

User Design and Development of a Culturally Inclusive, Online Wisdom Community

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Abstract

Faculty and graduate students in an Educational Design and Learning Technologies program collaboratively developed their degree programs' online wisdom community as a project in a *Foundations of Learning Design* 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 to use various learning technologies. Sociocultural learning theories and user design frame the study. We applied educational design and development research methods to analyse and explore Pre-Course and Post-Course surveys, an online discussion, the students' design and development documents, and student-constructed prototype wisdom communities. Findings were activities and features learning technologies students wanted addressed in their Educational Design and Learning Technologies wisdom community as well as suggestions for implementation. We share guidelines for designing a culturally inclusive community that is responsive to students' interests and needs for building professional identity as instructional designers and educational technologists.

Introduction

Introductory Problem

Masters' and doctoral students often do not mingle or have opportunities to learn from and mentor each other across levels of expertise, especially when they are in an online degree program. 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 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 in the literature (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. Each cohort consists of those students who enroll in the program in the same term.

However, the cohort model has created some problems. Learning in cohorts means that a group of 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. Following the prescribed course-sequence limits students' abilities to receive differentiated, personalized instruction. 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 can limit students' abilities to network with other students at different stages in their studies preventing them from learning from the strengths of diverse others who have different perspectives, cultural backgrounds, circumstances, experiences, and professional knowledge.

Theoretical Framework and Previous Research

Higher education faculty strive to facilitate transformative learning, that is, positive and permanent changes in intentions, knowledge, and actions on the part of each of their students (Rowley, 2006). Sociocultural learning theories provide a rationale for building online learning communities that facilitate problem-solving, discovering content knowledge, critical thinking, and professional identity formation. The sociocultural perspective emphasizes that learners develop and learn by transforming their understandings through socially shared activities conducted with diverse others. Ideally learning communities include voices of diverse learners across their degree seeking experiences. 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 reciprocally 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.

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

Design of Online Learning Communities

Brown, Collins, and Duguid (1989) and Lave and Wenger (1991) first proposed the formation of online communities of practice and since that time studies have established their positive effects (Lantz-Andersson et al., 2018). 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). Much has been written about the power of online interaction, mentoring, and presence among students and faculty (Kumar & Coe, 2017; Mayes, 2011, Swan, Garrison, & Richardson, 2009). Student-to-student interaction can lead to increased levels of both student satisfaction, student learning outcomes, multicultural understanding, and positive self-concept (Cifuentes & Murphy, 2000; Eom & Ashill, 2016). 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 and can help them establish careers and professional identity (Allan & Lewis, 2006). In Shearer et al’s study, (2020) the authors found that being part of a learning community provided students with what they want: a highly social, personalized learning experience. When individuals share community they often go beyond their given course space to interact through social media and with other communication tools to become colleagues as they build their careers (Luo, Freeman, & Stefaniak, 2020).

The research that informs design of learning communities most typically focuses on creating online community in the context of courses. But, community rarely happens in the context of a single course. 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).

Community building is not easy. Cifuentes, Maxwell, and Bulu (2011) found that community teachers only wanted to participate when they could anticipate working together on their campuses in person. Silvers, O’Connell, and Fewell (2007) found that in their program’s courses, students would only participate when “deadlines and due dates were clearly understood and adhered to” (p. 87). To overcome resistance to participation, Richmond & Manokore, (2011) found that sharing multimodal learning objects such as videos, games, photographs, and graphics in an online learning space motivated K-12 Science teachers to participate in their professional learning community. Community members agreed that the collaborative act of sharing and receiving resources from other participants resulted in their learning. They found that, to engage participants, the community design had to intentionally support collaboration, community formation, accountability, sustainability, and confidence building regarding content and guided inquiry. In a more recent study, Huijboo, van Meeuwne, Rusman, and Vermeulen (2020) conducted focus groups and surveyed the literature to identify characteristics of effective professional learning communities. The groups identified eleven characteristics: collaboration, reflecting, giving and receiving feedback, experimenting, mutual trust and respect, collegial support, social cohesion, shared vision, shared responsibility, shared focus on student learning, and shared focus on continuous teacher learning.

The hope of online learning communities is that they increase comfort, communication, and collaboration among students and with instructors. As design features, 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 (Bliss & Lawrence, 2009; Dawson, 2018; Kumi-Yeboah, 2018).

