ReCALL **14** (1): 32–46. © 2002 Cambridge University Press
DOI: 10.1017/S0958344002000411 Printed in the United Kingdom

Learning e-learning – a comprehensive investigation of course developers' and language teacher trainees' views regarding the usefulness and effectiveness of a multimedia self-tuition course

LIES SERCU
KU Leuven, Faculteit Letteren, Departement Linguostiek – Academische Lerarenopleiding, Blijde-Inkomststraat 21, 3000 Leuven, Belgium
(*email: Lies.sercu@arts.kuleuven.ac.be*)

ELKE PETERS
K.U.Leuven, Faculty of Arts, Blijde-Inkomststraat 21, 3000 Leuven, Belgium
(*email: Elke.peters@arts.kuleuven.ac.be*)

Abstract

The paper presents the results of a comparative investigation of course developers' and teacher trainees' views regarding the usefulness and effectiveness of a multimedia self-tuition course designed to introduce foreign language teacher trainees to tools and methods for organising computer-assisted language learning. The paper first provides a brief description of the home-study course itself. It describes the course's main components, its content as well as the learning and evaluation tasks the course provides in support of the learning process. Next, the paper reports on the way in which the evaluation project investigating teacher trainees' and course developers' views regarding the effectiveness of the course was set up. The project's design is presented, and the way in which various procedures of data collection (written evaluations and individual interviews) were triangulated is commented on. In the third section we present the investigation's main findings. The section focuses on points of agreement and disagreement between developers' and trainees' views regarding the usefulness and effectiveness of the course. Finally, we describe the changes brought about by the evaluation project, and reflect on the necessity to take account of future users' views and requirements in the design and development process if the training of foreign language teachers is to benefit from web-based delivery.

1 Introduction

Research on the development of learning environments, be they computer-supported or not, has provided insights into the way in which instructional design processes evolve as

well as into the characteristics of expert designers and developers. The instructional design process has to be conceived of as a cyclical process, in which phases of planning and development alternate with phases of assessment and revision of what has been developed (Rowland, 1992). As Winn (1990) points out, a fixed order of developmental phases is non-existent and also non-desirable, and each team of developers has to decide on the optimum way to proceed. Expert developers, then, take the cyclic nature of the development process seriously, and know that regular assessment and, if necessary, revision are prerequisite to realising high quality products. But before actually starting the design and development process, expert developers also carry out a thorough analysis of the different technological and educational factors constituting the learning environment to be developed. They analyse the educational context in which the learning environment is to function, map the characteristics of its future users (teachers and students), clearly define the project's fundamental objective as well as the key objectives which it should enable learners to attain. In addition, they consider possible educational and technological alternatives with respect to the concrete organisation of the learning process, and decide which activities best suit the learner characteristics and the educational vision (e.g. behaviourist, constructivist or social-constructivist) to be realised. They want to have a clear understanding of the information and learning contents which the learning environment needs to offer, as well as of the criteria that will be used to assess whether the learning environment is successful and whether learners have reached the attainment targets set. To this list Selinger & Pearson (1999) add that expert developers also study what access to technology users have, how existing pedagogies will be challenged and what extra support may be needed to guarantee that the learning environment will actually induce changes in the approach to learning and teaching.

From the above description of what expert developers do, it is clear that designing high quality computer-supported learning environments involves more than designing user-friendly interactive interfaces, databases sorting learning materials, or fun multimedia components. Instructional development must not only continue to keep up with technological developments. It must also, and more so than tends to have been the case in the past, take account of the profiles of the environment's future users, of their needs and expectations. Especially with respect to self-tuition learning environments, it is crucial that developers involve learners in the design process in order to get feedback on the effectiveness of their product. Research has brought to light that decisions made during the analysis- and design phase are often based on hypotheses about the educational context and the final user, not on facts (Elen, 2000). Even if the analysis is carried out meticulously, it can still happen that a course does not work within the context for which it was developed. Whereas in face-to-face teaching teachers are able to amend shortcomings of the learning environment, in the case of self-tuition courses this is far more difficult.

