

The impact of web-logs (blogs) on student perceptions of isolation and alienation in a web-based distance-learning environment

Michele D. Dickey*

Miami University, USA

In the rush to promote the use of computer-mediated technologies for both traditional and distance learning, relatively little research has been conducted about learner feelings of isolation, alienation and frustration. More recent technologies such as web-logs (blogs) may provide a wider range of tools for bridging learners' feelings of isolation. The purpose of this research is to investigate the impact of using blogs in a web-based learning environment. This qualitative investigation presents an interpretive case study of student perceptions of using blogs in a web-based technology integration course for K-12 pre-service teacher education students. Findings indicate that the use of blogs helped prevent feelings of isolation and alienation for distance learners.

Keywords: *Blogs; Web-logs; Web-based learning*

Introduction

The Web has had a resounding impact on education by both augmenting classroom practices and by affording educators new mediums for distance learning. Postsecondary institutions have begun to offer and support various distance education initiatives at an increasing rate over the past decade. A report from the National Center for Educational Statistics (NCES) states that during the 1997–1998 academic year 78% of public four-year institutions and 62% of public two-year institutions in the United States offered distance education courses (Lewis *et al.*, 1999, p. iii). Of these initiatives, many are relying on the Web as a primary medium for delivery. However, in the rush to promote and explore the use of computer-mediated technologies for both traditional and distributed learning, relatively little research has been conducted about learner feelings of isolation, distress and frustration regarding this type of academic experience (Egan & Gibb, 1997; Hardy &

*Department of Educational Psychology, Miami University, Oxford, OH 45056, USA. Email: dickeymd@muohio.edu

Boaz, 1997; Hara, 1998; Hara & Kling, 2000; Simonson *et al.*, 2000; Daviault & Coelho, 2003). Hara and Kling (2000, p. 574) identify the lack of 'prompt unambiguous feedback' and technical problems as a source of student distress. Technology may provide means for supporting communication between spatially distant users, but it may also alienate and frustrate users who, for a variety of reasons, may sporadically or continually feel disenfranchised or marginalized by the use of technology (Abrahamson, 1998; Daviault & Coelho, 2003). These feelings of isolation or alienation may have a consequential impact as computer-mediated technology continues to play an even greater role in higher education. It is important to look for methods, strategies and technologies that allow all learners to feel comfortable in the learning environment.

Daviault and Coelho (2003) identified several concerns in the design of distance learning environments that may impact students' perceptions. One of their concerns was the need for more extensive communication opportunities. Although they looked at methods for integrating existing technologies such as email and chat applications, they also argue that technical limitations of the medium impose limitations. New communication tools provide new possibilities for learning. Weblogs (blogs) are a new medium that has risen out of web culture. A blog is an online journal or diary, which reflects the personality of the author (Blood, 2002; Winer, 2003). Blogs may provide new strategies for bridging feelings of frustration and isolation by offering more engaging and interactive content and by supporting the emergence of individual voices in a distance-learning environment.

The purpose of this study was to investigate the impact of using blogs as a discourse tool for web-based learning. Specifically, this research focused on how blogs may impact learner perceptions of isolation and alienation in a web-based learning environment by looking at (a) observations of student use of blogs in a web-based learning environment; and (b) learner perceptions of using blogs for online journaling. The goal of this research was to provide insight into how the use of blogs as a discourse tool can enable or marginalize learners in a web-based learning environment.

Theoretical framework

Concurrent with the rise of distance learning has been an epistemological shift in paradigms of learning from an objectivist perspective to a constructivist perspective. At the core of the constructivist theoretical perspective is the belief that knowledge is constructed, not transmitted and that learners play an active role in the learning process (Duffy & Cunningham, 1996; Jonassen *et al.*, 1999; Jonassen, 1999). To foster the construction of knowledge, learners should have opportunities for exploration, interaction and manipulation within the learning environment (Jonassen, 1992; Cognition and Technology Group at Vanderbilt, 1993) as well as opportunities for discourse between learners. Conversation and discourse foster collaboration and support social negotiation in learning (Vygotsky, 1978; Lave & Wenger, 1991; Bruckman, 1997; Jonassen, 1999). This in turn allows learners to share information,

test understandings and reflect on learning (Duffy & Cunningham, 1996; Jonassen, 1999).

