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# The Learning Community Development Model: A lens for exploring community development in online learning

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# The Learning Community Development Model: A lens for exploring community development in online settings

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**Abstract** This paper presents an exploration of the community experience in online settings where the development of a learning community was a key instructional aim. The inquiry used the Learning Community Development Model (Brook & Oliver, 2003) to guide the exploration of the community experience in online settings. The paper reports the findings of a multi-case study that sought to investigate instructor actions that support community development in online settings.

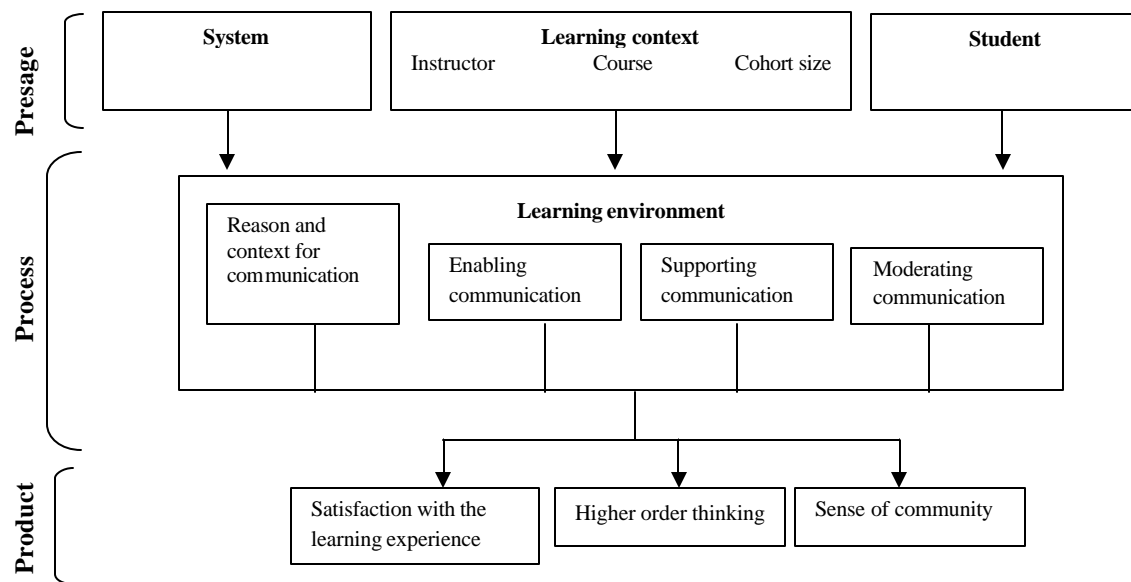
## INTRODUCTION

Many scholars assert that the social phenomenon of community might be put to good use on the support of online learning (Bonk & Wisner, 2000; Hiltz, 1998; Palloff & Pratt, 1999). This assertion is well supported by theories of learning that highlight the importance of social interactions in the construction of knowledge (Bruner, 2001; Dewey, 1929; Vygotsky, 1978). Further support is found in the works of scholars who explore the community construct. These scholars posit that community is characterised by a willingness of members to seek new members, involve all participants and share knowledge and the results of their endeavours {Moore, 2001 #39}. Benefits associated with community membership include an increase in intellectual capital (Stewart, 1997), an increase in social capital including the norms of reciprocity (Putnam, 2000) and the satisfaction obtained through membership (Lott & Lott, 1965). It has also been suggested that sense of community is characterised by a phenomenon of the whole being greater than the sum of its parts (Hawley, 1950). These characteristics afford members clear advantage over non member, but it remains unclear in what ways these characteristics might be purposefully developed in online settings (Bonk & Wisner, 2000). It is clear, however that the decision to join some communities and not others rests with the *will* of the individual (Tönnies, 1955). Factors that influence this decision remain unknown, although it is generally accepted that individuals seek community membership because it is beneficial for them to do so (McMillan, 1996).

