

Towards a Theoretical Framework for Informal Language Learning via Interactive Television

ABSTRACT

This paper proposes a pedagogical framework for informal language learning services via interactive television. We argue that mapping current language learning theories onto learners' expressed attitudes to a) their language learning and b) interactive television can provide a sound pedagogical framework for iTV based language learning services. Based on this framework, we suggest a number of possible interactive features that take into account the learning affordances of the iTV medium and that have the potential to facilitate informal language learning.

KEYWORDS

Adult learning, incidental learning, informal learning, language learning, interactive television, iTV

1. INTRODUCTION

Media technologies allow a wide variety of activities and experiences that can support language learning (Milton, 2002; Bickel & Truscello, 1996). Not all of these activities are situated in a formal educational setting and many of them are embedded in people's day-to-day lives (Merriam, 2001). They might include activities based on digital media in the target language, such as playing computer games in the target language, participating in computer mediated fora such as discussion boards or chat-rooms, searching for authentic material on the Internet and so on. The integration of "non-desktop" technologies is attracting increasing interest amongst researchers in informal, adult and lifelong learning. While conventional desktop computers are highly regarded in formal and curriculum-based learning in classroom settings, ubiquitous media technologies, such as interactive television (iTV), game consoles, and mobile phones may provide a better "fit" with the lives of learners who are in domestic settings or on the move (Atwere & Bates, 2003; Sharples, 2000).

In this paper, we focus on the learning potential of iTV, currently available in the UK via cable, satellite and terrestrial technologies. Unlike conventional television, iTV allows some level of user interactivity, providing new facilities for information retrieval and communication (Gawlinksi, 2003; O'Driscoll, 2000). Recently, iTV has been recognized as having great potential for supporting language learning (Bates, 2003; Pemberton 2002; Underwood, 2002). However, in order to succeed, iTV learning services need to be based on a sound pedagogical framework and to be derived from learners' interests, motivations and learning styles (Fallahkhair et al., 2004a; Masthoff & Pemberton, 2003; Underwood, 2002; Luckin & du Boulay, 2001). In this paper we propose a framework for informal language learning services via iTV. This is based on a review of current models of language learning, particularly the debates around informal and incidental learning, integrated with the results of focus group studies that have been carried out to elicit language learners' attitudes, needs and preferences (Fallahkhair et al, 2004a; 2004b).

2. FORMAL AND INFORMAL LEARNING

The notions of formal, informal and incidental learning are complex and difficult to define. One approach is to distinguish between formal, informal and incidental learning simply by looking at the circumstances in which they occur. For example, Marsick and Watkins contrast formal learning with informal and incidental learning as follows:

Garrick underlines the importance of experience in a quotation from Mao Tse Tung (1968): “all genuine knowledge originates in direct experience... human knowledge can in no way be separated from practice... practice is higher than theoretical knowledge. Whoever wants to know a thing has no way except by coming into contact with it, that is, by living in its environment...practice, knowledge, again practice, and again knowledge...such is the dialectical-materialist theory of the unity of knowing and doing” (Garrick, 1998, p.22).

3. THEORIES OF LANGUAGE LEARNING

In this section we outline some of the most influential current theories of language learning. However, as Mitchell and Myles point out, “we have not yet arrived at a unified or comprehensive view of how second language are learned [...] No single theoretical position has achieved dominance, and new theoretical orientation continue to appear (Mitchell & Myles, 1998, pp. ix-x). Language learning itself is not a unified activity, as the separate functions of speaking, listening, speaking and writing have to be addressed, each at many levels, from phonetics to discourse and pragmatics (Pemberton, 2002).

3.1. The Behaviourist Approach

The behaviourist approach, whose best-known proponent is Skinner (1957), suggests that language is a habit-associated activity, which can be learned explicitly through repetition and memory. Learners receive linguistic input from speakers in their environment and learning takes place through correct repetition and imitation. As a result, second language acquisition is developed through a set of habits that are related to the first language. These habits then clash with those needed for second language speech, and new habits will be formed. Certain skills such as vocabulary and grammar may well be acquired through the use of a behaviourist approach. However, the development of fluency and structural accuracy is not easily achievable and requires considerable exposure to the foreign language and/or to explicit instruction. The unsatisfactory results of behaviourist teaching approaches, such as the language lab and its repetitive exercises, cast some discredit on this theory (Milton, 2002).

