

Integrating Learning Communities and Distance Education: Possibility or Pipedream?

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ABSTRACT: As demands for accountability continue and increase, higher education administrators require tools for evaluating campus programs. Learning communities, as a course design strategy, have proven successful in confronting challenges associated with attrition and retention. Because high attrition is associated with online distance education, learning community principles might be applicable to online courses. The authors surveyed attendees at a learning communities conference to determine the applicability of learning community principles to Internet learning and assessment. On the basis of their findings, they developed a rudimentary diagnostic tool for ascertaining whether online course design takes learning community principles into account.

KEY WORDS: learning communities; distance education; online teaching and learning.

We often hear that online education shows promise for setting the collegiate learning experience free from the confines of the lecture hall. However, along with this newfound freedom come the requisite growing pains and problems. For example, attrition rates for courses delivered via the Internet are higher than average (Diaz, 2002). Although they vary from institution to institution and program to program, attrition rates are typically 10% points higher in online courses than in on-campus counterparts (Carr, 2000). For instance, data from the Dallas Community College District exposed “an 11–15 percentage-point difference between course-completion rates in the district’s on-campus courses and those in its distance education courses” (Carr, 2000, p. A39). Another study, from the online M.B.A. program at Texas A&M,

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showed attrition rates of 21% for online courses compared with 14% for traditional courses (Terry, 2001).

In an era of declining resources and renewed interest in accountability of higher education, high attrition rates are troublesome (Banta, 1993; Burke, 2002). Senior management officials on campus, including distance education administrators, tend to talk of online distance education programs in terms of exponential increases in headcount and the incessant demand for more courses (Green, 2002). The emphasis is on growth and meeting demand, with less attention paid to what is going on in the online classroom (Berge, 1998).

Scrutiny of online higher learning, however, is increasing. For example, at a United States House of Representatives subcommittee meeting in 2003 where reauthorization of the Higher Education Act was being deliberated, several legislators called for “more federal supervision over distance-education programs” (Carnevale, 2003, p. A33). One accrediting body, the Middle States Commission on Higher Education (2002) has stated that, if an institution offers “at least 50% of a program through distance learning, it must receive advance approval from the Commission to have those programs included within the scope of the institution’s accreditation” (p. 1).

The use of learning communities, as a course design strategy, has proven successful in confronting the challenges associated with attrition and retention (Cross, 1998; Shapiro, 1998). Because high attrition is associated with online distance education, it stands to reason that learning community principles might be applicable in online courses where students report a sense of isolation and remoteness.

Such a statement raises an important question. Can principles from the learning communities movement be used to assess and improve the new virtual classroom—a computerized version of the traditional bricks-and-mortar classroom? And, if they can, how? In an attempt to answer these questions, we surveyed attendees at a learning communities conference about their opinions regarding the applicability of learning community principles to Internet learning and assessment. On the basis of the findings, we developed a rudimentary diagnostic tool for ascertaining whether online course design takes learning community principles into account. These actions provide the groundwork for future study about using learning communities in online classes and the relationship to student retention.

The Wisdom of Learning Communities

The learning communities movement is a relatively new, rapidly expanding educational enterprise focused on designing programs that ensure incoming freshmen do not “fall through the cracks” and drop out of school because of the negative experiences sometimes associated with the first year of college (Gabelnick, MacGregor, Matthews, & Smith, 1990; Smith, 2001; Tinto, 1995). The original basis for learning communities involved the deliberate organizing of a curriculum through linking or clustering courses for a cohort of students (MacGregor, Smith, Tinto, & Levine, 1999). Today, these inventive programs have grown to include additional elements, such as an interdisciplinary approach to the curriculum (e.g., blending history and literature courses), team-teaching pedagogical techniques, extracurricular initiatives with a community service focus, and residence hall/living community components. Over time, learning communities have been shown to help ameliorate attrition and reduce drop out rates (Cross, 1998).

Indeed, the literature supports the notion that students feel valued and encouraged to participate when a course is structured so that both the professor and other students show interest, share insights, and express ideas (Bruffee, 1998; Dede, 1996; Harasim, Hiltz, Teles, & Turoff, 1995; Palloff & Pratt, 2003). In the few studies that do examine the dynamics of an online course, results point to a student’s sense of isolation and remoteness as significant barriers to learning via the Internet (Conrad & Donaldson, 2004; Everhart, 1999; Haythornthwaite, Kazmer, Robins, & Shoemaker, 2000; Kazmer, 2004). Consequently, for faculty teaching via the Internet, striving to create community in the virtual classroom should strengthen the bond among students taking the course and make the course material more interesting.

