



# A Phenomenographic Study to Identify Teachers' Experiences of Computer Assisted Language Learning Classrooms

メタデータ	言語: eng 出版者: 公開日: 2015-04-15 キーワード (Ja): キーワード (En): 作成者: Thomas, Simon メールアドレス: 所属:
URL	<a href="https://doi.org/10.24729/00006049">https://doi.org/10.24729/00006049</a>

# **A Phenomenographic Study to Identify Teachers' Experiences of Computer Assisted Language Learning Classrooms**

Simon Thomas

## **Abstract**

Language teaching and learning has been increasingly enhanced by specially equipped computer assisted language learning (CALL) facilities with the ability to provide students with a wider variety of learning experiences. Qualitative phenomenographic research carried out at a Japanese university revealed categories illustrating teachers' experiences of the advantages and disadvantages of CALL classrooms. The categories illustrate a recognized need for support for a developmental relationship that will allow and encourage a blend of training, instruction, assistance and knowledge exchange to be carried out by both the institution hosting the facilities, and also more experienced colleagues. The results of this exchange can influence a teacher's experience of CALL to evolve from being inhibited, to being enabled and enhancing language teaching, and students' learning experiences.

## **Introduction – Computer Assisted Language Learning**

Technological developments and advances in computer systems over the years have been similarly mirrored in the use of technology for language learning. As the quality of, and access to hardware, software and multi and hyper-media has increased so has its proliferation of use in education. Increasingly, networked computer facilities have become viewed as a method of enhancing the language learning experience and increasing numbers of institutions are funding the provision of these facilities, providing hardware technology, software, platforms, applications and language learning and management programs. The utilization of these facilities in language learning can be referred to by a number of different acronyms, as Beatty's (2003) comprehensive overview of terms and concepts illustrates. However, throughout this paper the generic term of CALL (computer assisted language learning) will be used.

Despite discussion on the efficacy of utilizing technology for language learning being on-going, institutions seem to place high importance on CALL because of the unique opportunities and advantages it provides for learning (Arnold, 2007). A widely accepted advantage of CALL is that students' language learning, practice and development is no longer tied to the limitations of the four-walled, enclosed classroom environment. The opportunities CALL can offer include networked

resources, authentic learning materials, and communication possibilities available on the Web and through software and applications that can lead to higher motivation, individualization of material selection and instruction, and interaction with technology, peers and other learners (Egbert & Hanson-Smith, 1999; Evelyn NG & Olivier, 1987; Kung, 2002; Lai & Kritsonis, 2006; Lee, 2000; Levy, 1997; Levy & Stockwell, 2006; Robertson, Ladewig, Strickland, & Boschung 1987; Taylor 1980; Taylor & Gitsaki, 2003; Warschauer, 1996). The emphasis in this paper though, is not on the learning opportunities that CALL can provide. Instead, it will focus on the CALL classroom environment and the experiences and perceptions of these facilities by the teachers that use them within one institution.

Despite the clear advantages CALL has over classrooms unequipped with networked computer facilities, CALL classrooms present teachers with new challenges. Chapelle (1990) and van Olphen (2003) describe how one of the key aspects to effectively integrating CALL and the hardware technology, software, platforms, applications and language learning and management programs that this includes, is ensuring that teachers understand how they can be used to enhance the learning process and offer effective instruction. To understand how effective CALL instruction can be achieved training in its application to language learning is crucial. This teacher training, learning and understanding can be provided by either the institution that selected the facilities, the designers of the software and programs that the facilities are equipped with, or other more experienced teachers. However, Egbert, Paulus and Nakamichi (2002), Kessler (2007), Levy and Stockwell (2006) all maintain that inexperienced teachers are more likely to turn to more experienced teachers in the same institution for guidance and an understanding of how CALL facilities can be effectively integrated into teaching and learning, rather than to other sources of assistance. Experienced teachers are more likely to be able to provide practical and local knowledge, which can be invaluable, relevant and highly applicable for a new CALL teacher and Levy attains that “*practical knowledge gained from experience needs to be put in a form where it can be shared and communicated*” (Levy, 1997: 221). An ideal situation for this to take place in is school-based workshop style technology training programs where well-trained and more experienced colleagues can help others (Jung, 2001).

### **Contextual Background**

Several years ago, the institute in which this study was undertaken invested in a number of fully equipped multi-media CALL classrooms, which provide each student with networked computer facilities for language learning. Since that time and prior to the start of each academic year, language teachers who will use these facilities are invited to a three-hour explanation session held by the CALL system technical support staff, who explain the technological use and capabilities of the operating system and facilities as laid out in the user instruction manual. No more training than this has ever been provided. Apart from this technical, operational explanation teachers have been left on

their own to understand, learn, apply and develop the workings and use of this technology and the software, platforms, applications and language learning and management programs to their teaching and to students' learning.

