

# Mobile City and Language Guides - New Links Between Formal and Informal Learning Environments

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**Abstract:** One of the major challenges in second and foreign language education, is to create links between formal and informal learning environments. *Mobile City and Language Guides* present examples of theoretical and practical reflections on such links. This paper presents and discusses the first considerations of *Mobile City and Language Guides* in language centres, upper secondary schools and universities. The core concept of *Mobile City and Language Guides* is *geotagging*. Geographical locations can be geotagged either through GPS or by marking positions directly in, e.g., *Google Earth* or *Google Maps*. Students or teachers can add various kinds of information to geotags: Photos, audio, text, movies, links, vocabulary and various language tasks. This allows the student, in self-defined learning contexts, to down- and upload location-based materials with his or her mobile phone, for immediate or later processing. More and more students are able to afford mobile phones with multimedia and broadband Internet. The potentials of user-generated mobile- and web-based content are increasing. In these years, the internet is moving from the so-called Web 1.0 to the more user-centered Web 2.0, i.e. Weblogs, YouTube, Google Maps, MySpace, Flickr, etc. In an educational context, Web 2.0 represents an interesting development of the relatively monologue Web 1.0, where traditional homepages often only allow minimal interaction with the site content. This paper investigates the opportunities that *Mobile City and Language Guides* seem to give second and foreign language students to learn from informal, location-based, experience-based and authentic materials; and discusses how language centres, upper secondary education and universities can involve informal learning contexts through student use of mobiles with broadband and Internet technology supporting second and foreign learning. *Mobile City and Language Guides* is only of several possible mobile and Internet-based language educational scenarios. The challenge for the future, therefore, is to develop and implement new, meaningful and exciting scenarios that strengthen the linkages between formal and informal learning environments.

**Keywords:** second and foreign language education, formal and informal learning, broadband mobile technology, web 2.0, geotagging

## 1. Introduction

More and more teenage and adult language students own state-of-the art mobile phones. These are phones with sound and video recording possibilities, usually with broadband access to the Internet. On the average, mobile phone users change telephone models every 18th month. This is also the average period it takes to effect improvements on the mobile phones' function.

Language students use the mobile phone in their daily life – both as students and as ordinary citizens (Chen 2007). They use their mobile phones to they take photos of friends and the places they visit. They send photos as MMS to their contacts or send them to their own Internet site. They are able to download and play media files such as music or short films. They can access the Internet and check their emails. Moreover, they can search for a variety of services on the Internet. If they wish to locate a street, they can, for example use "Google maps" which can be downloaded in their phones. Aside from data transport, most of the popular mobile phone services are offered for free. In Denmark, many young people give up their stationary Internet connections, and prefer to send and receive data traffic solely on their mobile phones. In short, the Internet has moved from being "stationary" to being "mobile" (Alby 2008a).

At present, we see a movement from Web1.0 to the more user-oriented Web 2.0 (Alby 2008b). Here, one finds a large variety of ways to organise content and interaction, which breaks away from the

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one-way communicating Web 1.0. Instead of heavy websites, we now see an enormous proliferation of blogs, mobile blogs (moblogs) or video blogs (vidblogs). These represent a simpler way to develop websites, while opening up for two-way communication on the content. Web 2.0 provides new ways of commonly creating and sharing information and knowledge via the so-called "social software," such as Wikis, Flickr, FaceBook, YouTube, Google Earth, Google Maps and so on.

These Internet applications can be accessed both from a computer and a mobile phone, and thus offer fantastic possibilities to learn a foreign or a second language.

One of the big challenges for both foreign and second language learning is how IT can mediate or create connections between the teaching's formal and daily (or "reality's") more informal learning environment (Bo-Kristensen 2004a). In foreign language learning, it is important to create a connection between, for example, the teaching of French and reality as reflected in the environment where French is being used. The same applies to second language learning. Luckily for the second language student, his/her environment outside the classroom provides language inputs and possibilities to use the language.