While a definitive definition of community remains elusive (Puddifoot, 1996) several generally accepted characteristics have been identified. Community is distinct from family and society (Tönnies, 1955), it exists in a geographic and relational sense (Gusfield, 1975; Worsley, 1991) including online settings (Surratt, 1998). It has been suggested that community is a sense rather than a tangible entity (Wiesenfeld, 1996). Sense of community exists in many forms including those associated with neighbourhoods, fraternities, sport and religion and an individual is likely to belong to more than one community at a time (Sarason, 1974). Sense of community has been represented as a four dimensional framework comprising the elements of membership, influence, fulfillment of needs and shared emotional connection (McMillan & Chavis, 1986). These elements might be present at varying levels in different community settings, although shared emotional connection is considered the definitive element of true community (McMillan, 1996). This model provides a useful mechanism for conceptualising the community construct, but does not indicate factors that might influence community development or in what ways the key elements of community might be purposefully developed.

## The Learning Community Development Model

Following an expansive review of contemporary literature, Brook and Oliver (2003) developed The Learning Community Development Model (LCDM). The Model describes three components in the process of community development in online settings; those that exist prior to any instructor actions, identified as presage factors. Instructor actions, identified as process teaching and learning strategies and the various outcomes including sense of community, identified as the product. Figure 1 shows the three components of the LCDM.



**Figure 1 The Learning Community Development Model (Brook & Oliver, 2003)**

In an earlier exploration of the LCDM, Brook & Oliver (Brook & Oliver, 2005) identified that presage factors appeared to influence community development in largely negative ways. However, the interrelationship between presage factors and process teaching and learning strategies in the process of community development was not made clear. The suggested influence of process teaching and learning strategies in developing a sense of community among learners gives rise to the question:

In settings where presage factors might be unsupportive, what strategies can teachers use to support community development in online courses seeking to establish a sense of community among learners?

## **METHODOLOGY**

The quest for both fundamental understanding and application of findings have been the guiding factors in the selection of both the research paradigm and methodology. Accordingly, this study seeks to engage in *use inspired basic research* (Stokes, 1997) with a dual focus on practical application of findings and a contribution to a growing theoretical knowledge base. Acknowledging that qualitative and quantitative paradigms are not mutually exclusive (Patton, 1990) both paradigms are used according to need.

The context specific nature of the community experience (Sonn *et al.*, 1999) and the desire to ensure congruence between the goals of the researcher and those of the practitioner (Reeves, 1999, 2000) influenced the methodology adopted for this study. To meet these goals a Grounded Theory (Strauss, 1987) approach was chosen allowing theory to be generated from close contact with the empirical world (Patton, 1990). In the tradition of Grounded Theory data collection strategies were embedded in the experiences, actions and behaviours of the actors involved. This was facilitated through a case study approach to the inquiry (Willig, 2001). This approach accounted for the context specific nature of the community experience providing for theory to be generation from the actions of expert practitioners and their students. A multi-case approach (Burns, 1996) involving multiple instances of community development was used. This allowed for refinement and further development of findings based on multiple instance of the same phenomenon under different conditions (Willig, 2001). Five instrumental cases considered exemplar models (Willig, 2001), selected on replication logic (Burns, 1996) were chosen for this study.

### **Data collection**

Data collection methods provided for *triangulation* (Willig, 2001) and the context specific nature of the community experience (Hill, 1996). To meet these conditions, it was necessary to adopt data collection mechanisms that allowed participants to describe their experience and allowed an objective interpretation of the community experience. Data collection methods included:

**a. Interviews** Interviews were used to account for the forms of engagement and activity employed by instructors to promote community development. Interviews were conducted in the early and latter stages of course delivery and were sensitive to the instructor's understanding and interpretation of community development (Willig, 2001).

**b. Observations** Potential incongruence between what the interviewee said and what actually happened was explored through an observational data collection strategy (Becker & Blanch, 1970). Observations were made of all participant online interactions throughout the various courses. To avoid the potential limitations of observations as a data collection strategy, a structured approach was utilised (Burns, 1996). Observations followed a structured approach proposed by Kiddler (1981);

1. What should be observed?
2. How should observations be recorded?
3. What procedures should be used to try to assure the accuracy of the observations?
4. What relationship should exist between the observer and the observed, and how should such a relationship be established.

This observation schedule provides for the opportunity to gauge participant practices and experiences before, during and after the learning experience.

**c. Questionnaire** A demographic questionnaire was employed to collect data on individual characteristics that appeared likely to influence community development including cultural influence, communication patterns and perceptions of self as connected or separate. Participating students were asked to complete the questionnaire at the beginning of the various courses. In addition, students were asked to respond to open ended questions that explored their community experience.

