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Learning behavior in an asynchronous Web-based executive program

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Abstract

Web-based learning (WBL) of the asynchronous type provides great potential for today’s managers and professionals to upgrade their knowledge and skills. Managers and professional staff, unlike full-time students, have to balance work, family and learning commitments. However, most research focuses on full-time students, with less concern for managers and professional staff. In this study, we adopt the ethnographic method to conduct a case study of the learning behavior and experience of managers and professional staff in an asynchronous Web-based Strategic Management course. Taking an interpretive stance, we reach several important findings: contingencies exist and influence learning behavior; deadlines play a significant but different role for different learners; learners spend more time and effort on an asynchronous Web-based course; learners adopt different strategies and build for themselves different combinations from the same set of teaching materials; and learners struggle to create for themselves a “classroom” where none in fact exists. These findings are substantial and contribute greatly to our understanding of how managers and professional staff learn in the asynchronous WBL environment.

Keywords: asynchronous WBL environment, deadline, executive program, learning behavior, learning strategy.

INTRODUCTION

Management demands that its workforce, especially managers and professional staff, keep upgrading their skills and knowledge. Employees show great interest in responding to this demand, some perhaps for fear of being replaced (Alavi & Leidner 2001, Govindasamy 2002, Nunes & McPherson 2003, Schrum & Benson 2000). However, learning at work may not be enough; and systematic learning, especially in a university or institution of higher education, may be necessary. But, unlike the situation of students in school, the work of managers and professional staff is often dynamic and unpredictable; their workload is heavy and unevenly distributed; and most of them have family to care for. It is not easy for them to spare a fixed time every week or a certain period to attend classes in school. Due to the prevalence of the Internet and the advancement of information technology, learning via the Internet seemingly has become popular for the sake of the flexibility of time and place that it offers (Chatterjea 2004). More and more institutions have been providing Web-based courses (Cantoni et al. 2004). Many multinational and large national companies have adopted Web-based training programs for their employees, especially for managers and professional staff (Clarke 2004).

There are two types of Web-based learning (WBL), synchronous and asynchronous. Asynchronous WBL is said to be more flexible and can provide learners with a more autonomous learning setting. Many authors, learning technology vendors and course providers concur that asynchronous WBL is learner-centric: learners can decide when to learn, where to learn, what to learn, and at what speed and in what sequence to learn. Learners seemingly gain more control over their learning and can learn “anywhere, anytime” (Cantoni et al. 2004, King 2002). But this also means that they need to assume more responsibility for their learning, with the result that they must bear part of the role of instructors or course organizers, i.e. arranging the schedule, place and teaching progress of the class.

Because WBL opens the way to a new learning paradigm and offers such great potential for learners, research has been increasing on related topics, including learning style and performance, company e-learning...
Learning takes time and effort, but everyone’s time is limited to some degree, and learning must compete with other activities. In traditional classroom learning environments, the student reserves time exclusively for sitting in a classroom and learning there. But in asynchronous WBL, the scenario is different since learners are situated in a totally different context and face a totally new way or environment of learning; and since they face as well the challenge of balancing their commitments to work, family, and learning, and other issues (Howland & Moore 2002, Kanuka & Nocente 2003, Schrum & Benson 2000). Many researchers assert that in order to learn well in such environments, learners should be autonomous, self-regulated, and self-directed in their learning and learning styles (Lu et al. 2003, Niemi et al. 2003). A manager or professional staff member should be capable of a certain degree of self-regulation. What does a self-regulating or self-directing ability mean for managers and professionals in an asynchronous WBL environment? Besides, asynchronous WBL presumably is a new learning paradigm for today’s managers and professionals since they were educated in traditional classroom teaching environments. How do they perceive and interact with this new way of learning?

In order to answer these questions, we conducted a case study of how managers and professional staff learn in an asynchronous Web-based Strategic Management course; and of what their learning behavior were, what strategies they adopted, and what factors contributed to these behavior and strategies.

