided to investigate the extent to which the MSTL program was achieving the constructivist design elements that were established at the onset of the program. The following questions guided our inquiry:

- To what extent does the program successfully create a sense of community?
- To what extent does the program allow candidates to engage in active and deep learning?
- What role does the presence of the instructor play in the online learning process?
- What challenges exist for the successful implementation of this constructivist online program?

In order to investigate the questions listed above, we reviewed data from four different sources gathered throughout the entirety of the program: the instructor's professional reflections, the candidates' course reflections, the candidates' descriptive responses from course evaluations, and a review of course materials and documents. The instructor kept a reflective journal in which she recorded candidates' reactions to the course content, their activity and work, and interactions with and among the candidates. Candidates provided responses to open-ended questions on both the course reflections and on the course evaluations. They responded to varying forms of questions asking them to reflect on their participation, the most helpful aspects of the course, and the impact of their development on their work in the school on each course reflection throughout the duration of the program. Candidates also provided feedback on the content and the instructor on the course evaluations along with detailed responses to two specific questions: 1) What did you find most valuable about the course content and/or instruction and 2) What suggestions do you have to improve the course and/or instruction. Finally, we reviewed the syllabus and assignments for each course.

Data analysis indicated that candidate and instructor perceptions of the course content as well as the interactions among the instructor and candidates reflected the major tenets of constructivist learning. Developing relationships for both candidates and the instructor was essential in establishing and promoting a sense of community in the online classroom. Emphasis was also placed on the practical nature of the assignments since candidates were asked to create and implement plans for their actual classrooms and schools. The candidates and the instructor both felt that her specific feedback and flexibility were essential to achieving the learning outcomes, yet that time remained an obstacle for all. In sum, four broad themes emerged from the analysis of the various data: 1) sense of community and relationship-building, 2) authentic experiences, 3) instructor involvement and feedback 4) time and flexibility.

Sense of community and relationship-building

Developing a sense of community is critical in the online classroom because the candidates may never meet the instructor or each other in person (Hambacher et al., 2018). The instructors must work to build quality relationships with each candidate and help to create avenues for candidates to connect with one another to mitigate the isolation that Fletcher and Bullock (2015) found in the traditional online classroom. At the onset of the MSTL program, many candidates expressed apprehension and anxiety because they did not know any of the other cohort participants and may have never taken online courses prior to starting this program. In the instructor's reflective notebook, she underscored the importance of the ways in which she needed to develop relationships writing that

I have to convey emotions through written, audio, and video formats—very different than face-to-face. I am reminded that I must make each individual feel valued and supported. Support, encouragement, and praise are important in helping candidates feel connected. One candidate indicated on the course evaluation that “[the instructor] makes an effort to respond to everyone...with positive reinforcement and questions that help to bring our thinking to a new level.”

In addition, connections among members of the cohort were established through the blogging and discussion board interactions in all of the courses in the program. The directions for interaction and participation are outlined on each course syllabus under the guidelines and expectations section, which reads: “Communication and collaboration are cornerstones of developing an active and supportive online community. It is especially important that you actively participate in this community so that you can gain new insights and learning based on others' ideas.” Online, candidates pose questions to one another, provide feedback on tasks or assignments, and offer possible solutions for problems that arise in their individual classrooms and schools. End-of-course reflections demonstrated the importance of using the blogs and discussion boards to build the layered levels of communication and collaboration. One candidate noted that “the deep understanding of the course content that has resulted from the discussions and blogs directly transitions into my actions in my school.” Another shared that the candidates “challenged each other's ideas in a way that was respectful and meaningful. We pushed each other's thinking to deeper levels through analyzing and discussing our learning and our findings.” Candidate comments on course evaluations echoed the same sentiments. For example, one candidate noted in her evaluation that “the wealth of backgrounds, perspectives, and interests made the online forums interesting and helpful centers of learning. My peers were always willing to share information and resources.”

Building relationships helped to establish a sense of community for candidates and the instructor where trust, openness, and respect characterized the online environment. One candidate summarized the value of establishing such a community on the end of the course reflection:

It was also valuable...to hear the perspectives of educators from different backgrounds and with varying levels of experience...The discussions allowed me to learn from teachers from various types of school settings who teach kindergarten through high school. While there were common themes that kept arising in the discussions, there were also successes and struggles that were unique to particular schools and districts.

