

Learning or Lurking? Tracking the ‘Invisible’ Online Student

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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 even when not actively involved in online discourse with other students and faculty. This 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 their “invisibility”, and if their preferred learning styles influence their online behavior. The data shows 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 grade is slightly 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.

1. Introduction

It is assumed that a high level of interaction is desirable and increases the effectiveness of both classroom and distance education courses (Fulford & Zhang, 1993). As early as 1970, Flanders demonstrated that increased interaction improves student achievement in classroom venues. However, to date, there is still a paucity of evaluative data that clearly indicates online interaction enhances the quality of learning in distance education courses. As interactive modalities have increasingly facilitated the connectivity between students and teacher, student and other students and 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.

Despite an increasing body of research and writing on the subject of online interaction between students and faculty (Gonzales, 1995; Kearsley, 1995; Neuhauser, 2002), we still know relatively little about how much learning actually occurs, how it does or why it doesn't, and what factors most affect learning outcomes in online formats. In considering the learning process in this particular environment, we might assume that it correlates closely to what is visible (i.e., students' written words that appear on the monitor), and conclude 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 non-participatory, 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.

What we do not see in asynchronous environments, literally and figuratively, is what else is going on that contributes to participants' learning. And 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, we might assume 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, we might conclude that they just don't 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 stated that it should consist of mediated, two-way conversation (2001). 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.

2. The "Invisible" Online Learner

Helmut Fritsch, director of the Center for Research in Distance Education at FernUniversität (Germany), who has served as an external evaluator of a virtual seminar offered jointly by the University of Maryland University College and Oldenburg University in 1997, 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 (Bernath & Rubin, 1999). He developed the notion of "witness learners" (i.e., students who were not actively participating via written contributions at a particular point, but who nevertheless were still engaged in the process as observers (witnesses) of the written exchanges taking place online between other students). He argues that learning, even in this more passive and less visible mode, is still occurring.

Assuming, for the moment, that some learning might indeed occur even 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 thinking about what to write 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 ?

Recent studies of attrition in online courses suggest that there are four key factors influencing the degree of learners' motivation to learn – appeal of the online environment; relevance to their interests or goals; confidence level in learning within an online environment; satisfaction level regarding the online instructional process (Keller, 1987). When all or most of these factors are present, attrition tends to be lower; when these factors are missing or weak, attrition is likely to increase. Do these same factors influence the interactive behavior of students who are relatively inactive, yet remain in online courses?

The online master's degree program offered by the University of Maryland University College and Carl von Ossietzky University of Oldenburg enrolled two sections of the initial Foundation of Distance Education course in fall 2000. As the semester

progressed, the phenomenon of student "invisibility", which the MDE faculty had been aware of for some time, became more noticeable. It was observed that twenty-four (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 one-week long online conference with each cohort).

Although program administrators and faculty were inclined to believe that Fritsch's "witness learner" phenomenon was operant in this situation (i.e., that invisible students were still relatively active in some course related activities), it was decided to design and administer a questionnaire to these apparently "inactive" students, with the intention of identifying the primary factors influencing their non-participation 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. While a visiting scholar at Oldenburg University, this author saw an opportunity to investigate this student interaction, and hopefully contribute to a greater understanding of the process. Accordingly, he designed the instrument, then analyzed and reported on the data. The survey was transmitted electronically to the target population in Fall 2000. Of the twenty-four students who were sent the questionnaire, all twenty-four responded within the prescribed deadline. The results and their interpretation follow.

It should be noted here that 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 by course providers in order for them to benefit from interaction with guest faculty. Since the course format requires some online participation to successfully complete academic requirements (although the frequency of online postings is not factored into the final course grade), and because the written articulation of ideas is viewed as an inherently critical element of the learning process, and an activity which is typically considered necessary in order that the institution certify that a satisfactory level of course mastery has been achieved, the conspicuous absence of the written word, whether presented on paper or electronically, becomes a key criterion for ascertaining academic success.