**d. Sense of Community index:** The SCI was the principal source of data gathered to facilitate exploration of the community experience. Respondents were required to rate their experience of the four discrete elements of sense of community on a five point scale (1 = low & 5 = high). These ratings were then combined to provide the individual's total sense of community experience (4 = minimum and 20 = maximum). The index was completed at the beginning of the course, to establish the early sense of community experience and toward the end to ascertain any variation.

### **Data analysis**

Resulting data sets were analysed using a constant comparative approach (Patton, 1990). Qualitative data was coded according to emergent themes. Themes were constantly compared with emergent categories to establish a best fit with the data set. Quantitative data collected through the SCI was analysed using descriptive statistics in accordance with the limitations associated with a relatively small sample size.

## **RESULTS**

Each of the cases explored in this study are introduced individually in subsequent paragraphs. Following the components of the LCDM, results of the inquiry are presented as process teaching and learning strategies seen to influence community development.

### **Case Study 1: Alexander's course**

**Introduction** In his course, Alexander delivered a teaching and learning skills program for instructors working in the university setting. The course operated over a five week period, included 27 participating students and was delivered in the online setting with one face to face meeting scheduled at the beginning of the course. An exploration of the presage factors revealed a setting that was largely unsupportive of community development. The instructor was inexperienced but well trained, the course was of a practical nature, suited to collaborative endeavours, but there was an absence of a recommended assessment schedule. The cohort provided for critical mass without a heightened risk of a sense of detachment typical of large cohorts. However, many students stated a reluctance to engage in collaborative endeavours, revealed attitudes of perfectionism, and reluctance to meet time requirements. Many of these factors appeared likely to present limitations to community development in online settings (Brook & Oliver, 2005).

**Reason and context for communication:** A sense of advantage motivated individuals to engage in collaborative activity. All students took advantage of the opportunity to manage their learning experience through engaging in collaborative activity. All the reports required as an outcome of group activity were completed, indicating that students engaged in some form of cooperative endeavour and many students reported that learning activities that reflected the lived in world motivated their participation.

**Enabling communication:** Students took advantage of the opportunity to utilise communication tools of their choosing and many reported the benefit of this approach in enabling communication. Manipulating the cohort to develop small group and whole class settings was seen to reduce the risk associated with communication in public forums for some students, while ensuring critical mass required for a satisfactory group experience. However, the pace of learning was the most commonly cited impediment to meaningful interactions with students perceiving lost opportunity to engage in critical discussions.

**Supporting communication:** The instructor took intentional action to support communication in various ways. The technical training provided to students at the beginning of the course resulted in 97% of the students engaging in early online interactions in a timely manner. Peer support networks were active and there was ample evidence of knowledge sharing and peer support. Student written communication adhered to social norms and while there was an awareness of the potential for misunderstanding there was little evidence that students were discomforted by communications. Group activities were managed by the students requiring them to engage in self regulatory behaviours.

**Moderating communication:** Alexander used a warm, friendly and accepting tone in his written communication that transferred to student behaviours. In addition, this approach was seen to develop a sense of safety and mutual respect among participants. Alexander's timely contributions to discursive activity were seen to motivate continued student participation and encourage student contributions. Table 1 shows the student responses to the SCI in the early and later stage of course participation in this setting and indicates variation.

**Table 1 The sense of community experienced by participants in Alexander's course**

| Student        | Sense of community |              |              |
|----------------|--------------------|--------------|--------------|
|                | 1st                | 2nd          | Difference   |
| Bridgett       | 14.33              | 15.33        | +1.00        |
| Maurice        | 12.33              | 13.33        | +1.00        |
| Marianne       | 9.66               | 12.66        | +3.00        |
| Yvonne         | 11.66              | 13.00        | +1.34        |
| Jim            | 6.00               | 7.33         | +1.33        |
| Valerie        | 6.66               | 5.33         | -1.33        |
| Brenda         | 9.66               | 11.33        | +1.67        |
| Natalie        | 11.00              | 10.33        | -0.67        |
| <b>Average</b> | <b>10.16</b>       | <b>11.08</b> | <b>+0.92</b> |

Table 1 shows that of the eight respondents, six perceived an increased sense of community and two indicated that this sense reduced. This suggests that process factors tended to overcome many of the limiting aspects of presage factors present in this setting. However, this was not the case for all students, suggesting factors that suppressed the community experience for some individuals continued throughout the course. Valerie, who reported the largest reduction in sense of community (-1.33), claimed divergent achievement expectations among learners as contributing to her sense of isolation. Natalie, who also reported a reduced sense of community (-0.67), expressed frustration when the LMS was unavailable. In addition, many students identified that the pace of learning limited their opportunity to engage in meaningful interactions.