Candidates also developed a sense of community among colleagues within their schools and districts throughout the coursework and most notably in the capstone experience. As mentioned earlier, during the capstone course, the candidates must convene a team of colleagues at the workplace and identify a mentor to provide guidance to the team. The candidates lead the team in solving a data-driven problem of practice. Many candidates characterized the capstone experience as “rewarding” and “meaningful” because of the “sense of community” that was established. On the capstone course reflection, two candidates summarized the importance of working with all of the members involved including the colleagues, peers, and mentor:

The capstone project is rigorous and has a lot of moving parts. I was hesitant to put myself out there as a leader during this process but found that with the support of my professor, peers, and

coworkers I was able to try out the leadership skills I was learning in order to make this capstone project come to fruition.

The opportunity to work with a team, including my mentor, helped me use my teacher leadership skills. Not only did my leadership skills increase but I was able to see my team using them in different ways as well. I felt extremely comfortable collaborating, meeting, and planning with my team three times a week for four weeks.

In sum, the MSTL program promotes what Hambacher et al. (2018) describe as meaningful connections and professional collaboration in learning communities with their online peers and with in-district colleagues.

Authentic experiences

In reviewing the course content and materials, we determined that each course needed to bridge theory and practice, and through the design of all assignments and tasks, reflect an authentic learning experience. For example, the description in the syllabus of the first course, EDL 501: Teacher Leadership to Transform School Culture, includes the following statement: “Theoretical concepts of leadership are integrated along with practical applications for teacher leaders...” EDL 501 uses a combination of case study analyses and classroom and school-level application tasks for its assignments. Candidates are asked to apply theory to analyze the leadership principles, styles, and behaviors of the leaders in the case study scenarios and provide recommendations for the teacher leaders on how to improve the culture of the schools. In addition, candidates are required to assess their own leadership capacity as well as that of others and the culture within their own schools using validated leadership instruments. The work in the course leads to the culminating assignment where candidates must create a plan to improve their leadership skills and the leadership capacity within their school. One candidate wrote on the end of the course reflection: “I could apply the lessons [from the courses] directly to my teaching and school environment.” Another candidate shared that “never have I been more engaged in my learning, despite it being completely online.” Authenticity leads to increased engagement and active learning which are essential indicators of a constructivist teaching and learning environment.

All of the courses in the program follow the same format as the introductory course, which include examining case studies and engaging in classroom and school-level application activities. In her reflective notebook, the instructor recorded the importance of relating the learning experiences to the candidates’ actual school communities so that they can enact change:

One of the most important goals is to inspire candidates to use what they have learned to bring about change in their classrooms and school communities. I must model the attributes and behaviors of a teacher leader, set high standards, providing rigorous yet practical experiences, and provide the vehicles necessary to encourage action. Assignments must have practical application and support the initial steps to make change in their [candidates’] classrooms, schools, and districts and sustain the changes for the future.

Authenticity reaches its highest level of fruition in the specialty tracks where candidates work in their chosen area to examine specific instructional strategies, student learning, and leadership practice. The course syllabi follow a natural progression from using a narrow lens to a broader one culminating in the collaborative capstone project. For example, the literacy leadership track starts with EDL 511, a course that provides teacher leaders with training and experience through complete cycles of inquiry within the literacy classroom in order to further develop their skills as master teachers. Then, in EDL 513, candidates actively participate in a coaching cycle that is designed to provide teachers with support over a period of consecutive days as they develop specific aspects of their teaching practice. Candidates develop the skills necessary to support those teachers through modeling lessons, co-planning and co-teaching lessons, conducting classroom observations, and providing feedback to those literacy teachers to foster teachers as reflective practitioners. Lastly, the syllabus for EDL 515 explains that together with their colleagues, candidates begin a cycle of posing questions, gathering data, and deciding on a course of action. As reflective practitioners, candidates continue to examine student achievement outcomes, instructional strategies, and reciprocal teacher leadership.