The challenge therefore in both foreign and second language learning is to identify effective ways of using IT to acquire relevant and authentic language in teaching and the student's learning (Bo-Kristensen 2004b) In this connection, we pose the question:

How can the mobile phones' and the Internet's new developments create the link between formal and informal learning environments in language teaching?

## **2. Approach**

To answer this question, we will first present a cognitive constructive view of foreign and second language acquisition. We will implement this view in a series of language activities, and discuss how these activities can be used in foreign and second language teaching, which continues to search for, and create better links between formal and informal learning environments.

We will also introduce the concept, *geotagging*, wherein one puts tags in Google Earth or Google Maps. With geotagging, one can mark or put visual representation on areas and landmarks in a given geographic area. These are the areas of the informal learning environment with which language learning would like to connect. Tags can contain everything from text over photos and film, to tasks. Language students can make their own tags and routes, or they can retrieve information, knowledge and tasks through the tags that the teacher or others have made.

In this paper, present our concept for mobile-based learning called "Mobile City and Language Guides". This draws upon the experiences of, and the possibilities that the Web 2.0 offers. We present concrete examples of geotagging and the cognitive-based language activities that have been developed earlier. This gives us the possibility to show how the development of mobile phones and the Internet can be used to create exciting and useful links between formal and informal learning environments in foreign and second language teaching.

After the summary, present a perspective on how broadband Internet, mobile phones and Web 2.0 applications can become an everyday reality at language centers, upper secondary schools and universities. Finally, we conclude that "Mobile City and Language Guides" is only one among several possible mobile and Internet-based language educational scenarios.

## **3. Links between formal and informal learning environments**

To find out how broadband mobiles and web 2.0-mediated links between the formal and informal foreign and second language learning environment can be presented and organized, we should first identify which language activities to focus on. We know that these language activities should be developed using the knowledge on how language is acquired as starting point. (Bo-Kristensen 2006).

Language students learn alone. They also learn together with others, and they learn the knowledge and skills that are meaningful for them (Illeris 2008). This applies to language, and to all other possible subjects. The individual perspective is referred to in second and foreign language learning research as cognitive (Ellis 2008). Learning is collaborative and situational when adults learn together with others (Wenger 1999). Learning uses the existential perspective when the focus is on "meaning"

in learning (Jarvis 2004). It is an art to both separate and blend these three perspectives – so they demonstrate how adults learn.

For many teachers, the cognitive perspective is the flagship of educational reflections in second and foreign language learning. What are the cognitive processes that provide the foundation for language learning? The answer to this provides an insight on how learning activities and their possible organization in formal and informal settings should look like.

Second language learning research has different models in which to understand cognitive learning processes. Several models are offered: information- and system theory-based, hermeneutically- and phenomenologically-based models (Bo-Kristensen 2004c). These models have 3 central processes in common:

- Prior knowledge
- Attention
- Use

The concept of *prior knowledge* concerns the experiences, the knowledge and the accomplishments on which language students base their learning. The concept of *attention* is drawn from the research on perceptions and consciousness and is a prerequisite for language learning (Schmidt 2001). To learn a language requires that one notices the language's phenomena, so one can store it in his/her short-term memory. Finally, *use* is a concept that also comes from memory research and shows that we know how to precisely use acquired language such that it would be possible to adapt and store it for later use – in long-term memory.

The question now is: how can these cognitive processes be implemented in concrete language activities. We will use the activities to create the necessary links between the formal and informal learning environment. We point out three types of activities:

- Pre-activities
- Main activities
- Post-activities

In "Pre-activities", the language student's experiences, knowledge and accomplishments are being mobilised. When a student becomes aware of what he/she already knows, it will be simpler and more rewarding to start with the main activity, which will give the student the possibility to acquire new knowledge. This new acquisition of knowledge occurs during an activity that focuses on drawing his/her attention to new phenomena in the language. It is only the student who can say what is new. However, lessons can be designed in a way that the student has the best possibility to notice the new aspects of the target language.

