Design and Development of an Educational Design and Learning Technologies Wisdom Community

Lauren Cifuentes
College Professor
School of Teacher Preparation, Administration, and Leadership
New Mexico State University
P.O. Box 30001
Las Cruces, NM 88003-8001
laurenci@nmsu.edu

Michelle Perry
Doctoral Student
School of Teacher Preparation, Administration, and Leadership
New Mexico State University
P.O. Box 30001
Las Cruces, NM 88003-8001
mperry@nmsu.edu

Abstract

Faculty and graduate students in an Educational Design and Learning Technologies program collaboratively developed their own online wisdom-community in Canvas as a project in a *Foundations of Learning Desig*n course. Community goals established by program faculty and students were to facilitate learning community, enhance identity as professional educational technologists, expand professional knowledge for the duration of their studies toward their degrees, and leverage and prepare members for use of various online learning technologies. We analysed and explored the EDLT learning context, learners, and goals, and student-constructed prototype environments following educational design and development research methods. Findings were needs, tasks, and features students wanted addressed in their WisCom, as well as suggestions for implementation.

Imagining something may be the first step in making it happen, but it takes the real time and real efforts of real people to learn things, make things, turn thoughts into deeds or visions into interventions. – Mr. Rogers

Problem

Masters' and doctoral students often do not mingle or have opportunities to learn from and mentor each other. Instead, they attend classes face-face or online, study, and complete assignments and assessments independently. Group work provides them with opportunities to work with and learn from each other, but such work limits their exposure to a small group of people in the same courses in which each is enrolled. Students do not have the benefit of learning from others across the spectrum of experience in their degree programs, particularly if they are fully online and are unable to mingle in the brick-and-mortar college setting.

For several years, in the hope of creating bonds among masters' and doctoral students and because of the structural, social, and organizational benefits cohorts promise (McCarthy, et al., 2005), Educational Design and Learning Technologies (EDLT) students have been accepted into their programs at our Southwestern, Hispanic Serving Institution (HIS) as members of cohorts. In our cohort model, students' programs are prescribed in that all members begin the program together and progress through course content in a shared sequence and pace.

However, the cohort model has created some problems. Learning in cohorts means that students are all studying the same content at the same time. Those who do not have time or finances to attend a full-time degree program may choose not to apply. Each cohort consists of just those students who enroll in the program in the same term. Following the prescribed course-sequence limits students' abilities to receive differentiated, personalized instruction. Students rarely form solid bonds or a shared knowledge-base, and faculty members are detached from

most students other than those that they advise or intermittently instruct. McPhail, Robinson, and Scott (2008) reported that factors such as dominant group members, lack of commitment to the cohort, failure to meet group expectations, traditional instructional modalities, and inadequate facilities negatively impact the cohort experience. Most importantly, the cohort model limits enrollment to traditional students who can afford the time and resources to participate in the scope and sequence of a highly structured degree-program.

In short, the current structure of college degree programs in general can limit students' abilities to network with other students in order to learn from the strengths of diverse others who have different perspectives, cultural backgrounds, and levels of experience and professional knowledge. As Gunawardena, Frechette, and Layne warn (2019), "Without proper deliberation, online learning experiences…[can] unduly reflect the cultural biases and limitations of their architects," (p. 1).

Theoretical Framework, Previous Research, and a Solution

Sociocultural learning theories provide a rationale for building any online learning community that facilitates discovering content knowledge, solving problems, thinking critically, forming identity, and including voices of diverse learners across their degree seeking experiences. The sociocultural perspective on learning emphasizes that learners develop and learn by transforming their understandings through socially shared activities conducted with diverse others. Learners with diverse levels of competence learn from one another as well as from their instructors (Vytotsky, 1978). Each learner has unique knowledge, needs, experiences, culture, and expectations that, when shared, can broaden others' perspectives and knowledge bases while they themselves reciprically benefit from others. A learning community of students within and across degree programs in a specific discipline can provide a venue for students' sociocultural learning by exposing them to a broad population of other learners who have diverse interests, experiences, and circumstances.