In this setting it appears that process teaching and learning strategies tended to overcome the limitations to community development presented by presage factors. However, this was not the case for all students and not all instructor actions were seen to be supportive of community development.

### **Case study 2: Philip's course**

**Introduction:** The course in which Philip participated was an undergraduate program for students learning how to teach in online settings. The course operated over a 12 week period, included 12 students and was delivered exclusively in the online setting. As a consequence of a competitive learning settings, an individual goal orientation and divergence between expected roles and responsibilities and actualities, conditions in this setting appeared largely unsupportive of community development (Brook & Oliver, 2005).

**Reason and context:** As in Alexander's course, students in this setting indicated that their motivation to engage in collaborative activity came from the advantage received for doing so and the authentic nature of learning activities. The majority of reports required as an outcome of small group activity were produced, however one group was seen to be dysfunctional with only one active member.

**Enabling communication:** Rotated membership in small group settings ensured that all active students shared the burden of non-participating students. The use of small group and whole class settings resulted in an increased opportunity for all students to contribute in meaningful ways and the provision of a meeting schedule resulted in an appropriate pace of learning. However, many students perceived that, as a consequence of the restrictions placed on the use of CMC technologies, this setting did not meet their communication needs.

**Supporting communication:** Technical difficulties were not cited as impediments to participation in this setting, suggesting that stating technical expectations and requirements was a useful strategy in preparing students for learning in online settings. In addition, there was scant evidence that students were discomforted by online interactions, suggesting that they were aware of the protocols for communicating in written forms. In addition, many students were seen to undertake various roles and responsibilities and regulate their own learning experience.

**Moderating communication:** Many students responded well to the warm and friendly tone of communication established by the instructor and mirrored this behaviour. The peer support and social discussion forums were well used with many students taking advantage of the opportunity to post or respond to questions and engage in non course related discussion. However, many students cited the level of instructor participation in discursive activity as a limiting aspect of this course. Table 2 shows student responses to the sense of community index and indicates variations.

**Table 2 Results of the sense of community index (Philip's course)**

| Student        | Sense of community |              |              |
|----------------|--------------------|--------------|--------------|
|                | 1st                | 2nd          | Difference   |
| Angela         | 12.00              | 14.00        | +2.00        |
| Kathleen       | 13.33              | 14.00        | +0.67        |
| Mary Liz       | 14.33              | 13.66        | -0.67        |
| Miriam         | 15.33              | 13.66        | -1.67        |
| <b>Average</b> | <b>13.74</b>       | <b>13.83</b> | <b>+0.09</b> |

Data presented in Table 2 reveals that two students indicated an increased sense of community and two indicated a reduction. It is noteworthy that while Angela, a student in Philip's course, experienced a relatively strong increase in her sense of community (+2.00), Miriam reported a negative influence at almost the same level (-1.67). This polarity of experience suggests that instructor actions tended to overcome limiting aspects of presage factors for some participants but not others. Interestingly, Angela was seen to experience a dysfunctional group and Philip took action to allow her to seek membership in a more active setting. This action appeared to meet Angela's learning needs. In contrast, Miriam sought to utilise alternate CMC tools and Philip took action to enforce the restriction on CMC technologies. This action appeared not to meet Miriam's communication needs. This finding suggests that some instructor actions were seen to support community development while others were not.

### **Case study 3: Cathleen's course**

**Introduction:** Cathleen was the instructor in a post graduate program for teachers studying special education. The course operated over a 12 week period, included 44 students and was delivered exclusively in the online setting. Pre-existing conditions were not supportive of community development (Brook & Oliver, 2005).