3. Time Spent in On and Off Line Activities

The first set of nine questions asked for data regarding total hours spent during the two-week conference period on various course related activities. The one activity that commanded the greatest amount of time was reading assignments - an average of 12 hours over the two 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 for which posting was required. 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, since the criterion for identifying them as the target population for the survey was the lack of online input from them. This

discrepancy is explained by the fact that they are responding on the basis of their online activity over the entire term to date, not only the two week period under study. A final question regarding time allocation concerned the application of what was learned in their respective work settings. The average (5 hours) is skewed by the fact that one respondent indicated 40 hours was spent in this activity, yet seven spent no time at all on it. Factoring out the 40 hour respondent, a more representative average of 1.7 hours per week results.

What might we conclude, at least preliminarily, from this data on how much time is spent on course related activity even though little of it is visible to the faculty or to other students? First, we can state that our intuitive assumption is correct that course related activity, though mostly invisible, is taking place. Indeed, if over a two 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 assumed 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-perceptions of the amount of time spent, as we are not in a position to perceive what goes on beyond the parameters of the online environment. It is indeed quite remarkable, given that this respondent group was identified on the basis of low participation in one course activity, 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 pursuits in this particular course. We do, however, suspect that these numbers may be somewhat inflated, due to some overlap in respondents' activities.

How does this level of coursework for invisible students compare with the time spent by their more interactive peers? Although we did not conduct a detailed analysis, the statistics showing user activity for this course revealed, not surprisingly, that our respondent group spent almost as much time on course log-on activities as did the other 31 students, with time spent on posting comments in the discussion areas being the only conspicuously reduced activity. It is also interesting to note that many of the activities that involved the most time (e.g., reading and writing) are those we associate with traditional classroom-based courses. Those who are involved in the instruction and assessment of online learning should be 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.

4. Reasons for "Invisibility"

The second set of questions posed to these low visibility students asked them to identify factors (checking all that apply from a list of ten 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 weren't quite sure how to phrase it. Thirty percent said they didn't feel they understood the topic well enough to comment, while the same percentage said they weren't 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. Four students indicated that time constraints limited the amount of time they could spend writing comments. Only one said the topics just weren't interesting enough to comment on.

It is evident from this set of responses 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. Gonzales, in an insightful study (1995) 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 our 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 non-participation. And, although it might be suspected that time constraints would be used frequently as an "excuse" for low participation, the data revealed that lack of time was a relatively negligible factor.

Based on all responses regarding factors contributing to low visibility, it appears that factors identified by Keller (1987) that have the most impact on attrition in online courses (appeal, relevance, confidence and satisfaction), also apply, at least to some noticeable degree, to the phenomenon of reduced interaction by our subjects. And although our invisible students chose to remain in the course, it is interesting to speculate if perhaps the least interactive segment within an online cohort are also the most likely candidates to eventually withdraw from a course.

5. Online Learning Styles

The final questions were intended to obtain data related to students' learning styles in an online environment, and asked them to respond with a Yes or No to ten items. All but one of the 24 respondents indicated that they were often processing ideas gained from the course even when not visibly participating. Nineteen (19) 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 got 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 are a result of these respondents feeling some pressure by being identified as low visibility students (even though we assured them that we viewed their course behavior in this respect entirely neutrally).

It is, of course, important to recognize that students' inclination to interact can depend on a variety of factors, including age, personality, learning styles, professional training, etc. Indeed, 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 Interactive Television 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, then knowing it is available may be as important as actually participating.