Wisdom Communities

In a wisdom community, here forward called a WisCom, students use technologies to communicate with one another online (Gunawardena, Frechette, & Layne, 2019). 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.”

In addition to studying in cohorts, offering an online WisCom that spans the duration of students’ programs-of-study provides for a broad community of co-mentors. In a WisCom students can 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 WisComs. Communication, distributed co-mentoring, and learner support take place within “Collaborative Inquiry Cycles” (CICs). Members work together in 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).

The EDLT Solution

Students in a *Foundations of Learning Design* course were assigned to design and develop prototypical WisComs in four small groups as their term project. They were to propose a solution to our problem of needing to strengthen bonds and open enrollment to nontraditional masters’ and doctoral students in EDLT graduate programs. The prototypes were collapsed into one WisCom for EDLT faculty and Master’s and Doctoral students to learn in across the scope and sequence of their studies. Community goals established by faculty and students were to—

- 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.

As students designed and developed four EDLT WisComs, and based upon their final products, we asked the following threefold question— Given the opportunity to design and develop a WisCom in the Canvas Learning Management System, (1) in what activities do EDLT students want to participate, (2) what strategies and features do they want included in the WisCom, and (3) how would they like the WisCom to be implemented?

Methods

WisCom designers and developers applied instructional design methods using Gunawardena, et. al's. (2019) framework and guide for building online wisdom communities.

Using Richey and Klein's taxonomy of design and development research we classify the investigation as "model use research (2014, p. 72)." The goal of such research is to provide "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. 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 WisCom as reported above. 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 implementation on faculty and students.

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. Topics of eleven modules in the *Foundations of Learning Design* 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 instructor-generated content in each of the modules.

Participants

As potential end-users, students 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. Participants included one faculty member (the lead researcher and instructor for the course), one doctoral student (co-researcher and graduate assistant), and fifteen students enrolled in the 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 K-12 educational administration experience. Students' ethnicities were 8 Hispanic, 4 White, 1 African American, 1 Native American, and 1 West Indian; and genders were 12 females and 3 males. In terms of teaching experience, 62% of the participants had 0-5 years, 31% had 6-10 years, and 7% had 11-15 years.

EDLT students served as designer-developers following the principles of both instructional design and user design, also known as participatory design (Carr-Chellman, 2015; Lowdermilk, 2013). Such designs involve input from potential users of the design so that the resulting learning experiences meet their needs. The researchers collected naturalistic data in the context of participants making design decisions.

Data Sources

Data sources and their corresponding codes for analysis were— 1) a *Pre-Wisdom-Community Design and Development Survey* developed and administered by the researchers to determine students' perceptions regarding their needs (PreS); 2) online discussion of "Our Personal and Professional Selves" (OD); 3) design and development documents: a needs assessment developed and administered by students and distributed to EDLT students who were not in the class, a goal/task analysis developed and conducted by students, assessment criteria identified by students, strategies and features identified and described by students, implementation strategies identified by students, and one-on-one and small group evaluations conducted by students (D&Ddocs); 4) a *Post-Wisdom-Community Design and Development Survey* (PostS); and 5) the four student-developed WisCom prototypes (WCs). Each of these sources contributed to the ultimate design of the EDLT WisCom.

Procedures

The overarching course assignment was for students to work in teams to develop EDLT WisComs while course modules scaffolded their design and development efforts. The first four modules laid the foundation for instructional design. Beginning with the fifth module, needs and learner analysis, each assignment led to the systematic development of their team's WisCom.

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. In the first Canvas module, they were also given written instructions and the rubric used to assess their ultimate product. They were divided into four teams and each team 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 Module 2, students carried on a discussion entitled "Our Personal and Professional Selves." In the discussion, students shared their career goals and what they hoped they would learn in their EDLT program.

Student-teams developed and conducted surveys to assess needs that they sent to all EDLT graduate students. In response to subsequent modules, the teams went on to conduct goal/task analyses, establish assessment criteria, develop prototype WisComs that demonstrated their preferred strategies and features, describe implementation strategies, conduct one-on-one and small group evaluations, and revise their WisComs accordingly. The resulting products were the four WisCom prototypes. The researchers identified the most effective and compelling components and features of each in order to

assemble one WisCom that would address EDLT students' expressed needs and interests. In the final course module, students filled out the *Post-Wisdom-Community Design and Development Assessment* using Google Forms.