The implication here is that faculty can reduce attrition rates by building a sense of community within their online courses. Few, if any, good measures exist to gauge whether or not important elements of community are present in an online course.

The Study

The purpose of this study was to determine the applicability of certain pedagogical principles associated with learning communities for use in online teaching and learning. The survey sample was generated from a list of attendees at the 8th Annual Conference on Learning

Communities and Collaboration: Student Learning and Engagement, held in Indianapolis, Indiana, USA, in November 2003. An excerpt from a past annual conference announcement described the meeting this way:

This conference has become a national gathering of faculty, administrators, counselors, librarians, and student mentors and tutors from two and four-year institutions, as well as secondary schools... focus[ing] on learning communities: thematically-linked courses from two or more disciplines. Presenters explore issues related to collaboration in various and complex teaching and learning settings. Participants explore the innovative, diverse, and creative ways that learning communities enhance student learning. The conference has been recognized with the Millennium Award for creativity and innovation by the Liberal Arts Network for Development consortium (Delta College, 2002).

The population list of 245 conferees, from which the sample was drawn, included published authors, top administrators, and innovative instructors who are considered national leaders in the contemporary learning communities movement. Although there is no evidence that this population has knowledge of distance education practices, we asked their opinion based on the assumption that, if efforts to build community increase student engagement in traditional campus settings, the concept may very well work in online courses. Survey questions about learning community principles were developed from the literature. After the conference, participants were asked via an e-mail survey to respond to statements about the applicability of eight learning community principles to teaching and learning via the Web:

1. Clustering two online classes around an interdisciplinary theme.
2. Using group projects to promote collaborative learning.
3. Integrating an extracurricular, student affairs component into the online class (i.e. social activity).
4. Encouraging students to take responsibility for their own learning.
5. Using instructor-guided peer questioning to encourage student-to-student interaction.
6. Incorporating reflective writing exercises, including student self-evaluation.
7. Encouraging students to share their own experiences and ideas in online discussions and/or postings.
8. Instructor sharing own internal processes (ways of thinking) with students.

Participants completed the survey online, with the Web address link available in the e-mail (Dillman, 2000). Qualitative comments from survey participants were requested for each of the learning community principles (Dillman, 2000). We analyzed the responses associated with each of the eight principles, as well as general comments about learning communities and online learning (Manning & Cullum-Swan, 1994). Pattern-coded responses were then categorized into themes to support the emerging framework and help operationalize the constructs that had been identified in the study (Miles & Huberman, 1984). Additionally, respondents were asked to rate the applicability of each principle on a 1–4 Likert scale, with 1 representing *low applicability* and 4 representing *high applicability*.

Results

Seventy-three responses were collected, representing a 29.8% return rate. Mean scores gauging the applicability of each learning community principle are given in Table I. Statement 7, the principle “Encourage students to share their own experiences and ideas in online discussions and/or postings,” scored highest on the 1–4 Likert scale ($M = 3.56$, $SD = 0.75$), followed closely by statement 4, “Encourage students to take responsibility for their own learning” ($M = 3.55$, $SD = 0.68$). Statement 5, “Use instructor-guided peer questioning to encourage student-to-student interaction” scored third highest ($M = 3.49$, $SD = 0.58$).

Table I also shows that the learning community principle described in survey statement 3, “Integrate an extracurricular, student affairs component into the online class” ($M = 2.71$, $SD = 1.08$), scored lowest. In fact, using analysis of variance (ANOVA) with Tukey HSD follow-up, the mean score for statement 3 was significantly lower than the mean scores for all other statements ($p < .05$). Note also that statement 3 had the most variability of all the learning community principles: 40% higher ($SD = 1.08$) than the average for the rest ($SD = 0.768$), suggesting the least agreement about this principle exists among the respondents.

Participants were also asked in the survey to rank order the top-three most-applicable principles from the list of eight as they relate to online teaching and learning. Results of these rankings are given in Table II. Interestingly, statement 1, “Cluster two online classes around an interdisciplinary theme,” scored higher than expected in the rankings considering its mean score shown in Table I.