Informal conversations with several teachers who use, and have used these facilities in this institute over several years have often concerned the advantages and disadvantages of using CALL classrooms for teaching and learning. With this theme in mind, this paper will briefly illustrate literature on the advantages and disadvantages of CALL. This will be followed by a phenomenographic description and analysis of qualitative discussions with teachers who are using, and who have used CALL at this institute. The discussions that took place were centered around one research question. This was:

From your experience, what are the advantages and disadvantages of using CALL facilities for teaching and learning?







The results will illustrate the perceptions and experiences of these teachers gathered in discussion around this question in a relationship developing from CALL as a possible inhibiting factor, through teacher training and instruction, to CALL as an enhancer of language teaching and learning.

### **The Advantages and Disadvantages of CALL**


A review of the evolution of CALL, how it has been used, the various ways that it has been classified, and criticisms since its first documented use in the 1960s begins to shed light on the many advantages and disadvantages that it presents to both language teachers and learners. The following three significant classifications of use – Classification of Applications, Historical Classification, Model of Computer Use Classification - point to further reading. Many of the applications and classifications identified in these tables have high instances of overlap.

<u>Classification of Applications</u>	
Proposed & described by:	Davies & Higgins, 1985; Jones & Fortescue, 1987; Beatty, 2003; Desroches & Gentry, 2004; Jarvis, 2004.
Classification of Application:	Specific language learning software (including tutorials and drill-and-practice), simulations, asynchronous and synchronous computer-mediated-communication, specific and non-specific language learning websites, concordancing, authoring programs, word processors, text analysis tools, spelling and grammar checkers and dictionaries and thesauruses.

Criticisms:	A very loose descriptive classification that has steadily grown in size to encompass the many developments that have been made but it fails to group or bring order to the applications in any meaningful way.
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<u>Historical Classification</u>	
Proposed & described by:	Warschauer (1996); Warschauer & Healey (1998)
Classification:	<ul style="list-style-type: none"> <li>• Behavioristic CALL (which later changed to Structural CALL (Warschauer, 2000),</li> <li>• Communicative CALL, and</li> <li>• Integrative CALL</li> </ul>
Criticisms:	Bax (2003) highlights inconsistencies in the presentation of dates, labeling and unclear criteria categorizing the phases and alignment with language teaching methodologies of the times.
<div>    </div>	
Re-Proposed & described by:	Bax (2003)
Classification:	<ul style="list-style-type: none"> <li>• Phase 1: Restricted CALL</li> <li>• Phase 2: Open CALL</li> <li>• Phase 3: Integrated CALL</li> </ul>
<div>    </div>	
Re-Proposed & described by:	Davies, Walker, Rendall & Hewer (2011)
Classification:	<ul style="list-style-type: none"> <li>• Dumb CALL,</li> <li>• Multimedia CALL, and</li> <li>• Web CALL</li> </ul>

<u>Model of Computer Use Classification</u>	
Proposed and described by:	Taylor (1980); Levy (1997)
Classification:	CALL systems undertake three roles in language learning:

	<ul style="list-style-type: none"> <li>• A Tutor,</li> <li>• A Stimulus, and</li> <li>• A Tool.</li> </ul>
	
Proposed and described by:	Evelyn & Oliver (1987)
Classification:	CALL as a provider of: <ul style="list-style-type: none"> <li>• Resources,</li> <li>• Remediation and Instruction and</li> <li>• Stimulation of discussion</li> </ul>

With greater understanding of the classifications and uses of CALL, as is presented in these tables, CALL hardware technology, software, platforms, applications and language learning and management programs can be viewed as “support for a total environment for learning rather than as a single tool or a source of information” (Egbert & Hanson-Smith, 1999: ix). Considering this interdependent relationship and overlap of functions, the advantages and disadvantages of CALL cannot solely be attributed to one specific use or classification. However, in order to present and bring some order to the list of advantages and disadvantages that literature presents, a brief description will be provided under the roles of CALL as a tutor, a stimulus and a tool, as suggested by Taylor (1980) and Levy (1997).

### **CALL as a Tutor – Advantages**

CALL, and all it encompasses, is viewed as able to supply students with individual, tailor-made learning needs, feedback and progress reports at numerous levels of multiple skills in multi-modal learning environments, adding the combination of media and face-to-face interaction (Levy & Stockwell, 2006; Taylor & Gitsaki, 2003). The Internet has made this independence and individualization available in online learning allowing anytime, anywhere flexibility (Lai & Kritsonis, 2006) creating a degree of learner autonomy (Levy, 1997). This can allow students to study at their own pace while also providing them immediate non-judgmental feedback and correction allowing instantaneous washback and learning to reinforce and strengthen linguistic skills, enhance achievement, learning attitude and motivation (Lee, 2000; Warschauer, 1996). CALL can also provide and enhance computer literacy skills (Usun, 2003) that are increasingly more valuable in the workplace.