The organization of this paper is as follows. Following the Introduction, we briefly introduce our research methodology. After that, we describe the executive program and the course and discuss our findings. We then conclude with some final remarks.

RESEARCH METHODOLOGY

Learners in an asynchronous WBL environment learn within their respective, different social contexts. Therefore, when inquiring into their behavior and experience, it is appropriate to use qualitative methods (Bianco & Carr-Chellman 2002). In this study we adopted the ethnographic method, which is often used to explore how and why humans behave in a social setting (Goetz & LeCompte 1984, Wegerif 1998). Both direct observation and interviews are often used for data collection in the ethnographic method. But, in our study, learning in the Strategic Management course was not a major task in these managers’ or professional staff’s daily lives, and it was not possible to access their offices and homes for long periods of observation. Therefore, we relied on interviews to collect data.

We studied the learning behavior of students in an executive program who took at least two courses in the spring semester of 2004 as part of a postgraduate executive credit program. One course was the asynchronous Web-based “Strategic Management” and the other(s) was (were) traditional classroom course(s). We expected that such sampling could generate richer information in that these learners were facing two different ways of learning at the same time. The Web-based Strategic Management course was chosen because it was the first and only course that had students also taking at least one classroom teaching course that semester in such a program.

There were twenty two learners who met our criteria, sixteen males and six females. Eighteen out of the twenty two were senior or middle-managers and four were professional staff. First, we purposefully selected for interviews six individuals who might best represent the diversity of the group’s backgrounds. These six included four males and two females, managers and professionals, with master’s or bachelor’s degrees (or the equivalent), living/working in the Taipei metropolitan area and not. After the six were interviewed, we interviewed others individually until data was saturated. In total, we interviewed twelve persons, including the first six. The basic information on the twelve interviewees is listed in Table 1. We also interviewed the administrator of the course to collect information about the course design and course management mechanisms. We took notes both during and
The interviews were semi-structured and were recorded with the interviewees’ consent. Each interview took thirty to sixty minutes. The questions covered how the interviewees learned, why they showed certain behavior or used certain strategies, and whether they changed their learning behavior as the course progressed. All interviews were transcribed. In our study, the data analysis adopted analytic induction (Goetz & LeCompte 1984). Themes were identified and confirmed by constant comparison (Lincoln & Guba 1985, Miles & Huberman 1994). Because the phenomena we studied concerned the learners’ personal thinking and their perceptions of their interactions with their new learning paradigm, we adopted more of an interpretive stance to analyze the data.

Table 1. List of Interviewed Persons

<table>
<thead>
<tr>
<th>Interview No.</th>
<th>Name (pseudo)</th>
<th>Gender</th>
<th>Job Title</th>
<th>Industry</th>
<th>Previous WBL exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ivy</td>
<td>Female</td>
<td>Manager</td>
<td>Software</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Joe</td>
<td>Male</td>
<td>Vice President</td>
<td>Software</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Tommy</td>
<td>Male</td>
<td>Deputy Manager</td>
<td>Electronics</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>David</td>
<td>Male</td>
<td>System Engineer</td>
<td>Research Institute</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Bennie</td>
<td>Female</td>
<td>CEO</td>
<td>Hotel</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>John</td>
<td>Male</td>
<td>Engineer</td>
<td>Telecom</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Sophie</td>
<td>Female</td>
<td>Director</td>
<td>Advertising</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Joyce</td>
<td>Female</td>
<td>Deputy Manager</td>
<td>Pharmaceutical</td>
<td>None</td>
</tr>
<tr>
<td>9</td>
<td>Roy</td>
<td>Male</td>
<td>Expert</td>
<td>Engineering Consulting</td>
<td>&lt; three hours</td>
</tr>
<tr>
<td>10</td>
<td>William</td>
<td>Male</td>
<td>Senior Clerk</td>
<td>Electronics &amp; textile</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>Vincent</td>
<td>Male</td>
<td>Manager</td>
<td>Electronics</td>
<td>None</td>
</tr>
<tr>
<td>12</td>
<td>Tony</td>
<td>Male</td>
<td>Manager</td>
<td>Electronics</td>
<td>None</td>
</tr>
</tbody>
</table>

