Computer Assisted Language Learning

Innovation in language support: The provision of technology in self-access

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Innovation in Language Support: The provision of technology in self-access

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Self-access centres are sometimes portrayed as being at the forefront of pedagogical innovation. They are also said to be technology-rich language learning environments. In practice, however, the application of technology in a self-access environment has proven to be a challenge. This article focuses on 10 self-access centres that were found to be the most intensive users of technology out of a total of 45 centres investigated worldwide. The article describes the range of technologies used by these centres and the types of administrative procedures and student learning supported. It also compares these centres with the other 35 in the study to identify how they differ in the way they make use of technology.

Introduction

Self-access centres are sometimes portrayed as being at the forefront of pedagogical innovation. They are also said to be technology-rich language learning environments (Gardner & Miller, 1999). In practice, however, the application of technology in a self-access environment has proven to be a challenge (Lázaro & Reinders, forthcoming). This article focuses on 10 self-access centres that were found to be the most intensive providers of technology out of a total of 45 centres investigated worldwide. The article describes the range of technologies provided by these centres and the types of administrative procedures and student learning supported. It also compares these centres with the other 35 in the study to identify how they differ in the way they make use of technology.

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Background

Although self-access centres (SAC) are said to be technology-rich environments (Gardner & Miller, 1999), few previous studies into the provision of technology in self-access exist. The only comprehensive study that has looked at the provision of technology across multiple centres and made comparisons between them was conducted by the authors. In that study (Reinders & Lázaro, forthcoming) have shown that SACs differ greatly in the extent to which they make technology available. It was found that centres generally use technology only to provide a limited range of support such as to offer language learning materials (100% of centres investigated), for communication purposes (such as language advising via email or communication related to administrative procedures: 74%), and electronic catalogues (70%). Other types of support were infrequently provided through technology. Also the range of technological tools used to provide these types of support was limited (language learning software was used by 97% of centres, email by 77%, internet resources by 73%, but other tools such as chat and discussion boards were used rarely). The results thus showed that the range of pedagogic applications of technology in self-access was, in general, limited.

Because of the fact that there is only one known study of its kind, it is difficult to draw conclusions about the potential of technology for self-access. It is possible that a small number of centres make greater use of technology to offer a wider range of support and use a greater number of tools to do so. Such centres could act as forerunners for other centres and lead by example in the implementation of technology for the provision of self-access support. In the previous study there was some indication that a number of centres were more advanced in this respect than others. This paper attempts to establish if there is indeed a difference between the ''average'' self-access centre and a smaller group of leading centres. If so, it will establish how intensively and for what purposes technology is provided by them and make comparisons with the other centres in the study.

Innovation in the Use of Technology in Self-access

Innovation has been discussed by De Lano, Riley and Crookes (1994) as being an ill-defined concept. They consider innovation as (a) change, (b) development, (c) improvement, or (d) novelty and highlight some of the problems with each. They quote Rich as saying ''Although there could be no innovation without change, most changes are not innovation'' (1981, p. 145). The term development also does not find favour as mostly this refers to curriculum development, which in practice largely relies on the incorporation of new materials without a rethinking of the tenets of the programme itself. Although the authors recognise improvement as the implicit goal of innovation, this requires a full understanding of the current situation first. Novelty or newness is unsatisfactory as a term because it depends on what is new for each person. ''We would prefer to see the experience or position of the field as the benchmark against which newness should be judged.'' (1981, p. 489). This is the

approach taken in this study. In a previous study (Lázaro & Reinders, 2006) the authors have developed an evaluative framework to enable comparisons between centres in their provision of technology and which can be used for benchmarking purposes. In this paper innovation was recognised by:

1. investigating the current use of technology in a large sample of SACs using the evaluative framework;
2. identifying the most intensive providers of technology; and
3. conducting a quantitative investigation of the range of support offered.

