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## Learning or lurking? Tracking the “invisible” online student

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### Abstract

While much has been written regarding the learning behaviors of students participating in online courses, little research has been conducted to ascertain whether or not students are still engaged and actually learning when not actively involved in online discourse with other students and faculty. This case study of inactive students enrolled in an online graduate course attempts to identify how much time is spent in course-related activity, what the reasons are for student’s “invisibility,” and if their preferred learning styles influence online behavior. The data show that these students do, in fact, spend a significant amount of time in learning-related tasks, including logging on, even when not visibly participating, and they feel they are still learning and benefiting from this low-profile approach to their online studies. However, preliminary analyses of course grades indicate that the mean course grade is better for high-visibility learners than for no-visibility learners. Findings suggest that further research in the area of the so-called invisible learner is a critical area of investigation to better understand the dynamics of asynchronous learning and teaching. © 2002 Elsevier Science Inc. All rights reserved.

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### 1. Introduction

Despite a significant body of research and writing on the subject of online interaction between students and faculty, relatively little is known about how much learning actually

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occurs, how it does or why it does not, and what factors most influence learning outcomes in online formats. It is assumed that a high level of interaction is desirable and increases the effectiveness of both classroom and distance education courses. In classroom venues, research over the last 30 years has demonstrated that increased interaction improves student achievement. However, there is still a paucity of evaluative data that clearly indicates that online interaction enhances the quality of learning in distance education courses, or that limited interaction compromises learning. As interactive modalities have increasingly facilitated the connectivity between students and teacher, between student and other students, and between student and content, attention to the phenomenon of online interaction has gained heightened interest among those seeking to enhance the teaching-learning process at a distance.

In considering how learning occurs in this online environment, it may be assumed that learning correlates closely to what is visible (i.e., students' written words that appear on the monitor). It may also be concluded that if there is no visible online activity, then little or no learning is likely to occur. This parallels somewhat the situation in traditional classroom venues where instructors note that some students are passive and nonparticipatory, sometimes to the point of not even appearing for classes. Yet, despite doubts about how much these students are learning and how well they will do on assignments and exams, many of these same students eventually manage to do quite well academically, regardless of their lack of active face-to-face participation.

Assuming that some learning might indeed occur when students in online courses are not posting comments, what could be contributing to this tendency to "lurk" on the periphery of course activity? Are they "auto-didactic learners" who prefer to remain as anonymous and autonomous as possible? Do they forsake opportunities to participate because writing online is more formal and less spontaneous than oral, face-to-face dialogue typically is? Do they frequently have a thought in mind that they are mentally composing, but others often seem to express the same idea before they can do so? Or are they simply having technical difficulties mastering the intricacies of the particular online platform being used?

Helmut Fritsch, director of the Center for Research in Distance Education at FernUniversität (Germany), who has served as an external evaluator of virtual seminars, offers an insightful appraisal of the level of student participation as measured by the frequency of online entries at specific points in time as a seminar progresses. He developed the notion of "witness learners" (i.e., students who are not actively participating via written contributions at a particular point, but who nevertheless are still engaged in the process as observers (witnesses) of the written exchanges taking place online between other students). Fritsch (1997) argues that learning, even in this more passive and less visible mode, is still occurring. This was the working assumption that this case study sought to investigate.

## **2. Methodology**

An online master's degree program offered jointly by the University of Maryland and Oldenburg University enrolled two sections of the Foundation of Distance Education course in Fall 2000. Midway through the semester, it was noticed by faculty that 24 out of a total of

55 students in the two sections had not actively participated (i.e., they posted no online messages during one or both of the modules), wherein two prominent guest faculty, who had authored the required textbooks, were each conducting a 1-week long online conference with each cohort.

These students were not singled out because they had been inactive in online communication since the beginning of the course, but rather because they were inactive during this particular phase of the course when relatively high participation was expected so that students could benefit from interaction with guest faculty. Since the course format requires some online participation to successfully complete academic requirements and because the articulation of ideas (whether presented on paper or transmitted electronically) is viewed as an inherently critical element of the learning process, it is seen as an activity that becomes a key criterion for ascertaining academic success.

It was decided to design and administer a questionnaire to these apparently inactive students, with the intention of identifying the primary factors influencing their nonparticipation in this particular component of the course. It was also determined that this survey should be conducted by someone not directly involved in the administration of the program or instruction of the course. Accordingly, this author designed the survey and performed the analyses and reported on the data. The survey was transmitted electronically to the target population in Fall 2000, midway through the academic term.