3.2. The Cognitive Approach

According to the cognitive approach, second language is a process of building up a cognitive model of the target language through practice and experience until learners can make use of their knowledge automatically without even being aware of doing so. During this process of automatization, the learner organizes and restructures new information that is acquired. Through this process of restructuring the learner links new information to old information and achieves increasing degrees of mastery in the second language (McLaughlin, 1987).

3.3. The Creative Constructionist Approach

The Creative Construction position on language learning is particularly associated with Krashen (1981). Krashen suggests that language acquirers are not usually aware of the fact that they are learning a language, but acquire the second language by understanding the message or by receiving comprehensible input. Comprehensible input can come from a variety of sources at a level on or slightly above the learner’s current level of competence. (There is a clear parallel here with Vygotsky's notion of the Zone of Proximal Development). This input contributes directly to acquisition (incidental and implicit learning) which is largely responsible for developing comprehension and subsequent productive fluency in a second language. According to this theory, the learners are not required to actually speak or write in order to acquire language. Acquisition takes place internally as learners read and hear understandable samples of the language. In other words, after a great deal of listening, speech will emerge spontaneously in a natural order. Motivation to learn also appears to be one of the most important determinants in successful language acquisition (Krashen, 1981, 1982; Trueba, 1987). Krashen suggests that language programs must be highly motivating and designed in ways that cause learners to forget that they are hearing or reading another language.

3.4. The Constructivist Approach

The Constructivist approach asserts that learning is an active, creative, and socially interactive process in which learners construct new ideas based upon their current and past knowledge (Bruner, 1990). Knowledge develops via the negotiation of meaning through dialogue with the target language and its many socio-cultural expressions. Successful language learning is therefore achieved through exposure to and interaction with language in authentic contexts. Typically a learner in a constructivist-inspired programme would be required to perform tasks and solve problems involving listening, reading, writing and speaking in the foreign language, ensuring a high level of interaction. The Constructivist philosophy is closely tied to communicative teaching approaches and indeed is the force behind many initiatives in interactive computer assisted language learning.

4. DISCUSSION & IMPLICATIONS

Our initial brief was to design technological support systems for language learning using the facilities of interactive television. We assume that for language learning programmes to be effective, they must be designed within certain constraints. These would include at least:

- a) a considered approach to the question of formal vs. informal learning,
- b) a sound pedagogical framework based on a viable learning theory
- c) a consideration of the learning affordances of the technology used, in this case iTV
- d) the expressed attitudes and preferences of learners.

We attempt to incorporate these different sets of constraints into our framework for iTV based language learning service.

Taking a learner centered design approach, we conducted a number of focus group studies to elicit learners' attitudes (Fallahkhair et al., 2004a). The focus group studies indicate that our participants did not perceive iTV as a medium for formal learning. They did not want to watch "language learning" programmes, but rather mainstream programmes, which they would consume as a form of entertainment that may have the side effect of learning, i.e. they took an informal/incidental learning approach. In addition to this, participants indicated that they appreciated the advantage of multimedia presentation of material, with different media complementing each other and providing context to facilitate understanding. For instance, subtitles can make it easier to follow speech, gestures and other graphical information can express extra-linguistic meaning, music underlines speech and so on. Participants also indicated that contact with other people – teachers, peers and target language speakers - motivated them to learn. The results of the focus group studies determined that any systems we did design would be aligned to an informal learning approach (Fallahkhair et al., 2004a; 2004b). It is therefore in the overlap between informal learning approaches and theories of language learning that we need to construct the pedagogical framework for our iTV based language learning service, informed by the learning affordances of the iTV medium and other input from user studies. This is sketched in Figure 2.

This overlap predominantly covers the socio-cultural, discovery and experiential, constructionist and constructivist approaches to learning, which together advocate that language learning is self-constructed knowledge (i.e. not reliant on teacher input) that may be acquired by receiving comprehensible input, observing others and participating in social interactions.