As mentioned above, most studies into the use of technology in self-access describe individual developments at one institution. An exception is a report by Caballero Rodríguez and Ruiz Madrid (2006) on a Multimedia System of Interactive Autonomous Language Learning (SMAIL), developed by and implemented at a consortium of tertiary institutions, that aims to promote learner autonomy. It analyses students' learning profiles through a range of tests (to determine whether a student has a preference, for example, for active vs. reflective, emotional vs. rational, synthetic vs. analytical, visual vs. verbal, inductive vs. deductive, cooperative vs. individualistic, or field-dependant vs. field-independent learning) and a learning styles test that mediates the students' access to the materials and activities. An important objective of developing a learning profile is to encourage self-reflection on the part of the students and on their preferred ways of learning. Completing the profile gives students access to a range of learning materials and activities that together form different pathways, in tune with the student's preferences. The computer prompts students to set learning objectives and plan their learning, encourages strategic learning, and gives opportunities for self-assessment.

Brammerts (2001) and Lázaro Torres (2006) report on different e-tandem projects that aim to foster autonomous learning in a self-access context. E-tandem is based on the same principles of reciprocity and autonomy as traditional tandem learning (Brammerts, 2001; Little, 2001). Technology has greatly facilitated the possibilities for tandem learning and has opened up opportunities for new ways of collaboration and exchange, not previously possible. The different projects use mainly e-mail, although chat and telephone are offered as alternative ways for communicating with the language partner. The learning process is guided by teachers and learning advisers. Despite the fact that learner diaries are used in most of the projects, the use of e-portfolios or blogs was not reported.

Reinders (2007) reports on another project that fosters autonomy through an Electronic Learning Environment, which enables the students to analyse their learning needs and goals, to keep a record of their learning and to reflect on their ongoing learning process. This application monitors learners' activity in the system and sends prompts as it notices any mismatch between learners' goals and their use of the resources. For example, if after completing a needs analysis students find that a certain skill is their first priority (say ''listening to lectures'') and they then use mainly resources that help with another skill (e.g. grammar), then the computer will alert the

student and encourage them to rethink their approach. Similarly, when a student sets a certain goal level to be achieved by a certain date and the student's level does not go up fast enough, the computer will warn the student and suggest they spend more time on the skill in question.

Toogood, Pemberton, Ho, & Jones (2004) discuss the SASSAD (Self-Access Support System and Database for English language learning) that offers an online catalogue system that students can use to better understand their learning needs and find the types of materials that they require. In addition, SASSAD recommends strategies and types of language tasks. The authors also report on an online programme called VELA (the Virtual English Language Adviser) that guides learners in analysing their specific language-learning problems and goals, and that recommends a tailored learning plan for each student based on their interaction with the programme. It does this by taking students through six steps: (1) selection of language skills and relevant interests; (2) identification of language learning problems; (3) clarification of the cause of these problems; (4) selection of appropriate strategies according to the FTG (Focused, Transfer, General) model (see Toogood & Pemberton, 2006); (5) materials selection according to the FTG model; and (6) learning plan recommendation.

These studies describe innovative approaches (in one or more of its meanings as discussed by De Lano *et al.* (1994) to providing language support through technology. Next we will describe our study into the provision of technology and its different pedagogic applications in a number of self-access centres around the world.

The Study

The purpose of this study is to investigate the provision of technology in one specific type of learning environment, namely that of self-access. We were particularly interested in the types of language learning support offered through technology, as we feel that (differences in) pedagogical applications of technology reveal their true innovative potential and make the use of technology worthwhile. As part of the study we first identified the most comprehensive providers of technology and then looked at the range of pedagogical applications for that technology, and the types of tools used to implement them. Next, we drew comparisons with other centres and identified differences. Below, we describe the methodology of the study in detail.

Instruments

This study builds on an evaluative framework developed previously by the authors (Reinders & Lázaro, forthcoming) and used to establish the level of technology use in self-access. The evaluative framework consists of two parts. The first part records the types of support that are offered through technology in a given SAC (see Table 1).