Methodology

The methodological framework for this investigation is an interpretive case study. According to Merriam (1998), the focus of an interpretive case study is upon the use of thick descriptions to illustrate a phenomenon with the intent of analyzing and interpreting that phenomenon. The reason for choosing an interpretive framework for this study is not to provide a penultimate judgment about the applicability of blogs for web-based learning, but rather to understand the pedagogical affordances and constraints of using blogs as a discourse tool.

Background and motivation

The setting for this investigation is an advanced university web-based course entitled *Integrating technology and education practicum* (I-TEP). The focus of the course is to provide pre-service teacher education students with technology integration models and practical application for integrating technology in their future teaching practice. The students in the course are from a wide variety of teacher education programs including Adolescent Education (Integrated Language Arts, Life Science Education, Earth Science, Integrated Mathematics, and Integrated Social Studies), Middle Childhood Education, Early Childhood Education, Foreign Language Education (Spanish), Art Education, Music Education, Physical Education, and Special Education. I-TEP is a junior/senior level one-credit hour course. Prior to taking I-TEP, students are required to have completed two under-class technology skill-building courses.

At the end of each semester, students are asked to complete course evaluations. Course evaluations are submitted anonymously and supply feedback to instructors about the course content and teaching performance. The course evaluation for I-TEP consists of an online version of the course evaluation endorsed by the Department of Teacher Education at Miami University. Although information about feelings of isolation and alienation is not explicitly sought, the course evaluations include areas for students to add comments. Over a span of two years, consistently 30–40% of the I-TEP course evaluations returned included students' comments that alluded to feelings isolation and/or alienation from classmates, the teacher or both. Typical student comments ranged from expressions of missing companionship to feelings of isolation and alienation.

I miss being in a class with other students.

I got a lot of feedback, but I still felt like I was alone.

I liked the convenience of this class, although I got kinda lonely.

Michele answered my email right away, but I still felt like I wasn't really in a class. I felt sort of out there by my self.

I learned a lot in this class, but I also learned that I like it better when I have real people to talk with. It's not the same through a computer.

Each semester various attempts were introduced to prevent or alleviate these negative feelings. The various attempts included required collaboration with an assigned email partner, mandatory assignments with individual student web logs, optional electronic mailing lists, and mandatory use of discussion groups for small group learning communities. While students dutifully participated, each attempt failed in varying degrees to elicit the sense of community and reduce the reports of feelings of isolation and alienation. However, in the summer and fall semester of 2003, web-logs (blogs) were integrated as a discourse tool for small group learning communities. Web-logs were chosen as a discourse tool because they are an increasingly popular form of self-expression. It was thought that perhaps the personal nature of blogs and blogging would foster more interpersonal communication and thereby possibly reduce or bridge feelings of isolation and alienation.

The web-based learning environment

The I-TEP course content is offered in both traditional and web-based format. Students enrolled in the web-based sections are provided with the URL to the course web site along with login and password information. They are given the opportunity to attend an orientation session at the start of the semester; however, for those electing not to attend, orientation information is presented on the course web site.

The I-TEP course content is divided in five thematic modules. One module focuses on learning theories and the other four modules deal explicitly with types of technology tools (communication tools, presentation tools, productivity tools, and internet tools).

Students enrolled in the online version of I-TEP are placed into small learning communities based on their academic programs in order to foster a sense of community (Wenger *et al.*, 2002). Individual communities vary in size, from two to six students. Each community consists of learners in similar programs. The communities each have a communal blog and members are required to post reflections to online readings and exemplars to their blog. Additionally, because the course models a constructivist perspective by putting learners in a position where they use educational technology to learn about educational technology, learners are encouraged to use the blogs to express both frustrations and triumphs of using technology. Although learners' are permitted to submit reflections to their community blog as often as they like, they are required to post at least one reflection per week. The course content culminates with each student creating an individual online project (*WebQuest*¹). This online project spans eight of the 16 weeks of the semester. In addition to using the blogs to post reflections to course content, during the *WebQuest* assignment students must include updates about their progress in creating their *WebQuest* project. Blogs were the only tool used for learning community discussion. No discussion groups or individual blogs were used, nor were email

partners assigned. An electronic mailing list was used infrequently by the instructor to broadcast information via email to all students. Students used email to send specific questions to the instructor.