The main activity cannot be endless. There is a limit on how much new knowledge on language the student can absorb. Finally – to ensure that the new knowledge is stored – the student has to go through another activity. This activity, which will ensure that the new knowledge is stored in the student's long-term memory, demands that the student uses this new knowledge. This "post-activity" may have many different forms and content. The important thing is that the student is able to use the new language phenomena so he/she acquires cognitive "ownership" of them.

We see these three types of activities often in formal learning, e.g., in language teaching's listening and reading disciplines (Richards & Rodgers 2001). But how can these cognitive and constructivist-substantiated activities be used in organising good and affective links between the formal and informal learning environments?

We present as an example the teaching of a second language: We propose that pre-activities are introduced in the formal learning environment. With this approach, the teacher creates activities designed to utilise the student's experiences, knowledge and accomplishments. If the example for a class is conversational grammar, the teacher should ensure that the student is aware of his/her prior knowledge about the conversation's structure and special idiomatic expressions, *while* the student is allowed to acquire knowledge on how a specific conversation is carried out in the target language. This way, the student is able to prepare himself/herself to interact in the informal learning

environment, where he/she will be able to experience the language phenomena in a “real” conversation.

Activities that focus on authentic conversational grammar are addressed in the “main activities”. These activities are ideal in the informal learning environment, where newly acquired knowledge is tested in the student’s own conversations.

It is possible to introduce these activities’ post-processing or use of the new language in a more formal learning framework. For example, one can use in the classroom, specific phenomena, such as the conversation’s listening positions and phenomena in the activities, in the classroom.

In this chapter, we have shown both the language activities and the acquisition theory in order consider how language learning can create links between the students’ formal and informal learning environments. The following is a short presentation of the possibilities that geotagging offers.

#### 4. Geotagging

*Geotagging* is described as the activity where one puts tags either via GPS or by marking directly in i.e., Google Earth (Fig. 1) or Google Maps (Fig. 2). What interests us in geotagging is the possibility it offers to mark or put visual representations in places and landmarks in a given geographic area. They can be areas that function as informal learning environment in which foreign and second language education wishes to create links.

Geotagging covers the following:

- A geotag describes longitude and latitude, which is connected to a specific object, e.g., text, a photo, a video clip or a language task (see e.g. Nunan 2004).
- Geotagging is a collective description that refers to the connection of information with a specific geographic point, such that the information can be searched in a map database system or via GPS.