For purposes of this analysis, high visibility means logging more than 1000 words in at least one of the online conferences, low visibility means no log-on in one of the online conferences, and no visibility means no log-on in either online conference. It should be noted that this study did not take into account age, gender, native language, and whether or not this was the respondents' first online course experience.

### 3. Findings

Of the 24 students who were sent the 23-item questionnaire, all 24 responded within the prescribed deadline. The first set of questions (Table 1) asked for data regarding total hours spent during the 2-week conference period on various course-related activities, with eight

Table 1  
Survey questions related to time spent on activities

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Approximately how many hours (if any) during the 2-week Holmberg/Peters module did you spend on the following activities?

- Logging-in just to see what was happening
  - Reading assignments
  - Writing assignments
  - Composing comments for the conference discussion
  - Reading others' comments
  - Communicating with study group
  - Other related activities (e.g., web searches)
  - Applying what was learned to work setting
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Table 2

Survey questions related to what prevented students for making more comments

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What prevented you from making more (or any) written comments in these modules?

- Preferred to read what others wrote.
  - Had thoughts, but others made similar comments before I could.
  - Did not find the topic(s) interesting enough to make comments.
  - Was not sure I understood topic well enough to write anything.
  - Often had something in mind to write, but was not sure how to phrase it.
  - Felt a few students dominated discussion too much of the time.
  - Do not feel comfortable writing my ideas in an online asynchronous environment.
  - People do not seem to stick to main topic, so was not sure what to contribute.
  - I often had ideas not related to topic, so was reluctant to comment.
  - Had too many other demands on my time that prevented me from participating.
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choices provided. The one activity that commanded the greatest amount of time was reading assignments—an average of 12 hours over the 2-week conference period, with a low of 1 hour and a high of 40 hours. An average of 7.6 hours was spent logging on to the course site and reading others' comments. Close behind in time allocated was 7.2 hours for writing assignments required for submission. An average of 4.3 hours was dedicated to miscellaneous activities (e.g., Web searches), 3.1 hours on communicating with the study group, and the least amount of time (2.2 hours) was spent composing comments for the conference discussion. It may seem somewhat curious that these respondents indicated that any time at all was spent on this latter activity, given they were identified as the target population on the basis of low participation. This discrepancy may be explained in that some likely responded on the basis of their online activity over the entire term to date, not only the 2-week period under study.

The second section of the survey (Table 2) asked respondents to identify factors (checking all that apply from a list of 10 options provided) that deterred them from posting comments. Three-fourths of them responded that they simply preferred to read what others wrote, or that they had thoughts but others made similar comments before they could post anything themselves. Forty percent indicated they had something in mind, but were not quite sure how to phrase it. Thirty percent said they did not feel they understood the topic well enough to comment, while the same percentage said they were not sure what to contribute because the discussion seemed to drift away from the original topic. Twenty-five percent acknowledged that they do not feel comfortable writing their ideas online. Only four students indicated that time constraints limited the amount of time they could spend writing comments.

Table 3

Survey questions related to students' learning styles in an online environment

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- I think I am learning as much or more reading others' comments than writing my own.
  - I often process ideas from the readings and postings even when I am not visibly participating.
  - I am more of an autonomous learner and so seldom get too engaged in group learning activities.
  - I get more from the readings and assignments than I do from the conference discussions.
  - I hope to log-on more frequently for the remainder of the course.
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The last set of questions (Table 3) was intended to obtain data related to students' learning styles in an online environment and asked them to respond with a yes or no to five items. All but 1 of the 24 respondents indicated that they were often processing ideas gained from the course even when not visibly participating. Nineteen said they felt they were learning just as much or more from reading others' comments than from writing their own. About half identified themselves as "autonomous" learners less inclined to be active in-group learning, regardless of the medium. One-third indicated they gained more from other course activities, such as reading, than they did from the online conference discussions. Finally, one-third stated that they intended to log-on more frequently during the remainder of the course. It may be that some responses to this last item were a result of these respondents feeling some pressure by being identified as low-visibility students.

Finally, all 24 respondents offered comments in the open-ended spaces provided. These were, for the most part, revealing and candid remarks that further informed our inquiry regarding the so-called invisible learner and reinforced their preceding responses. It is interesting to note that only two respondents claimed to be more active than our data indicated, but most of the others readily acknowledged, some a bit defensively, that they were low-profile participants, at least for the conference phase of the course we were examining for purposes of this research.