Data collection

Data collection was initially conducted during the summer, however, because the summer semester condenses the typical 16-week semester into four weeks, it was determined that findings may be less revealing than observations and reports gathered during a typical semester. Additionally, fewer students take the course during the summer. However, because the initial pilot findings were intriguing, it was decided that data would be gathered during a typical 16-week semester and with a larger group of students. In actuality, the findings of both semesters were very similar; however, additional data gathered from the fall semester revealed a richer picture. The data presented in this study were collected during the fall 2003 semester. Observation data were gathered from 111 students in 12 teacher education programs who participated in the course during fall semester. Additionally, 15 students from various programs voluntarily participated in informal interviews and an additional 36 students volunteered to participate in email interviews.

Data analysis

Data collection included observations of blog postings, informal interviews, email interactions and course evaluations. Additionally, negative case samples were sought (Glaser & Strauss, 1967; Lincoln & Guba, 1985). This triangulation of multiple-data collection is designed to support trustworthiness, however, it should be noted that the interpretation of these data was still subjective (Pershkin, 1988; Fine, 1994). Although the author admits a bias towards technology, she is aware that technology can be a filter in teaching and that the values perpetuated by computer technology may not be consistent with the researchers.

Findings: blogs

Observations

Initial observations of the learning community blog activity revealed that learners used the blogs in various ways. They predictably used the blogs to respond to their assignments, but also evident in the postings were elements of socialization, reports of activities and events, signs of support, and reports of feelings and emotions.

Many of the initial postings at the beginning of the semester included student responses to postings of their community members'. It was not uncommon to observe students agreeing or disagreeing with one another's observations and reflections.

Ok, I have to say that the cultural exchange project is the coolest thing I have seen in education ... (Tyler²)

I agree with Tyler that the cultural exchange project is amazing ... (Carl)

Many also directed specific community members to various web sites and resources both within the modules and to outside web sources, whereas other students made general recommendations about additional content and resources they had found to be useful.

Did you check out Teachervision.com? (Sara)

Teachervision.com was so awesome. Online grade books, lessons, fun tips, colorful sites, printables, etc. Everyone should check it out—I'm glad I did because I had never heard of it before and now I have another great resource! (Kimmy)

In addition to reflecting on course content and commenting on other community members' reflections, there was also evidence of learners using the blog for initiating and supporting casual socialization. Community members often began each posting with informal greetings to one another.

I just wanted to say hi to my fellow musicians! I think 'blog' is a funny word. (Cara)

Hi Timmy, Sean, and Cara! How's it going? I have to admit, I really do enjoy conducting class and learning about music history ... And yes, 'blog' is quite a funny word ... Well, see you all later! (Mike)

Hey Guys, I think I will name my first-born Blog, I like that word so much. (Sean)

Hey blogettes :-) (Timmy)

They also included recounting of personal, technical and health related events in their postings. In turn, community members often referenced or responded to these events in subsequent postings, thereby creating a type of support system within their community.

Linda: OK, I have to finish this as I am still very sick and I need another dose of Dayquil!!

Bre: Linda, I feel your pain. I have been on Dayquil and Sudafed for the past two days. I always get sick when the weather changes.

Amber: Have a good day girls and get better Linda and Bre!! :)

Linda: Well, thank you all for the get well wishes! I am back to feeling better, but this cough, my gosh, it is really lingering for too long! Brooke—hope you are feeling better as well. :)

Students also frequently included personal expression of feelings about the I-TEP course, other classes and other student and non-student related demands. Throughout the semester, these expressions altered from friendly and playful exchanges to statements of stress and anxiety about the demands of being a student and the demands of their programs. Because many of the students were in the same program cohort, they often empathized with each other.

I hope everyone's week in field³ is going well so far. I don't know about the rest of you, but I have been so busy and drained this week. (Katie)

I know were here to learn and whatnot but sometimes I just need a little more time for

me. It sucks when you have professors who think their class is the only class you have or the only class that's important. (Emily)

I have had multiple friends tell me that I am no fun anymore. (Tiffany)

I am always doing work. I hate that ... (Lindsay)

The course content culminated in each student creating a *WebQuest*. During the eight weeks of this assignment, students were asked to provide additional updates of their progress. While most students failed to explicitly state their progress, many were very verbal about their feelings of anxiety and frustration. Both content and technical frustrations were reported.