Table I
Mean Applicability Scores for Learning Community Principles

Learning community principle	Mean score	Standard deviation	N
7. Encourage students to share their own experiences and ideas in online discussions and/or postings	3.56	0.75	72
4. Encourage students to take responsibility for their own learning	3.55	0.68	69
5. Use instructor-guided peer questioning to encourage student-to-student interaction	3.49	0.58	73
6. Incorporate reflective writing exercises, including student self-evaluation	3.42	0.71	73
8. Instructor shares own internal processes (ways of thinking) with students	3.33	0.85	73
2. Use group projects to promote collaborative learning	3.30	0.79	73
1. Cluster two online classes around an interdisciplinary theme	3.02	1.02	73
3. Integrate an extracurricular, student affairs component into the online class (i.e. social activity)	2.71	1.08	70

Note. Likert scale (1–4) used from *little applicability* (1) to *high applicability* (4).

When conducting factor analysis, both a sample size of 100 or more is desirable and a two-to-one ratio of sample subjects to variables should be maintained in order to overcome the “problem of equivalence of factors rotated” (Kline, 1994, p. 76). The subjects-to-variables ratio is achieved here, but the low sample size ($N = 73$) means this study must be considered tentative or exploratory. However, although sample sizes of 100 or more are the standard for achieving statistical significance using exploratory factor analysis, sample sizes of as little as 60 are permissible if communality coefficient scores of 0.60 are achieved for each of the salient variables contributing to the construct factors (MacCallum, Widaman, Zhang, & Hong, 1999).

Table III presents the results of exploratory factor analysis using the principal component extraction method. We used varimax rotation to reduce the dimensionality of the data and further establish correlative connections between salient learning community principles. The results show how paired survey statements “cluster” together, with

Table II
Results from Rankings of Most Applicable Learning Community Principles

Rank	Learning community principle	<i>f</i> (frequency)
1	2. Use group projects to promote collaborative learning	35
2	7. Encourage students to share their own experiences and ideas in online discussions and/or postings	34
3	1. Cluster two online classes around an interdisciplinary theme	30
4	4. Encourage students to take responsibility for their own learning	29
5	6. Incorporate reflective writing exercises, including student self-evaluation	26
6	5. Use instructor-guided peer questioning to encourage student-to-student interaction	21
7	8. Instructor shares own internal processes (ways of thinking) with students	19
8	3. Integrate an extracurricular, student affairs component into the online class (i.e. social activity)	13

the resultant factor framework explaining the greatest amount of the common variability in the data. A one-word indicator, or factor, was then selected that best characterizes a common theme for each group of clustered statements. Factor analysis from this survey yielded three factors: “Connections,” “Experience,” and “Responsibility” (C-E-R).

Statement 5, “use instructor-guided peer questioning to encourage student-to-student interaction,” and statement 8, “instructor shares own internal processes (ways of thinking) with students,” were variables not salient to the interpretation of any of the C-E-R factors. Perhaps this occurred because these particular principles from the content domain, while unique variables for effective teaching and learning in their own right, may not impact an online course. Of course, there is always the possibility that poor wording in these statements caused confusion in interpretation by survey participants. Nonsalience of variables, such as statements 5 and 8, is not unusual in exploratory factor analysis (Thompson, 2004).

Table III also indicates that communalities of 0.60 or higher were achieved in five of the six variables of the C-E-R framework. Only statement 1, the learning community principle “Cluster two online classes around an interdisciplinary theme,” had a communality

Table III
Results of Exploratory Factor Analysis (N = 73)

Learning community principle	Factor structure coefficients			Communality coefficient	Variance Explained (%)
	Connections	Experience	Responsibility		
1. Cluster two online classes around an interdisciplinary theme	.611	.137	-.213	.44	27.1%
2. Use group projects to promote collaborative learning	.822	-.055	.288	.76	
3. Integrate an extracurricular, student affairs component into the online class (i.e., social activity)	.314	.680	-.217	.61	20.7%
7. Encourage students to share their own experiences and ideas in online discussions and/or postings	-.117	.870	.182	.80	
4. Encourage students to take responsibility for their own learning	-.001	-.025	.822	.68	19.3%
6. Incorporate reflective writing exercises, including student self-evaluation	-.002	.030	.862	.75	
Total Variance Explained					67.2%

Note. Bold scores show learning community principle's component grouping.

coefficient below the recommended level of 0.60 ($h_{[s1]}^2 = 0.437$). These communality scores, besides supporting the significance of sample sizes less than 100, are also considered a “lower bound” general estimate of reliability (Thompson, 2004).