2 Rationale of the evaluation project

It is against this background that we decided to involve the future users of a recently developed self-tuition course in the instructional design and development process. The research was carried out on the occasion of the planned introduction of a self-tuition course that had been designed to introduce Flemish foreign language teacher trainees to tools and methods for organising computer-assisted language learning. Before actually

introducing the course into every foreign language teacher trainee's curriculum, we wanted to obtain feedback on how a sample of teacher trainees perceived the effectiveness of the course. In addition we wanted to compare their views with those of the course designers.

Apart from this first reason for carrying out the investigation which we derived from the research literature, a second reason complemented the rationale of evaluation project. When proposing to introduce the self-tuition course into the curriculum of all teacher trainees, some members of staff expressed sincere doubts about the prototype's quality, distrusting the designers' all too positive appreciation of the tool they had developed. The research project, it was hoped, would provide a valid research basis for deciding on whether to introduce the course in its present form in the teacher training programme; whether to make minor changes but still introduce it; whether to wholly revise the course, and then introduce it; or whether not to introduce the course at all. The project would also encourage the designers to be explicit about their objectives and educational visions, as well as about the way in which they had wanted to realise both of these in their learning environment. It should be pointed out here that the authors of this paper are currently members of staff, but did not participate in the course's design or development.

The main questions that guided the project are as follows:

- How do the course developers evaluate the functionality and effectiveness of the learning environment they created?
- How do the future users evaluate the functionality and effectiveness of the learning environment?
- In which respects and to what extent do developers' and trainees' views coincide?
- What conclusions can be drawn on the basis of the research results with respect to the changes that would need to be made to the course if it were to be introduced as an obligatory component in every foreign language teacher trainee's curriculum?

Before explaining how the above research questions were operationalised, how the data were collected, what research results we obtained and what conclusions could be drawn from the research results, a brief overview of the development project will be provided, and the course's main features, as well as the educational premises on which it is built , will be described.

3 The development project

The self-tuition course was jointly developed by a Dutch and a Flemish teacher training institute, offering pre-service and in-service training to teachers of foreign languages. Fontys Teacher Training College (Tilburg, the Netherlands) initiated the project. The teacher training centre of the Faculty of Arts of the K.U.Leuven (Leuven, Belgium) was the sole project partner.

Development of the course started some two years ago. The fundamental objective of the project was to develop a course that would provide future foreign language teachers with the skills and insights they would need to successfully implement CALL in their own language teaching.

At the time of the evaluation project, course development was still going on. However, the fundamental options regarding how to organise the learning process or how to assess the trainees' learning remained unchanged, and all ongoing adjustments and developments took place within the chosen formats and frame.

4 Description of the self-tuition course

The fundamental objective of the course is to introduce foreign language teacher trainees to tools and methods for organising computer-assisted language learning. On the opening screen *DELLE* (Digitally Enriched Language Learning Environment) is defined as "A self-study course for teachers and teacher trainees in the Netherlands and Flanders".

The course consists of four parts: a text part, a reference section, a series of workshops and five evaluation tasks. The text part aims to encourage future foreign language teachers to reflect on the changes to our society brought about by the introduction of computers. More specifically, this part of the course invites students to reflect on how the PC has changed education and the role of the teacher. Hyperlinks in the texts direct learners to relevant background information on the Web, or to Web pages internal to the course.

The reference section is an ordered collection of links to materials that could be of interest to foreign language teachers. It is here that users get an overview of the kinds of materials that can be found on the internet and that may be helpful to them, as teachers, or to language students. The reference section contains links to, amongst others, dictionaries, grammars, authentic text material, literature sites, or software reviews. To help the students use the reference section, a workshop is provided. The reference section is useful when students complete the workshop tasks in the course.

The workshops aim at helping users reflect on possible applications of Information and Communications Technology (ICT) in education. They set tasks that assist trainees in acquiring the skills and knowledge they will need to meaningfully integrate ICT into their foreign language teaching. Figure 1 provides an overview of the workshops that have been included in the course. Some workshops focus on basic computer skills, such as surfing or e-mailing. Others focus on topics directly related to foreign language teaching. In every workshop, the user gets instructions and tips, which are often hyperlinks to websites outside *DELLE*. Users are also advised to save their results and answers in a portfolio, visualised on every workshop page by the pf-icon, in order to document their own learning path.