Before we start with a discussion of language learning theories and their integration with iTV applications, we should clearly indicate what are the learning affordances of iTV technology. This will explain why some language learning theories may not be suitable to be endorsed for iTV learning. Television is one of the most familiar media technologies and is perceived as leisure-, rather than work-related, so any learning service needs to be designed with this in mind (Ling & Thrane, 2002). iTV like conventional television offers a rich multimedia experience, where language learners can immerse themselves in authentic materials from the

target language and culture. Interactivity adds a new dimension to learning from television. With interactivity, viewers could select from alternative audio and video streams, make their own choice amongst subtitling or captioning options, view supplementary information on screen, and use communications tools such as chat and email. While television presents obvious opportunities for developing listening and comprehension skills, it may not be pertinent for developing speaking and writing skills (Sherington, 1973), although the potential is there with iTV (for example, writing emails and exchanging chat with native speakers).

Figure 2: A pedagogical framework for iTV based language learning

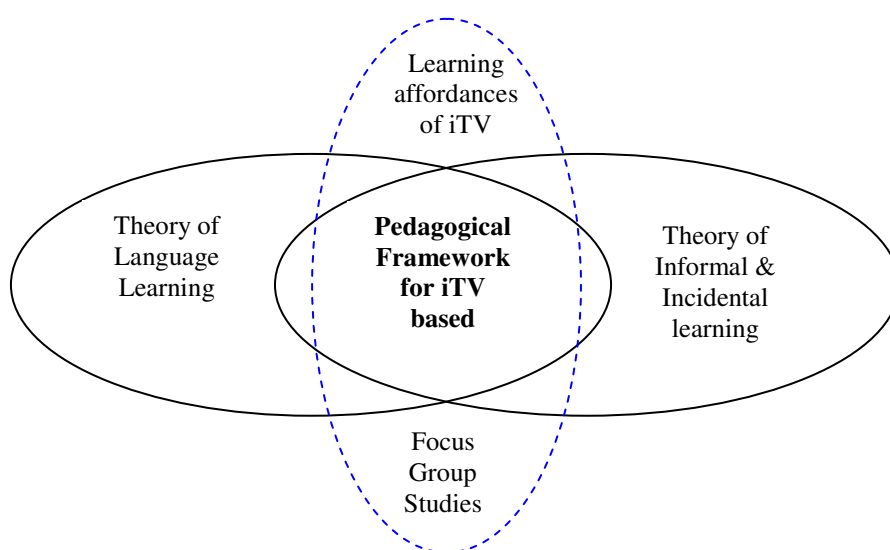


Table 1 provides a summary of the learning theories and approaches, and possible iTV applications that may facilitate language learning.

Table 1: Learning theories and iTV applications

Learning theories and approaches	Learning through:	iTV applications
Behaviourist	Repetition and drill	Not suitable
Cognitive	Practice, learning grammar, cloze-exercises	Not suitable
Constructionist	Acquisition of comprehensible input	Scaffolding understanding by supplying word meanings and labelling objects in scenes. Electronic dictionary via iTV. Supports learner's autonomy and flexibility.
Constructivist	Construction of new knowledge based upon current and past and through the negotiation of meaning through dialogue	ITV based personal learning space, e.g. "My language learning" to store and retrieve learning content.

Socio-cultural	Language play and social interaction	iTV based discussion fora and chat-rooms to supports social interactions
Discovery and Experiential	Reflection on your experience and by living in environments	Language learning games. Authentic material from television itself is useful for learning to occur

While the behaviourist and cognitive approaches have worked well in explicit teaching and computer based instruction (e.g. learning through repetitions, drills and practice), they would not be suitable for learning informally from iTV. Our focus group participants wanted to sit back and relax while being immersed in the up to date authentic materials provided through TV programme and to be able to get extra support to help them obtain more from their foreign language viewing. The focus group participants also did not like to watch a TV programme that was purposely made for language learning requiring them to be actively involved in repetitions and drill in a way similar to a language class or lab.