Although socio-cultural learning theories have been proposed for many years, developing learning environments that facilitate sociocultural learning has been difficult until the advent of online learning technologies. Such technologies can bring diverse thinkers, experts, and learners together in distributed learning communities to contribute to each other's learning.

Online Learning Communities

Students can both learn and gain personal satisfaction in online learning communities when they fully participate in them. Much has been written about the power of interaction, mentoring, and presence between students and faculty in online learning communities. In addition, online peers have tremendous influence on one another. Student-to-student interaction can lead to increased levels of student satisfaction and student learning outcomes (Eom & Ashill, 2016). The Association of American Colleges and Universities identified establishing, building, and maintaining learning communities as a high-impact practice that leads to student success (Brownell, & Swaner, 2010).

The literature on learning communities most typically focuses on creating online community in the context of coursework. But, community rarely happens in the context of a single course. Rather, community can be formed at the program level by intentionally coordinating and linking the content of courses, materials, assignments, grading rubrics, and course resources within programs; orienting students to expectations across a program; using instructional-teams; and using engaging pedagogies (Brownell, & Swaner, 2010; Linder & Hayes, 2018). As Jody Donovan (2015) claims in her blog, "taking an online course should be more than sitting in front of a computer – real engagement involves becoming a part of the community of learners." Learning communities can provide diverse college students with a sense of belonging to a group that shares their goals and interests. Often individuals in shared communities interact through social media beyond their courses and become colleagues as they build their careers.

Palloff and Pratt (2011) created a framework for distance learning that generates growth of learning community in online programs. Their framework advises that—

· online [communities] should include focused outcomes with buy-in from everyone in a program and time spent sharing goals,
· content knowledge should be achieved actively through and with interaction and feedback,
· [Communities] should include facilitated collaboration, and,
· faculty guidance toward teamwork with mutually negotiated guidelines helps students be part of a learning community.

The hope of online learning communities is that they increase comfort, communication, and collaboration among students and with instructors. Online collaboration tools and social media can be incorporated into online communities to promote learners' senses of community and increase the knowledge flow between students, thereby facilitating social negotiation of meaning as learners construct their own understandings (Bliss & Lawrence, 2009; Dawson, 2018; Kumi-Yeboah, 2018).

Wisdom Communities

In a wisdom community (Gunawardena, Frechette, & Layne, 2019), here forward called a WisCom, students use technologies to communicate with one another online. Social interaction, dialog, discourse, collaborative problem-solving, and construction of new knowledge with instructors and peer guidance are the fundamental activities of WisComs. Gunawardena et al. call this transactional approach "distributed co-mentoring."

An alternative to requiring students to study within a cohort is to offer an online WisCom that spans the duration of students' programs-of-study. With the goal of facilitating bonding and shared knowledge, students bring their cultural and historical perspectives, experience, and knowledge to each other and form bonds around a shared identity. Social interaction, dialog, discourse, collaborative problem-solving, and construction of new knowledge with instructor and peer guidance are the fundamental activities. Co-mentoring, and learner support play critical roles in wisdom-communities. Communication, distributed co-mentoring, and learner support take place within "collaborative inquiry cycles." Members work together in collaborative inquiry cycles (CICs), one cycle at a time, to "explore a problem or issue, brainstorm solutions and considerations, and work together to synthesize findings" (Gunawardena et al., 2019, p. 278). Once learners agree that the cycle is completed it is preserved and the group moves on to the next CIC.

Along with co-mentoring, learner support plays a critical role in WisComs. Student retention, motivation, identity formation, academic achievement, satisfaction, engagement, and success all hinge on learners knowing that they are supported (Mehran & Mahdi, 2010). Therefore, a WisCom includes access to interactive activities and services intended to support and facilitate the learning process of each student (see Figure 1).