Data Collection and Analyses

Data collection took place in the context of course activities in the *Foundations of Learning Design* course. Therefore, design and development tasks and data were realistic in scope. Students collaboratively generated and submitted design and development documents for each design and development phase. In addition, they participated in the online class discussion and took the *Pre and Post Wisdom-Community Design and Development* surveys. The researchers had access to the four WisComs built in Canvas. These were not assessed or analyzed until the end of the course.

All data sources were qualitatively focus-coded according to a) activities in which students wanted to participate, b) features they wanted included in the WisCom, and, c) suggestions for implementation. They were then categorized across five salient components of WisComs that lead to transformative learning according to Gunawardena, Frechette, & Layne, (2019): technology, communication, distributed co-mentoring, learner support, and collaborative inquiry cycles. Findings reported reflect saturation within or across data sources. Data interpretations and the final WisCom were member-checked with participants before it was launched to the EDLT community so that they could affirm, clarify, or contribute new ideas regarding the design.

Findings

Students studied and learned instructional design processes in the context of a term-long project to design and develop an EDLT WisCom. Although the entire class was delivered online, students requested that the instructor meet with them via Zoom once a week to clarify content to study and tasks to complete. Covid was in full swing and we all needed the human interaction to support our learning.

The PostS revealed the extent that students felt course resources and activities helped them design the WisCom. From the students' perspectives, goal-setting was most helpful; conducting needs and goal analyses, listing objectives, and instructor constructed readings were also helpful; developing a test-blueprint, collaborating, identifying features, and establishing implementation and management processes were somewhat less helpful; formative evaluation was even somewhat less helpful; and readings in the text were considered to be the least helpful of all the class activities (see Table 1). These preferences reflect some students' remarks that they want less reading in both their courses and in their WisCom.

The PreS 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. Most said that they were likely to participate. In their D&Ddocs, students stated that they look forward to being able to learn in the EDLT WisCom. Students' processes for evaluating their

prototype WisComs revealed, through one-on-one and small group evaluation that the environment will provide students with a “sense of connection to the edtech community,” and a “safe and pleasant space to promote discussion.” They want “online collaboration with more control than teacher-led structured learning environments.” EDLT students offered that the WisCom would be a welcome “community space where questions can be asked and answered by different community members with different perspectives that can broaden others’ perspectives.” They want a space for “shared expertise, ideas, methods and approaches to online teaching and learning design,” and “relevant discourse.” One student offered that she sees the WisCom as a “pool of knowledge to access and/or a hive-mind to address certain topics.” Another student plans to use the space to “get input on things I was struggling with or just need guidance on how to go about it.” Most importantly they expressed appreciation for a “space where everyone feels welcome to voice their thoughts and experiences.”

For students to feel comfortable co-mentoring, they shared that both faculty and students should invest time and effort toward building trust. They want to know that the WisCom is a supportive environment where they will not be made to feel stupid or ill-informed no matter what they ask or share. They “want others to share their ideas, methods and approaches to overcoming specific gaps or situations;” want to “share ideas, experiences, success stories, and approaches;” as well as provide the “opportunity for more seasoned students to mentor newcomers to the EDLT program,” (D&Ddocs). Together they want to “create, test, and sample content,” (PreS) and “share experiences of teaching online,” (OD).

In what activities do EDLT students want to participate?

Beyond what they study in their coursework, students want to share tutorials in learning technologies as well as share, see, and practice ways that they and others apply technologies to support learning. They want to “share wins and losses of tech implementation in the classroom[s]” where they teach (PreS). Students on each team provided both synchronous and asynchronous communication in their WisCom prototypes and want students to be able to communicate in both discussions and brief chats.

Several students expressed the wish to see each EDLT community member’s introductory profile and biography; and many want to be able to connect and network with each other to, “share my content I create” and “impact other’s development” (D&Ddocs). They want to be able to ask and answer each other questions about the field and about their experiences in the degree program. In addition to spaces for chatting and discussions, they want a space to share celebrations of personal and professional achievements.