**Reason and context for communication:** Once again, the advantage received for participating in collaborative activity served as a primary factor motivating student participation. Many students took the opportunity to share knowledge and understanding derived from their workplace. Reports required as an outcome of group activity were produced and there was scant evidence that individuals had not contributed in appropriate ways.

**Enabling communication:** Students took advantage of the opportunity to use communication tools of their choosing to engage in frequent communications. The planned meeting schedule ensured an appropriate pace of learning and fostered a sense of continuance among participants.

**Supporting communication:** There was strong evidence in this setting that students were comfortable in communicating online and were prepared to undertake various roles and responsibilities. However, technical problems were cited as the most inhibiting factor to student participation, and there was a strong suggestion that the help desk facility did not fully meet student technical needs.

**Moderating communication:** The tone of communication throughout the course mirrored the warm and welcoming tone established by Cathleen. There was little evidence that any student were dissatisfied with Cathleen's

contributions, despite these being largely didactic in nature. Many students took advantage of the opportunity to engage in non course related discussion through the social discussion forum. Table 3 shows student responses to the SCI at the beginning and end of the course and indicates variation.

The data reveals that overall students reported a marginally increased sense of community. Of the 13 responses, eight reported an increased sense of community, four reported a reduced sense of community and one reported that the sense of community remained static. These responses suggest that process teaching and learning strategies overcame limiting aspects of presage factors for some participants, but not all.

**Table 3 Results of the sense of community index (Cathleen's course)**

| Student        | Sense of community |              |              |
|----------------|--------------------|--------------|--------------|
|                | 1st                | 2nd          | Diff.        |
| Melanie        | 7.33               | 8.33         | +1.00        |
| Louise         | 9.00               | 9.66         | +0.66        |
| Lisa           | 10.00              | 10.66        | +0.66        |
| Jennifer       | 11.00              | 12.00        | +1.00        |
| Wendy          | 11.33              | 13.66        | +1.33        |
| Janine         | 12.00              | 11.00        | -1.00        |
| Karin          | 12.33              | 12.00        | -0.33        |
| Ludmilla       | 11.66              | 12.66        | -1.00        |
| Tony           | 11.00              | 11.00        | even         |
| Tania          | 12.33              | 12.00        | -0.67        |
| Samantha       | 13.33              | 13.66        | +0.33        |
| Bridget        | 11.66              | 12.33        | +0.67        |
| Anonymous      | 12.00              | 12.33        | +0.33        |
| <b>Average</b> | <b>11.15</b>       | <b>11.65</b> | <b>+0.48</b> |

#### **Case study 4: Jim's course**

**Introduction:** Jim taught a postgraduate education program for students studying the principles of online instruction. The course operated over a 12 week period, included nine students and was delivered exclusively in the online setting. In light of several limiting presage factors, conditions in this setting appeared unsuited to community development (Brook & Oliver, 2005).

**Reason and context for communication:** All students participated in collaborative activity, even those who were usually unwilling to do so, indicating that the benefits provided for participation were well suited to the needs of individual students. Although two students expressed dissatisfaction with the nature of learning activities, the majority of students were satisfied that the authentic nature of learning activities motivated their participation and supported knowledge sharing. All reports required as an outcome of group activity were received in a timely manner indicating that students engage in some form of collaborative activity.

**Enabling communication:** One student expressed dissatisfaction with the available communication tools, however this was an isolated incident with all other students taking advantage of the opportunity to use communication tools of their choosing.

**Enabling communication:** The regular meeting schedule established by the instructor appeared useful in keeping students engaged, with many students citing this as a factor that sustained their participation. Students cited the availability of small group and whole class settings as a factor that encouraged a sense of togetherness, providing the opportunity for experienced individuals to mentor others.

**Supporting communication:** In one case a technical difficulty appeared to result in a student withdrawing from the course. However, this was the only instance where a student appeared dissatisfied with the timeliness of the technical support provided by the instructor. The majority of students were active in discursive activity and there was little evidence that any students were discomforted by the nature of online communications.

**Moderating communication:** Student communications mirrored the warm and welcoming tone of communication established by the instructor. The 100% completion rate of group activities reflected the willingness of individual students to undertake various roles and responsibilities. The leadership role was shared among participants, although the timely contributions made by the instructor were valued. Table 4 shows student responses to the sense of community index at the beginning and end of the course and indicates the variation at the completion.