The category *practical support* includes (1) an electronic catalogue which gives access to resources. This is a key feature in self-access as the materials form the basis

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Table 1. Types of support

Practical support	Learning support
Electronic catalogue	Language learning materials
Direct (electronic) access to resources	Learning activities
Communication tools	Computer-mediated language advice
Administrative support	Needs analysis tools
Evaluation processes	Learning process planning tools
	Learner training
	Learning process monitoring tools
	Assessment

of students' self-directed learning. In order to facilitate access to resources, many centres develop specialised catalogues that allow searching by level, language skill and sub skill (e.g. ''writing'' or ''writing expository essays''), topic, etc. Many also give (2) direct electronic access to resources (usually through the catalogue) and (3) communication tools allow communication between language advisor and learners, and learners among themselves through synchronous and asynchronous communication tools such as e-mail, chat facilities, and discussion forums. Communication can serve both administrative and pedagogical purposes. The latter is classified in the framework under ''learning support''. (4) Administrative support refers to the technology used for administrative purposes, and (5) evaluation processes include evaluation for research purposes as well as the recording of student use of the centre (facilities, support services, activities and materials).

The category *learning support* includes any intervention in the students' learning process. The difference between practical and learning support is crucial within this evaluative framework as it allows the classification of pedagogical uses of technology. Learning support includes the following components: (1) language learning materials, (2) language learning activities, and (3) computer-mediated language advice. Many SACs offer a so-called language advisory service. This type of service involves one or more meetings between an advisor and a student to help identify learning needs, plan learning, monitor progress and give advice, model strategies and offer encouragement (cf. Mozzon-McPherson & Vismans, 2001). In an increasing number of cases this type of support is offered online or within a Learning Management System (LMS). (4) Needs analysis tools and (5) learning process planning, including tools for determining priorities, for allocating time to each priority, for setting goals and sub goals, etc. Normally this planning process takes place in an integrated module as part of the needs analysis process. (6) Learner training: technology is used in different ways to support or encourage students in developing their learning skills and to engage in metacognitive processes. This can be done, for example, through providing information about learning strategies or by annualising learner styles and learning patterns within the self-access centre. (7) Learning process monitoring tools: self-access centres regularly monitor *how* students

learn. For example, how do students select tasks and how do these relate to their learning needs? How often do they make use of the centre and what materials do they use for what purpose? The use of databases of students' learning activity can be helpful in determining when students may need additional guidance. This is now sometimes done through e-portfolios, which allow learners to reflect on their own learning. (8) Assessment: self-access centres attempt to measure both learning *outcomes* as well as to measure changes in how students approach the learning *process*.

On the surface there appears to be some overlap between these two sections (practical and learning support). For example, ''evaluation processes'' and ''learning process monitoring tools'' appear to be similar. The difference is in the focus. Where evaluation processes involve for example recording page visits for the purpose of evaluating the system and procedures in place, monitoring involves tracking learning progress in relation to a (student- or advisor-generated) learning plan or other outcome. Similarly ''communication tools'' support processes such as making bookings or sending out announcements, whereas ''learning activities'' involve pedagogical activities the students engage in for the immediate purpose of learning something.

The second part of the framework (Table 2) records the types of tools used for providing the practical and pedagogical support discussed above. This allows differentiation between (practical or learning-related) functions and the tools with which they are implemented.

Every tool can be used to provide different types of support; for example, email could be used for language advising as well as for monitoring learning progress. Most tools are self-explanatory. Online courses are types of courses normally embedded in LMS that integrate a wide range of electronic tools. *Electronic materials* is a category of resources that do not reside on the Internet. An electronic portfolio is a repository

Table 2. Types of tools used

Tools
E-mail
Chat
Discussion boards/forums
E-mail lists
Online courses
Internet resources
Electronic materials
Software (produced commercially or in-house)
Electronic tests
Electronic portfolio
Activity report
Students notes
LMS
Electronic questionnaires
Online booking system

where students can record reflections on the learning process. An activity report either automatically records or allows students to record materials used, activities completed, etc. Students' notes are a type of student record; for example, for newly learned vocabulary. LMS was included as a tool because some SACs offer a custom-made learning environment designed to support student learning. Activities, materials and help are usually provided through this environment. An online booking system allows the booking of language learning resources and support services such as advisory sessions or workshops.