THE EXECUTIVE PROGRAM AND THE COURSE

The course we selected was the Strategic Management course in the asynchronous Web-based College of Management Executive Program. The program is run by one of the most prestigious universities in Taiwan. This program was developed in 2002. Before it was introduced, there had been a similar one, the College of Management Executive Program, but it was taught in a classroom. Both programs offered graduate course credits. Most, if not all, students in both programs were managers or professionals with at least a bachelor’s degree or the equivalent and more than six-year’s working experience on average. The incentives to join the programs were diverse. Some were preparing to enter an Executive MBA program in the future; some intended to improve their management knowledge and to exchange experience and opinions with others, and some wished to cultivate a second expertise.

Because the university was prestigious and the course was for credit, the course instructor and planner inevitably bore the obligation to reflect and maintain the image of the university in the course. Therefore, the course was well-planned, well-structured and strictly managed in the delivery. The course structure was modularized and arranged in a self-directed Web-based instructional format. The intent of the course was somewhat to automate the classroom (Leidner & Jarvenpaa 1995), i.e., by design the professor teaches in the manner he usually employs in a traditional classroom. This tactic of using new technology for traditional teaching has been adopted by many professors (Yazon et al. 2002). This course, like many Web-based courses, also adopted a blended design, i.e. both online and face-to-face instruction, were included. There were twelve online lecture sessions delivered via the Web, synchronous office hours, discussion boards, chat rooms, an online teaching assistant (TA), and three opportunities for face-to-face discussion provided at the beginning, middle and end of the course. There were also group activities for group assignments; each group was comprised of three people assigned by the administrator of the course.

The course started on February 2, 2004 and lasted through June 20, 2004. Each online lecture session consisted of several small sub-modular units or topics lasting around fifteen to twenty minutes. According to the course administrator, the rationale for including short sub-modular units was two-fold. First, it allowed learners to use short and scattered opportunities in the office or at home to attend the online sessions. Second, it provided enough time for learners to concentrate.
Tests were given after two consecutive sub-modular units, and learners had to pass a test before they could move on. Learners were required to follow sequential processes step by step, with no bypassing or hyper-linking allowed. Although the tests helped learners evaluate their understanding of what they had just studied, the tests might also have helped them reduce boredom by interacting with their computers. The online lecture sessions were not all initially put on the Web, but were made available sequentially according to the planned schedule, and with a designated time for each session. All the materials for the previous online sessions were removed from the Web when a new session was put on, except for the week right before the midterm exam and again before the final exam. During this period, learners had to log onto the system and attend an online lecture; otherwise, they were recorded as absent from the session. Those absent from the class for more than one-third of the total hours of the course were not allowed to attend the final exam and were given a failing grade in the course. At first, the duration of each online session was seven days. After the third session, at the suggestion of some students, the duration was changed to ten days, starting at 12 a.m. on Friday and finishing two Sundays later at 12 p.m. The course structure also incorporated an electronic bulletin board feature to provide a place for the teacher and students to initiate on-line conversations or discussion.

The course was designed to be delivered through ADSL or cable, not dial-up, with a download speed of more than 256kbps to ensure good reception of quality video, audio, and PowerPoint presentations, and download delays as short as possible. Every student had to have access to a personal computer with at least a Pentium III 800MHZ CPU and 128M of RAM, running Windows 2000/XP and Media Player 7.0.

FINDINGS AND DISCUSSION

Contingencies affect learners’ learning behavior

Learners attended online lecture sessions in their offices, home or other places. Among the interviewees, only two attended the online sessions in their office, while all the others did so at home. The functions and meanings of those places are not normally associated with learning, so learners may have had to deal with other matters first before going online to study. Indeed, they may have encountered many contingencies, such as unexpected interruptions, temptations from other activities, personal physical or mental conditions, etc. Learners are more easily distracted from their learning in such settings (Rossett 2000).

