DOCUMENT RESUME

ED 470 076 IR 021 514

AUTHOR	Crozier, Jane
TITLE	Web Enhanced Learning and Student Awareness of Strategy Use.
PUB DATE	2001-11-00
NOTE	7p.; In: Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Computer Oriented Programs; *Computer Uses in Education; *Group Activities; Higher Education; Instructional Materials; Online Systems; Undergraduate Students; *Web Based Instruction; World Wide Web
IDENTIFIERS	Web Page Design

ABSTRACT

This study continues the research into Web-based learning by examining a mid-level Web-based learning environment as a support for an informal learning experience. The informal learning situation was a group of undergraduate students that were Fellows in the Honors program and who served as the selection committee for the finalists of a global awareness and peace award. The committee members needed to determine the award criteria, research and learn about the backgrounds and attributes of each nominee, and evaluate each nominee based on the criteria for the award. Participants utilized a Web-based learning environment. Their homepage was developed in WebCT and allowed them to access informational resources, conduct online chats, and write reflective journals. The findings focus on student awareness of their strategy use and their online learning community experience. (Contains 11 references.) (Author/AEF)

Web Enhanced Learning and Student Awareness of Strategy Use

By: Jane Crozier

Web Enhanced Learning and Student Awareness of Strategy Use

Jane Crozier

Abstract

This qualitative study examined the awareness of strategy use and justification of that use of gifted undergraduate students as they researched, utilized resources, and evaluated finalist for a global understanding and peace award. The participants in the informal learning environment utilized a web-based learning environment. Their homepage was developed in WebCT and allowed them to access to informational resources, conduct online chats, and write reflective journals. The findings focused on the student awareness of their strategy use and their online learning community experience.

Introduction

An increasing number of universities and K-12 school systems are using some type of web-based support for learning (Mandiach & Cline, 2000). Mandiach and Cline (2000) argue that despite the enthusiasm of some educational institutions, practical and curricular problems related to the integration of web-based learning environments persist. These environments range from low-level integration where a homepage contains links to related information; to mid-level integration, where a homepage contains informational links, asynchronous and/or synchronous communication connections in the form of chat sessions or a bulletin board, and course handouts; to a high-level integration, where the entire course is delivered via the homepage including lectures, homework, all communications, testing, and student grades (Miller & Miller, 2000).

Researchers have just begun to scratch the surface of the usefulness of the range of different levels of web-based learning environments (Gunawardena & Zittle, 1997; Miller & Miller, 2000; Palloff & Pratt, 1999). The research highlighted the online learning communities involved in various levels of web-based environments and learner characteristics that enable students to successfully interact and learn using these environments. These elements were identified through exploration of either reflection or collaboration, and from the perspective of the teacher and/or student.

Purpose

This study continues the research into web-based learning by examining a mid-level web-based learning environment as a support for an informal learning experience. The informal learning situation was a group of undergraduate students, that were Fellows in the Honors program, who served as the selection committee for the finalists of a global awareness and peace award. The committee members needed to determine the award criteria, research and learn about the backgrounds and attributes of each nominee, and evaluate each nominee based on the criteria for the award. There were a variety of strategies the students would utilize in order to develop criteria, research nominees, and evaluate nominee attributes. The learning aspect explored was the role the web-based environment had in supporting student awareness of strategy use.

Online reflection and collaboration activities to identify strategy were used and the reasoning behind that use, from the student perspective. In addition, perceptions of the student's online experience were sought. The original research question addressed in this study was, "How does a web enhanced learning environment effect the nomination process?"

Research Literature

Awareness of strategy use

Researchers in the field of psychology consider "awareness of strategy use" as part of an individual's metacognitive abilities. Bjorklund (1995) and Sternberg (1990) identify these abilities as an individual's knowledge and regulation of cognitive processes. The knowledge of an individual's cognitive processes or strategies involves knowing the proper time to use strategies and the reasoning behind their use. The regulation of cognitive processes or strategy use involves planning strategy use and evaluation of the result of the strategy usage, although mentioned here as a definition, regulation is not a focus in this study.