Participants

The framework was used to quantify the use of technology by a total of 45 centres in 5 countries (Germany, Hong Kong, New Zealand, Spain and Switzerland). The centres were visited and the managers interviewed on the key aspects of the functioning of these centres, their strengths, weaknesses, opportunities and threats. Data collection took place on four separate occasions. For selection of the centres in Germany and Switzerland convenience sampling was used (Manheim, 1977). The study in Hong Kong focused on tertiary-level institutions, whereas in New Zealand both centres operating at the tertiary level and those providing adult education were visited. In Spain centres were selected based on their reputation, as determined by the literature.

SAC managers were contacted by email or telephone and the purpose of the study was explained to them. Out of a total of 46 centres, 45 agreed to participate in the study. The interviews were done with the managers in most cases, although other staff were sometimes also present. In a small number of cases the manager was not available and the interview was conducted with the most senior staff member available.

Procedures

Initially, information about each centre was obtained through publicly available source such as the centres' websites and research published by them. Managers were sent a copy of the interview questions before the actual meeting took place. Subsequently a visit to the centre took place where the researchers were shown around the facilities and then met with the manager for the interview. These lasted from one to two hours each, depending largely on the quantity and complexity of the learning support systems offered. In a number of cases follow-up questions were sent to the manager via email, to verify some of the comments made during the interview.

Analysis

The interviews were transcribed for content. The authors then applied the evaluative framework they had developed earlier to the data to determine (1) the range of support types offered, and (2) the number of tools used to provide that support.

Both researchers conducted this analysis independently and then compared their results in order to resolve potential interrater variability. In all cases there was agreement about the results. The 10 most intensive users of technology were then selected to be investigated further by comparing their results with those for the other centres in the study. This selection was based on a comparison of the number of types of support offered by the centres and not on the number of technological tools used to offer that support. However, it is worth pointing out that in 9 out of 10 cases, a greater number of support types offered went hand-in-hand with the use of more tools.

Results

Table 3 shows the range of support offered by 45 SACs in five countries. The 10 centres offering the greatest number of types of support are highlighted.

Fewer than one in four of the 45 centres offer more than six types of support. The majority of the centres (35 out of 45) only provide between one and six types of support and 13 only provide one or two types of support. The provision of technology to provide different types of practical and learning support is clearly limited in most centres. Table 4 shows the types of tools used by the centres.

The same observations as made in relation to the types of support offered apply to the types of tools used. Only 4 centres out of 45 use more than seven tools and the majority (30) only between one and four. When we compared the number of tools used by the 10 centres referred to above that offer the widest range of support, we found there was an overlap in all but one case; the offering of more types of support appears to go hand-in-hand with the use of a wider range of tools.

It is interesting to analyse what *types* of support are offered by the both the 10 "intensive users" and by the other 35 centres in the study. Table 5 shows these results, rounded off to the nearest full number.

Table 3. Types of support offered, $n = 45$

Number of types of support offered in each centre	$n = 45$
1	5
2	8
3	6
4	4
5	7
6	5
7	**2**
8	**2**
9	**1**
10	**1**
11	**1**
12	**2**
13	**1**

Table 4. Types of tools used, $n = 45$

Number of types of tools used per centre	$n = 45$
1	5
2	5
3	11
4	9
5	4
6	3
7	4
8	2
9	1
10	0
11	0
12	0
13	1

Table 5. Types of support offered

Practical support	$n = 10$	(%)	$n = 35$	(%)
Electronic catalogue	10	100	22	63
Communication	10	100	5	14
Direct (electronic) access to resources	8	80	24	69
Evaluation processes	8	80	1	3
Administrative support	2	20	6	17
Learning support				
Language learning materials	10	100	35	100
Computer-mediated language advice	8	80	8	29
Needs analysis	8	80	8	29
Monitoring the learning process	8	80	5	14
Learning activities	7	70	0	0
Planning the learning process	7	70	2	6
Learner training	5	50	1	3
Assessment	5	50	3	9

The 10 centres in the left-hand column together cover all types of support, but not equally. Administrative support for example is only provided by two centres and learner training and assessment are only provided by half of the centres. Also of note is that the ten centres provide both practical and learning support in fairly equal measures (68% of practical support on average and 73% of learning support). With the exception of administrative support all types of support are provided by at least half of the centres.