Figure 1

Wisdom-Community Framework Created by Casey Frechette for Gunawardena, Frechette, & Layne (2019). Used with permission from the authors.
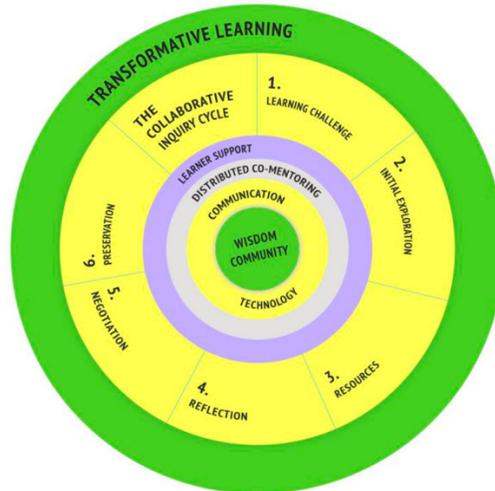
A Solution

In the hope of strengthening the EDLT graduate programs in a Southwestern United States, Hispanic serving university, students in a *Foundations of Learning Design* course designed and developed a WisCom as their term project. The WisCom will be used and contributed to by EDLT faculty and Master's and Doctoral

students across the scope and sequence of their studies. Community goals established by faculty and students are to
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- facilitate professional learning community,
- enhance sense of identity as members of the global professional learning community,
- expand professional knowledge among community members, and
- leverage and prepare members for use of various online learning technologies.

During students' design and development processes and based upon their final products, we asked the following question— Given the opportunity to design and develop a WisCom in the Canvas Learning Management System what needs, tasks, and features did students want addressed in their WisCom, as well as what suggestions did they have for implementation.

Methods

Instructional design methods were applied in this educational design and development research with the goal of developing "theoretical insights and practical solutions in real-world contexts, together with stakeholders" (McKenny and Reeves, 2019, p. 6). Iterative phases of—
(1) needs analysis and exploration,
(2) design and construction, and
(3) evaluation and reflection comprise such studies.
In this study, we report on phases one and two. In phase one as suggested by McKenny and Reeves, we attempted to "generate a clear understanding of the problem and its origins as well as specification of long-range goals" (p. 85), for the wisdom-community. In phase two, through teamwork, communication, and creativity we produced a potential solution to the stated problem by creating a WisCom in Canvas. In phase three, which is yet to come, we will evaluate the impact of the WisCom on faculty and students. We included EDLT students as designer-developers following the principles of user design (Carr-Chellman, 2006), also known as participatory design. User design involves input from potential users of the design so that the resulting instruction meets their needs. As potential users of an EDLT WisCom, EDLT students participated in the design and development of their own WisCom.

Context

In the context of the graduate level *Foundations of Learning Design* course, EDLT students helped design and develop the EDLT WisCom in accordance with the principles of instructional design. They analyzed, designed, developed, implemented, and evaluated example EDLT WisComs. As potential end-users, they were actively involved in the design process to help ensure the resulting WisCom would be compelling, usable, and responsive to their cultural, emotional, spiritual and practical needs. Recent research suggests that designers create more innovative concepts and ideas when working within a co-designed environment with others than they do when creating ideas on their own (Treischler, Trischler, J.; Pervan, S. J.; Kelly, S. J.; & Scott, D. R., 2018). Therefore, they built Canvas-based WisComs in four teams of three to four students.

Topics of modules in the course follow: Becoming a Learning Designer, IDer, and Educational Technologist; History of the Field; ID Models; Foundational Theories; Needs and Learner Analysis; Task Analysis and Identification of Types of Learning; Assessing Learning; Development of Strategies that Address What We Know about How People Learn; Implementation and Management of Learning Design Projects; Evaluation; and Conclusion. Readings included *Culturally Inclusive Instructional Design* by Gunawardena, Frechette, and Layne, (2019) and the instructor of generated content in each of the modules. The overarching assignment was for students to follow the principles of instructional design to develop an EDLT WisCom. Beginning with the fifth module, each had assignments that led to the systematic development of their team's WisCom.