**Table 4 Results of the sense of community index (Jim's course)**

| Student   | Sense of community |       |       |
|-----------|--------------------|-------|-------|
|           | 1st                | 2nd   | Diff. |
| Clare     | 6.66               | 9.33  | +3.00 |
| Michael   | 7.33               | 7.33  | even  |
| Katherine | 9.66               | 10.33 | +0.67 |
| John      | 10.66              | 11.66 | +1.00 |
| Athina    | 11.33              | 13.33 | +2.00 |
| Rodney    | 13.33              | 15.00 | +2.00 |
| Megan     | 15.33              | 16.00 | +1.67 |



|                |              |              |              |
|----------------|--------------|--------------|--------------|
| Katrina        | 14.00        | 17.00        | +3.00        |
| <b>Average</b> | <b>11.03</b> | <b>12.49</b> | <b>+1.46</b> |

The student experience of sense of community appeared to increase as a consequence of participating in this setting, although this increase was not consistent for all students. Clare and Katrina, who reported the greatest increase in sense of community (+3.00), exemplify this outcome. While Michael, who reported one of the lower sense of community experiences (7.3), revealed no change in his community experience. Data analysis reveals that Michael was aggrieved at the nature of collaborative activity encouraged by the instructor and described a feeling of coercion to take part in what he perceived to be meaningless ways.

Once again, findings suggest that in many instances instructor actions tended to overcome limitations presented by presage factors, but not for all students.

### Case study 5: Elaine’s course

**Introduction:** Elaine presented a professional development program for registered training authorities (RTO’s) working in the field of vocation education and training (VET) in principles of online teaching. The course was intended to operate over a six month period with an initial active component of five weeks and included seven students. The course was delivered in the online setting with one face to face meeting scheduled for the end of the initial five week period. In this setting presage factors reveal conditions that appear not to be well suited to community development (Brook & Oliver, 2005).

**Reason and context for communication:** Extremely low levels of student participation marked this course. There was scant evidence that instructor actions motivated students to engage in collaborative activity.

**Enabling communication:** Although students were given unrestricted access to communication tools, the instructor revealed that students preferred to communicate on a one to one basis with the instructor via the telephone. As might be expected the students were unprepared to direct their own learning experience preferring to take leadership from the instructor.

**Supporting communication:** There was little evidence that students were discomforted by online communication, although their rate of participation was extremely low.

**Moderating communication:** The strong leadership role undertaken by the instructor was seen to reflect a traditional didactic approach to instruction and to promote passive behaviours among learners. Those students who did contribute to discursive activity adopted a warm and welcoming tone similar to that of the instructor. Table 5 shows student responses to the sense of community index at the beginning and end of the course and indicates variation.

**Table 5 student responses to the sense of community index (Elaine’s course)**

| Student        | Sense of community |             |              |
|----------------|--------------------|-------------|--------------|
|                | 1st                | 2nd         | Diff.        |
| Meredith       | 7.00               | 5.00        | -2.00        |
| Robin          | 11.66              | 7.66        | -4.00        |
| <b>Average</b> | <b>9.33</b>        | <b>6.33</b> | <b>-3.00</b> |

These responses suggest that conditions in this setting were not supportive of community development. Despite respondents indicating a reduced sense of community experience, there was little evidence that students were aggrieved with actions taken by the instructor. However, data analysis suggested that the instructor dominated discursive activity and tended to adopt a didactic approach to instruction. The aggregated sense of community index does not indicate in what ways these factors influenced community development, but it does suggest that the influence was negative.

This finding suggests that the actions taken by the instructor failed to promote a sense of community experience for the participants in this setting.

## DISCUSSION AND CONCLUSION

The study has revealed that some settings are characterised by conditions ripe for community development, while others are not. This inquiry also revealed that many instructor actions were seen to support community development while others were not.. Participants reported an increased experience of sense of community in settings where the

instructor demonstrated strong actions in each of the process elements of the Learning Community Development Model. In contrast, participants reported only a marginal increase or a reduced community experience in settings characterised by weak instructor actions in one or more of the process elements. This finding suggests that those instructors who develop strong practices in each of the process elements of the Learning Community Development Model are likely to support community development and overcome limitations presented by presage factors. This suggests that under certain conditions process factors are more influential in community development than presage factors.