### **CALL as a Tutor – Disadvantages**

The availability of the many tutoring tools accessible to teachers and students presents them with the logistical considerations of which tools to use, and what should be done at the computer and handled by the technology, and what should be done away from it, and by the teachers and students independent of the technology (Levy, 1997). Over reliance on, and over use of CALL can result in learner isolation from peers and the teacher. Similarly, the design of CALL classrooms can also contribute to isolation when students all working individually on identical activities sit at rows of desks designed for teacher convenience, while the teacher is remotely monitoring, isolated at a console at the front of the classroom. This is criticized as detracting from the communicative aspects of language learning, and in reaction Levy (1997) describes CALL as imperfect, stating multi-media learning programs can often be weak in pedagogy and interaction.

Similarly, while CALL often has an ability to monitor and assess reading, writing and listening skills through pre-programmed exercises with rigid parameters, it is unable to monitor and effectively assess language outside these parameters, particularly spoken language (Levy, 1997). In an ideal situation CALL should be able to understand spoken input, diagnosing problems with usage, syntax and pronunciation while evaluating it for correctness and appropriateness. However, its pre-programmed nature ensures it is unable to respond to unexpected learner responses to questions and intelligently provide solutions for improvement. This inability puts it further out of step with the communicative approach of teaching and learning; an issue that has been raised since the 1980s (Evelyn & Oliver, 1987; Levy, 1997; Warschauer, 2004). It also illustrates benefits for the spoken language instruction, interactional support and instantaneous reactive feedback and correction of output that teachers can provide (Egbert & Hanson-Smith, 1999).

### **CALL as a Stimulus – Advantages**

In comparison to a traditional language classroom CALL gives learners instant access to a plethora of written, audio and visual materials on the Internet, independence from a single language learning resource and access to a number of tools with which to produce the target language similarly in the written, aural/audio and visual forms. These forms are able to provide students access to, and opportunities for practice and experiential learning (Corbett & Rogers, 1985 as cited in Storer, 1989; Lee, 2000). Not only does this provide choice and interaction stimuli for learning (Taylor, 1980; Warschauer, 1996) but Robertson, Ladewig, Strickland and Boschung (1987) attest that this builds self confidence in learners as they learn to negotiate and build self-instruction strategies.

### **CALL as a Stimulus – Disadvantages**

The multi-media resources that are available in CALL present an expansive choice of materials that teachers can introduce to learners. Difficulty arises in choosing the appropriate resources or learning

program to suit students' language abilities and learning needs and interests. The choice of incorrect level or unsuitable resources can have detrimental effects on learning and motivations in the same way that the suitable materials can positively influence learning (Higgins, 1988). If unsuitable resources are coupled with the isolation that students in CALL classrooms can often experience, this can leave students unsure of how to act, proceed or communicate with peers or a teacher in order to resolve any problem, and can also mean that problems can go unnoticed by the teacher. Due to this, teachers need to possess both the knowledge of the available resources and programs, and receive training in how they can be introduced effectively into the classroom to provide maximum benefit to the learners (Arnold, 2007; Atkins & Vasu, 2000; Egbert, Paulus & Nakamichi, 2002; Jung, 2001; Kim, 2002; Lam, 2000; Smerdon et al., 2000; van Olphen, 2007).

### **CALL as a Tool – Advantages**

The resources and applications available in CALL are proposed by Lee (2000) to encourage greater asynchronous, synchronous, production and online and face-to-face interaction of content in written and spoken form influencing reading and listening skills. Students, their peers, teachers and also a virtually unlimited number of people who may be online at the same time (Levy & Stockwell, 2006) are able to communicate in both independent and collaborative learning environments (Kung, 2002), using what is now a wide range of programs and applications. This can come with minimal interaction from a teacher to influence the content and language used and can also be self-motivating to students (Lee, 2000; Warschauer, 1996).

### **CALL as a Tool – Disadvantages**

It is widely considered that there are a number of barriers to using CALL and technological tools for language learning (Davies et al., 2010; Higgins, 1988; Leh & Ogata, 2001; Levy, 1997; Levy & Stockwell, 2007; Roblyer, 2003). As previous points have shown, these also affect its use as a tutor and stimuli. The major barriers seem to be recognized as teachers' lack of familiarity and knowledge of the CALL capabilities and limitations, and also the low skill levels that teachers possess in being able to apply them to pedagogical theory and incorporate them appropriately into a curriculum to support learning, rather than rely on them to produce learning. Levy (1997), Higgins (1988) and Roblyer (2003) attest that most teachers do not receive sufficient training in the use of CALL. They are therefore unable to guide learners adequately and respond to problems and difficulties they might have when using CALL for language learning. Three reasons are given for this lack of training. These are the workload of teachers, the lack of available time, and also the inability to be supplied with suitable training (Leh & Ogata, 2001).