When we compare this with the results for the other 35 centres, the picture is rather different. Every category of both practical and learning support is offered by considerably fewer centres than by the intensive users. Only one of the types of support (language learning materials) is provided by more than 70% of all centres, compared with 10 of the 13 types of support for the intensive users. The 35 centres only offer three of the 13 types of support in more than 30% of cases. There are some striking differences between the two groups especially in the use of evaluation processes (80% versus 3%) and the offering of learning activities (70% versus 0%). The only categories where both groups offer support at somewhat comparable levels are language learning materials, direct access to resources, electronic catalogue, and administrative support. These results confirm the one of the findings by Reinders and Lázaro (2006) that the use of technology in SACs is generally limited to providing an alternative way of delivering learning materials, and that the full potential range of applications of technology is not realised.

As for the use of different tools, the range is fairly limited, even by the intensive users. Only 5 out of a total of 15 tool types are used by a majority of the 10 centres. Predictably, email, Internet and software are the most commonly provided tools but portfolios, learning management systems, and even chat are provided infrequently. Discussion groups and mailing lists are only provided by one of the centres (see Table 6).

When we compare this with the results for the other 35 centres, we find that they provide all tools even less frequently than the intensive users. Only three tools are provided by more than 40% of centres, as opposed to seven by the intensive users. In some cases there are big differences in the use of a certain tool; for example, the use of an LMS (40% versus 0%), or activity reports (80% versus 11%).

Table 6. Types of tools used

Tools	$n = 10$	(%)	$n = 35$	(%)
Software (produced commercially or in-house)	10	100	34	97.14
Email	10	100	25	71.42
Internet resources	10	100	24	68.57
Electronic materials	9	90	12	34.28
Activity report	8	80	4	11.42
LMS	4	40	2	5.71
Electronic portfolio	4	40	0	0
Electronic questionnaires	3	30	3	8.57
Online courses	3	30	2	5.71
Electronic tests	2	20	5	14.28
Chat	2	20	2	5.71
Online booking system	2	20	1	2.85
Discussion boards/forums	1	10	1	2.85
Email lists	1	10	1	2.85
Students' notes	1	10	0	0

Discussion

The results of the study clearly show that the ten most intensive users of technology of the 45 do offer a wider range of support and use a larger number of tools than do the other centres. All but one of the different types of support in the evaluative framework were offered by at least half of the 10 centres whereas only 3 out of 13 types of support were offered by 30% or more of the other 35 centres. There is clearly a difference between the majority of centres and a smaller group of centres that draw on technology more widely.

The use of technology for some types of support, especially in the areas of assessment and learner training, however, is very limited across all centres. Assessment is a particularly challenging area in self-access, as is clear from previous literature (cf. Champagne *et al.*, 2001; Morrison, 1999). One of the reasons for this is that students often self-select their course of study, making it difficult to know, for example, what to assess. In addition, many students do not make use of self-access on a regular basis. Many ''dip in'' and out of the available support based on their needs and time available and staff often do not know if and when students will return (cf. Fu, 1999). This makes it difficult to select an appropriate time for assessment; a student may have just returned from several weeks of not studying at the centre. A major issue in assessing self-access learning is that learning gains cannot easily be attributed. Do learners improve because of their self-access work or because of individual differences (e.g. motivation, ability to learn independently) that made them engage in self-access work in the first place? Do learners improve only because of their self-access work or because of their interaction with the language outside the centre? Although this explains why assessment is not always carried out in self-access centres, technology could certainly potentially play a role in overcoming some of these difficulties, for example by assessing learners differently based on their pattern of use and the resources they have worked with. In practice this does not appear to happen. A practical reason for this may be that self-access learning is seldom credited by (see Reinders, forthcoming) and there is thus little incentive for self-access staff to find new ways of assessing learners.