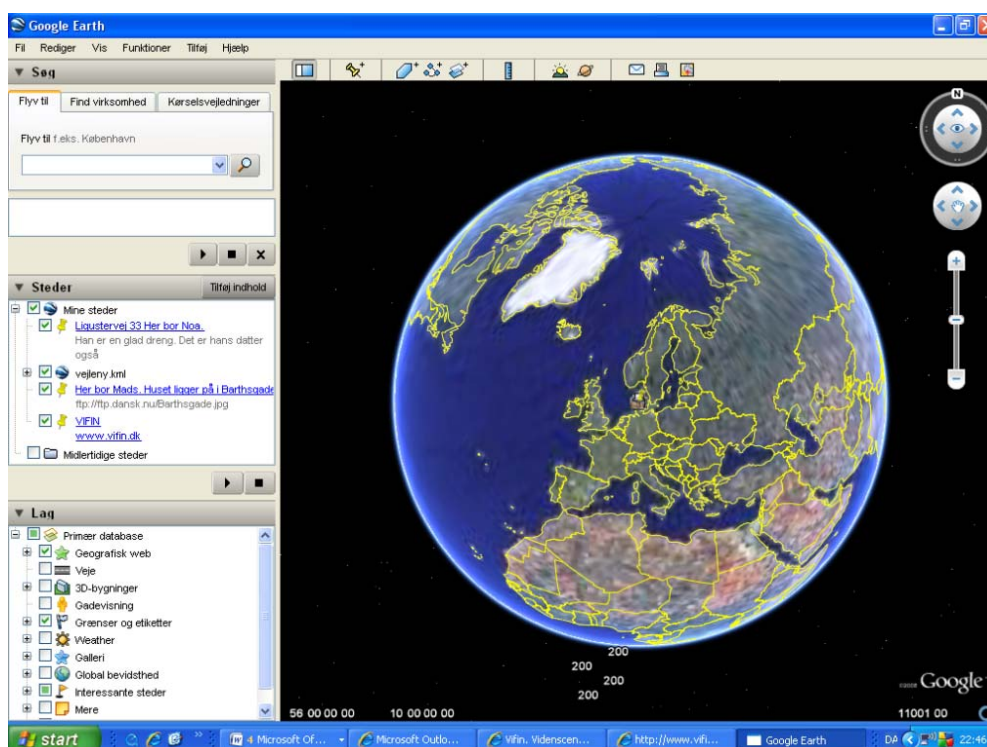


Figure: 1: Google Earth

One can access maps and tags from his/her PC or mobile phone. It is also possible to make one’s own tags via the mobile or PC. This way, one can preserve and eventually share one’s experiences from the town and its language to others. Language students can make their own tags and routes, or they can get information, knowledge and tasks via tags from the teacher or others who have posted them. The purpose of connecting information with a geographic location is to provide the possibility to build a bridge between the virtual universe and the physical worlds. Thus, IT systems support and



promote interaction between the experiences and activities that one meets in the physical world. This can be used to seek support from the IT system, e.g., to focus attention to the language in the informal environment.

## 5. Mobile city and language guides

The Mobile City and Language Guides will enable the student to create learning connections between the classroom (formal environment) and the informal environment, where the language is spoken. How does one create these relationships?

The following is a classic model to organise activities in and outside the classroom:

- *Pre-activities:* The student prepares for the main activities in the classroom.
- *Main activities:* The student undertakes the given activities outside the classroom.
- *Post-activities:* The student goes back to the classroom and completes the assigned activities.

This model follows the cognitive approach (See Section 3) We use the model as basis in considering how the *Mobile City and Language Guides* can help the student create meaningful relations between the formal and informal learning processes. We use as an example, second language education. One of the greatest challenges here is how the student learns to adapt in his/her everyday conversations, e.g., with his/her neighbour, a caretaker in the children's day care centre or a shop assistant. It can also be everyday conversation at the workplace -- with colleagues at the cafeteria, with the boss, or with a customer. These conversations happen at different places in the geographic areas the student finds himself/herself. One can imagine where these areas can be found at a Google map and geotags with information on the specific conversational situation. Much of this later.

To make the example as concrete as possible, we will show how one expresses oneself and show that one is listening in the context of a Danish conversation.

The question is: How do *Mobile City og Sprog Guides* help the student to become a better listener in daily conversations in the target language? The listener expresses himself/herself in small comments, questions and nonverbal expressions on the subject that the speaker undertakes in the conversation. (Bo-Kristensen 2004c).

The knowledge that are taught in the pre-activities is how does one listen in a Danish everyday conversation. This can be done by presenting some short film clips of everyday conversation that illustrate what a listener can say and do in a conversation in Danish. The students are given a list of the listening expressions. They will be asked to, among others, compare the expressions with their own language. This way, the pre-activities give prior knowledge which can be used when the student is in his/her own informal learning environment in expressing the language phenomenon.

The teacher introduces Google Maps to the students, where some places in town are marked (geotagged), where conversations can, for example, occur. A link is provided, and when one clicks on the tags, one can watch an example of the conversation in YouTube. Likewise, there is also a summary of the conversation and a list of the listening expressions at the geotags.

In the tag, the students are asked to use their own mobile phones when they start a Danish conversation that they experience daily. They should focus their attention on and document at least two conversations they encounter. They can use their mobile phones for the following:

- Take a photo of the person/persons they converse with;
- Upload the photos at a system that enables them to put geotags on the photos (Some mobile phones have built-in GPS, wherein geotagging can be made directly from the phone);
- Audio record their conversation;
- Video record their conversation;
- Record – or get a native to record – listening expression/s that he/she has noticed.

