Learners re-shaping learning landscapes: New directions for old challenges?

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The sheer inevitability and momentum of global adoption of all forms of technology has engendered a range of responses from wholehearted welcome and exploitation, to denial and anger. Consequently, the education landscape has been shifting, although not in the colossal, earth-rending manner that was initially envisaged. Information, Communication Technology Enhanced Learning and Teaching (ICTELT) has progressively continued to evolve and mature, embedded in an increasing foundation of research. One key benefit identified in this process is the inclusiveness and fluidity that can be built into ICTELT experiences, especially when they occur within a collaborative community. This paper explores an example of how ICT was used to adapt part of an existing ‘problematic’ curriculum in a way that helped address central issues, encouraged collective learning and enabled learners. In the Foundations programme at Dubai Men’s College (DMC) students find the conventions of academic writing, and the requirement to improve their proficiency, challenging, especially as they are also struggling with the transition from secondary to tertiary education, and their own changing identities. The framework of existing Communities of Learning (CoL) was employed to introduce a blended, scaffolded approach that aimed to assist students with academic writing, as well as assisting their transition to more self-directed, confident learning. The design and implementation of the interventions is described, and a brief overview of the results of the associated research study is given, along with recommendations for educators wishing to adopt a similar approach.

Keywords: ICTELT, blended learning, communities of learning, academic writing, Gulf region, Foundation programmes

Introduction

The sheer inevitability and momentum of global adoption of all forms of technology has engendered a range of responses from anger, through denial, to wholehearted welcome and exploitation (Schneckenberg, 2004). Consequently, the education landscape has been shifting, although not in the colossal, earth-rending manner that was initially envisaged. Information, Communication Technology Enhanced Learning and Teaching (ICTELT) has progressively continued to evolve and mature, embedded in an increasing foundation of research. One key benefit identified in this process is the inclusiveness and fluidity that can be built into ICTELT experiences, especially when they occur within a collaborative community.

Research supports the theory that communities of practice (CoPs) enhanced by Information, Communication Technologies (ICT) can encourage collective learning (Wenger, 2001). This paper explores an example of how ICT was used to adapt part of an existing ‘problematic’ curriculum in a way that helped address central issues, encouraged collective learning and enabled learners (Wenger, 1998). In the Foundations programme at Dubai Men’s College (DMC) students, who are from a largely oral culture, find the conventions of academic writing, and the requirement to improve their proficiency, challenging, especially as they are also struggling with the transition from secondary to tertiary education, their own changing identities, and a desire to be accepted into the academic community (Lillis, 2001). The framework of existing Communities of Learning (CoL) was therefore employed to introduce an ICTELT blended learning approach that aimed to assist students with academic writing, as well as assisting their transition to more self-directed, confident learning. After a brief review of relevant research, the design and implementation of the interventions is described, and an overview of results of the associated research study is given, along with recommendations.
Context and issues

Many Arab students enter tertiary education with meagre understanding of academic writing conventions and often have weak basic writing skills, even after 'studying' writing conventions (Harste, Short, & Burke, 1988). All Foundation programme students at DMC are Emirati male nationals, whose first language is Arabic, and the majority of whom are between seventeen and thirty years old. Students educated in the Gulf region tend also to be reliant on the teacher as a source of instruction, and have advanced rote learning and memorisation skills (Smith, 2001). The pass rate in the English 070 Writing Key Common Assessment (KCA) administered at the end of the 2004, 2005, and 2006 academic years was uniformly low, with 25% of students failing their academic writing by 20% or more.

Theoretical perspectives

ICT enhanced writing and vocabulary acquisition

Studies in the 1960s that focussed on ICT enhanced writing proficiency suggested that ‘traditional’ instruction tended to be more effective. For instance, findings from a study conducted in 1966 by Izzo (as cited in Al-Jarf, 2004) in Japan indicated that essays produced on computers were shorter and less well organised than those that were hand-written. In the last decade, however, technology has advanced, as have theories, approaches, and pedagogies. Goldberg, Russell, and Cook (2003) advise that “the results of...[their] meta-analyses suggest that on average students who use computers when learning to write produce written work that is about .4 standard deviations better than students who develop writing skills on paper” (p. 20). The reason for the difference was attributed to learner motivation, increased independence, and a greater level of engagement. A further benefit of ‘writing’ with computers is that students are encouraged to be more creative, write a greater quantity, and are more willing to review and revise their work (Goldberg et al., 2003), especially when writing sessions are a “socially situated activity, involving issues of epistemology, social identity and social relations and practices” (Cowan, 2004, p. 3). Simic (1994) advises that improvements in writing proficiency can be accelerated when, with sufficient scaffolding, learners are encouraged to experiment concurrently with several aspects of the writing process, thereby overtly comprehending interconnections. Chun and Plass (1997) also found that multimedia environments stimulate vocabulary acquisition when different medium are used to present new lexical items. Studies which have specifically investigated the effects of mobile learning (which can include laptops) to enhance literacy (Attewell, 2004) have found that interactions tend to be more collaborative and learner-centered, whereby learners communicate in authentic contexts and there is a shift away from interacting “with computers to interacting with other humans via the computer” (Warschauer & Kern, 2000, p. 11).