All of the courses in the specialty tracks enable the candidates to be immersed in work in their real-world setting from examining individual learning concerns in the candidates’ classrooms to coaching a colleague and finally to

leading a team of educators in investigating and implementing solutions to authentic problems. Several candidates in the specialty tracks expressed the benefit of the real work application on their course reflections:

Having the vocabulary with which to speak to the success of a cycle that begins with observation and moves through modeling, co-teaching, and then reflective observation of the progress made will help in my future conversations with colleagues; it can also be a resource for the newer teachers in the building for the collegial observation portion of the teacher evaluation system.

This capstone project has been exceedingly beneficial and opened my eyes to a number of valuable insights that I may have not otherwise realized...The most helpful aspect of the project was getting the opportunity to work with my colleagues to both ask and answer real questions about our practice... Engaging in dialogue and working closely with my colleagues during the action-research process helped strengthen the impacts of our work.

Many of the course evaluations attested to the importance of the authentic learning environment created in each course. When asked about the most valuable part of a variety of courses falling at the beginning, middle, and end of the program, a number of candidates mentioned the real-world application and practicality of the assignments:

I truly feel I can help shape the future of my school to be the best outcome possible academically, culturally, and pedagogically!

The fact that the course allowed me to put actual research to my analysis of the problems with my school and district was helpful. Having these resources available going into the coming year will be valuable as other teacher leaders and I attempt to put some of these changes into action.

Instructor involvement and feedback

In a constructivist classroom, knowledge is dynamic and constructed through the complex interaction between and among the instructor and the candidates (Marlowe & Page, 2005). Learning is active and the instructor's involvement promotes candidates' self-discovery, inquiry, and deep understanding (Odin, 2002). As such, instructors in the MSTL program plays a significant role in the online learning community, extending and scaffolding the learning process for each candidate through specific feedback provided on all discussions and tasks. In the section labeled other comments on the course evaluation form, one candidate observed that "[the instructor] really motivated me to look at different things in a different light both at school and at work." Another candidate observed that although the instructor holds "a wealth of knowledge that she shares with her students," it was done so "in a way that allows them to self-discover, reflect, and problem solve...giving concise and honest feedback in a nonjudgmental way." The same candidate went on to write that the instructor "facilitated many discussions in a way that challenged me, supported, and helped me to define my learning" and "opened the door to allow open ended discussions and questions, and facilitated student involvement."

Instructor presence is important in an online environment and has been shown to be connected to candidate engagement and learning (Nortvig et al., 2018). Candidates shared that feeling connected to the instructor was an integral part to a successful and effective experience and that this was a valuable aspect because, as one wrote, it "helps me, as a student, feel more connected to my instructor, especially in an online course." In the course evaluation, another candidate noted that "this was my first time taking an online course and I worried about how there could be interactions and/or learning opportunities that went beyond course reading and assignments. I found that the feedback that we received to be most valuable in moving my thinking forward." The instructor's recordings in her notebook supported this conclusion as she reflected that "the candidates seem to feel more connected and more confident when they see me continuously interacting with them and when I respond immediately to concerns." She also observed that it was important to post in "a proactive manner rather than waiting until problems or issues arise" and to "...provide specific questions and possibilities specific to the individual and professional context." This proved to be meaningful for candidates as they recalled that "[the instructor] made a point to know every student and their background. She was extremely helpful, understanding, and knowledgeable. The feedback provided helped to facilitate further thinking."

In addition to demonstrating a continual presence in the online classroom through individualized attention and feedback, the instructor also connected the candidates' learning through the identification of common themes regarding insights, concerns, wonderings, and professional experiences. This provides synchronicity and integrates the discussions, unlike the fragmented nature of many discussions in traditional online classrooms. The instructor noted in her notebook that although the primary grade teachers (K-2) and high school literacy teachers may

seemingly have less in common on the surface, they are gaining so much from one another. After I shared how they were both in need of focusing on some phonics work for the neediest of students, they remained open to other grade level's activity work. They are learning so much from each other that they hadn't ever expected!

The candidates highlighted the importance of seeing these commonalities for establishing the online learning community in the course evaluations. One candidate noted that "the instructor raised common questions and synthesized our learning, which helped to unite us as a class. It helped to deepen the learning for me and my classmates."

