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Exercise of Learner Autonomy in Project-Oriented CALL

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Abstract

Increasingly, the use of modern technology is coupled with cooperative approaches to learning. The question is how technology affects the exercise of learner autonomy. By presenting evidence of critical incidents and learners' reactions, this article describes how technology-related factors such as computer literacy and beliefs in CALL have affected individual learner's autonomous learning in a Project-Oriented Computer Assisted Language Learning (PrOCALL). The findings suggest that technology can have a positive impact on learner autonomy when learners have extensive experience with technology. However, they also suggest that it can have a beneficial impact on autonomy only when learners perceive technology as a useful tool. The findings indicate that learners' perceptions vary largely according to the level of their computer literacy although the students' perceptions may be modified through positive or negative relationships with other students and the teacher. The article concludes with three conditions necessary for successful autonomous learning: 1) accessible and reliable technology, 2) sufficient computer literacy in students, and 3) good communication with and support from peers.

Keywords: Learner autonomy, PrOCALL, cooperative learning, computer literacy

Introduction

Learner autonomy has been widely discussed in L2 research (Dam & Little, 1998; Wenden, 1998; Macaro, 1997; Littlewood, 1996; Little, 1995; Little, 1990; Dam, 1990; Holec, 1981). There is now considerable evidence supporting the view that cooperative learning, including project-oriented learning, can lead to the enhancement of learner autonomy (Ehrman & Dornyei, 1998; Dam & Little, 1998; Johnson & Johnson, 1998; Dornyei, 1997; Macaro, 1997; Crabbe, 1993; Legutke & Thomas, 1991).

Increasingly, the use of modern technology, such as email, the Internet, HTML editors, is coupled with cooperative approaches to learning (Blin, 1999; Ehrman & Dornyei,1998; Warschauer, 1996, 1997; Barson & Debski, 1996; Kelm, 1996), and the positive effects of technology on language learning, in general, has been demonstrated (Warschauer, 1996, 1997; Sandholtz et al., 1997; Barson & Debski, 1996; Tella, 1996, Roblyer et al., 1988). However, although modern technology is claimed to encourage students to have positive interdependence, individual accountability, and abundant interaction (Kelm, 1996, p. 25), a careful analysis of the literature illustrates how little is known about how technology affects the exercise of learner autonomy. Why is it that, under similar conditions, technology affects autonomous learning in ways that vary widely from student to student? It is envisaged that the success of autonomous learning would be greatly influenced by learners' computer literacy and their beliefs in technology-incorporated learning. This article describes how these technology-related factors have

affected individual learner's autonomous learning in a technology-incorporated cooperative language learning environment.

Definition of autonomy

Originally, the concept of learner autonomy was a reaction against behaviourism, and usually associated with the notion of learner-centredness and a vision of language as a tool for communication (Gremmo & Riley, 1995). It is now generally defined as an ability to take charge of one's own learning (Wenden, 1998; Macaro, 1997; Littlewood, 1996; Little, 1995; Dickinson, 1995; Victori & Lockart, 1995; Dam, 1990; Holec, 1981). While it has been claimed that independence and individual responsibility are the core notions of learner autonomy, some researchers hold the view that autonomy also involves interdependence (Blin, 1999; Little, 1990; Boud, 1981). Responsible learners know that, as long as learning takes place in social interactions, learning in isolation is impossible, and effective learning without mentors and peer support is difficult. Taking charge of one's own learning therefore inevitably involves being positively interdependent, particularly in a cooperative learning environment. From this perspective, in this article, learner autonomy is defined as 'ability and willingness to learn both independently and in cooperation with others as a responsible learner'.

Background and research questions

Project-Oriented Computer Assisted Language Learning (PrOCALL) has been employed in many places around the world (eg. Blin, 1999; Debski & Gruba, 1999; Warschauer, 1997, 1996; Barson & Debski,1996; Barson et al., 1993). However, reports focusing on learner autonomy in this style of language learning are still few. The existing literature, limited as it is, presents mixed findings.