Participants

Participants in phases one and two were one faculty member (the lead researcher), one doctoral student, and fifteen students enrolled in an eight-week online graduate level course on learning design. The faculty member identifies as a white female from the U.S Westcoast with several years of teaching experience in educational technology and instructional design. The graduate student identifies as a white female from the Southwest with several years of teaching experience and educational administration experience. Students' ethnicities were 8

Hispanic, 4 White, 1 African American, 1 Native American, and 1 West Indian; genders were 12 females and 3 males; and location when growing up were 8 from the Southwest United States (U.S.), 4 from the Westcoast of the U.S., 1 from the midwest, 1 from the South, and 1 from the West Indies. In terms of teaching experience, 62% of the participants had 0-5 years, 31% had 6-10 years, and 7% had 11-15 years.

Data Sources

Data sources included 1) a *Pre-Wisdom-Community Design and Development Assessment* developed and administered by the researchers to determine students' perceptions regarding their needs*;* 2) a needs assessment developed and administered by students and distributed to EDLT students who were not in the class; 3) a goal/task analysis developed and conducted by students; 4) assessment criteria identified by students; 5) strategies identified and described by students; 6) implementation strategies identified by students; 7) one-on-one and small group evaluations conducted by students, 8) a *Post-Wisdom-Community Design and Development Assessment*, and 9) the four student-developed WisComs.

Procedures

The fifteen participating students enrolled in the online *Foundation of Learning Design* course. In a Zoom mediated course orientation, students were introduced to their term project of developing an EDLT WisCom for future use by Masters and Doctoral students. They were also given written instructions for the assignment in the first Canvas module. They were divided into four groups and each group was given a Canvas shell in which to build an EDLT WisCom. The *Pre-Wisdom-Community Design and Development Assessment* was administered online using Google Forms in the context of the first course module. It was designed to establish whether or not there was a need for a WisCom, whether or not EDLT students were likely to participate in a voluntary WisCom, and what topics students would be interested in exploring together in a WisCom.

In the fifth course module student-teams developed and conducted a needs assessment of their own by sending surveys to all EDLT graduate students. In response to subsequent modules, the teams went on to conduct a goal analysis, establish assessment criteria, develop WisCom prototypes, describe implementation strategies, conduct one-on-one and small group evaluations, and revise their WisComs accordingly. The resulting products were four WisCom prototypes. The researchers identified the most effective and compelling components and features of each in order to assemble one WisCom that addresses EDLT students' needs. In the final course module students filled out the *Post-Wisdom-Community Design and Development Assessment* using Google Forms.

Data Collection and Analyses

Inputs explored were needs, tasks, and features identified by students as they developed their WisComs, as well as what suggestions they had for implementation. Data collection took place in the context of course activities in the *Foundations of Learning Design* course. Therefore, design and development tasks were realistic in scope. Multiple data sets were used to triangulate the data. Students collaboratively generated and submitted design and development documents for each design and development phase. All data sources were qualitatively focus-coded according to the following codes: needs, goals, objectives, assessments, strategies, implementation, evaluation, technology, communication, distributed co-mentoring, learner support, collaborative inquiry cycles, WisCom features and emergent themes. Those findings will be shared in a subsequent manuscript.

Results

The EDLT students strove to gain a clear understanding of the problem they were addressing with their design. The tasks were difficult for them, particularly assessment, given that participation in the WisCom environment will be optional and content will be developed by students as they participate. They concluded that testing or quizzing EDLT students on content in the WisCom context would be oppressive and turn students off to participation. They did design exit surveys to collect students' responses to the environment for formative evaluation purposes. They realized that they were to develop a flexible framework for participation. However, their final products did not reflect full understanding that co-mentoring and collaboration are to take place across time, content, and activities and not in just one space. Also, students did not address content of collaborative inquiry cycles or how they would be administered and implemented. We conclude that their avoidance of addressing this

important feature in WisComs was due to their lack of understanding of how they might be presented and sustained.