The students are provided the following assistance:

- The mobile phone's camera and sound/video recorder.
- Google Mobile Map with tags and relevant wordlists and links.

- Possible example videos (There is a link in the geotag that opens to the film in YouTube)

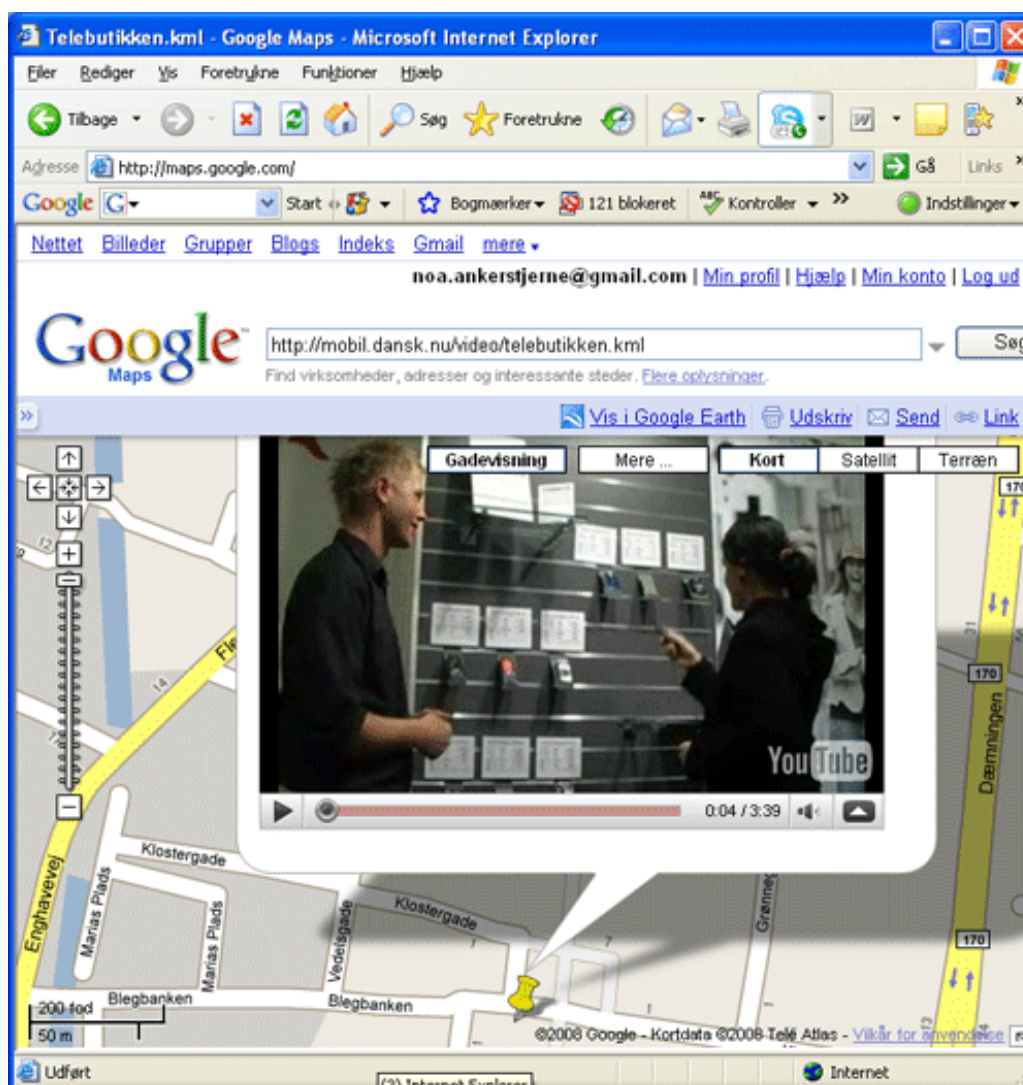


Fig. 2: A Google map geotag with an embedded conversation from a language student's informal learning environment

The students can present their collection of their research of the target language during and after the exercise. This post-activity can be combined with other activities. After processing the experience at the classroom, the student can go back to the informal learning environment with new questions and research. They may be encouraged to make their own maps with tags containing conversation, expressions and relevant observations.