Barson et al. (1993) report on a CALL project undertaken by students of French at Harvard University and Stanford University, who collaboratively produced French-language newspapers and videotapes. They described how, at the end of the course, students expressed deep satisfaction at being able to manage their language learning in the target language adopting a variety of roles, from manager to assistant. Debski & Gruba (1999) conducted a university-wide survey of attitudes towards CALL at the University of Melbourne, which involved several foreign language programs. They noted that the interviewed instructors expressed reservations regarding the implementation of learning based on learner autonomy: "Instructors did not think that students would want to be truly in charge of their language studies" (p. 231). Blin (1999) discusses the effect of learner-learner interactions in a CMC environment on learner autonomy, that was part of a CALL project at Dublin City University, as students who were about to leave Ireland for France used a discussion list to exchange information with their partner students who had the experience of residing and studying abroad. She described how the correspondence encouraged students, who at first were attentive passive contributors, to bring their comments on culture and language to their language class, and discuss learning objectives and strategies that would help them to benefit from their residence. None of them,

however, describes why technology affects autonomous learning in ways that vary widely from student to student.

Computer literacy

Sussex (1998), based on his informal observations and reports from colleagues and students, suggests that unstructured learning may be successful for learners with previous experience in learning on the Web, but that there are potential and real difficulties for students if they have little experience with navigating the Internet. Conceivably, this is because students' experience in the use of modern technology affects how they react to technology. Students with extensive experience with technology may find it easy to manage their learning whereas technologically less-experienced students may be bewildered by new technological tools.

Beliefs in technology incorporated learning

A number of recent articles have stressed the central role played in determining learning behaviour by the learners' beliefs and representations about language and language learning (Gremmo & Riley, 1995, p. 158). Learners' beliefs in technology incorporated learning likely affects their attitude and learning behaviours in PrOCALL. Their beliefs have been formed from their positive or negative experience with technology in the past. As Cotterall (1995) has stated, the beliefs that learners hold may either contribute to or impede the development of their potential for autonomy (p.196). Students who have positive beliefs in technology may, as they have trust in technological tools, be able to make full use of the tools to support their autonomous learning. On the other hand, students with negative beliefs in technology-incorporated learning may not be willing to use the tools for their learning from a fear of failure.

The following sections will look into these hypotheses.

The project

A large-scale implementation of PrOCALL project was conducted at the University of Melbourne in two-second semesters (12 weeks each) over the years 1998 - 1999 under the supervision of the project leader (see Debski, 2000). The PrOCALL involved 11 languages (1 Chinese, 2 German, 2 Indonesian, 3 Japanese, 1 Russian, and 2 ESL classes) and over 250 students with the diversity of language levels and 10 teachers from different cultural backgrounds. The PrOCALL project aimed to transform existing language classes into classes incorporating project-oriented CALL while each class was aiming to improve students' skills using multimedia as tools. In class, students in groups were assigned to create their web pages which involved on-line research, computer-mediated communication, and web-publishing.

Each language department offered a slightly different class as it reflected the attitude, motivation, and skill of each participating teacher (Debski, 2000). Despite this difference among the classes, all classes generally followed a similar path as illustrated below.

In the first session of a course, participant students were introduced to the background of the Project. A timetable and assessments were negotiated with them. The

students then formed groups and each group decided on a topic. From the second session, the students searched for various Web sites that were related to their topic and investigated other sources outside of the class. In some classes, students had e-mail correspondence with their partners overseas and wrote messages on an electronic bulletin board, which was used to exchange useful information among the students in the classroom and with overseas partners. Target language use was emphasised for all communication. After gathering information for 5-6 weeks, the students created their pages by writing texts and inserting images and sound. There was a peer review session towards the end of the course, where the students gave comments on other groups' pages and received feedback on their pages from their classmates and teacher. The students then revised their pages as necessary using the suggestions from the review sessions and submitted finalised pages to the teacher at the end of the semester. These pages were uploaded to a Web server, and made available to a worldwide audience (The pages can be viewed at http://www.glen.hlc.unimelb.edu.au/glen/hll).