So far, I have not encountered any troubles, but I do feel anxious about actually 'making' the web-page. (Carre)

I'm kind of nervous about making a web-page. (Lyn)

Additionally, learners used the blogs to request technical assistance and solicit feedback from other members about their project topic and content.

Does anyone know how to add animation to a WebQuest because when the time comes I think I would like to. (Lindsay)

Good ideas Anne, personally, I like the rain forest idea ... you can get lots of info on this topic. (Mary)

PS Thanks for the ideas Mary! (Mary)

I think I have decided, with everyone's help, that the Rain Forest is a good idea for my WebQuest ... I will target a two-three grade age range because I feel you can do more with these ages. (Anne)

Learners also passed along advice.

I was wondering where on earth I would find pics to decorate and illustrate my WebQuest. Digital Art Shop was the example that I chose to investigate. I loved the variety and span of clip art, etc. (Sarah)

I also checked out KinderArt.com as another RESOURCE. KinderArt has over 1000 art lesson plans, editable lesson plans, and so much more. You guys should check it out—it would be great for rainy day babysitting times! (Amber)

At the beginning of the project, students expressed initial excitement. As the project due date grew closer, student expressions of frustration and anxiety increased, yet once they had completed their project most express pleasure, excitement and satisfaction of meeting a challenge. These comments were made at the start of the assignment:

I think I am actually excited to come up with something that I would be able to use in my classroom, something that really interests me ... (Jennifer)

I'm pumped! (Kate)

I am getting really excited about this WebQuest project!! (Abbey)

Midway through the assignment:

Karen: I haven't done anything on my WebQuest this week, which stresses me out ... It's getting into the busier time of the semester, and I'm always scrambling around trying to find time to do everything.

Jen: I'm with Karen on the fact that I'm struggling to find time for everything ... I have made a rough draft of my process, I have a task, but I haven't done much for my evaluation section (the evaluation section still makes me a little nervous).

Kara: I've read all your blogs and I am in total agreement with everyone about time, and classes (Jen, I hear ya)

Becca: I am nervous too ...but mainly about the technical aspects of this assignment.

Sara: The cause of my anxiety is the technical aspect, by far!

Near the due date:

I am extremely frustrated right now, but its not just because of my inability to upload things to website. (Mike)

I'm very frustrated with my stupid computer!! (Casey)

I can't wait to get this done! (Amber)

This whole assignment is getting more and more overwhelming. (Mary)

I am one of those procrastinators ... (Mason)

The completion of the assignment:

Well, I can't believe it but I am all completed with everything! Sorry, but I really don't want to brag, but this could be one of the best feelings in the world. It took me a long time to figure every little detail out, but I think it was worth it—I actually feel a lot better about my computer skills! (Lisa)

Well I love my WebQuest now that it is complete. (Jen)

Amy: YESSSSS!!!! My WebQuest is uploaded. What a great feeling. I am so relieved that the process wasn't as difficult as I had thought.

Kate: I feel your excitement, Amy. It feels like a huge weight has been lifted from my shoulders just having my WebQuest uploaded and everything turned in. Once I got going, it wasn't nearly as difficult as I thought it was going to be. I didn't even have too many problems uploading it, thank goodness!!! It was great getting to be in this blog with all of you this semester. It definitely flew by but it was a good one! Good luck with finals and congrats on getting your WebQuests done.

Student reports: interviews

Fifteen students voluntarily participated in informal interviews and another 36 students participated in email interviews about their perceptions of the course and use of blogs. Requests were sent via email to all students for volunteers to participate in interviews. Additionally, several students who attended office hours agreed to participate in in-person interviews. Overall, all of the students reported having positive experiences with using the blogs. Most also expressed the belief that it

helped reduce feelings of isolation because as one student noted, 'it helped knowing I wasn't alone.' Included below are typical responses about the use of blogs.

Yeah, I liked the blogs. I only had one other person in mine, but we became friends and helped each other a lot.

It helped to be able to see that each student was in the same 'boat' as me, so to speak. We all had our stressful times and our worries about the WebQuest and classes in general.

Yes, and it was nice to hear about other people's problems, so I knew I wasn't the only one having problems.

It was nice to see other WebQuests as references when the instructions seemed unclear (which was rare).

My blog group was very helpful throughout the entire WebQuest process. They provided feedback and assistance when needed and helped encourage productivity ... I definitely felt like I was part of a community.