### **Methodology**

To investigate the advantages and disadvantages of CALL classrooms as experienced by teachers



within this institute, a discursive phenomenographical methodology was employed (Kelly, 2002). As a relational, qualitative, interpretivist methodology, phenomenography seeks to identify the aspects of variation in which people experience phenomena - in this case computer-assisted language learning classrooms (Trigwell, 2006). In this sense, phenomenography views experience as neither purely objective, and independent of people, nor subjective, and independent of the world (Mann, n.d.). As a second-order approach to research the phenomenographic researcher sets aside his/her own presumptions of the phenomenon in usually, and if possible, 10 to 30 unstructured interviews of between 30-60 minutes each that seek to explore the participants' experiences of the phenomenon in depth deriving from sub-questions obtained from responses and without pre-determined influence (Kelly, 2002; Larson & Holmström, 2007). Despite this lean towards the unstructured interview Sjöström & Owe Dahlgren (2002) and Trigwell (2006) state that interviews should be semi-structured to allow answers from specific questions to be more easily grouped and categorized. Ashworth and Lucas take the middle ground and suggest "*the most appropriate means of obtaining an account should be identified, allowing maximum freedom for the research participant to describe their experience*" (Ashworth and Lucas, 2000:300).

In phenomenographic research, data collected from interviews is sorted into categories of description that identify the particular ways that the participants as a group, and not as individuals, experience an aspect of the world and the logical relationships between these experiences (Hasselgren & Beach 1996; Trigwell, 2006). These categories of description are termed the outcome space. These spaces are often seen in a hierarchical relationship but Martin and Booth (1997, in Ashworth & Lucas, 2000:297) also refer to phenomenography as ascertaining structures of awareness. This suggests that categories may not always be hierarchical but may take other forms, such as linear or developmental relationships.

This methodology was chosen over others specifically because research findings will enable the identification of categories of description of difference in the research participants' experiences of the advantages and disadvantages of computer assisted language learning.

### **Data Collection**

Requests for interviews were sent out by email to five professors of English who use CALL classrooms. Follow-up emails over a three-week period and face-to-face meetings with three professors resulted in these three professors declining to take part. One professor issued a spoken statement for his declination in a recorded statement that was authorized for use in this research on the provision that it remained anonymous. Two professors failed to respond and could not be met face-to-face during this period. To investigate the possible reasons for this number of declinations and lack of responses one further professor was contacted, and a written statement authorized for

inclusion in this research was released.

Following these declinations, five part-time teachers using CALL classrooms to teach English agreed with the ethical considerations of the research and consented to take part in recorded interviews on the provision that they took place in between classes on particular days. These restrictions on the number of participants, location of the discussions and the amount of data that could be collected in the time available are recognized as limitations of this research. The data collection methods used were as follows.

	<u>Interviewees</u>	<u>Coding</u>	<u>Data Collection</u>	<u>Length of Interview</u>
1.	Professor	P1	Spoken Statement	N/A
2.	Professor	P2	Written Statement	N/A
3.	Native Japanese Teachers 1 & 2	J1 & J2	Mini Group Interview	25 Minutes
4.	Native Japanese Teacher 3	J3	One-to-One Interview	22 Minutes
5.	Native English Teacher 1	E1	One-to-One Interview	27 minutes
6.	Native English Teacher 2	E2	One-to-One Interview	25 minutes

One interview that took place involved two people. It is unknown whether interviews with two participants can be considered a mini-focus group as described by Gilbert (2008) and O’Leary (2010), or a legitimate data collection method in phenomenography and this is also recognized as a limitation within this research. In this situation however, the participants requested another person present and it was judged by the interviewer to have positive results in stimulating discussion and identifying themes.

Due to the time restrictions that were placed on the interviews by the participants unstructured interviews were selected over semi-structured interviews. This was so that participants were allowed the maximum freedom within the time to describe their experiences. The lead question that was asked to the research participants and that the unstructured interviews stemmed from was:

*“In your experience as a language teacher using a computer assisted language learning classroom and facilities, what are the advantages and disadvantages of CALL?”*

### **Analysis of Interview Data**

Bracketing the researcher's own assumptions and presuppositions as much as possible (Ashworth & Lucas, 2000) the interview transcripts were read and re-read in order to increase familiarization. Following this, significant elements of participants' answers were condensed and grouped into categories based on theme, thematic field and frequency after which they were compared to establish their borders, and then a contrastive comparison of categories was made (Sjöström & Owe Dahlgren, 2002). In an ideal situation several researchers are needed to verify validity of these categories through a consensus of discussion (Åkerlind, 2005). As a single researcher, this was not possible in this situation. However, transcriptions of the recorded interviews and discussions were made available to participants for review, along with the phenomenographical outcome space categories that were revealed through the research data. Participants approved both the transcripts and outcome space categories as being their own experiences and perceptions, and not influenced by the researcher or the response led questions used in the interviews. This increased the content validity of the research data and outcomes (Kelly, 2002).