During this project, IT officers took active roles; coming to classrooms for IT demonstrations and other IT support. The teachers were facilitators rather than instructors. They had prepared the basic structure of the course, but the rest was left flexible to leave rooms for the students to exercise learner autonomy.

Data collection and analysis

Data collected included transcripts of semi-structured student interviews conducted on 55 students (5 students from each language classroom), weekly logs kept by 5 participant teachers, and observational notes made by the IT officers and the project evaluator. A questionnaire on students' computer literacy was also used for the analysis. These data were coded by the project evaluator using the qualitative data analysis application, QSR NUD*IST (see Lynch, 2000 for details). For this analysis, I have used data annotated as "student autonomy" and other related indexes such as "computer literacy", "motivation and attitude", "collaborative learning" and "language learning".

The analysis for this study followed two steps. Firstly, after reviewing all the autonomy-related data, I have categorised the student comments into positive, negative, and neutral in terms of showing evidence of learner autonomy in PrOCALL. While the majority of them fell into the neutral category, some were very positive or negative. For the second step, I cross-analysed these positive or negative comments and the results of the computer literacy questionnaire to extract four different groups of students:

1. High computer literacy students who made positive comments
2. High computer literacy students who made negative comments
3. Low computer literacy students who made positive comments
4. Low computer literacy students who made negative comments

All the participants' names have been changed to pseudonyms to maintain the privacy of the participants.

Results and discussion

Why is it that, under similar conditions, technology affects autonomous learning in ways that vary widely from student to student? For technology to function properly was a sine qua non. The two years' participation in the PrOCALL Project gave me the impression that reliability and accessibility of technology were a prerequisite for autonomous learning. I observed the students were more independent when computers were acting as efficient aids for learning. However, even when technology did function well, learner autonomy was dependent on several factors.

Successful students with high computer literacy (7 students)

The students' reactions to the hitches varied from student to student: some enjoyed the challenges of technology while others showed hostility toward it. Kate, the IT officer, observed a clear difference among the students:

> Upon encountering a technical problem, the students who were confident in their computer skills enjoyed the challenge of something not immediately working, and learnt how to make use of it more efficiently for their learning. In contrast, technologically less-advanced students or less confident students became frustrated and drew back from taking further steps (Kate, IT officer).

Even when technology was functioning properly, the reaction from these two groups was very different. When the students were at the beginning stage of searching for topic related Web sites, the techno-savvy students were already more autonomous. In the process of searching, some students found some sites that they could use in the future. Patrick from the Chinese class made a couple of email pals through the email pal service that he found on the Internet. Pierre, on the other hand, explored a number of programs that allowed him to use Japanese and thus expanded his Japanese. He says:

> At the beginning of this semester, I didn't really have much on my computer which could use the Japanese language, (but) I found heaps and heaps of resources of programs that I could browse the web in that particular language and word process in the language (Pierre, Japanese class student).

Pierre also said that he independently made choices in the selection of reading materials commenting that ‘it taught me to sift through all the information and get what was important’.

Drop-out of technologically advanced students (2 students)

While the above stated general tendencies exist, I also observed a few cases where technologically advanced students withdrew from responsible learning and less-advanced students found ways to be successful in learning. About this, the Indonesian teacher analysed the threshold of technology as a combination of both the ability and attitude of the students:

> It was nonetheless the case that for many of the students the computer technology played an important role in how they interacted with their work and with each other.