Many students participating in the interviews noted an appreciation of being able to 'vent' and express their feelings. One learning community whose participants had not known each other prior to taking I-TEP became friendly through their interactions in their community blog. They then made plans to meet and subsequently became friends.

It is also interesting to note that many of the same learners who expressed frustration in their blog postings noted in follow-up interviews that procrastination on their part had an impact on their levels of frustration. Upon reflection, many attributed their feelings of isolation and alienation to their own performance and not to the format of the course. Many stated that they were not aware of how much they relied on the accountability that comes with physical presence.

There were few reports indicating a comparison of using other technology tools. This may be attributed to the relatively scarce use of communication tools in other courses. However, of the few reports, most students reported primarily upon mechanic aspects rather than the differences in format.

The blogs were better than Blackboard⁴. It was easier to submit and faster. I had to wait forever for Blackboard.

I had a lot of problems with the Blackboard discussion stuff. It was confusing. The blogs were easy to use.

Student reports: course evaluations

Completing an evaluation is voluntary on the part of the student, but they are strongly encouraged to supply feedback. Sixty-six students submitted a course evaluation for the fall semester of 2003. As with each semester, information about feelings of isolation and alienation was not explicitly sought, however, unlike previous iterations of the course, there were no comments provided by students of both the summer and fall semesters which stated or alluded to feelings of alienation or isolation.

Negative case samples

One student who participated in the informal interviews revealed mixed feelings about the learning community and use of blogs. While her reports were favorable, she expressed that she felt the friendliness displayed in the postings of her community were false. She reported feeling as though some of her community's members had become friends and began ignoring her postings. She felt her attempts to initiate dialogue were often ignored. She also stated that she felt that the 'community' expressed in the postings was not a fair representation of the community but instead was merely a mask that did not adequately represent the dynamics of the group. A second student expressed similar concerns. She stated she did not feel her community members were supportive of her during the WebQuest process. She felt they ignored her requests for assistance. Because the semester had ended at the time of the informal interviews, no attempt was made to contact or interview members of either community; however, a review of the learning community blogs postings for both students subsequently took place. There is evidence that the second student's requests for assistance had gone unanswered by her blog mates; however, she had received faculty assistance by email.

Discussion

The purpose of this study was to investigate the impact of using blogs as a discourse tool for web-based learning. The question of interest was whether the use of blogs can enable or marginalize learners in a web-based learning environment. The findings of this study reveal that the use of blogs as a discourse tool for small group learning communities supported the emergence of community by affording students opportunities to socialize, interact and enter into dialogue, seek support and assistance, and express feelings and emotions. This in turn helped bridge or prevent feelings of isolation.

What is interesting about this study of blogs is that in previous versions of this course, technology tools such as discussion groups, electronic mailing lists and even personal blogs had been required for assignments. In actuality, the use of blogs in this case study was not much different than the previous use of discussion groups. The assignments were very similar, yet the use of the discussion group tool had failed many times to elicit the same sense of community displayed in the blogs and reported by students in I-TEP. This is a puzzling finding. One possible explanation is that web-logs (blogs) are a relatively new technology. They have emerged out of youth web-culture. Blogs have the cachet of being progressive and perhaps even a bit countercultural. Most of the I-TEP students were very familiar with blogs and many had friends and family members who maintained their own blogs. They were familiar with the personal and self-revealing aspects of blogs. Blogs represent a means for individuals with or without technical savvy to gain an unprecedented entry into widespread media and to some degree push against the impersonal nature of technology. For those with access, blogging is a democratic medium in which individuals can post their daily editorials, diaries and observations (JonKatz, 1999).

Perhaps the informal nature of blogging appealed to students and they interacted with the tool in ways they knew to be acceptable.

Another possible explanation is that most of the students in I-TEP had used discussion group tools in other courses. Discussion groups and mailing lists are commonly used and likely have lost novelty appeal. Blogs are relatively new and not widely used for academic purposes. The novelty of using this technology might be one explanation for the appeal.

While research about the educational use of blogs is very recently emerging, Wrede (2003) argues that relationships are central to discourse. Blogs are a personal public construct. They afford a diary-like monologue, invite dialogue and promote a learner-centered approach because they afford personal expression (Wrede, 2003). This supports Abrahansom's (1998) assertion of the importance of providing opportunities for learners to interact with one another. Many of the students interviewed expressed an appreciation for being able to report their feelings and knowing they were not alone. Oravec (2002) contends that blogs provide educational support because they allow personal reflection and the emergence of individual voice. Similarly, Roberts (2003) claims that blogs encourage communication. Hara and Kling (2000) noted the importance for students to express feelings of isolation and frustration in a distance environment. The use of blogs in a web-based environment may help ease feelings of isolation and alienation because it represents a type of communication that is both personal and public.