More than half noted that they log-on frequently, some several times a day. Many emphasized that they spend many hours on the course, and that they have gained much from the course, however little it may appear that they participated, at least in terms of the criterion we used for the survey. Although no questions pertained to the use of e-mail, a few did allude to their frequent use of it for course-related communication. Perhaps this is another activity that contributes to learning, but for which there is little visible evidence in the course environment. Only two revealed that asynchronous online courses did not seem to be their preferred way to learn.

Summing up respondents' comments regarding the primary reasons given for non-participation, the factor cited most often is that online learning is a new experience and students need time to become acclimated to using it. Three stated that limited time was a problem and three admitted that their limited interaction online is similar to how they would behave in a classroom setting. Several expressed willingness to write comments more frequently, but did not because by the time they were ready to do so, others had already posted similar ideas. Some said they preferred to read rather than write and felt just as much learning took place in this manner. Four students admitted to being self-conscious about writing in this forum. It was also clear that many were reluctant to offer online comments just for the sake of being "present." Interestingly, two stated that they frequently compose messages, but did not post them; such behavior may be a more common phenomenon than we might have initially conjectured.

Preliminary analysis of final course grades offer intriguing evidence that performance cannot be easily correlated to participation or that frequent participation necessarily leads to better performance on graded assignments. The statistics show that the mean grades are better for the high-visibility students than the no-visibility students, yet low-visibility students seem to do a bit better than the visible (average) students (Huelsmann, 2000). This suggests that

fully engaged, highly participatory learners tend to perform strongly in graded assignments, but that minimal online participation does not compromise grades. In fact, the grades may suggest that these low-visibility students are dedicating more time to reflection and processing of course material that translates to stronger assignments than those submitted by students participating at an average level.

#### **4. Discussion**

It may be possible to conclude, at least preliminarily from these data, how much time is spent on course-related activity even though little of it is visible to the faculty or to other students. First, an assumption is correct that course-related activity, though mostly invisible, is taking place. Indeed, if over a 2-week period in the lives of busy adult students, each spends an average total of 44.6 hours (the highest reporting 92 hours and the lowest 6 hours) engaged in these various course-driven tasks, it must be that some learning, and the application of that learning, is taking place in an ongoing fashion. While it may be tempting to question if students really do, in fact, spend as much time as is claimed on these activities, we must nonetheless accept their self-reporting of time allocations, as we are not in a position to perceive what occurs beyond the parameters of the online environment. It is quite remarkable, given that this respondent group was identified on the basis of low participation, and in view of the other competing demands on their time, that such a significant amount of time (i.e., 22+ hours per week) is devoted to academic activity in this one course.

What is not seen in asynchronous environments, literally and figuratively, is what else is going on that contributes to participants' learning. In addition, it is easy to assume that unless learners in online formats are actively participating by posting frequent and relevant contributions, they may be benefiting relatively little from this more passive experience. Further, assuming that unless students are posting comments that are directly related to the designated topic in, for example, a so-called threaded discussion forum, their learning is likely to be further compromised. Thus, for those students who, even if they do regularly log-on, but who do not engage at all in a particular discussion or who seem to be offering irrelevant or, at best, tangential remarks, it may be concluded that they do not contribute to or benefit much from the experience. Some distance education theorists argue that the dialog between student and teacher is the essential defining element of distance education. Holmberg (1981) stated that the dialog should consist of guided didactic conversation. It is curious that, although an historical tenet of distance education is the notion of learners autonomously constructing their own knowledge, instructors facilitating the learning process for distant students often become alarmed when dialog with them wanes.

Those who are involved in the instruction and assessment of online learning are reminded that although the medium is technology-based, the actual learning remains an inherently auto-didactic and invisible process, just as it is in courses at fixed times and places. It is also important that faculty, especially those teaching adult working students enrolled in professional education courses, recognize that another "invisible" activity (the application of newly acquired knowledge and skills to the student's work environment) may also be taking place,

and this too, in turn, can be fed back into the course, so that learning continues to occur through knowledge acquisition, application, and reflection. These learning behaviors are all occurring outside the context of the visible online course environment.

It is evident from the responses regarding reasons for low participation that a significant factor affecting online activity is a certain level of discomfort with the electronic environment, causing some hesitancy to contribute, and then the moment is lost. Students want to “get it right” before they commit themselves to online dialogue because the written format seems so “public.” It may be that online discourse feels more formal and premeditated, while classroom discussion lends itself to a more spontaneous, informal exchange that is not recorded and therefore is less likely to be retained. Gonzalez (1995), in an insightful study of online course interaction, observed that the instructor adopted a much more formal tone when communicating electronically with students, compared to her communication with students enrolled in a classroom-based version of the same course. That three-fourths of the respondents in this preliminary study indicated they prefer to read rather than write may suggest a learning style preference, but it may also relate to a lack of familiarity and facility with the medium. It should be reassuring to the course authors that only one respondent indicated that low interest in the topic was a contributing factor to nonparticipation. In addition, although it might be suspected that time constraints would be used frequently as an “excuse” for low participation, the preliminary data revealed that lack of time was a relatively negligible factor.