## 6. Conclusion and perspectives

*Mobile City and Language Guides* is a language learning concept that can help second and foreign language learning by creating a better link between the teaching's formal and "reality's" informal learning environment. In this paper, we have shown how new technological developments in mobile phones and the Internet can be used to create exciting and useful links between these environments. A question that one can ask right now is: How can broadband Internet mobile phones and Web 2.0 applications become a reality and the daily life at the language schools, upper secondary schools and universities?

The answer to the question is training for teachers. But we are not so sure that this is enough. Other supporting initiatives must be undertaken if a learning concept such as the *Mobile City and Language Guides* will be a reality in a practical everyday teaching and learning. Perhaps, the answer can be found, at a higher level, at the institutions' own concrete IT culture and vision on how technology (in this case broadband mobile phones and Web 2.0) should be incorporated in teaching. In our

experience, this culture starts to seriously develop when it has the support of the institution's Board, management and teaching staff.

Finally, *Mobile City and Language Guides* is only one among several possible mobile and Internet-based language educational scenarios. Therefore, a future challenge is to develop not only the concept of *Mobile City and Language Guides* but a great deal of other meaningful and exciting scenarios that can strengthen the linkages between formal and informal learning environments.

## References

- Alby, T. (2008a) *Das Mobile Web*. Munich: Hanser Fachbuch
- Alby, T. (2008b) *Web 2.0*. Munich: Hanser Fachbuch
- Bo-Kristensen, M. (2006) "Content Development in Adult Second Language E-learning", in: Remenyi, D. (ed.) *Proceedings of the International Conference on e-Learning*, University of Quebec at Montreal, Canada, 22-23 June 2006. UK: Reading, pp. 23 – 30
- Bo-Kristensen, M. (2004a) *Multimediedidaktik i andetsprog for voksne – bidrag til andetsprogsdidaktisk forankring af undervisningens multimediedidaktik*, Copenhagen, DPU. (ph.d.-dissertation)
- Bo-Kristensen, M. (2004b) "A Proposal for a Multimedia Didactics in CALT and CALL", in *CALL for The Nordic Languages – Tools and Methods for Computer Assisted Language Learning*, Peter Juel Henriksen (Ed). Copenhagen Studies in Language, 30. Copenhagen: Samfundslitteratur, pp189-197
- Bo-Kristensen, M. (2004c) "Multimediedidaktik i andetsprog for voksne – bidrag til andetsprogsdidaktisk forankring af undervisningens multimediedidaktik", Copenhagen, DPU (Ph.d. thesis)
- Chen, Y. (2007) "Extending Family to School Life: College Students' Use of Mobile Phone" Paper presented at the annual meeting of the International Communication Association, TBA, San Francisco, CA, May 23, 2007
- Ellis, R. (2008) *The Study of Second Language Acquisition*. Oxford: Oxford University Press (2nd Edition)
- Ellis, K. (2007) *How we learn*. London/New York: Routledge
- Jarvis, P. (2004) *Adult education and lifelong learning: Theory and practice*. London: Routledge Falmer.
- Nunan, D. (2004) *Task-based Language Teaching*. Cambridge: Cambridge University Press
- Richards, J.C. and T. S. Rodgers. (2001) *Approaches and Methods in Language Teaching*, Cambridge, Cambridge University Press. (2nd edition).
- Sharples, M. (Ed., 2007). *Big issues in mobile learning: Report of a workshop by the Kaleidoscope Network of Excellence Mobile Learning Initiative*. Nottingham, UK: University of Nottingham, Learning Sciences Research Institute.
- Schmidt, R. (2001). „Attention“. In: P. Robinson (Ed.), *Cognition and second language instruction* (pp. 3-32). Cambridge: Cambridge University Press.
- Wenger, E. (1999) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