Similar to Hara and Kling's (2000) investigation, both content and technical frustrations were reported within the I-TEP blog postings; however, it is interesting to note that many of the same learners expressing technical frustrations in their blogs also noted in interviews that procrastination on their part had impacted their frustration. Additionally, one surprising observation is how feelings of frustration altered to some degree after completing a task considered to be technically difficult. However, unlike Hara and Kling's study (2000), students in I-TEP expressed little frustration about gaining feedback. While this may be attributed to faculty feedback response rates, it may also be attributed in part to the support system of the learning groups and the informal nature of discourse afforded by the use of blogs.

The scope of this qualitative case study is by no means comprehensive, but rather intended to examine how the use of blogs may impact or prevent student perceptions of isolation and alienation in a web-based distance-learning environment. The focus of this investigation is on the pedagogical implications of these tools and not on effective means for using them. The findings of this study are not a prescription of how a distance-learning course using blogs should be structured, nor do they explain how a learner might interact with these tools. Rather, the findings of this study reveal why these tools may have alleviated student perceptions of isolation in a web-based learning environment. The applicability of these findings for researchers and practitioners can only be determined by the context in which these tools may be used for further research and practice. It is important to acknowledge that the tools do not evoke the dynamics of a learning community, but rather these dynamics are the result of the interplay between content, the instructor and the learners. The affordances of tools, however, may impact discourse and interaction.

While this investigation reveals that blogs afford a range of discourse opportunities for spatially distant learners, further research needs to be conducted to explore fully the potential of the use of blogs. A discourse analysis of community blog postings would likely yield information about the dynamics of learner interaction patterns. There is also a need to examine further the conceptual framework of learners in different web-based distance learning environments to determine ways in which these tools might be most effectively used. Further detailed investigations of this discourse media may provide researchers with a better understanding of how learners interact with each other and their learning environment.

Conclusion

The premise of this investigation is that learner perceptions of community and alienation impact learning. Although the objective of many distance-learning initiatives may be to increase learning opportunities for spatially distant learners, the use of technology may lead to feelings of isolation and alienation. It is the belief of this study that there are methods and strategies to be employed in the design of web-based learning environments that help bridge learners and reduce feelings of alienation. Understanding learner perceptions may contribute to and enhance the effectiveness of the design of distance learning.

Notes

1. As *WebQuest* creator Bernie Dodge (1997) states, 'A *WebQuest* is an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet'.
2. All names have been changed to maintain anonymity.
3. *Field* is a common reference to field experience. Teacher education students are required to spend time in various K-12 classrooms observing master teachers and interacting with students.
4. Blackboard is the course management software supported by the university. Many courses use Blackboard as a supplement for in-class instruction.

References

- Abrahamson, C. E. (1998) Issues in interactive communication in distance education, *College Student Journal*, 32(1), 33–43.
- Blood, R. (2002) Weblogs: A history and perspective, in: Perseus Publishing (Eds) *We've got blog: how weblogs are changing our culture* (Cambridge, MA, Perseus Publishing), 7–16.
- Bruckman, A. (1997) *MOOSE crossing: construction, community, and learning in a networked virtual world for kids*. Doctoral dissertation, MIT.
- Cognition and Technology Group at Vanderbilt (1993) Anchored instruction and situated cognition revisited, *Educational Technology*, 33(3), 52–70.
- Davialt, C. & Coelho, M. (2003) Forum: a new approach to the production of educational content, paper presented at the *30th Annual Conference on Computer Graphics and Interactive Techniques*, San Diego, CA, 27–31 July.
- Dodge, B. (1997) *Some thoughts about WebQuests*. Available online at: http://edweb.sdsu.edu/courses/edtec596/about_webquests.html (accessed 2 April 2004).
- Duffy, T. M. & Cunningham, D. J. (1996) Constructivism: implications for the design and delivery of instruction, in: D. Jonassen (Ed.) *Handbook of research for educational communications and technology* (New York, Macmillan), 170–198.