For managers and professional staff, getting their work done was deemed to be the first priority. Work content and workload were often not so predictable or controllable. There were always new assignments, problems, or situations to handle. These could influence learners’ arrangements, concentration, or continuity of learning. Sophie made the following comments during her interview:

At the beginning, probably I could listen to the lecture several times and have it done before Friday. But later I was transferred to another department and had new clients, and I was responsible for new business development. During the transfer period, I often had to meet with my boss for hours. We had meetings even at night. When I went home, I still had to work out some plausible strategies. Therefore, I could not go online for class.

When studying at home, family affairs often affected learners’ time arrangements and the learning process. Tommy said:

When watching the lecture, I have to make sure that my son will not disturb me. When I am at home, he sometimes wants to be with me. Even when I am in my reading room, he still tries to come in. To let him have no chance to disturb me, I often choose to go online late at night after he goes to bed. Sometimes, if he goes to sleep earlier, I will go online earlier.

The degree of volatility in the environment and in the learners’ control over contingencies and situations affects how learners behave. Where work and family are more predictable and stable, learners may have more control over their learning in terms of time and place. Almost all the interviewees mentioned that their physical and mental conditions may have affected whether or not they attended the online lecture sessions, the length of duration each attendance, and the number of times they attended.
Deadlines play a significant but different role for different learners

Deadlines often play an important role in our life, but they have different meanings to different people in different situations. They can anchor scheduling, be a driving force to push us, or become an excuse to put off until tomorrow what we planned to do today. Although individuals react to a deadline differently, a deadline does impose a certain influence or pressure on people’s plans and behavior that is perceived either positively or negatively. This influence or pressure on learning behavior is especially obvious in an asynchronous WBL environment, where self-learning is a more important context.

As mentioned, the materials of each online session were put on the Web according to a defined schedule with a starting and a closing date, i.e. a deadline. This arrangement had two purposes: to help learners keep up with the schedule, and to allow them to flexibly arrange their time to attend the class at some point during the posting period. Learners all knew the penalty for missing a deadline, but they reacted differently. Some actively made a learning schedule. More were pushed by the deadline. In fact, the flexibility offered by the deadline could become an excuse for not studying right away.

Because you feel you have a whole week, a whole week to attend the online sessions. If I am busy today, I can attend the sessions tomorrow. Tomorrow, if I am still busy, I have the day after that. Then when I come to the deadline, I find I can hardly finish the session on time. I have to hurry and that makes it very, very difficult for me. (Bennie)

As a consequence, there were deadline rushes. Many learners often put off their study as long as possible and applied “just-in-time” practices to complete their online sessions, sometimes only a couple hours or even minutes before the closing time. It seems that the deadline was good motivation for them to finish the required session since there was no possibility of further delay. This abuse of the time flexibility provided by the deadlines is also found in Chatterjeea’s (2004) study. Be that as it may, the deadline did exert a significant influence, mostly helpful, on learners.

Learners spend more time and effort

Most of the learners expected to spend about as much time in online sessions as they were accustomed to spending in traditional classroom lectures, i.e. around 150-180 minutes per week; additionally, they figured they could save university commute time, about 60-90 minutes. However, all the interviewees reported they spent much more time, about two to three times as much. This finding has also been reported by other researchers studying different asynchronous courses, even ones without online testing mechanisms (Manuel 2001, Valenta et al. 2001).

The longer studying time generally results from the characteristics of the asynchronous WBL. Downloads take time, and the modular design increases the number of downloads. Multimedia teaching materials, which are designed to stimulate learners’ interest and attract their attention, including video (talking head), audio, and PowerPoint files, require more time to download. Although all the learners accessed online sessions via ADSL or cable modem, they still had to wait awhile to complete downloads laden with data. The duration of the wait time depended further on the traffic of the network, the number of logged-on learners, and the learner’s own perception of the waiting. Download time may affect learning (Davis & Hantula 2001). In addition, unexpected interruptions, such as phone calls, often caused learners to replay certain sections. All of this is not yet to mention that the course we studied incorporated an online testing mechanism. Therefore, we surmise that such learners have to spare more time from work, family life, sleeping, leisure or other things to accomplish learning goals. Besides, a longer time in and of itself implies a heavier burden, with more concentration and determination needed.