Time and Flexibility

The biggest challenge for both instructor and candidates in sustaining a constructivist teaching and learning environment online is time. Six of the eight courses in the program are for 3 credits and run 7 weeks. The other two courses are 6 credits; one runs 14 weeks while the other runs 7 weeks in the summer. Some candidates reported on the 3-credit, 7-week course evaluations that "time is a...factor." One candidate in particular noted that "it is a lot of material and a fast pace" which made it "hard to manage all of the assignments." On the course reflections, candidates agreed that "they needed to be sure to log onto the course at least once a day, sometimes, even more, to make sure nothing was missed." The instructor raised questions that echoed this finding:

The candidates who are participating and engaging in the discussions each day are offering the most effective solutions, connecting to the material, and sharing profound and insightful learning experiences. Is it too much to expect that they should all log on every day? It does become overwhelming as I feel the same pressure. It has become all-consuming for me as well. How can we lessen the burden for us both?

Time was the most problematic in the capstone course because of the intensity of the project. One candidate confirmed that "it was a little challenging to complete the action research project in such a short time. I wish this course was a little longer to allow for more time." The instructor agreed that the capstone course felt "the most rushed and needed the most individualized attention. Every year I have to provide additional time to complete" the project. She continued by noting that the candidates "would benefit from making this a 14-week course." Moreover, a candidate explained that "at times, it felt like I was trying to drink from a fire hose, but it was all so good and it really changed the way I thought about my teaching and how I interact with colleagues at school." Although this image denotes the wealth of learning that candidates experience, the rush is far too fast and heavy. More time is needed for both the candidates and instructor to process each learning experience.

Given the time constraints of the online courses in the MSTL program and the amount of work assigned in these courses, understanding each candidate's level of experience as a teacher and leader and the context in which each works is critical to identifying and meeting the unique needs of each candidate. As such, assignments are individualized according to the needs of the candidates as they assume a variety of different roles from pre-school, elementary, secondary, and specials teachers. For example, according to the syllabus in EDL 511, Cycles of Inquiry within the Literacy Classroom, candidates "are provided three case studies in the literacy classroom, one for each school level (elementary, middle, and high school). Candidates must choose one scenario to view through a critical lens." In addition, some candidates may already be leaders (e.g. coaches, team leaders, coordinators) or may hold a different function within the school community (e.g. school counselor). The instructor reflected in her notebook that "the teachers already assuming formal leadership positions found the adjustment made to be beneficial." Adjustments to assignments and content are needed so that each candidate can construct deeper meaning and apply the learning to his/her context. One candidate noted on the course evaluation that "it was helpful to have choice in assignments that aligned with the content area and grade levels that are relevant to my current position. This allowed for the work to be most meaningful and to have the greatest impact."

Our self-study analysis suggests that the candidates genuinely appreciated the flexibility of the instructor. Since candidates are working professionals, online instructors must understand that the end of the term “is a busy time of year with grades due, so being cognizant of what is going on in their professional and personal lives is critical” (instructor journal entry). Many candidates noted on the course evaluation that the instructor was “really understanding, flexible with assignments and supportive in every way,” like “even when family stuff came up.” Although the majority of candidates work in public schools, some find themselves in other sectors such as in private organizations; still others change positions midway through the program which may cause issues with completing hands-on assignments. For example, according to the syllabus of EDL 509, Leading School Improvement, one of the learning objectives is to “develop a refocused school improvement plan to improve school effectiveness and student learning.” Candidates who work in private schools use similar documents and some who have changed jobs along the way may not have access to these documents. Therefore, they have the choice to develop their own plans or to revise sample plans from their current or former school. Remaining flexible and understanding that each candidate experiences different and unique circumstances are important to helping each one reach his/her maximum learning potential. One candidate described how the flexibility of the instructor allowed her to complete the program during a difficult time:

I found myself in a very challenging situation and nearly a career crisis when I took a new position in a new school with some serious culture and climate issues I hadn't been aware of. The guidance she provided and the patience she showed were the only thing that allowed me to keep going.