## References

- Becker, H., & Blanch, G. (1970). Participant observation and interviewing: A comparison. In W. J. Filstead (Ed.), *Qualitative methodology*. Chicago: Markham.
- Bonk, C., J., & Wisher, R., A. (2000). Applying collaborative and e-learning tools to military distance learning: A research framework. Retrieved July 2, 2002, from [http://www.publicationshare.com/docs/Dist.Learn\(Wisher\).pdf](http://www.publicationshare.com/docs/Dist.Learn(Wisher).pdf)
- Brook, C., & Oliver, R. (2003). Online learning communities: Investigating a design frame work. *Australian Journal of Educational Technology*, 19(2), 139-160.
- Brook, C., & Oliver, R. (2005). *Exploring system factors that influence community development in online settings*. Paper presented at the World Conference on Educational Multimedia, Hypermedia & Telecommunications, Montreal, Canada.
- Bruner, J. (2001). Constructivist theory. Retrieved May 10, 2001, from <http://tip.psychology.org/bruner.html>
- Burns, R. B. (1996). *Introduction to research methods*. South Melbourne, Australia: Addison Wesley Longman Australia Pty. Limited.
- Dewey, J. (1929). *The sources of a science of education*. New York: Liveright.
- Gusfield, J. R. (1975). *The community: A critical response*. New York: Harper Colophon.
- Hawley, A. H. (1950). *Human ecology: A theory of community structure*. New York: The Ronald Press Company.
- Hill, J. L. (1996). Psychological sense of community: Suggestions for future research. *Journal of Community Psychology*, 24(4), 431 - 437.
- Hiltz, S. R. (1998). *Collaborative learning in asynchronous learning environments: Building learning communities*. Paper presented at the WebNet 98 World Conference of the WWW, Internet and Intranet Proceedings, Orlando, Florida.
- Lott, A. J., & Lott, B. E. (1965). Group cohesiveness as interpersonal attraction: A review of relationships with antecedents and variables. *Psychological Bulletin*, 64, 259-309.
- McMillan, D., W. (1996). Sense of community. *The Journal of Community Psychology*, 24(4), 315 - 325.
- McMillan, D., W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14, 6 - 23.
- Palloff, R., & Pratt, K. (1999). *Building learning communities in cyberspace*. San Francisco: Jossey-Bass Publishers.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Newbery Park, California: SAGE Publications, Inc.
- Puddifoot, J. E. (1996). Some initial considerations in the measurement of community identity. *The Journal of Community Psychology*, 24(4), 327 - 334.
- Putnam, R. D. (2000). *Bowling alone*. New York: Simon and Schuster.
- Reeves, T. (1999). A research agenda for interactive learning in the new millennium. Retrieved July, 29, 2001, from <http://it.coe.uga.edu/~treeves/EM99Key.html>
- Reeves, T. (2000). *Enhancing the worth of instructional technology research through design experiments and other development research strategies*. Paper presented at the International Perspectives on Instructional Technology Research for the 21st Century, New Orleans, LA, USA.
- Sarason, S. B. (1974). *The psychological sense of community*. San Francisco: Jossey-Bass Publishers.
- Sonn, C., Bishop, B., & Drew, N. (1999). Sense of community: Issues and considerations from a cross-cultural perspective. *Community, Work & Family*, 2(2), 205 - 218.
- Stewart, T. A. (1997). *Intellectual capital*. New York: Doubleday/Currency.
- Strauss, A. L. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.
- Surratt, C. G. (1998). *Internet citizens and their communities*. New York: Nova Science Publishing inc.
- Tönnies, F. (1955). *Community and association* (C. P. Loomis, Trans.). London: Routland & Kegan Paul Ltd.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner & E. Soubberman, Trans.). Cambridge: MA: Harvard University Press.

Wiesenfeld, E. (1996). The concept of 'we': A community social psychology myth? *The Journal of Community Psychology*, 24(4), 337 - 346.

Willig, C. (2001). *Introducing qualitative research in psychology adventures in theory and method*. Buckingham: Open University Press.

Worsley, P. (1991). *The new modern sociology readings* (second ed.). New York: Penguin Books Ltd.