An agreement among students was that faculty members and doctoral students take turns and volunteer to design and moderate the Collaborative Inquiry Cycles (CICs). Topics and experiences of interest established by the students for CICs include:

- Social/emotional support and stress reduction – university offerings to support mental health (D&Ddocs, PostA, WCs),
- Guest speakers (D&Ddocs),

- Field competencies and standards (D&Ddocs),
- EDLT terms and definitions (PreS).
- ID models (PreS),
- ID foundations and “workshops that tackle the components of instructional design,” (PreS, OD),
- History of ID (PreS, WCs),
- ID methods (D&Ddocs),
- Gagne’s 9 events of instruction (PostS),
- Instructional design critique (D&Ddocs),
- Different example course designs (OD, D&Ddocs),
- Teamwork and conflict resolution (D&Ddocs),
- Relevant theories including Problem-Based-Learning, critical theory, and critical digital literacy (OD, D&Ddocs, WCs),
- How to establish presence online (D&Ddocs),
- High impact instructional strategies; what works and what doesn’t (OD, D&Ddocs)),
- Technology integration models (PostA),
- Engaging strategies with a variety of tools (D&Ddocs, WCs),
- History of educational technology (PreS, WCs),
- Tutorials for use of specific learning technologies; specifically students named Discord, Google Scholar, MicroSoft Office, Facebook, social media, (OD, D&Ddocs, WCs),
- Problem solving scenarios based on prior course work or work experiences (D&Ddocs),
- MOOCs (OD),
- How to provide teachers’ professional development (D&Ddocs),
- Feedback on work-product (OD, D&Ddocs, WCs),
- Ideas, experiences, success stories, and approaches (D&Ddocs),
- How to mentor and co-mentor (OD; WCs),
- Social networking (OD; WCs),
- Research engagement (D&Ddocs),
- How to develop valid and reliable assessments (D&Ddocs),
- APA citation help (D&Ddocs),
- Seminal article studies (OD),
- Recent enlightening journal articles (OD),
- Research findings (OD),
- Portfolio development with examples and feedback (OD),
- Relevant national organizations, journals, and conferences (OD, D&Ddocs, PostS; WCs),
- National policies (PostS),

- potential funding (D&Ddocs),
- How to crowd-source (D&Ddocs),
- OERs (D&Ddocs),
- Degree program advice (D&Ddocs),
- Career preparation (vitae and portfolio development; types of positions; internships; post-docs, etc.) (OD, D&Ddocs, PostA),
- Corporate and academic job opportunities (D&Ddocs),
- How to work with clients (PostS)

What features would students like included in the WisCom?

Students requested that the WisCom be conducted in Canvas, the campus LMS in which all EDLT students are fluent (PreS). They felt that using another technology such as Discord or Teams would potentially interfere with their broad and seamless adoption, but that tutorials in those applications would be appropriate (D&Ddocs). Zoom is integrated into Canvas courses and is the adopted application for synchronous gatherings. In addition, students asked that we “create a handle and share posts with #WisComEDLT,” (D&Ddocs). While courses are often text-heavy, they want the WisCom to have less text and more videos, graphics, and social media to gain EDLT students’ attentions to activities (D&Ddocs; PostS).

Each group of developers included a space with interaction and resources to support their peers’ social-emotional well-being. Students want the WisCom to include “webinars and Zoom meetings,” “seminars, ... and discussion, and networking with like-minded professionals,” as well as “workshops,” (OD, D&Ddocs). Each WisCom also included an evaluative exit survey for students to take at the end of their degree program to support formative evaluation. Features of the four student-developed prototypes are listed in Table 2 below:

In the consolidated WisCom, CICs are developed as modules in Canvas. Students requested additional modules for purposes other than CICs. Therefore, the WisCom includes an orientation that explains their WisCom offerings and activities with “homepage highlights where new members can begin” and demonstrations of Canvas use (D&Ddocs, WCs). As students suggested, the WisCom includes a growing module to be populated with self-paced tutorials and lessons that allow them to check their understandings without risk to their grades or reputation as a student, teacher, and scholar. A question-and-answer space allows students to ask about whatever is on their minds. Each of the four WisCom teams recommended having students sign a netiquette pledge with acceptable behaviors clearly stated.

As mentioned earlier, students want opportunities to interact both academically and socially, so we created a “Water Cooler” discussion space for very short social messages, a “Café” for more in-depth social discussions, and a “Celebrations” space for announcing achievements such as design and development projects completed, progress with research, internships, and jobs.

How can the WisCom best be implemented to serve each individual in the graduate programs?