The research on strategy use and the reasoning behind that usage, the focus of exploration for this paper; involves strategy use in problem solving (Royer, et al, 1993) and among gifted students (Carr, et al, 1995). Strategy usage has been easy for students to identify, however the reasoning behind strategy use is more difficult for individuals to identify. The findings dealing with knowing when to use a strategy have indicated that it is fairly easy for adults to identify strategies they have used; however younger learners cannot always identify a strategy by name (1995). In both cases, discussing their reasons for strategy use was much more difficult, if not impossible.

Online student reflection

The research conducted involves student reflection activities, and usually revolves around student impressions of learning and working in an online learning community (Sherry, et al, 1998; Gunawardena & Zittle, 1997). However, one study of particular interest was that of Guzdial and Turns (2000); where they examined student reflective practice in an online community as the students collaborated on projects in an online engineering course at the University of Michigan. According to the findings, in order for the students to successfully contribute to their class, they had to reflect on the bulletin board discussion threads and determine whether a new or alternative idea should be contributed to the concept thread and how their response would be

perceived. These practices assisted in student contribution to course discussion threads and, the researchers noted, in turn, enhanced student learning.

Online student collaboration

The research involving web-based learning support of student collaboration focused on providing students with immediate access to their peers and to informational resources on the Internet (Palloff & Pratt, 1999; Sherry, et al, 1998). Through collaboration, many students form online learning communities within the bounds of the course or project. Palloff and Pratt (1999) emphasize that these communities have a great influence on the success of the class; in fact, these researchers suggest that if the community is unsuccessful or does not exist then no learning occurs.

The strength of the collaboration is key to the success of the community and is dependent upon the student's comfort level as a member of the community. Sherry, et al (1998) discussed that participants in their study had stronger communities when the members had a high comfort level while working in the online environment. An element that enhances a member's feeling of comfort is what Gunawardena and Zittle (1997) called a "sense of presence." According to these researchers, this sense of presence indicates that the member feels a strong connection to the online community. In addition, it has been identified as a key factor in successful online learning experiences.

Method

Participants

The participants involved in this study were nine Honors Fellowship undergraduate students at a public university. Students who received a fellowship are viewed as gifted. These Honors Fellows served as members of a selection committee responsible for selecting the finalists for an annual global understanding and peace award. One third of the committee had participated the previous year. The names used in the study were pseudonyms selected by the participants. There were two teams. The advisor to the this student committee was also the researcher.

Study Design

This study took place in the informal educational setting of the award selection committee for approximately two and a half months. The participants worked individually to research their nominee (included individuals and nonprofit organizations involved with issues related to global understanding and peace initiatives) and in teams to support each other's efforts. The first two committee meetings were design ed to orient the students to research resources, establish evaluation criteria for the nominees, and allow the students to select their nominee.

In the following month, the teams met weekly to discuss member research progress and evaluation issues. These weekly meetings were held in the team chat rooms. The final team meeting was held face-to-face. Each team member introduced his/her nominee and answered questions posed by other team members. At the end of the meeting, the team members selected one or two nominees to submit to the full committee as finalists. The team members who nominated the team finalists incorporated the feedback from other team members into a one page composite listing of the nominee's background and attributes for submission to the full committee. The full committee reconvened after the final team meetings and nominated the finalists.

During the final two meetings, in the first full committee meeting, each team introduced their nominee to the group, in a similar manner as they did during the final weekly team meeting. The full committee then voted on the nominees from the teams and selected all the nominees submitted, six in all. The finalist composites submitted to the full committee were expanded into nomination documents. These documents detailed the nominee's background, affiliated organization, and criteria based attributes; and were then sent to the governing board.

Homepage Design

The committee web page was developed in WebCT (an Internet based course support system which supports asynchronous and synchronous communication such as Chats and bulletin boards, as well as student records, faculty lectures and notes via audio and/or video). The homepage provided the group with secure access to: 1) Weekly meeting schedules and updates, 2) team chat rooms, 3) reflective journals via bulletin board, 4) forms to support research, and 5) links to research databases. These resources provided a convenient and effective means for feedback among the team members and the advisor. After the weekly chat meetings, students were asked to reflect on the process they used and their online experience, in their individual online journals (shared only with the advisor, not the other students). The students used forms on the Homepage that served as guidelines for recording sources. The students provided research database links that grew in number as they located more sources of information. The links were made available to all committee members in order to help those having problems locating resources.