The instructor's flexibility also manifested in the way in which she utilized layered questioning to push individuals to their own zone of proximal development (Vygotsky, 1978). She observed that “individualizing my questions based on the discussion board posts is helping me to teach in the moment; it is enabling me to provide additional scaffolding and elevate the thinking beyond the parameters of the initial prompts.” One candidate mentioned in her course reflection that “[the instructor] never missed a beat when it came to student involvement. She helped organize and set up further questions and discussions to allow us to really think and take things to the next step.” Course evaluations also attested to the importance of how the instructor facilitated many discussions in a way that challenged, supported, and helped candidates to define their own learning and move forward on their individual projects based on the goals they had established for themselves.

Discussion and Conclusions

Our self-study of the online learning community that was established across the entire MSTL program of Quinnipiac University's School of Education suggests that this program embodies the major tenets of a constructivist model of teaching and learning. First, the review of the MSTL program indicates that it has been successful in establishing a sense of community between the instructors and candidates as well as among the candidates themselves. As a result of the various activities and assignments in the MSTL program, candidates also worked to forge meaningful connections with other teachers and staff in the schools in which they were working. Second, consistent with a constructivist pedagogy, our candidates were exposed to a variety of authentic learning experiences, ones that required them to be genuinely engaged in the courses and demonstrate the characteristics of active learners. Third, unlike traditional online courses in which the responsibility of the instructor merely consists of monitoring and assessing student progress, in the MSTL program, instructors take on a much more active role (e.g. mentor, facilitator or coach). This means that the presence of the instructors is continuously felt in the learning community and that they provide ongoing feedback, support and guidance to the candidates throughout the duration of the courses. Finally, our study suggests that given the time constraints and the diversity of the candidate population enrolled in the online courses, the instructors needed to display a great deal of flexibility and understanding to accommodate for the different needs of the learners (qualities that are consistent with constructivist teaching).

Yet, why is it so important that the MSTL program and online programs in general embody the tenets of constructivist teaching and learning? For one, both research and our own experience suggest that designing curricula and tasks that require candidates to become active and scholarly participants in the learning process can help them develop better skills and gain a much deeper understanding of the content than they would in more traditional online education programs (Fang and Ashley, 2004). Our experience with traditional online courses indicates that candidates enrolled in these courses can often misconstrue some important concepts that the

instructor is trying to get across or learn the material in a cursory manner. Because of the reliance in traditional online courses on passive memorization of information, there are limited opportunities in such courses to engage in active and deep learning. In contrast, the type of tasks our candidates in the MSTL program are required to complete—like the collaborative action research project described above—are authentic and practical in nature. The latter type of experiences not only require candidates to have a good grasp of various theoretical concepts of teacher leadership but also understand how these concepts can be applied to solve actual school problems.

Moreover, a social constructivist model of online teaching and learning correctly assumes that students learn best when they are engaged in meaningful interactions among themselves and with the instructor. That is, in constructivist online programs students gain insights that they otherwise would probably not acquire through exchanging ideas with other learners in the virtual community. One of our candidates in the program captured this point when she noted that:

The interactions I have had with my peers in this course have by far been the most beneficial in the [MSTL] program so far. I am so excited that I have been able to work with teachers who have more experience than me, as well as one who is a literacy coach.

Thus, in the MSTL and other online programs that use a constructivist model of teaching and learning, candidates attain essential knowledge and skills from the various opportunities to exchange ideas with students who may be different and more experienced than them. Finally, the constructivist online education that we are advocating necessitates that not only candidates but also instructors assume a proactive role in the learning community. As illustrated in the case of the MSTL program, learners really benefited from the fact that the instructor took on a very active and supportive role throughout the duration of the courses. Indeed, one candidate noted in her course evaluations that “[the instructor] offered insights and suggestions that were key to my situations. She was so responsive and always had a plethora of suggestions for next steps.” In contrast, in many traditional online courses, the instructor takes on a narrower and more passive role, which is often reduced to monitoring student progress and assessing their work. The results of our study suggest that the robust presence of instructors displayed in constructivist online courses has a significant impact on issues like student motivation and their ability to view educational issues from multiple perspectives. Such presence and involvement on the part of instructors of online educational courses can go a long way in facilitating the creation of the kind of relationships and learning community that can benefit all. With respect to the issue of time management, our self-study suggests that it continues to be a concern for both candidates and instructors in online courses. We believe that further research is needed to investigate the issues of time and pacing before any definitive conclusions can be reached on improving the teaching and learning experience in online environments.

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