- Egan, M. W. & Gibb, G. S. (1997) Student-centered instruction for the design of telecourses, in: T. E. Cyrs (Ed.) *Teaching and learning at a distance: what it takes to effectively design, deliver, and evaluate programs* (San Francisco, CA, Jossey-Bass), 33–39.
- Fine, M. (1994) Working the hyphens: reinventing self and others in qualitative research, in: N. K. Denizen & Y. Lincoln (Eds) *Handbook of qualitative research* (Thousand Oaks, CA, Sage), 170–182.
- Glaser, B. G. & Strauss, A. L. (1967) *The discovery of grounded theory: strategies for qualitative research* (New York, Aldine).
- Hara, N. (1998) Student's perspectives in a web-based distance education course, paper presented at the *Annual Meeting of the Mid-Western Educational Research Association*, Chicago, IL, 14–17 October.
- Hara, N. & Kling, R. (2000) Students' distress with a web-based distance education course: an ethnographic study of participants' experiences, *Information, Communication, and Society*, 3(4), 557–579.
- Hardy, D. W. & Boaz, M. H. (1997) Learner development: beyond the technology, in: T. E. Cyrs (Ed.) *Teaching and learning at a distance: what it takes to effectively design, deliver, and evaluate programs* (San Francisco, CA, Jossey-Bass), 41–48.
- Jonassen, D. H. (1992) Evaluating constructivist learning, in: T. M. Duffy & D. H. Jonassen (Eds) *Constructivism and the technology of instruction* (Mahwah, NJ, Erlbaum Associates), 137–148.
- Jonassen, D. H. (1999) Designing constructivist learning environments, in: C. M. Reigeluth (Ed.) *Instructional design theories and models, volume 2* (Mahwah, NJ, Erlbaum Associates), 215–239.
- Jonassen, D. H., Peck, K. & Wilson, B. G. (1999) *Learning WITH technology: a constructivist perspective* (Columbus, OH, Merrill/Prentice Hall).
- JonKatz (1999) *Here come the web-logs. Slashdot.com*. Available online at: <http://slashdot.org/features/99/05/13/1832251.shtml> (accessed 2 April 2004).
- Lave, J. & Wenger, E. (1991) *Situated learning: legitimate peripheral participation* (Cambridge, MA, Cambridge University Press).
- Lewis, L., Snow, E., Farris, K. & Levin, D. (1999) *Distance education at postsecondary education institutions: 1997–1998*. National Center for Educational Statistical Analysis Report. Available online at: <http://nces.ed.gov/pubs2000/2000013.pdf> (accessed 2 April 2004).
- Lincoln, Y. S. & Guba, E. G. (1985) *Naturalistic inquiry* (Newbury Park, CA, Sage).
- Merriam, S. B. (1998) *Qualitative research and case study applications in education* (San Francisco, CA, Jossey-Bass).
- Oravec, J. A. (2002) Bookmarking the world: web-log applications in education, *Journal of Adolescent & Adult Literacy*, 45(7). Available online at: <http://journalism.hcrhs.k12.nj.us/journ/article.html> (accessed 2 April 2004).
- Pershkin, A. (1988) In search of subjectivity—one's own, *Educational Researcher*, 17(7), 17–21.
- Roberts, S. (2003) Campus communications & the wisdom of blogging, *Syllabus Magazine*. August. Available online at: <http://www.syllabus.com/article.asp?id = 7982> (accessed 2 April 2004).
- Simonson, M., Smaldino, S., Albright, M. & Zvacek, S. (2000) *Teaching and learning at a distance: foundations of distance education* (Upper Saddle River, NJ, Merrill-Prentice Hall).
- Vygotsky, L. S. (1978) *Mind in society: the development of higher psychological processes* (Cambridge, MA, Harvard University Press).
- Wenger, E. McDermott, R. & Snyder, W. M. (2002) *Cultivating communities of practice* (Boston, MA, HBS Press).
- Wrede, O. (2003) Web-logs and discourse: web-logs as a transformational technology for higher education and academic research, paper presented at the *Blogtalk Conference*, Vienna, 23–24 May.
- Winer, D. (2003) *What makes a web-log a web-log?* Available online at: <http://blogs.law.harvard.edu/whatMakesAweblogAweblog> (accessed 2 April 2004).

Copyright of Open Learning is the property of Carfax Publishing Company and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.