### **Research Findings and Discussion**

The qualitative data collected in the research process revealed eleven key themes identifying the ways in which the group of teachers participating in this research experience computer assisted language learning classrooms. These themes were categorized together in four groups, three of which form a linear development relationship. These outcome spaces, or categories of description, and the logical relationship between these categories that emerged from the data are represented in Figure 1.

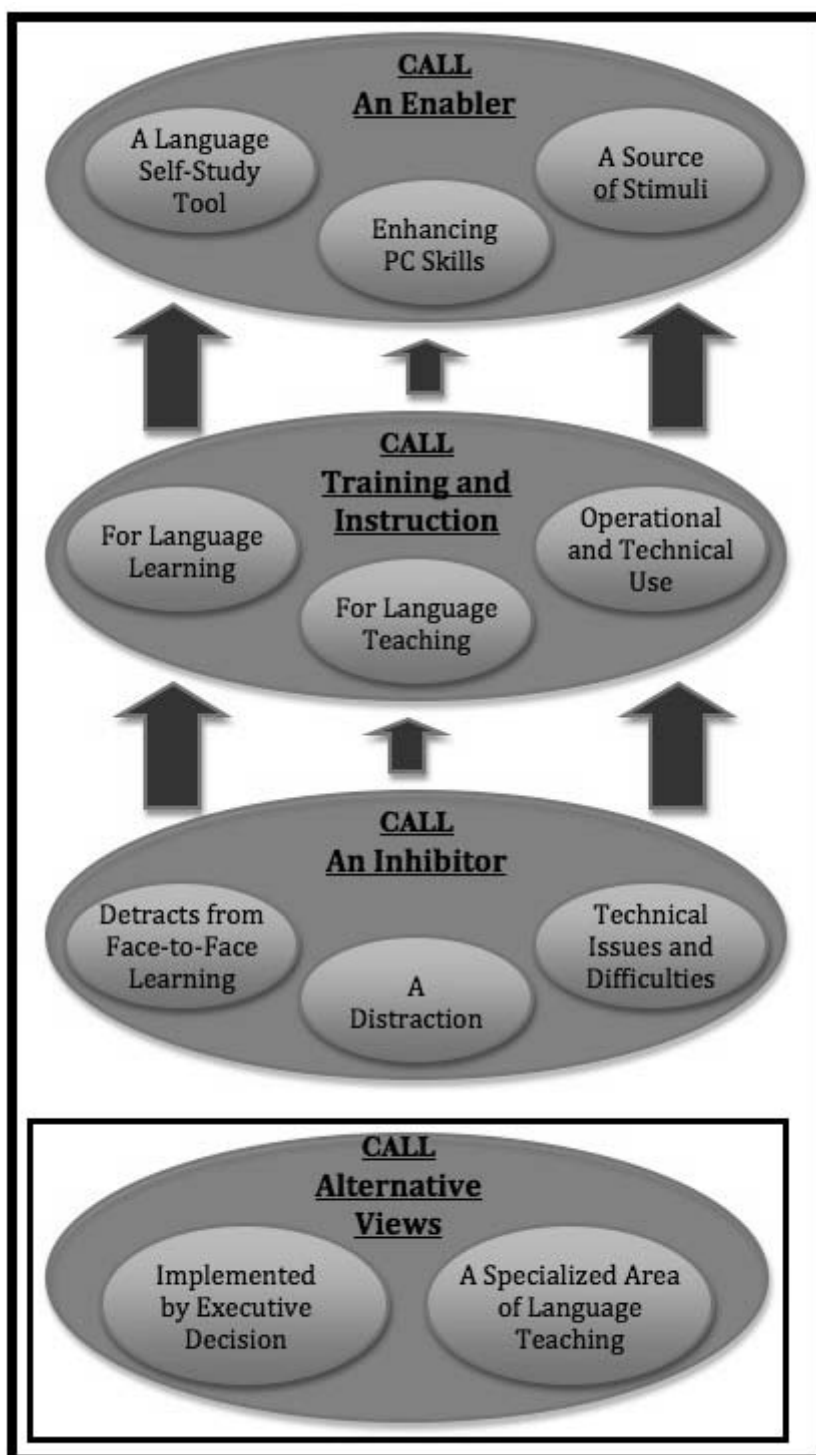


Figure 1. The Outcome Space of CALL as experienced by teachers.

The following section will explain how these categories of description were identified as illustrated by participating teachers' qualitative comments.