> Some found it liberating; some found it oppressive. For some, it took up a very large part of what they were doing in the class, while for others it became just another tool. Both students' level of computer abilities when they started the class and their attitude about learning new technologies contributed to the degree they had during the semester (Matthew, the Indonesian teacher)

While 7 out of the 9 technologically advanced students were very enthusiastic about the incorporation of modern technology in language learning, one student, Sally, showed no autonomy. Although, in her interview, she said that she 'did an Internet class in 1997 and we did a Web site then', she sometimes felt disadvantaged because she did not have the Internet at home. To the Project leader's question, 'Do you generally enjoy being given freedom in class?', she replied:

> Not on this situation, I didn't. We would go to class and people would just sit in front of the computer and that was it. I'd arrive to class and do my email and there was no class communication. You would just go into class and hardly ever speak to the other group members because everyone was just sitting in front of computers (Sally, Chinese class student).

Although Sally had no problem with the technical content of the class, she was not at all enthusiastic about using the tools. What she wanted to be more face-to-face communication in the classroom.

There was another case where a successful computer user did not show a high level of learner autonomy in language learning. The Indonesian teacher, Matthew, mentioned that 'at least one of these students finished what he thought was an appropriate amount of work for the subject early on and then rarely attended classes'. This student did not participate in class activities where much of the language learning was going on.

I am aware that it is inappropriate to draw any sort of conclusion merely from the two cases, but we cannot deny that there was something in common between these two students. They felt detached from their classmates. The students who seemed most successful were those who had good technical skills and could use their skills to help other students.

The success of technologically less-advanced students (5 students)

What were the factors that influenced these students' attitudes? Lack of interaction with other classmates seems to have caused them to form their negative beliefs and have led these students to have a negative attitude towards the PrOCALL class. What made me focus on interaction was the retrospective interview passages from students who started as low-level computer users but who eventually showed their willingness to use technology and learnt some aspects of the target language in the class. Five low technology students fit into this category, all of whom made some positive remarks regarding peer support.

Fiona, in her interview, expressed how she was nervous when she started the CALL class as she wasn't sure what to do at all. Nevertheless, with the help of her group partner, she overcame her fear of technology and has gradually developed confidence:

> I was very lucky because we formed groups to do the Web page, about two or three people, and the person I formed a group with knew a lot about computers, so that was lots of help (Fiona, Japanese class student)

Having an adequate person at hand seems to have been one of the critical factors. Georgie, whose computer literacy level was about the same as Fiona's, on the contrary, could not overcome her handicap due to the lack of personal support. She said, at the interview, that it was very difficult: neither she nor her group partner knew much about computers.

A similar view of Fiona's was also expressed by Mike, Kat, and Bella. Mike expressed his appreciation for 'working with a person whose computer expertise far-out-weighed mine'. Louise was also one of the students who 'did not have skills as great as a lot of other people in the class and had a lot of problems with things because of that'. However, despite encountering many technical hitches, with the help of her partner who had superior knowledge of computers in her group, Louise did manage to create a Web site, and she succeeded in her language learning. To the question, 'Do you think the class taught you a bit more autonomy in your learning?', she replied:

> I think so. We really had to take it on to ourselves as to what we were going to learn. If we wanted to make lists of words and things we really had to do that. It is a good skill to have and when you finish university you're going to have to do it all the time so I think it's a good way of developing that sort of skills (Louise, Japanese class student).

These students who were unacquainted with technology initially had some reservations towards using technology as a learning aid, either from fear or nervousness of using new tools. However, at the end of the course, these five students showed a positive attitude towards PrOCALL. Good interaction with and reliable support from other group members seemed to have helped these students to overcome their problems.

Struggling students with low computer literacy (3 students)

Some students who had very limited experience with computers found it difficult to search for information on the Web without having someone to guide them in the right direction. A typical comment was:

> Being independent is a good thing. It's just that when you're not exactly sure of what you're doing on the computer, you don't know whether you're meant to go to this site, or this site, whatever. It's very hard to motivate yourself to do it rather than if someone took a class and said, 'this is this' and then 'this is this' (Nina, French student).