Why learner training is not provided through technology more often is more difficult to explain. One of the key roles of self-access centres is to foster autonomous learning and certainly explicit training can be an important part of that. Although some of the centres described in the literature review have been able to develop approaches to training that suit an independent learning environment, in practice not many centres make use of the potential technology offers. Perhaps it is a result of the fact that in self-access there are no ''groups'' and often the range of learners' levels, backgrounds, interests, and needs is extremely large. This makes it difficult to offer suitable learner training. However, just as with assessment, technology could play a role for example by matching a learner's use of the resources and perhaps performance, with appropriate training materials. This is in fact, what is done in some of the centres in the literature review but is clearly not common practice. An important factor is a commonly reported lack of funding and specialised staff

for developing this type of training materials (Reinders, Anderson, & Jones-Parry, 2003).

The fact that administrative support is only offered by 2 of the 10 centres is surprising as more and more tertiary institutions are making use of learning management systems for managing classes, sending out course materials, and a range of other administrative purposes. Perhaps the less organised nature of self-access (there are no fixed groups, there is no set timetable, no curriculum, etc.) makes it more challenging to successfully make use of existing tools.

As for the use of different tools, it was found that centres that offer more types of support also use more tools to do so. None the less, also the 10 most intensive users of technology were limited in their range. Even widely available tools such as chat, discussion, and email lists were used very infrequently. This is surprising given the nature of SACs: with the irregular access by most students asynchronous tools such as discussion groups and lists can potentially perform a very useful function in creating a sense of continuity and in bringing students together. SACs are largely commensurate with principles of flexible learning and chat facilities could be used to make learning opportunities and support more widely accessible; however, this tool was used in only one centre. The effectiveness of such tools has been found to be dependent on their degree of structure and guidance (cf. Salmon, 2004). As structure and guidance are not two hallmarks of self-access this may explain why these tools are under-used.

Innovation, as defined by De Lano *et al.* (1994), requires a benchmark against which to measure individual self-access centres. This study has shown that a small number of centres do differ from others in their applications of technology and thus that they show signs of innovation, but it has also shown that compared against the framework used here, their full potential is not realised and innovation is limited. Although the value of SACs does not simply lie in quantitative measures such as the number of tools they use the above does raise questions about the purported ''technology heavy'' aspect of such centres. Although technology is not a prerequisite for offering high quality support and fostering autonomy, self-access is in some ways an unusual type of learning environment. It is very flexible, very much student-centred, and actively aims to form a bridge between formal learning and the students' personal lives (cf. Crabbe, 1993). The use of new technologies holds the promise of flexibility and accessibility but these do not seem to be widely tapped even by the 10 most intensive providers of technology of the 45 centres investigated worldwide.

There are some limitations to this study, however, that future research may be able to overcome. Firstly, although the study looked at the provision of technology, it did not look at its use by learners. Admittedly, the value of technology does not only lie in the range of support it attempts to offer but in what ways students actually draw on such support for their day-to-day learning. In that sense, studies such as those referred to in the literature review offer valuable insights. It would be worthwhile to investigate if students in the ten centres discussed in our study learn differently with the technology available than the students in the other 35 centres in the larger sample. Similarly, the study is limited in assessing ''innovation'' in the sense that to better

understand the components innovation has been suggested to be made up of (change, development, improvement and novelty), requires a broader investigation of the impact of technology on multiple aspects of the educational environment, perhaps over a longer period of time.

None the less, studies such as this one can help practitioners and developers take stock and realise the gaps in the support they offer to students. The main challenge seems to be a pedagogical one of finding meaningful uses for technology, not as a new tool for old tasks but as a means to implement new pedagogies. In this sense, this study has tried to show what pedagogical applications technology is currently provided for in self-access, and by showing where we are, a possible direction in which we may want to head.

Acknowledgements

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