It is important to recognize that students’ inclination to interact can depend on a variety of factors, including personality and learning styles. As Kearsley (1995) and others have noted, it may be that the more autonomous, self-directed learner is also more reflective, and so requires less stimulation and reinforcement from interacting with more “other-directed” peers. And it may be that the perception that there are avenues for interaction is just as important as actually utilizing them. Fulford and Zhang (1993) found that a key factor in student satisfaction in an ITV course was not the extent to which students actively participated, but rather their perception that interaction was occurring. This suggests that if courses are designed to provide interactive features and there is evidence that interaction is taking place or even that the potential for it exists and then knowing it is available may be as important as actually utilizing it.

## **5. Further research**

Although research has been conducted to analyze the overt learning behaviors of online students, it is recommended that additional study be undertaken to better understand the unseen dimensions of online learning, as it is in that realm where most learning actually occurs. The words appearing on a monitor are simply recorded in what a student articulates via the electronic medium provided. Because some choose to be less participatory does not necessarily mean they are less engaged in meaningful learning. Indeed, it could be argued that the “overactive” online students (i.e., those who are constantly inputting words) do so at the expense of a more reflective and less visible learning process in which their silent peers are

actually more fully engaged. There may exist, of course, other variables that could influence these students' interactive behavior online. This study did not, for example, record whether or not this was the respondents' first online course experience, arguably a factor that could influence students' communication and one that could change or remain constant over time.

Obviously, additional studies are needed that address and isolate critical dimensions of interaction, especially research that examines questions suggested by Kearsley (1995) and others, as they particularly apply to the "invisible" learner:

- Is frequency of interaction a useful measure of student success or course effectiveness?
- Is interaction of greater value for some learners than others?
- Does interaction affect achievement of learning outcomes and grades?
- Does increased interaction enhance student satisfaction?
- Are forms of visible interaction more important than other "invisible" course-related activities?
- Does the pattern of interaction change over a course, or over multiple courses, and if so, why? And should it change?

## **6. Conclusions**

From this case study, what are the preliminary conclusions to be made about what transpires "below the surface" in an online context that either helps or hinders learning? One conclusion may be that essentially the same "witness learning" phenomenon occurs in both formats—classroom and online. Certainly, most students are actively engaged in learning activities, often in an auto-didactic fashion, even though there may be relatively little obvious manifestation of that activity. It could be suggested that the image of an iceberg serves as a useful analogy here, in that most of its mass is hidden beneath the surface, just as is the case with invisible students' learning.

It should be emphasized that the author is not endorsing low-visibility behavior in online course participation as a desirable trait; the purpose of the case study is to begin to better understand those factors contributing to low-visibility participation at certain points as a course progresses and to determine if learning-related activities might be occurring "behind the scenes." If these students had been noticeably and consistently disengaged in their online activity from the very beginning of the course, one would be looking at an entirely different phenomenon, and would not be as sanguine about the overall learning taking place.

Students who, for whatever reason(s), choose to remain largely invisible during certain portions of an online course, and particularly those who do so throughout the entire course, are especially vexing for faculty who value a social constructivist approach to the teaching/learning process. For faculty, establishing a collaborative learning environment premised on fully engaged students is a critical element for online course efficacy. Indeed, some resort to "forced interaction," whereby they require a minimum number of postings from each student during prescribed periods. To them, the student who limits course involvement to reading and only posting mandatory written assignments may seem parasitic, extracting what



is available from the course content, yet contributing little to it. This prevailing perception that acceptable academic performance is premised largely on visible content, denigrates the less visible processes of teaching and learning that occur “off camera.”

It is premature to declare that a certain level of interaction in online discourse is an essential ingredient to student success or course effectiveness. All online learners are invisible to the teacher; that some are less visible than others is not necessarily an indicator that the learning benefits of the experience are being compromised. Dewey’s observation is useful in remembering a critical element of the teaching process: to create conditions for “productive inquiry” that takes place independent from the teacher. In the online learning environment, teachers must be especially attentive to process as well as content to ensure that this inquiry is indeed occurring, however invisible it may be to them.

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