Synchronous communication in general, and Instant Messaging (IM) in particular, enables context-related learning communities to be formed where common needs and goals are shared, while also remaining “unbounded since the messages can be exchanged anywhere in the world” (Sharples, Taylor, & Vavoula, 2005, p. 23). Also, when using IM, learners have an altered connection with the written word compared with oral communication because it is more permanent and yet the interaction is still occurring in a similar timeframe as a spoken conversation (Kramsch, A’ Ness, & Lam, 2000). Semones (2001) proposes that the flexibility and spontaneity of chat encourage enthusiastic participation, and as a result “unskilled writers are pushed to achieve higher levels of writing as they learn from others, and skilled writers have the opportunity to exchange ideas and think critically about their writing” (p. 308). In addition, chat history can be saved and referred to as, for example, a record of ideas, or to check back on instructions (Sullivan, 1993).

Communities of practice

In the late 1980s and early 1990s, Lave and Wenger developed a social theory of learning based on anthropological apprenticeship studies which they called Communities of Practice (CoPs). In comparison to viewing learning as a finite process which an individual undertakes with little or no reference to the context(s) in which they are involved, CoPs encompass the notion of 'situated learning' whereby learners constructs meanings collectively in a community and “have invaluable insights they can learn from each other” (Wenger et al., 2002, p. 71). Smith (2003) posits that many aspects underpinning CoPs have, informally, been part of education systems for an extended period of time. Lave and Wenger’s theory does not, however, transfer unproblematically to formal, institutionalised education (Adler, 1998). Adler suggests that sociocultural theory offers a way of integrating pedagogy and social practice theory by bridging the gap between the bounded discourses found in education establishments with Lave and Wenger’s “notions of access to a practice through the transparency of its resources” (1998, p. 162).
To differentiate between what purists believe to be CoPs and what is gradually gaining acceptance as an alternative CoP (i.e. a group that is set up rather than forming naturally, but with the intention of learning collaboratively and creatively) the term Community of Learning (CoL) (Mentis, Ryba, & Annan, 2001) will be used in this paper. A CoL can be online, face-to-face, or use blends of communication to achieve common goals, pursue shared interests, foster positive interdependence and make “progress through socially shared cognitions” (Mentis et al., 2001, p. 2).

**Design of the ICTELT interventions: Description and rationale**

Having identified broad problems with the ENGL070 writing curriculum, it was necessary to distinguish components of the writing curriculum that could be adapted and augmented. In consultation with the four instructors who were teaching the quasi-experimental and control groups, sociocultural theory was used as the underpinning pedagogical philosophy for the design of four interventions based around existing resources pertaining to advantage/disadvantage and compare/contrast essays. Key aspects of sociocultural theory (adapted from Vygotsky, 1986) were discussed in relation to design decisions, thus identifying the need to:

- develop resources likely to encourage creative ‘innovative’ participation (Lave & Wenger, 1991);
- ensure learners’ contributions were valued and shared (Wenger et al., 2002);
- encourage reflection / integration of ‘new’ ideas through collective experiences (Taylor, 2002);
- provide meaningful, authentic tasks, resources and sessions (Wenger, 1998), which enable more advanced peers / teacher to provide guidance;
- utilise topics identified as interesting (Harrison, 2007);
- assist construction of knowledge through guided discovery and active engagement;
- develop scaffolding tools / sessions that accommodate students' learning preferences;
- use models, examples, frameworks, and step-by-step demonstrations to develop thinking skills (Passey, 1999); and
- use activities requiring high-level skills (Murchú & Muirhead, 2005) that assist cumulative, self-regulated and goal-focussed learning, and a move toward greater competence and self-direction.