Feeling stressed by their mandatory coursework, family, and workplace obligations, students unanimously want a low-stakes, supportive, optional environment designed to move them forward without requiring homework or testing beyond self-checks. “Users must be provided the opportunity to manage and contribute according to their interests in varying ways that are comfortable for them,” (D&Ddocs). One student recommended that facilitators “gradually release responsibility to the users,” (D&Ddocs). This is accomplished by encouraging doctoral students and senior Masters students to moderate CICs. Students concluded that testing or quizzing EDLT students on content in the WisCom context would be oppressive and turn students off to participation. In short, students want “a positive, supportive environment” (PostA) as they progress through their degree program. They suggest that the “community be self-run, all members contributing and building one another's knowledge concerning EDLT” (D&Ddocs).

Students recommended that systems be in place for providing access and knowledge of how to navigate and be active in the WisCom to all EDLT students (D&Ddocs, PostA, WCs). Therefore, a faculty member maintains those systems that include entering and deleting students as they enter and leave the program, and granting and withdrawing editing privileges to CIC moderators every two weeks. The faculty member also assures that new students are oriented to WisCom purposes and activities. The faculty member documents guidelines for maintaining the site and for WisCom CIC moderators. Although the framework proposed by Gunawardena et al. suggests that participation in CICs continue until a CIC is complete, EDLT students preferred short experiences. After much deliberation, we settled on two-week-long CICs.

Generally, roles of students and faculty members are the same as they are equal participants and co-mentors. But, for some tasks, roles differ. Students wanted to direct 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. Therefore, faculty members decided to use a volunteer approach giving students the responsibility of moderating CICs. Only faculty members and student moderators have full editing rights while students contribute and interact. Those moderator-volunteers identify the theme of the CIC that they lead and attend to its contents daily for 2 weeks. Because students want daily access and moderator availability, moderators support the environment each weekday of those 2 weeks (PreA). Students want an easy space to navigate. Therefore, we open one CIC at a time and archive completed CICs so that the WisCom does not get too complicated and content-dense.

CIC moderators announce where on the site students collaborate as well as the topic for their CIC. Each CIC begins with a learning challenge, provides an initial exploration and resources, and gives students opportunities for reflection and negotiation of meaning. In addition to contributing to the Canvas site, students want to share links to valuable content. They work together and network with others in the field using social media and post to the WisCom links to those communication channels and suggestions regarding who to “follow” and “friend.”

Students suggested that, because participation is optional and participants typically work full time while going to school, motivation to participate must be addressed by design. Therefore, we applied the ARCS-V (Keller, 2010; Keller & Deiman, 2012) motivation model across the environment and in that context demonstrate the ARCS-V model to students suggesting that they apply it as they lead others through CICs as well as in their future careers. Through design we gain students' attention through student ownership in the environment, injection of personal stories, invited speakers, variation, and unexpected events. CIC moderators establish relevance by relating CICs to fellow students' goals, interests, and experiences. CIC designers build confidence by providing clear expectations, as well as opportunities for success and personal responsibility. And, students gain satisfaction with their experiences in the WisCom as they are rewarded by inclusion and fairness while growing as educational technologists (D&Ddocs).

From the faculty members' and researchers' perspectives there were some weaknesses in the students' WisCom designs that the faculty were able to address when consolidating and revising the four student-developed WisComs. For instance, students embedded frequent self-checks in the hope that those would keep students engaged and they included numerous exit surveys at the end of modules for collecting students' responses to the environment for formative evaluation purposes. These interactive features can be expected in a course on instructional design foundations, but were determined to be detrimental to participation in the otherwise supportive WisCom and were removed because they might be seen by students as burdensome and potentially punitive.

Students 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 dedicated space. Rather each group created Modules titled Collaboration and Mentoring where those activities were to take place. Also, students did not address how CICs would be administered and implemented, leaving that up to the instructor. In the consolidated and revised design, collaboration and co-mentoring take place within all modules and CICs include learning challenges, initial explorations, resources, reflections, negotiation, and ultimately, preservation in Canvas archives.

Discussion And Conclusion

In summary, EDLT students identified activities they want to work on, and features they want included in their WisCom, as well as implementation strategies to make the WisCom successful. They hope to collaboratively gain professional identity, knowledge, and community as well as grow in their skill with learning technologies during their graduate degree programs in EDLT. They want to use the WisCom to share technology applications and learning design expertise. And they identified topics to explore in CICs.