### **Alternative Views of CALL**

The influencing factors that affect the alternative view of CALL at this institute are that CALL classrooms were/are:

1. Implemented by Executive Decision, and,
2. A Specialized Area of Language Teaching

When participant P1 was asked to take part in this research he/she gave a statement saying that he/she was not qualified to take part for the following reason:

*"Although I use the CALL classroom I do not use any of the CALL facilities. ... administration requires that the classrooms are used but neither I or my students use the computers". (P1)*

In a follow up to this, the researcher restated the aims of the investigation were to identify the advantages and disadvantages of using the CALL classrooms, and therefore, P1's reasons for not using the facilities would fall within these boundaries. However, P1 again declined to take part but allowed his initial statement to be included in the research. In follow-up investigation to this response, P2 released a statement including the following extracts:

*"The CALL system was implemented without the full support of our language teachers, but rather as a well-intentioned idea put forth by the executives of our university and, in turn, pushed/pressured upon our faculty, ... It's a common belief among many Professors that CALL facilities should be left to the Techies as a specialized off-shoot of language learning. ... For a Professor to retrain and refocus in computer based language learning takes them away from their `real` job of personalized and specialized language learning". (P2)*

These statements illustrate similarities with a situation at Stanford University in the 1960s when the implementation of CALL facilities was regarded as unsuccessful. A primary reason for this was that the end users of technology (the teachers) were not involved in the initial decision-making processes, which were made by university administration. Other factors that influenced the unsuccessful situation at Stanford included that technical support was not available for teachers and technical issues and difficulties were commonplace (Levy & Stockwell, 2007). Levy and Stockwell (2007) claim that there is often pressure from an institution to use a particular technology or innovation

because of current trends which are followed by the subsequent investment of monetary funds by the institution administration. Davies et al. also recognize that “*administrators often have the mistaken belief that buying hardware by itself will meet the needs of the centre*” (Davies et. al, 2010: Foreword). However, Levy and Stockwell (2007) maintain that the decisions to use technology must be because it satisfies the pedagogical need of the activities that are integrated into the classroom and so must be made with cooperation of, and in conjunction with the teachers that will use the facilities.

The statements by P1 and P2 imply that:

1. CALL was implemented at this institute without the full support of faculty members,
2. Technology does not satisfy the pedagogical need of professors in their teaching,
3. CALL is regarded as a specialized area of language teaching that requires specialized training, and,
4. CALL is thought to detract from face-to-face contact in the classroom.

Of these four implications, numbers one, three and four have all been similarly recognized in literature that has been presented in this paper on the advantages and disadvantages of CALL. Elements of these implications are similarly seen in the responses of teachers participating in the interviews and the linear development of outcome spaces that are derived from these responses.

### **CALL as An Inhibitor**

Statements by participants identify three factors that illustrate that a CALL classroom can be an inhibiting experience in language teaching.

Firstly, teachers who have used CALL classrooms view them as detracting from the face-to-face learning experience, as has been similarly suggested in literature by Evelyn and Oliver (1987), Levy (1997), and Warschauer (2004). Both the structural layout of the facilities and the independent nature of using CALL facilities for learning were seen as contributing to the isolation that CALL creates from peer-to-peer and peer-to-teacher interaction. This was a predominant feature in comments by native English speaking teachers who are encouraged to focus on communicative aspects of language teaching and learning while still using CALL facilities. Illustrative comments regarding teacher-student communication include:

*“With a large number of students you have the difficulty with how much time you can spend with the students and now you are in an environment where you are isolating yourself. The teacher is isolated from the students – cocooned at the teacher’s monitor – not even seen by the students”. (E2)*

Concerning peer-to-peer interaction it was noted that:

*“Having these monitors (on the desk) is not conducive to speaking activities. They get in the way and not being able to move the desks and having limited space to move chairs in is detrimental to a communicative class”. (E2)*

*“I’ve only had the students use the computer occasionally this semester. The rest of the time I feel like the consoles are in the way. It’s more difficult to have a group discussion”. (E1)*

E1 acknowledged that CALL facilities require:

*“... a completely different type of teaching” and that “although it is good using it (CALL) as a tutor as students are working independently, it is taking them away from the communicative aspect of language learning.” (E1).*

For the native Japanese speaking teachers who focus on teaching and building language comprehension skills, the benefits of CALL as a tutor were acknowledged, despite it similarly being viewed as restricting communicative interaction due to the layout:

*“The CALL rooms are very good for building skills but they (students) only communicate with the students on one side of them”. (J1)*

The second factor defining CALL as an inhibitor is that CALL technologies can be viewed as a distraction to learning. Three teachers (E1, E2, J2) acknowledged that students were easily distracted by the Internet and other technologies, which cannot be removed when they were not necessary for in-class tasks. E3’s comment exemplified this feeling, that using CALL:

*“... takes a different type of management of the students. It’s one thing to be able to walk through the aisles of a regular classroom and make sure that they are on topic, whereas here (in the CALL classroom) there are too many gateways for them to venture off through”. (E2)*

The third experience of CALL is that it can be inhibited by technical issues and difficulties. All five teachers interviewed recounted times when the flow of the class had been disrupted due to technological issues. In the most severe reactions to this two teachers stopped using a particular technology.