Data Collection

The study's data collection resources were triangulated to trace student strategy use, depict student awareness of strategy use and its justification, as well as provide confirmation of findings. This triangulation of data resources was utilized to provide greater validation to the study (Patton, 1990).

- Weekly Team Chat Session Discourse: The chat session discourse was recorded and reviewed in search of evidence of criteria and evaluation strategy discussions. The reflective journals were included as a main source of data related to student awareness of evaluative strategy use.
- Student Reflective Journals: Each week, the students were asked to respond to a few brief questions and incorporate their own thoughts and ideas, about the process, and their research, into their own reflective journal.
- Semi-formal Interviews: The interviews of team leaders/facilitators were conducted half way through the project. These individuals were selected because they facilitated the chat discussions and their role focused on review of team progress. They presented opportunities for obtaining data related to student awareness (Patton, 1990). Most of the student questions focused on the criteria selection process, research, and the online experience.
- Participant Observer Fieldnotes: Since the researcher (myself) was also the advisor to the group, participant observer fieldnotes were used. These notes were summaries of events during the face-to-face meetings.
- Student Artifacts: The student artifacts or final nominee documents were used to review the synthesis of the team's work and the progression of evaluative strategy use.

Data Analysis

The qualitative case study method was used (Glaser, 1995; Merriam, 1997) to analyze the data collected in this study. The case study method incorporates constant comparison for the analysis. During the analysis, the researcher reviewed the data, identified patterns, determined categories, and identified overriding themes. The student reflections, chat discourse, and final documents were compared to identify repetitive themes related to awareness of strategy use and online learning. The field notes and artifacts were used to verify findings. The credibility of the study analysis was enhanced through an exhaustive search for negative cases found in the themes. According to Merriam (1998), a negative case is one that is the extreme opposite of the patterns or trends discovered during analysis. These cases were sought to extend the definition of the rule of the pattern, as in participant awareness of strategy use or participant experience as an online learner (Patton, 1990; Merriam, 1998).

Key Findings

The students began their discussion to establish the criteria used in evaluating nominee goals and accomplishments; the group discussion required an additional group meeting in order to determine the final criteria. After this first meeting, the participants selected their nominee (there were fifteen nominees and nine students, so six students selected two) and began their research. At the end of the second meeting, the criteria was established. The students developed a list of five criteria: Awareness, Benevolence, Commitment, Diplomacy, and Influence. The presence of the criteria served as a foundation for the students and was mentioned periodically during team meetings as reference points from which to gauge the information they were reviewing. The criteria guided their research, discussions, and decision-making. The responses to the interview questions, guided reflection, and chat discussions provided a comprehensive picture of the student strategy use and their online experience. Two key questions asked were, "What steps did you take to determine the criteria?" and "Why did you make your selection?"

Awareness of Strategy Use

The students were able to identify the strategies they used to establish the criteria, such as brainstorming, adaptation, compare and contrast, and simplification. However, most did not adequately discuss their reasons justifying their choices. One student, Madi, from Team A, demonstrated this when she discussed her strategy selection during her participation in the first round of criteria development:

> I just basically brainstormed ... And then in my group, Don and Jan, they had really specific things, like "have an extended period of service" ... – mine are a little vague so I adapted mine to the more specific things that they had.

Madi's awareness of her use of the brainstorming and adaptation strategies were present, however her reasoning for discarding her original criteria list and adopting the list of her teammates seemed weak. Madi adopted the new list, citing that it was more specific than her list, but did not expand on why she found this attribute preferable. This awareness of strategy use and lack of reasoning was apparent in the reflections of most of the participants. The ability has been noted in gifted students by Carr, et al (1995); their findings indicated that gifted students more so than average students possess specific strategy knowledge or the metacognitive knowledge about when and where to use a strategy with fewer of the students knowing why they used a strategy.