For the technologically less-advanced students, Internet searches were time-consuming. They felt very tired after spending an enormous amount of time going into seemingly endless pages just to find out that they were not useful. One of my students in this category informally told me that reading texts on the screen made her feel ill. As claimed by Locky from the Japanese class, 'if you know how and where to look then you

can find a lot, but if you don't it can be frustrating' . These feelings of frustration and fatigue must have impeded the exercise of learner autonomy.

Even though the scanning and manipulating images interested the students, Megan from the Japanese class felt that these devices impeded her language learning as 'they pulled me too much towards technology'. She said that she 'could have learnt more language while in this stage through more relevant work'.

Some students remarked how they had learnt a great deal about technology but not much of the language. The students with insufficient technological skills, in particular, were greatly handicapped in their study of the target languages. Some students claimed that they could not make progress in speaking the language because of their lack of computer knowledge. Georgie expressed this common view in the following words:

> Because I know nothing about computers I always end up speaking in English so my Indonesian doesn't get any practice. It's just so frustrating when you don't know what you're doing with computers at all (Georgie, Indonesian class student).

Lewis and Atzert (2000) described the above issue as follows:

Because the PrOCALL class requires the learning of computing skills as a prerequisite or a non-negotiable adjunct to the process of language learning, the impression can arise among some students that the emphasis in the PrOCALL class is not on language learning but on mastering technical skillsq¥ªn particular, students who had low levels of computer literacy, or who self-assessed themselves as having poor to fair computing skills felt at a disadvantage.

Blin (1999) pointed out that the gap between the anticipated use of technology by the teacher and the actual use by the learner may provide some valuable information on the level of autonomy. In this project, all the participant teachers introduced technological tools, believing that they would facilitate their students' autonomous language learning. However, while some students used the tools as intended, some other students could not make use of them.

There may be a technology threshold level that students need to pass to achieve learner autonomy. The threshold level, however, may not be measured quantitatively. It is rather an emotional barrier that students create in their minds. In interviews, participant students were asked about their technological skills. Interestingly, students with a similar level of technology judge their skills quite differently. From the comments of the students, it could be presumed that this diversity may be attributed to their confidence in using their skills.

All the students came to PrOCALL with a disposition towards technology formed by their previous experiences. The students who previously had positive experiences with technology were usually keen and confident in their attitude towards mixing technology and collaborative learning. These students, in most cases, exercised their learner autonomy. On the other hand, students who had little experience or negative encounters with technology reacted very differently. In some cases, their negative beliefs impeded the development of their potential for autonomy. Nevertheless, the findings from the data analyses suggest that students' perceptions can be altered through positive or negative experiences during a PrOCALL course. In other words, students' attitudes toward learner autonomy can be enhanced or impeded by changes in their beliefs.

Conclusion

In this article, I have indicated evidence of critical incidents that facilitated or inhibited learner autonomy in terms of technological supports for language learning. I have also pointed out salient learner differences in reactions to the incorporation of technology.

To summarise, the findings suggest, generally speaking, that technology can have a positive impact on learner autonomy when learners have extensive experience with technology. However, they also suggest that it can have a positive impact on autonomy only when learners perceive technology as a useful tool. The findings indicate that learners' perceptions vary largely according to the level of their computer literacy although the students' beliefs may be modified through positive or negative relationships with other students.

The implications of the study may be that there are at least three conditions necessary for successful autonomous learning in PrOCALL. Firstly, it must be guaranteed that the technology in use is accessible and reliable. The accessibility and reliability of technology are a necessary prerequisite for learner autonomy. The second condition is sufficient computer literacy in students. Although it is hard to state how much computer knowledge and skills are needed, it appears that students are required to have some fundamental computer literacy to make use of a technology-rich environment. Lastly, and most importantly, good communication with and support from peers should be emphasised.

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