ICT tools were selected to offer the greatest potential for realising the factors listed above, as well as being readily available. A blended learning approach, utilising blogs (www.blogger.com), MSN instant messenger (http://webmessenger.msn.com), and tools provided in WebCT, as well as face-to-face sessions, was implemented. The topics – driving and laptops - were selected by students in a pre-study survey. Ultimately interventions were designed to encourage students to adopt a recursive, less linear writing process that emphasised the dynamic interplay of skills, knowledge, and revision, within a CoL (Murray, 1993). A simple model of the intervention sessions can be seen in Figure 1.

**WebCT**

A course entitled *Improve your Writing and Vocabulary in Foundations* was built for the study to provide participants a shared repertoire of communal resources (Wenger, 2001). For example, “How to videos” were used to take students step-by-step through structuring advantages/disadvantages and compare/contrast essays; these could be downloaded by students onto their laptops or IPods to watch/listen/read, discuss and review, at times and in places of their own choosing.

**MSN IM**

In a pre-study survey, 14% of students indicated that they found it difficult to formulate ideas, 14% felt that it was difficult to find evidence to support opinions, and 18% found it challenging to form their own opinions. Because of the benefits of synchronous communication discussed above as well as the high status of ‘chat’ among DMC students, it was decided to use MSN IM-ing to brainstorm ideas as the initial step to writing an essay, especially as chat history could easily be saved, retrieved, collated, and the ideas made available in WebCT. However, unless awareness is raised of the reason for a chat task, alongside a clear model and guidelines, chat sessions can rapidly disintegrate. As such, a video was made showing a chat session that is initially informal, and then models the type of interchange desired. After watching excerpts of the video, the whole class discussed possible educational benefits of IM.
Figure 1: Simple model for ICTELT writing and vocabulary proficiency intervention sessions

Vocabulary

Relevant vocabulary was identified and the quasi-experimental groups were explicitly encouraged to learn it using a range of approaches, including Smartboard activities, which students could save onto their laptops and refer to again later, particularly during the writing process. A vocabulary pre-test was administered online using WebCT in the first intervention session, and students were advised that they would repeat the test at a later date. The pre-test was also administered to control group students who had received no explicit instruction. Post-tests were administered to all four groups, and this was followed by a retention test of all the items (see Figure 2).

Blog postings

Blogs were set up by every student in the quasi-experimental groups using peer-support and videos to assist the process. Example self-reflective example postings were made available and discussed as a group to introduce the notion of self-reflective practice and the reasons behind it. Blog postings and comments were made after each of the intervention sessions (see Figure 2). Even though blogs have been shown to have the capacity to improve written literacy, the decision was made to ask students to use the blogs only for self-reflection and feedback, partly to clarify the purpose and also to reassure students that the accuracy of their writing was not the focus of this activity.

Discussion board

Olsen (1994) places literacy in a context firmly rooted within cultural and social frameworks where the process of writing is not a solitary act (as claimed by Ong, 1983) but one that involves “interactions between people, contexts and texts” (Murray, 1993, p. 100). Therefore, the discussion board in WebCT was used to host tasks (see Figure 2) designed to activate and utilise the dynamics of the CoLs, as well as “stimulate real [written and spoken] communication in the target language” (Willis, 1996, p. 1). Initially students, as a class, deconstructed an essay rubric and discussed the conventions for the essay genre,
initiated by accessing models (in the form of videos). Two students working on one laptop computer then collaboratively composed a draft essay that was posted to the discussion board, and then reflected and revised. The final step involved pairs using a marking rubric and feedback categories (which had been discussed and modelled) to grade and give feedback to another pair's essay.

The research study

Existing research into tertiary level writing is sometimes dated and often not generalisable to the specific circumstances found at DMC. As such, it was proposed that a study be conducted in Higher Diploma Foundations (HDF) which would document the effectiveness of ICTELT framed within a CoL. Two of the research formulated were:

i. Do students improve their writing proficiency while they are using ICT enhanced learning within a blended learning environment?
ii. Does ICT enhanced learning used within a blended learning environment increase vocabulary acquisition?