The students in this study, indicated that they knew when and where to use a strategy, however, only one expressed exactly why she used a specific strategy. Another student, able to identify the strategies she used, was also able to discuss her reason for using the strategy. This unusual illumination occurred with one participant, a case which further defines the strategy usage theme to allow for some rare occasions when gifted students are able to justify their use of a strategy. Radison, from Team B, commented on her own strategy use and reasoning, when she discussed the hour of debate that ensued prior to the acceptance of the final criteria list. This debate was a war of words rather than meaning; the paragraph length descriptions of each attribute was eventually reduced to the five general terms representing global understanding and peace at Radison's Team's prompting (The five criteria for global understanding and peace were: Awareness, Benevolence, Commitment, Diplomacy, and Influence). Radison wrote in her journal:

We came up with five words that seemed to cover the overall theme we had been trying to get at in all the previous work. I think simplifying is often the most overlooked step in processes such as these. Sometimes it's hard to take ideas off the list because it feels like we're moving backwards.

Radison recognized that the strategy the group was using to finalize the criteria (refining the phrases, word by word) was not working and suggested another way of accomplishing the task. This way was accepted almost immediately.

Online Learners

Online community:

The chat sessions, participant observer field notes of face-to-face meetings, and interview responses from the two team leaders relayed information regarding student roles and impressions of the online chat meetings. The patterns that emerged depicted themes of the nature of online collaboration that focused on member support and interaction in the online community. Each member had a role, i.e. facilitator, support member, or advisor; most of these roles were identified in Palloff's and Pratt's work (1999). In a supportive function, team members voluntarily offered information resources, research tactics, and emotional support for those frustrated with either an over abundance or lack of informational resources. These aforementioned practices demonstrate a camaraderie among team members that appears to have strengthened throughout the committee's tenure. The teammates joked with and teased each other.

However, the establishment of the online community could not be solely attributed to the participants' involvement in the chat sessions. Since many of the students knew each other prior to their involvement in the committee, due to their honors fellowship affiliation; the camaraderie among Team B community members, while strengthened by the online interaction, was also a product of the prior affiliation and the face-to-face meetings (Palloff & Pratt, 1999; Gunawardena & Zittle, 1997).

The students preferred interaction among their peers, indicating a greater satisfaction and comfort level, than from their online interactions. While the facilitated discussions and online chats provided team members with a convenient opportunity to give and obtain the additional skills they needed to access additional information about their nominees and support better decision making; the chat environment didn't offer the personal interaction the team members were accustomed to and preferred. The students stated that they felt the online meetings were convenient and productive; however, since they were on the same campus, their preference was for face-to-face meetings (Sherry, Fulford, and Zhang (1998). The team mentioned that they would work in the online environment again, but only out of convenience (1998). Overall, the team members impressions of their online experiences were productive and facilitated their research, but less satisfying than their face-to-face interactions.

Lack of social presence:

The students indicated that the online experience just wasn't the same as meeting in person. They exhibited some resistance to the use of online means of communication by requesting that they have another face-to-face meeting instead of a final chat session. This resistance could have hindered their online experience, but was not the only deterrent to their online experience. The students mentioned that technical problems, such as delays in response time and disconnections, made for a less than optimal experience; and due to typing delays, the chats were sometimes difficult to contribute to and follow.

Online behavior:

As mentioned in the Online Community section, much of the online behavior observed supported past research that identified members of the community assuming and maintaining their roles in the community (Palloff & Pratt, 1999). One role, of particular interest during the team chat sessions, was the that of the chat facilitator. The facilitator was voted in by the team to be the team leader and facilitate the chat meetings. The unexpected online strategies used by the chat facilitator were monitoring and troubleshooting the chat session. These were used to maintain continuity during the discussion and ease any discomfort among chat participants,. This practice moved team members through awkward moments and is illustrated by TLeader, from Team B, after a few minutes of silence and an interruption in the chat:

TLeader:	this may be an awkward silence, so i'll move on. Nimbus, how's your research going?
Nimbus:	Do they focus on promoting peace between certain religions or do they have broader goals of general tolerance/acceptance?

During later reflection she indicated that it was difficult to determine why chat participants stopped interacting (typing).