The first factor, “Connections,” accounted for the most variance in the analysis, at 27.1% of total variance. The other factors, “Experience” and “Responsibility,” accounted for 20.7 and 19.3% of total variance, respectively. Therefore, the cumulative score for “total variance explained” by the factors of the C-E-R framework was 67.2%.

Developing a Diagnostic Tool

Results from this exploratory study revealed the three-factor C-E-R framework, grounded in principles from learning community programs and pedagogy. Ideas associated with the C-E-R framework suggest the applicability of the creation of a community of learners in an online class in which participants communicate regularly and develop connections.

One question that remains unanswered, however, is whether or not instructors incorporate learning communities into their online courses? Table IV expands the C-E-R framework into a diagnostic tool by suggesting three statements, for both students and faculty, for each factor of the construct. The ideas contained in these statements were formulated to reflect sound learning community principles. The more of these statements that are responded to in the affirmative, the more likely that community exists within the online course being evaluated.

The first factor, “Connections,” describes a key ingredient for building community in a virtual classroom: Students should feel a connection to each other and to the course material. Gabelnick et al. (1990) wrote extensively on learning communities and described this phenomenon as “students and faculty members (recognizing) courses or disciplines as complementary and connected” (p. 19). Mark Van Doren (1943), in his influential treatise *Liberal Education*, wrote, “The connectedness of things is what the educator contemplates to the limit of his capacity. The student who can begin early in his life to think of things as connected ... has begun a life of learning” (p. 115). Conversely, Haythornthwaithe et al. (2000) showed that “those [students] who fail to make such connections feel isolated and more stressed than those who are more active in the community” (p. 1).

A key to making “Connections” work is careful planning and coordination among faculty in a deliberative effort to connect or cluster

Table IV
C-E-R Diagnostic Tool: Ideas Supporting the Framework, for
Both Students and Faculty Engaged in an Online Course

Component	Evaluative Statements
Connections	For students 1. Actively engage in group assignments 2. Work to see the common themes across courses 3. Seek to help other students For faculty 1. Coordinate, design, and plan with other faculty across disciplines 2. Help guide group projects and supervise progress 3. Emphasize commonalities between clustered courses
Experience	For students 1. Share their experience, knowledge, and inspiration with others 2. Participate in scheduled extracurricular activity 3. React, respond, and critique others' ideas in discussion postings For faculty: 1. Design extracurricular activity for students 2. Ask students to share ideas and experiences 3. Incorporate real-world application into the curriculum
Responsibility	For students 1. View themselves as responsible and self-motivated learners 2. Engage in reflective writing and self-evaluation 3. Communicate regularly with the instructor For faculty 1. Provide a model for expectations and responsible learning behavior 2. Reward self-evaluative exercises such as reflective writing 3. Encourage self-motivation and student-led exercises

classes, across disciplines. One survey respondent characterized the coordination issue this way:

You have to be quite intentional about clustering: the designers of the two courses should consult each other at the very least. If students see overt connections that don't contradict or confuse, there's more of a likelihood to continue on in both subjects.

Another respondent concurred and believed the effort to create "Connections" is a worthy endeavor:

This should improve retention in both classes, across disciplines, since the faculty have co-designed their courses and the students have peer relationships in both courses. This may spawn online learning clusters

among those with similar learning skills. This should be suggested and encouraged by faculty.

The second factor, “Experience,” has roots in classical educational theory. Dewey (1938) proposed that the instruction of “subject-matter of facts or information and of ideas . . . [was] satisfied only as the educator views teaching and learning as a continuous process of reconstruction of experience” (p. 87). The possibility of incorporating experience into the online learning context is intriguing, but mixing new technologies with old pedagogies may not suffice: “Meaningful change [will occur] by redesigning instructional technology in terms of being both a strategic and cognitive tool” (Privateer, 1999, p. 67). Moreover, faculty may need instructional design and technical support for Web-based initiatives. Spence (2001) suggested a shift in pedagogical philosophy: “We won’t meet the needs for more and better higher education until professors become designers of learning experiences and not teachers” (p. 18).