Participants and procedures

Participants comprised four HDF sections (n=74 students) and four instructors. As the study was conducted in Semester two of the academic 2006-2007 year, the students were already members of established, CoLs (Seliger & Shohamy, 1989), so there was no opportunity for random sampling. The sections were selected from fifteen others to include a representative cross-section of the students in HDF. Students were all first year, and approximately the same entry level according to their Common English Proficiency Assessment (CEPA) scores. Two of the sections were designated as control groups (n=39) and two as the quasi-experimental (quasi- because participants could not be randomly assigned) groups (n=35). This approach was chosen to enable some level of comparison of effect (Burns, 2000). The researcher conducted four interventions as part of the quasi-experimental groups’ timetabled ENGL 070 sessions to help ensure consistency and remove the effect of having different instructors. A regular time and day (Tuesdays at 8am for quasi-experimental group 1, and Wednesdays at 11am for quasi-experimental group 2) was set thus controlling this moderator variable. The two control group classes were not actively encouraged to access resources outside of those provided by their class teacher.

Data collection

Evaluation of the effectiveness of the design and implementation was gathered through a range of methods and research tools to create rich data, including observations, surveys, interviews, quizzes, exams, associated documentation, reflective blog postings, and discussion board postings.

Results

The full body of data that has been collected, collated, analysed and interpreted is substantial. Reported below are only key aspects of this data.

CoL

Based on data from observations, interviews, questionnaires, and blog postings it can be stated that that the existing CoLs within which the interventions were implemented had a positive effect on the way learners and teachers interacted with, and through, the ICTELT resources. Peer support, lively discussion, and consultation about problems were commonplace and encouraged a sense of enjoyment and comfort. For example, one student commented in his blog posting [sic - from the original] “its funny when Arguing with a friend about the topic...but stell the new ideas i got from my partner is useful and its new create way to learn”. It is not, however, possible to state that ICTELT resources used within a CoL had a direct effect on increased vocabulary acquisition or academic writing proficiency. The roles the learners and instructors took within a CoL system though can be defined as supportive, active and pro-active.

Writing proficiency

During the collaborative discussion board activities students were motivated by peers reading their work and several voluntary revisions were completed. Furthermore, observations revealed that pairing students resulted in risk-taking, the sharing of alternative learning strategies and skills, and the fostering of positive interdependence. Peer grading and feedback initiated discussion about how to grade and give formative feedback. Reflection on the differences between their own and peers’ essays also encouraged dialogue. There was some evidence of short-term writing proficiency gains, but when students were given
Figure 2: Timing and outline of interventions

the same essays to write individually in-class only 75.4% recycled target vocabulary (more than four target words per essay), illustrated a developed awareness of genre, and exhibited improved writing accuracy. In essays written under exam conditions during the period of the intervention sessions, control group one improved their writing grades by a mean band score of 0.28, group two decreased by 0.14, quasi-experimental group one increased by 0.08, and group two by 0.24. Therefore, based on these statistics alone, it appears that the ICTELT blended mlearning intervention sessions had no direct effect on writing proficiency. This could be for several reasons, the main one being the time factor, as it is likely, given the level of engagement, the increased quantity of writing, and the improvement in motivation to write, greater improvement would be seen over a more extended period of time with a larger number of intervention sessions.

Vocabulary
The pre- and post-test mean scores for the laptop vocabulary revealed that although control group one’s mean was high in the pre-test, comparative gains for the quasiexperimental groups in the post-test exhibited a significant increase while there was a decrease in average mean scores for the control groups. In the second pre-test both control groups scored lower than the quasiexperimental groups and showed a significantly lower mean in the post-test. In contrast, the quasiexperimental groups showed a significant increase in mean scores. The comparison of the two post-test means for each group with the retention test means for each group shows that quasi-experimental group one increased mean gains by 0.15, and group two decreased by 0.13, whereas control group one decreased gains by 2.65, and group two increased gains by 1.52. Several factors need to be considered when considering these results. The control groups did not receive any explicit instruction for the laptop and on-road/off-road driving vocabulary, nor did they have as many opportunities to recycle, review and produce the target vocabulary in meaningful contexts. Students and instructors regarded the tests as time-consuming, repetitive, and saw little value in completing them. The control groups’ relatively high pre-test mean scores for the laptop vocabulary could
be attributed to higher frequency of familiarity as all HDF students have laptops. Whereas, the on-road/off-road driving vocabulary was “more difficult...they had the technical vocabulary in Arabic, but they didn’t know the word in English”.

In conclusion, it can be stated that explicit vocabulary instruction, when combined with opportunities for learners to recycle, revise, and produce for a reason is effective. It is not, however, possible to state that the ICTELT blended approach had a direct effect on increased vocabulary acquisition. One instructor observed, though that “some aspects of vocabulary acquisition such as recycling, the need for repeated recall, and systematic organisation and storage are well-suited to technological methods”.