The *Pre-Wisdom-Community Design and Development Assessment* as well as the student administered needs assessment that went to all EDLT students established that students felt the need for an online environment where they could share content with other students in EDLT. Many offered that they were likely to participate. Needs, tasks, and features of the four student-developed prototypes are illustrated in Figure 2 below:

Figure 2

The Home Pages of Four Student-Developed Prototypes.
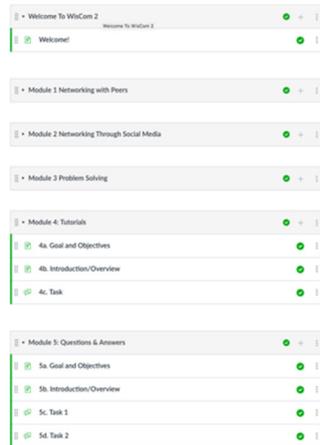
WisCom 1.

Wisdom Community- Group 1

Each module has multiple and varied components.
1. Welcome and orientation
2. History and key terms
3. Co-mentoring
4. Opportunities in the EDLT field
5. Popular technologies in ID
6. PD organizations
7. Using theory to evaluate projects
8. Collaboration
9. WisCom exit survey
10. WisCom suggestions

WisCom 2.

Wisdom Community- Group 2

Each module has objectives, intro and overview, and tasks.
1. Networking with peers
2. Networking through social media
3. Problem solving
4. Tutorials
5. Q & A
6. Wellness
7. Informational text
8. Post survey (upon degree completion)

WisCom 3.

Message to Students

Welcome to WisCom3!

Behind every good learning environment is the work of an instructional designer. Instructional design is a creative process that uses learning theories and frameworks, project-planning, content expertise, communication, writing, and technology. The best instructional designers are agile and adaptable; they can quickly synthesize unfamiliar content, evaluate new technologies, and develop learning solutions that best meet the needs of a diverse audience. Throughout this WisCom you will be exposed to diverse ways of expanding your professional knowledge and connections in learning design.

Expectations
- Material Access: You will find notes, worksheets, support materials within the modules.
- Organizational Method: Modules are organized by an over arching goal and sub-headed by objectives.

Quick Access
- Canvas Student Guides : Answers to frequently asked Canvas questions

Wisdom Community – Group 3

Modules 1-4 have objectives, specific topics to explore, and a quiz.
1. Enhancing your professional identity
2. Clarifying your professional knowledge
3. Expanding your professional knowledge
4. Unity through an online community
5. End of degree program evaluation

Module 4: Unity through an Online Community

Overview and Objective for Module 4

Unity through Diversity and Problem Solving (M4-O1&2)

M4-O1&2 Discussion

Unity through The Basics (M4-O3)

M4-03 Discussion

Unity through a Safe and Borderless Audience in an Online Community (M4-O4)

M4-04 Quiz
0 pts

WisCom 4.

This community is designed to provide a space for interaction among users to share content, knowledge, experience, the use of and implementation of current technology in research or the workplace, and access content that promotes professional growth.

Announcements   Modules   Discussions

Wisdom Community – Group 4

Modules had attention-getters, objectives, and discussions.
1. Orientation
2. Theories
3. EDLT technologies & software
4. Collaboration
5. Design
6. Professional communities
7. Final survey and suggestions

The researchers will identify the most effective and compelling features of each in order to assemble one WisCom that addresses EDLT students' needs, provides for co-mentoring, and facilitates completion of collaborative inquiry cycles. The WisCom will be launched in January, 2022.

Regarding implementation, students offered that systems need to be in place for providing access and knowledge of the WisCom to all EDLT students. They suggested that, because participation will be optional and students are typically working full time while going to school, motivation to participate must be addressed through the design. We will apply the ARCS-V (Keller, 2010; Keller & Deiman, 2012) motivation model across the environment and in that context demonstrate the model to students suggesting that they apply it as they lead others through CICs. Students recommended using a lot of visual representation to gain EDLT students' attentions to activities. They do not want a text-heavy environment. With each CIC, we will emphasize relevance, confidence, and satisfaction. We expect that these emphases will increase students' volition to be active in the WisCom.