An example of “Experience” in an online course revolves around instructor and students meeting at the home page of a famous art museum’s Web site and then entering as a group for a virtual tour. A chat room window remains open while the instructor guides students through the museum, thus allowing for discussion about art, artists, and history. This would certainly qualify as a digital version of a novel extracurricular learning community activity. However, virtual activities are still a new idea and, as a counterpoint, one survey respondent spoke to the difficulties of attempting this type of exercise:

This is tough in online learning since one of the key advantages is flexibility with regard to time to engage the course during a day. I have offered field trips for online classes and have never gotten beyond 20% [attendance] because of scheduling and the reality that many students are geographically remote.

The third factor, “Responsibility,” refers to motivation and maturity, students being accountable for their own learning, and empowered to learn in a manner that is best for them. One survey respondent suggested that learning contracts—where student and professor agree to expectations for the online course in writing—might be useful. Even so, there needs to be the offer of help and consistent assistance from the professor. Chickering and Ehrmann (1996) suggested that frequent instructor–student contact is the preeminent factor in student engagement, motivation, and involvement. As one respondent commented, “There needs to be support, however, for students asking the instructors questions. What might serve this best would be online discussion.”

Another way to encourage “Responsibility” in an Internet course is through reflective writing exercises. Here, deeper learning is achieved as students go beyond simply acquiring information. They make sense of what is learned and move toward the internalization of concepts and ideas, through reflective writing (Monteith & Smith, 2001). One respondent speaks highly of the pedagogical value of reflective writing: “Reflection will not be diminished online, and, as the online context is written, it should enhance written reflection if students are guided to understand reflections vs. response in the online mode.” An interesting complementary advantage for using reflective writing in an online learning community is that it qualifies nicely as an alternative assessment method. Such alternative methods for assessing outcomes are gaining favor in higher education (Banta, 2002).

Limitations

As suggested earlier, although survey participants were part of the population list from the annual national conference on learning communities, there is no evidence that individual respondents possessed special expertise on learning communities. In fact, some of the conferees were first-time attendees, including both junior faculty and graduate students, and likely were relative newcomers to the learning communities phenomenon. Similarly, there is no evidence that any respondents had knowledge in matters related to distance education. In fact, several participants raised this concern in their responses, stating that they would answer the survey as best they could, although they had no experience teaching online.

A Future Agenda

The next step in this project is to develop a broader measure based on the C-E-R diagnostic tool, using additional variables for each of the three construct factors. The new instrument(s) should be administered to a sufficiently large sample of both students and faculty, who do indeed understand and work with online education, to substantiate the results of this study and move toward confirmatory analysis. Once a C-E-R measure has been validated, studies to assess whether retention rates are higher in online courses that incorporate learning community principles versus courses that do not use these design features should make a significant contribution to the emerging body of knowledge about teaching and learning via the Internet.

Conclusion

Can the principles and techniques associated with learning communities become a reality in online courses, or are they merely a pipedream? Because of advances in information technology and electronic communication in education, it is likely that some of the more cumbersome pedagogical innovations, such as online group work and extracurricular activities via the Internet, will become easier over time. Therefore, the question of learning communities and distance education may be more about the human factor, particularly for faculty, and a willingness to embrace creative new ways to address the educational needs of today's learner. As Spence (2001) noted, "a lot of technology in education looks like bolting an internal combustion engine on the back of a horse and buggy . . . technology will transform education only when we unhitch the horse" (p. 18).

Columbia Teachers College President Arthur Levine likened the phenomenon of online learning to the G. I. Bill in terms of its impact on higher education. In an op-ed piece published in the *New York Times*, he predicted that information technology could one day make traditional bricks-and-mortar universities obsolete (Levine, 2000). Levine also gives an ominous warning about this trend: "My big fear is that we will provide personal, highly interactive campuses for those who can afford them, and the rest will be given virtual higher education" (Press, Washburn, & Broden, 2001, p. 37).

As institutions make available new options for learning, such as online distance education, the emphasis should be on quality, not enrollment growth. More good measures are needed to assess whether or not an online course meets the test for quality. The Internet, as a medium for learning, has huge potential for both frequency and quality of student collaboration, communication, and learning. Innovative pedagogical strategies, such as the formation of online learning communities, can help meet the quality challenge. The C-E-R diagnostic tool provides one way to ascertain their existence.

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