*“It’s disconcerting for students and teachers if you have a problem. You don’t want to get the technicians to have to sort out one in 30 computers. It makes you look bad and so you are disinclined to use it again”. (E1)*

*“Many students had problems with their monitors and so I abandoned using the system as I was taking time to sort out the technical problems rather than teaching.” (J2)*

These three inhibiting factors to teachers’ experiences illustrate the difficulties that CALL classrooms can present. Despite this, the next category in the developmental relationship of the CALL experience illustrates that teachers have a desire to overcome these difficulties and to be able to use CALL facilities more effectively.

### **Training and Instruction in CALL**

In the interviews on the advantages and disadvantages of CALL classrooms, all participants commented on factors of training and instruction in the use of CALL for language teaching, learning, and in operational and technical use. Teachers illustrated experiences that they had received, and talked about training that they would like to receive in order to move CALL from being an inhibitor through to it being a greater enabler of language teaching and learning. This identified training and instruction as the second category in the linear development.

Describing experiences with operational and technical training, a common theme recounted was the limited instruction that had been received before using the CALL classrooms for teaching.

*“Three years ago I was taught how to use the technology but I learned it only once and then I started teaching” (J1)*

*“As a new teacher I didn’t know anything about the CALL system and suddenly I was told I would be teaching in a CALL classroom. I had a few hours training on how to use the system but it was not enough.” (J2)*

*“The training that we received was only in what the technology does” (E1)*

These comments led to expressions of desire for further training and instruction in how to operate the facilities.



*“I need ongoing training once every year on how to use that system.” (J1)*

*“I don't use the (operating) system, it's difficult and complicated to use. I should use it ... but I can't. So we need further training ... at the beginning of the year”. (J2)*

None of the teachers expressed that they had ever received specialist training in the use of CALL for teaching, as was noted in the literature by Levy (1997), Higgins (1988) and Roblyer (2003). This led teachers to express the need for further instruction, support and a sharing of knowledge in how to teach and develop lessons and materials using CALL:

*“To use CALL means you have to bring skills to the table before it becomes effective. It would be nice to have assistance in bringing you up to speed so it becomes a smooth process”. (E2)*

*“Better training would be nice. It could be improved by showing some structures and sample lessons and how to use different technologies available”. (E1)*

*“I really want to know how other teachers are using the CALL classrooms. Some teachers like me don't know how to make use of this system. As part-time teachers we don't have the time to develop materials and learn how to use the system in our own time.” (J2)*

*“I want to know how I can use these technologies in a class and how I can fit them strategically into the activities that I'm going to do so that everything fits well and it works well as a lesson.” (E2)*

Besides teachers wanting more knowledge on how to utilize the CALL system they also expressed wishes for the students to receive training and instruction in how to use computers and CALL outside of the language classes. Teachers noted that with these skills students would be greater equipped to excel in their CALL language learning opportunities.

*“The CALL system provides autonomous learning opportunities but students don't understand autonomous learning because they have a traditional idea about what teaching is. So students also need to be taught how to learn independently using the available materials”. (J2)*

*“I don’t consider it my job to teach them how to use the computer. I want to be able to assume that they can, and most of them can and do. But I don’t have the time to teach computer skills and I won’t do it. If they don’t know then they need to find out in a hurry”. (E1)*

These comments illustrate that teachers are strongly aware of the need for greater specialized training, instruction and knowledge in the use and operation of CALL by teachers and students, which would lead to greater effectiveness in its use in language learning.

Despite participants expressing these wishes for further training and instruction, the CALL classrooms and facilities were still seen as an enabler to particular aspects of learning, as identified in the final of the linear development categories.

### **CALL as An Enabler**

Identifying the final category, teachers focused on three factors identifying the benefits of CALL classrooms: CALL as a language self-study tool/tutor, as enhancing computer skills, and as a source of stimuli for language learning.

Although previous comments illustrated that training to enable students to become autonomous learners was necessary, CALL as a tool/tutor is still seen as providing a positive self-learning environment:

*“Using the materials and CALL system each student can learn by themselves. They don’t need me.” (J2)*

*“I told my students at the beginning of the course " You don't need a teacher". My role in the classroom is only to say “watch”, “stop” and “respond”. I said showing this DVD “This is your teacher not me. I'm not your teacher”. (J1)*

*“This environment turns into a program of self study and the teacher becomes second”. (E2)*

Despite these comments identifying the positive benefits that students can receive using CALL as a tool/tutor for learning, they illustrate that teachers feel a degree of redundancy in the CALL classrooms. As the earlier literature recognized this could be due to the isolation that teachers feel

at the front of the class, and the lack of a communicative nature of CALL. It could also illustrate that when students are using CALL as a tool for individual learning it is not necessary for a teacher to be physically present.