Learners adopt different strategies and build their own combination of teaching materials

Students adopt different learning strategies. These strategies emerge and evolve, and are not planned and static. In our study we found such strategies arising from interactions and experiences with the asynchronous WBL environment and its contexts. Some learners modified their approaches, or even their family life, to cope with the course. For example, Roy said:

I know there must be discipline in learning. Therefore, I force myself to spare one to two hours every day to participate in the online sessions and not be absent. In the classroom learning environment, we do not
need to learn how to attend a class because we have been educated in classrooms since elementary school. There is no need to make any special arrangement to go to a class. But if you learn “flexibly” at your home, it means your lifestyle needs to be adjusted and tuned to the optimum status.

Some learners just replicated their traditional classroom learning practices in this course. No matter how flexible the course structure might be, the learners just sat in front of a computer monitor for two or three hours once or twice to run through the lectures. They persisted in their traditional learning paradigm. Other learners, instead of passively receiving the delivered materials, re-structured the materials to meet their own needs. For example, Sophie just “listened” to the audio portion and sometimes read the pre-downloaded PDF material without watching the screen at all; the talking heads and acting PowerPoint presentation were totally ignored. Some learners recorded audio segments they considered important and listened to the recorded files later. Learners did not passively accept all the materials that the course provider delivered, but rather selected and assembled materials themselves.

**Struggling to establish a “classroom”**

A classroom, in the traditional learning paradigm, is an isolated and exclusive place, in which a number of students gather to listen to an instructor for a certain period of time. In a classroom, learners are able to concentrate on what is being taught without worrying about being interrupted by unexpected things. Learning needs a concentrated mind. An undisturbed place and an undisturbed time period, either in a traditional learning or a WBL environment, are essential for people to muster the necessary concentration for learning. There are no physical classrooms in asynchronous WBL environment, but learner behavior and strategies seemingly reflect the fact that a struggle occurs to establish the equivalent of a “classroom”—an exclusive time and place for learning. Unfortunately, a classroom does not exist or appear “anywhere, anytime.” Learners alone cannot fully decide when, where and for how long a classroom shall exist. That depends also on the course, the individual’s environment and individual interaction.

Different learners exert different degrees of control over the establishment of virtual classrooms in different time scales. Some establish their classrooms with little change from their customary practice, while others may adopt only an emerging strategy, i.e. just be open to situations of the moment. The meaning and concept of a classroom are applicable and important in an asynchronous WBL environment, especially to those who are new to this environment. Students may learn better if they know where and when virtual classrooms are.

**CONCLUSION**

The asynchronous WBL environment is different from the traditional classroom teaching. Managers and professional staff face challenges posed by the new paradigm of learning. They not only have to learn course content but also a new way to learn, which is dual-learning. In today’s competitive markets, the work of managers and professional staff can be challenging and dynamic enough, even without coursework added.

This study investigated the behavior of managers and professional staff in an asynchronous Web-based “Strategic Management” course. The findings, based on an interpretive perspective, reveal how the learners interact with and react to the course, the course management mechanism, and individual environments. There are contingencies to deal with in daily life, just as there are requirements from the course instructors and providers. In addition, learners have to assume part of the role of the course organizer. This may challenge their long-standing assumptions and experience. Confronted with such a new and challenging learning environment, learners evolve their own individual strategies or actions in response. They experience, adapt to and respond to the new learning environment. They may restructure or re-assemble their own learning materials beyond what the course planner imagined. The process is ongoing, adaptive and mainly emerging. However, in the end learners are not so free after all; they still learn at certain places at certain times. Struggling to establish a “classroom” is a challenging, but essential, aspect for managers and professional staff hoping to reap the substantial benefits of asynchronous WBL.
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