The constructionist approach requires support for comprehensible input and learners' autonomy. Comprehensible input can be supported in the form of subtitles or close captions that anchor speech in a written form. We can provide a language learning version of subtitles that provides extra language support, which may help learners to understand more from their viewing, for example by annotating new words with translations, labeling objects in a scene and so on. Learners' language intake will be therefore optimal while they are watching the TV programme or when "acquisition" takes place (Krashen, 1989). However, this comprehensible input should come at a level matching or slightly above the learner's current level of competence (Krashen, 1981; 1982). In order to determine this automatically, a learner model would need to be constructed to facilitate automatic generation of language items. An artificial intelligence algorithm could be engineered to segment and annotate these language items with translations to suit the learner's motivation and knowledge level. However, achieving this may be difficult within the current iTV set up (Whitaker, 2001; O'Driscoll, 2000). Another option is to ask language teachers or experts to take responsibility for annotating these language items, in accordance to different levels and different learners' interests. We can also support personalized scaffolding by providing support in appropriate complementary media such as the mobile phone. The general enthusiasm for learning on the move expressed in our focus groups suggested the incorporation of the mobile phone. This combination of mobile phone with iTV has the advantage of not imposing language items on other viewers, and of giving the learner the opportunity for asynchronous engagement with the programme, after, while or even before it is broadcast (Fallahkhair et al, 2004b).

The constructivist approach can be supported by enabling learners to create their own learning space, e.g. "*My language learning*" that can be accessed on an anytime or anywhere basis. This facility enables them to be in charge of their own learning experience. An iTV system could provide extra language learning materials, such as a list of vocabulary related to the TV programme or a summary or digest of what was happening in the show that could be retrieved and saved prior, during or after the show time from the iTV or other media technologies, such as Internet and mobile phones. Mobile phones are particularly valuable here because they have the advantage of ubiquity (Ultralab, 2003).

The socio-cultural approach can be supported if we facilitate social interaction with other learners or with native speakers. We can provide a service that facilitates these kinds of interactions via iTV, for example enabling viewers to participate in discussion boards and/or chat-rooms after the show, or allowing them to send and receive text messages to/from mobile phones. The fact of having viewed a programme, whether a football match or a soap opera, provides rich common ground for such interactions (Quico, 2003).

The discovery and experiential approaches can be supported through language learning games. Games are highly motivational and can encourage learners to be engaged in other form of activities and learn subconsciously or incidentally as a result of their interaction. Games are one of the most successful iTV applications (Gawlinksi, 2003). Interactive language learning games could be provided in the form of a quiz to examine a learner's comprehension of a particular TV programme. The quiz questions can determine learner's understanding of speech or a dialogue, a word's meaning and their insight of what has happened on

a show. These types of games can also stimulate viewers to participate and learn as a result of their participation, via rewards such as promotion to another level of the game or access to additional programme content, e.g. to entitle learners to watch a back stage show, or extra documentaries about the characters in a show. These types of games are not only motivational but also support incidental and informal learning.

There are other types of games that are usually played in groups either in the same location or through networks, which promote conversation between players. These types of games, which are known as voice-over-IP games, enable players to communicate with others who are playing at the same time. The players are equipped with microphone and headphone. They can comment on each others' performance or guide each other through hazards (Halloran et al., 2004). Their conversations can be in the target language, which they all intend to learn. ITV language learning games could provide their own "call to action" to stimulate viewers to go and play after a show, e.g. play the Harry Potter game after the Harry Potter movie, and facilitate voice-over-IP conversation, which allows learners with a similar interest to communicate with each other. This again points back to the socio-cultural approach and incidental learning as a result of learners' interaction.

5. CONCLUSIONS

The pedagogical framework presented here responds to many of the requirements articulated by language learners and learning theories. The constructionist approach to language learning can be supported by providing comprehensible input by scaffolding language items, similar to subtitles, to suit learners' motivations and knowledge levels. The socio-cultural can be supported by enabling learners to participate in real and meaningful conversations with other learners who share their interests. Learning can occur informally and incidentally as a result of learners' interactions. The constructivist approach to language learning can be supported by allowing learners to create their own learning space that can be accessed in anytime and anywhere bases, and to insure high level of interactions between peers. The discovery and experiential approaches of learning can be supported by language learning games. Games are motivational and can facilitate social interactions.

We have investigated the technical feasibility of such learning environments for the iTV platform (Fallahkhair, 2004). Our next step will be to design the onscreen display and interactions for a number of these facilities for use and evaluation with independent adult language learners.

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