As the second factor, teachers see CALL as an advantage to enhancing students' PC skills, which is perceived as an advantageous affect to other aspects of their social and academic lives:

*"I was surprised that some of the students didn't have some of the basic computer skills. So ... they get to practice and use different software". (E1)*

*"We're in a technological society so we need to know how to use and interact with computers, the Internet and different software and this gives them some practice". (E1)*

*"There are benefits in teaching the students how to use the computer as a tool and here you are doing it in English. Students have remarked that classes are more like computer classes than English classes so they are using English instinctively in order to understand how to complete the task using the tools provided." (E2)*

The final enhancing factor of CALL in this category is that it is seen as a motivating source of stimuli for language learning that can provide learners with examples of real language, discussion and interaction that can be transferred to classroom activities, as illustrated through these comments:

*"CALL and the Internet is a cornucopia of resources to stimulate interest and discussion and language use". (E1)*

*"They can interact with the technology for assignments and I think it creates an atmosphere where there is more interest and more motivation in the students". (E1)*

*"It gives them real language and real interaction which stimulates different learning styles". (E2)*

*"CALL could be placed in the category of real world applications that youth can relate to". (P1)*

As stimuli, the theme runs parallel to literature presented by Corbett and Rogers (1985 cited in Storer, 1989), Lee (2000), Taylor (1980), and Warschauer (1996).

## Implications and Conclusion 1

The findings of this research have presented teachers' experiences of the advantages and disadvantages of CALL as a developmental relationship of outcome spaces, illustrating the inhibiting factors, the training and instructional experiences and desires for the future, and the factors that enhance language teaching and learning.

There are distinct parallels that can be drawn between the literature on the advantages and disadvantages of CALL as a tool, tutor and stimuli, and the perceptions of teachers identified in the data collected in the research. The most significant being that there is a recognized need and desire for specialized training and instruction above and beyond the technical instruction that is provided by the institute. This is supported by the following review of literature.

### Teacher Training and Development in CALL

Literature shows that CALL facilities can be unsuccessful in achieving their aims due to factors crucial to their success being ignored. These factors include, but are not restricted to executive assumptions that the existence of hardware and software will automatically lead to their successful implementation, integration and normalization in teaching and learning, and, the lack of training, and administrative, and pedagogical support for teachers, which can lead to unfamiliarity and uncertainty in the use of facilities (Bax, 2003; Chambers & Bax, 2006; Debski & Gruba, 1999; Kessler, 2006; Lam, 2000; Levy & Stockwell, 2006; Mishra & Koehler, 2006; Smeardon, Cronen, Lanahan, Anderson, Iannotti & Angeles, 2000). Garrett (2009) stresses the need for reminders that CALL does not just mean “*the use of technology*’ but designates a dynamic complex in which technology, theory, and pedagogy are inseparably interwoven” (Garrett, 2009: 720). Lafford (2009) describes this as moving towards an ecological CALL in which language is acquired by taking advantage of available opportunities and creating a relationship between the learner and the environment signaling an opportunity for, or inhibition from action. Bax similarly describes this situation as normalization - “*The stage when a technology is invisible, hardly even recognized as a technology, taken for granted in everyday life*” (Bax, 2003, p.23).

For normalization to occur, changes in teachers' attitudes towards technology, their familiarity, knowledge, skill, approaches and methods to integrating technology and teaching pedagogy together into classroom practices are necessary (Arnold, 2007; Atkins & Vasu, 2000; Egbert, Paulus & Nakamichi, 2002; Jung, 2001; Kim, 2002; Lam, 2000; Smerdon et al., 2000; van Olphen, 2007).

In order to influence these changes and move towards this state of normalization, institutional and instructional support and on-going professional development for teachers that stresses purposeful

integration of technology into the curriculum and content, and enables teachers to learn and experiment with the available and new technologies is needed, rather than just mere technical operation (Swenson, Rozema, Young, McGrail & Whitin, 2005). Without these support and development opportunities, there is a greater burden and responsibility on teachers to understand technology and even deal with technical problems alone (Levy & Stockwell, 2006).

### **Implications and Conclusion 2**

This literature on teacher training and development in the use of CALL identifies that positive changes can occur in teaching practices when more than just instruction in technical operation is provided. Training, instruction, assistance and knowledge exchange for teachers to apply CALL technology to teaching can result in, as the developmental linear model in this research suggests, a move from CALL classrooms being perceived as an inhibiting factor to an enabling factor in teaching and learning.

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