Somebody could have been typing, somebody could have been thinking, somebody could have been preparing a response, but nobody really knows so you are just sort of sitting there wondering well should I break the awkward silence.

TLeader monitored and effectively smoothed over the rough spots during the online chat. When she encountered a difficulty or interruption in the communication line, she mentioned it and moved on. This practice seemed to assuage some team members discomfort in the online environment. Madi, chat facilitator for Team A, did not specifically address the silences; she simply

moved on quickly through the session. This practice could have affected her team interaction; they did not have a great deal of camaraderie.

Recommendations for Practice

- Online monitoring and troubleshooting strategies of chat facilitators can improve comfort level and promote community during chat sessions. Acknowledging awkward moments, such as silences, inactivity or technical difficulties and quickly move forward may improve comfort level and promote community among group members.
- In the online learning community, to maintain student interest and increase student comfort, create a sense of presence for the students, by the use of humorous emoticons ☺, self-selected avatars, or other methods to improve a student's online experience.
- Guided reflection may encourage student awareness of strategy use for evaluation purposes and online community facilitation.

Conclusion

This study has laid the groundwork for future research in online learning communities through the examination of online strategy use of chat facilitators. The findings here encourage further analysis of successful facilitative strategies for chat sessions in order to provide continuity in communication, enhance member comfort, ensure the productivity of the group, and facilitate the learning process.

In addition, the findings of this study support those of other researchers in the area of metacognition or awareness of strategy use among gifted students. Specifically, the participants in the study were able to identify their strategy use during criteria development and all but one experienced greater difficulty identifying their reasons for using a particular strategy.

Furthermore, the findings support previous research on successful online learning communities, especially in the importance placed on student comfort level and having a sense of presence in the online environment.

Finally, this study offers additional insights on web-based learning, such as facilitation of online communities and reflective practices, leaving the essence of successful web-based learning less of a mystery.

References

Carr, M., Alexander, J.M., & Schwanenflugel, P.J. (1995). Where gifted children do and do not excel on metacognitive tasks. Roeper Review, 18(3), 212-216.

Gunawardena, C. & Zittle, F. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. The American Journal of Distance Education , (11),3.

Guzdial, M., & Turns, J. (2000). Computer-Supported Collaborative Learning in Engineering: The challenge of scaling-up assessment. In M. Jacobson & R. Kozma. (Eds.). Innovations in science and mathematics education: Advanced designs for technologies of learning (pp.227-257). Mahwah, NJ: Lawrence Erlbaum.

Mandiach, E. B., & Cline, H. F. (2000). It won't happen soon: Practical, curricular, and methodological problems in implementing technology-based constructivist approaches in classrooms. In S. P. Lajoie (Ed.), Computers as cognitive tools, volume two: No more walls (pp. 377-395). Mahwah, NJ: Lawrence Earlbaum.

Merriam, S. (1998). Qualitative research and case study applications in education: Revised and expanded from Case study research in education. (pp. 1-68, 134-150, 220-246). San Francisco, CA: Jossey-Bass Publications.

Miller, S., & Miller, K. (2000). Theoretical and practical considerations in the design of web-based instruction. In B. Abbey (Ed.) instructional and cognitive impacts of web-based education. (pp.156-177). Hershey: Idea Group Publishing.

Patton, M. (1990). Qualitative evaluation and research methods. Newbury Park, CA: Sage Publications.

Palloff, R. M., & Pratt, K. (1999). Defining and redefining community. In Building learning communities in cyberspace: Effective strategies for the online classroom (pp. 21-32). San Francisco: Jossey-Bass.

Royer, J. M., Cisero, C. A., & Carlo, M. S. (1990). Techniques and Procedures for Assessing Cognitive Skills. Review of Educational Research, Summer 1993, 63(2), 201-243.

Sherry, A., Fulford, C., and Zhang, S. (1998). Assessing distance learner's satisfaction with instruction: A quantitative and a qualitative measure. The American Journal of Distance Education, (12), 3.

Sternberg, R.J. (1990). Metaphors of Mind: Conception of the nature of intelligence. Cambridge , MA: Cambridge University Press.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

[X] This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

[ ] This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").