The online communication style of faculty, as well as their stated expectations for online discourse certainly can influence how their students function in an online environment. Faculty who espouse and practice a social constructivist approach to their courses; who convey to students that a collaborative learning model is valued (often to the point of calculating a percentage of the course grade on the basis of the quality and quantity of visible online participation); and who are themselves highly engaged in course dialog, will presumably encourage a high level of participation among most students. The program under review here utilizes what might be called a 'progressive interaction' approach, whereby students are exposed to readings, followed by online dialogue facilitated by faculty, and culminating in written assignments required of individuals and groups. This model, characterized by input-processing-output, creates an expectation that student interaction will increase as participants become more familiar with the content and more comfortable with the format. But faculty who do not explicitly address what they expect in terms of online activity, or make infrequent appearances in online discussion areas, are likely to have a reductive effect on most of their students' visible online participation. Faculty who highly value active online participation by their students, yet are reluctant to force this activity, can find themselves in a bit of a conundrum. It is not unusual for some less visible students to perform exceptionally well on various course assignments, creating a situation where a minimally active student achieves a high grade.

6. Summary of Results

All twenty-four (24) respondents offered comments in the open-ended spaces provided; these were, for the most part, revealing and candid remarks that 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.

Summing up the primary reasons given for non-participation via these commentaries, 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 intentionality to write comments more

frequently, but didn't because by the time they were ready to do so, several 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. It was also clear that many were reluctant to offer online comments just for the sake of being "present." Four students admitted to being self-conscious about writing in this forum, one due to being a non-native speaker, another to being shy, and the other two were just not sure how to express themselves. Interestingly, two stated that they frequently compose messages, but don't post them; it may well be that this behavior is a more common phenomenon than we might have initially conjectured.

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, and we suspect that this is yet another activity for which there is little visible evidence in the course environment. Only two confessed that asynchronous online courses did not seem to be their preferred way to learn, and one respondent wondered about the value of the entire program because of its theoretical rather than technical focus.

Preliminary analysis of final course grades on required essay assignments offer intriguing evidence that performance cannot be easily correlated to participation, or that frequent participation necessarily leads to better performance on graded assignments. For purposes of this analysis, high visibility equals logging more than 1,000 words in at least one of the online conferences; low visibility equals no log-ons in one of the online conferences; and no visibility equals no log-ons in either online conference. 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 (cf. Hülsmann, 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 and, in fact, may reveal 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.

7. Conclusions

From this initial study, can we arrive at any preliminary conclusions about what transpires "below the surface" in an online context that either helps or hinders learning? We can probably conclude 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 beneath the surface, just as is the case with our invisible learners.

It is to be emphasized here that we are not endorsing this low visibility behavior in online course participation as a desirable trait; our purpose is 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 disengaged in their online activity from the very beginning of the course, we would be looking at an entirely different phenomenon, and would not likely be as sanguine about the overall learning taking place, as there would be little to “show” for whatever efforts they were making.

Although much research has been conducted to analyze the overt learning behaviors of online students, we recommend 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 simply record what a student articulates via the electronic medium provided. Because others 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, but 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, take into account such factors as gender or native language, nor did it record whether or not this was the respondents’ first online course experience, or whether it was the first course in the master’s program in which they had enrolled.

Subsequent to this preliminary case study with its relatively small sample size, this author has since had the opportunity to serve as faculty in two sections of the same course (Foundations of Distance Education). While no empirical data has yet been formally gathered as a follow-up to this study, impressions based on anecdotal data and observation by other faculty teaching this same course in the program generally parallel the findings and conclusions of this study. From a typical cohort of approximately 40 students, about 15 of these could be categorized as low visibility students who participated minimally in the full class online discussions, but contribute more frequently in their small group dialog. Their grades on required written assignments were slightly lower than those of their more active peers. And, despite their self-admitted low profile style of course engagement, all seemed to have positive feelings regarding their overall learning experience.

Obviously, we need additional studies that address and isolate critical dimensions of interaction, especially research that examines questions suggested by Kearsley (1995), 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; if so, why; and should it change?
- Should faculty “force” interaction, and factor it into the final grade?

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 benefits of the learning experience are being compromised. We are

reminded here of Dewey's observation regarding 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 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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