**Attitudes to ICTELT**

A post-study survey and interview was administered to the four instructors who participated in the study. When asked if technology enhances the writing proficiency of students at DMC 75% agreed, and 25% strongly agreed. Open-ended comments were informative. Control group instructors felt that technology should be “used in moderation, otherwise it’s a distraction”. Comments from the instructors of the quasi-experimental groups were enthusiastic, remarking that the sessions were “very enjoyable for me and the students”, and “fit in with the curriculum”. In addition, it was noted that glitches with technology appeared to be handled easily by students. A post-study survey was also responded to by thirty-two students from the quasi-experimental and control groups. When asked if they felt that technology enhanced their learning 91% either agreed or strongly agreed, supporting the impression that education technology has a high status with students. Some students did, however, express concern that technology could be a distraction.

**Recommendations**

The next section makes recommendations (see Table 1) drawn from the experience of implementing the interventions as well as from the findings of the research study. The recommendations could be used for the design and implementation of other ICTELT programmes, especially those for ESL students.

**Table 1: Guidelines for design and implementation of ICTELT resources**

| Participants | - Define roles, including responsibilities / interdependencies (e.g. instructors, subgroups, group leaders, facilitators, individual learners)  
| - Provide groups / individuals with online spaces for collaborative / group work  
| - Organise mentor / buddy system  
| - Encourage individuality / identity through creation of personal spaces |
| Processes & resources | - Establish etiquette (e.g. for chat, & peer review / feedback)  
| - Identify participants with relevant ICT knowledge or skills  
| - Focus on process rather than end product  
| - Promote participation, dialogue, advice & feedback, not just observation  
| - Ensure authentic, logical reasons for participants to work collaboratively (especially around / through ICT tools)  
| - Offer clear, timely instruction / facilitation to assist risk-taking & reduce frustration  
| - Provide activities that generate ideas that can be collated & shared  
| - Design tasks that are authentic, motivational, challenging but achievable, & which require reflection  
| - Ensure suitable level of support is provided by actively scaffolding students  
| - Include opportunities for choice  
| - Encourage use of CMC to form networks, & initiate informal communication  
| - Use models, & share examples of quality writing along with meta tasks that help learners recognise & apply the concepts being modelled  
| - Provide students with support & training to help them become more self-directed  
| - Encourage revision for authentic reasons such as outside audience / ‘publication’  
| - Structure tasks in a step-by-step format |
| Technology | - Select user-friendly ICT tools  
| - Use an LMS to host course / assessment requirement, & key dates  
| - Combine novel & familiar (e.g. include movies/vodcasts in writing sessions)  
| - Use graphics, screen shots, diagrams, illustrations, process models  
| - Design tasks that use CMC & face-to-face interactions + immediate feedback  
| - Have a plan ‘B’ for technology glitches |
Conclusion

The improvement of writing proficiency and vocabulary acquisition is complicated by the complexity of learning a second language, as well as by factors such as culture, academic conventions, and education background. The research study findings discussed above suggest that quasi-experimental participants' cultural and individual needs for learning were largely met, and students were definitely motivated to use the ICTELT resources within the framework of their existing CoL. Students were empowered to select tools and support as required, and the instructor was freed up to answer questions and give guidance when required. The technology in itself, however, did not improve communication, learning skills, writing proficiency or vocabulary acquisition. Rather it offered a catalyst for creative opportunities and the enhancement of collective learning experiences (Warschauer, 1996). Careful and meaningful integration is required, along with professional development and incentives for instructors (Simic, 1994). Furthermore considerable time investment is needed to plan and develop the highly scaffolded blended learning resources that can provide the support required by learners who have previously been educated in a teacher-centered environment. It is through initiatives such as those described in this study, that students are more likely to be more effective in their immediate programme of study, as well as gaining skills that help them become 'anytime, any place' lifelong learners.

There are relatively few studies that attempt to provide empirical evidence of the effectiveness of ICTELT initiatives within CoLs as an enhancement to writing proficiency (Kramsch et al., 2000), especially with Gulf learners. Additional research will be required to provide empirical support as to whether sustained participation in ICTELT blended learning interventions actually does improve writing proficiency. The data from this study, nevertheless, appear positive, are informative, and can be used to inform future studies.

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