This design and development study affirms the value of user-design as an important element of instructional systems design theory. As co-designers, EDLT students have ownership and claim that they will participate and continue to build content in their WisCom. They designed the community in accordance with sociocultural learning theories, meaning that each member's contributions are valued

and that “the hierarchical structure is diminished ... through distributed learning, mentoring, [and] support...among all participants” (Gunawardena, et al., p. 160). They intend for the WisCom to be transformative in that it will have a lasting impact on their professional lives as educational technologists (Rowley, 2006).

This study also 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 spite of students’ low rankings of the text-readings, they did 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 future EDLT students.

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 students suggested was on the history of instruction design. That students chose to include history in their WisComs may reflect the professor’s expressed value of history. Secondly, the compiled specific 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 students. In this case, students in the specific context of the region and university culture, socially constructed their WisComs and each of the four WisComs 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 evaluate the impact of this WisCom that launched in March 2022 on educational design and learning technology students’ transformational learning. Other studies such as this one need to be conducted exploring design, development, implementation, and evaluation of WisComs and their efficacy to facilitate culturally inclusive experiences for students in different disciplines, at different ages, and across and within different global regions.

Implications for Practice— Guidelines for Designing, Developing, and Implementing WisComs

Focusing on cultural responsiveness in their design elevated students’ awareness of that need in their future designs. We share how to design a culturally inclusive community that is responsive to students’ needs for building professional identity as instructional designers and educational technologists. Based upon the literature and our design and development experience, as recommended by McKenny and Reeves (2019), we offer the following guidelines for designing, developing, and implementing WisComs to be offered over the duration of learners’ studies in degree programs:

- Co-design and develop with potential student and faculty users.
- Collect user input regarding activities and features they want included in the space.
- Collect user input regarding how they want the space to be implemented.

- Develop systems for preparing all in the community for membership and for welcoming newcomers.
- Develop guidelines for CIC moderators that include CIC structure and the ARCS-V model.
- Make different roles of WisCom members explicit while remaining flexible.
- Include discussions, asynchronous content, synchronous webinars, infographics, and videos, and less text than in online courses.
- When implementing the WisCom, apply the ARCS-V motivation model across the environment.
- Periodically conduct needs assessments to determine the interests of community members, and revise the environment as necessary.
- Include a space for brief chats, a space for off-topic sharing and discussion, a space for celebrations of professional achievements, and a space with tips and resources to support social-emotional health.
- Assign volunteers to build Collaborative Inquiry Cycles as described by Gunawardena, Frechette, and Layne (2019).

Prior studies have explored the impact of design components that promote community (Huijboom, et al., 2020; Richmond & Manokore, 2011). This study is different in that it explores user-design and development of a community of practice that serves students for the duration of their degree program while they prepare to be educational technologists and instructional designers. It identifies activities, features, and implementation practices preferred by students in a wisdom-community to inform both theory and practice for preparing professional educational technologists.

Ruja Benjamin (2020) tells us that “emancipatory designs are not only possible, they already exist” (p. 193). Many vital educators engage in technology development that supports cultural inclusion and social justice in education. Design, development, and implementation of WisComs to support professional development for cultural inclusion and social action play a role in such efforts. The EDLT WisCom is meant to be an emancipatory, transformative design that promotes cultural inclusivity in EDLT graduate programs as well as prepare students to design culturally inclusive learning environments. WisCom’s developers expect that active involvement in the WisCom will transform EDLT students by helping them identify as professional educational technologists, expand their professional knowledge, and prepare them to use various learning technologies as they design and develop culturally inclusive learning environments and experiences.

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Tables

Table 1 *Student Opinions of the Extent that Class Resources and Tasks Helped them Design and Develop the WisCom (N=9)*

Course Resource	Not at All	A Little	A lot
Goal setting			9
Conducting needs and goal analyses		1	8
Listing objectives		1	8
Readings in modules (researcher constructed and web linked)	1		8
Developing test blue print		2	7
Collaborating		2	7
Identifying strategies and features			
Establishing implementation and management processes		2	7
Formative evaluation		3	6
Creating assessments		4	5
Readings in text	1	5	3

Table 2 *Student-Summarized Features on the Home Pages of Student-Developed WisCom Prototypes.*

Wisdom Community- Group 1

Each module has multiple and varied components.