Students want to run the WisCom themselves indicating that the site should be managed by faculty or a graduate student intern under faculty supervision, but that students should generate content. They suggested monthly activities. Although the framework proposed by Gunawardena et al. suggests that participation in CICs continue until a CIC is complete, for ease of management, each CIC in our WisCom will be led by a small team of 1-3 doctoral students and last one month at which point a new team will take over.

Topics of CICs will be chosen by EDLT students. Students will lead and conduct CICs in modules and students will know where on the site they are collaborating each month through announcements made by the student team that is in charge for that month. Each CIC will begin with an orientation and statements of objectives. In addition to contributing to the Canvas WisCom site, students want to share links to valuable content. They hope

to work together and network with others in the field using social media and tools such a TEAMS and Discourse, so links to those communication channels will be posted. CIC content will be preserved on the Canvas WisCom so that students can review previously submitted content.

Conclusion

In summary, EDLT students identified needs they wanted addressed, tasks they wanted to work on, and features they wanted included in their WisCom in order to collaboratively gain professional identity, knowledge, and community during their graduate degree programs in EDLT. The completed first and second phases of this longitudinal study set the stage to generate guidelines for developing and implementing WisComs offered over the duration of learners' studies in degree programs. Prior studies have explored the impact of design components in courses offered as WisComs. This study explores the impact of a longitudinal wisdom community to inform both theory and practice for preparing professional educational technologists. The study contributes to the literature by describing how WisComs can be collaboratively designed with potential users to enhance professional identity, community, and professional knowledge for students across the span of their Educational Technology degree programs. In addition, specific components and features that appealed to graduate students were identified. Findings in this study contribute to instructional practice by providing a practical solution to the problem of graduate students' sense of isolation and lack of identity as experts in their fields, particularly those who are studying in online programs.

Ruja Benjamin (2020) tells us that "Emancipatory designs are not only possible, they already exist." The EDLT WisCom is meant to be an emancipatory design that will promote cultural inclusivity in EDLT graduate programs. This study validates Gunawardena et al's framework and guide for building online wisdom communities by demonstrating the ease with which the guide can be used by designers and developers (Richey & Klein, 2014). In this case, students were able to use the guide in combination with systematic instructional design processes to develop a learning environment meant to meet their needs as well as the needs of others.

A first limitation of the study is that EDLT students designed and developed the WisCom in the context of an EDLT course led by a professor who openly shared her vision for the learning environment. Although she clearly stated that she was open to all design ideas, she likely influenced many of the students' design decisions. For instance, one of the *Foundations of Learning Design* modules was on the history of instruction design. That students chose to include history in their WisComs may reflect the professor's value of history. Secondly, the compiled specific components and features that appealed to graduate students in this study cannot be generalized to other contexts. Rather they are perhaps a jumping off point for exploring the needs of other learning technologies students. In this case, students in the specific context of the region and university culture, socially constructed their WisComs and each WisCom was remarkably different from the others.

This study of user design and development of the EDLT WisCom is the beginning. In a future representative field evaluation study (Richey & Klein, 2014), we will implement and evaluate the WisCom with educational technology students from the time they enter the degree program until they graduate, we will ask the following questions: What are the impacts and effects of the WisCom on goal achievement? How has the WisCom impacted professional identity, community, professional knowledge, and transformational learning? What unanticipated needs arise? What technical, temporal, physical, transactional, or pedagogical components can be revised, added, or deleted to better support communication, co-mentoring, collaboration, inquiry, reflection, negotiation, and learning among EDLT graduate students? And, how does the WisCom impact EDLT faculty? Answers to these questions will inform both socio-cultural learning theory and practice in higher education, as well as contribute to the research on online learning communities and, in particular, wisdom-communities.

Other studies such as this one need to be conducted exploring design and development of WisComs and the efficacy of wisdom communities to facilitate culturally inclusive instructional design for students in different disciplines, at different ages, and across and within different global regions.

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