1. Welcome and orientation
2. History and key terms
3. Co-mentoring
4. Job opportunities in the EDLT field
5. Popular technologies in ID
6. Professional organizations
7. Using theory to evaluate projects
8. Collaboration
9. WisCom exit survey
10. WisCom suggestion box

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 online community
5. End of degree evaluation

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)

Wisdom Community- Group 4

Modules and 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

Figures

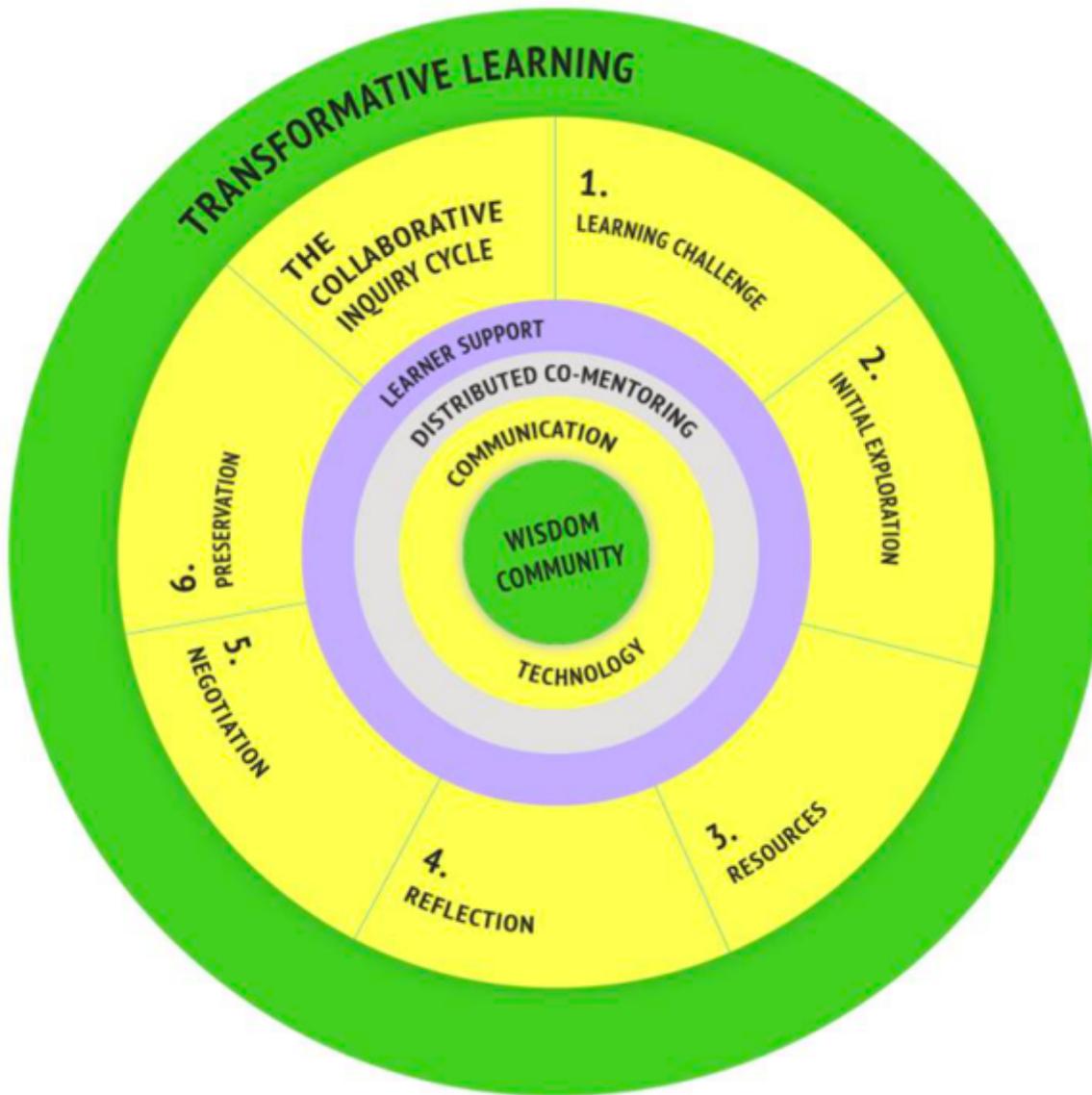


Figure 1

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