The evaluation tasks, listed in the middle of the screen shot in Figure 1, are meant both as self-assessment and as evaluation tasks. They intend to inform the trainees regarding their present level of understanding of and skill at integrating computers into foreign language teaching. The tasks trainees 'hand in' will also inform instructors about a trainee's learning progress.

Having worked their way through the text part of the course, and having completed all workshops, users should be able to complete the evaluation tasks with relative ease. Every evaluation task is structured in the same way: the task is formulated, the user gets some tips and hints, some information about what is expected of the product handed in, as well as about the evaluation criteria used to assess the task.

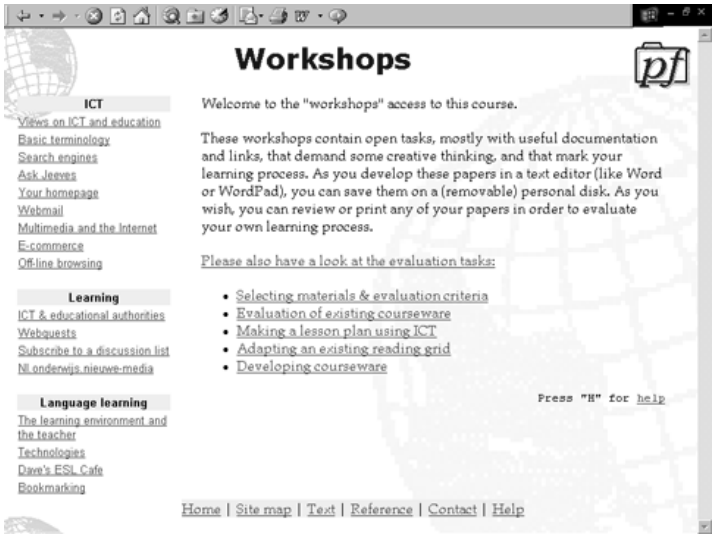

Fig. 1. Overview of workshops.

5 Evaluation project

The main objective of the research project was to compare the course developers' and the teacher trainees' views regarding the functionality and the effectiveness of a learning environment. The results of this confrontation would inform the next stage of the design process and provide a basis for deciding on concrete minor or major changes to the course if it were to be introduced as an obligatory component in the Leuven teacher trainees' curriculum.

5.1 Operationalisation of 'effectiveness: gathering data regarding the designers' and the users' views

Before data collection, instruments could be developed that would allow us to gather the data we needed to answer our research questions; our central concept, namely 'effectiveness' had to be operationalised. Below we describe how 'effectiveness' was operationalised, first with respect to the developers and then with respect to the future users of the course. We want to underline that 'effectiveness' will not be defined in technological terms here. We did not want to investigate how the respondents assessed the quality of the interface or of the navigational commands, but rather how they assessed the educational quality of the tool.

- **The designers**
  Since the chosen instructional design model to a large extent determines how designers see and assess the learning environments they develop, the first thing to do was to investigate what the developers claimed to have been their instructional design model and what educational principles they had wanted to actualise when designing *DELLE*. Whether a learning environment is developed on

the basis of behaviourist, constructivist or social-constructivist views on learning and teaching, the chosen model always affects the specific format chosen (Elen & Lowyck, 1995) as well as the way in which designers will assess their product. For example, developers supporting cognitive information processing models of learning are more likely than their behaviourist colleagues to evaluate a learning environment based on behaviourist premises negatively. A social-constructivist is likely to judge behaviourist or non-interactionist approaches to learning negatively.

A second aspect to investigate was how the designers described the key objectives of their course, since the learning objectives they set for course users will also determine the way in which they perceive and assess their course. When evaluating their product as a whole, developers will examine to what extent the course is successful in helping learners attain the learning objectives set.

In line with this second area of inquiry, data were also collected on the course developers' opinions regarding the success of individual course components in terms of the quality of the information contained in the course, the range of the materials offered, the selection of the materials, the quality of the tasks set, the quality of the learning path plotted, etc. The designers were invited to voice what concrete improvements they planned to make.

- **The users**
  Our investigation regarding the effectiveness of the tool as perceived by the future users centred on (1) the extent to which they felt the learning environment was adapted to their level of understanding of foreign language teaching methodology and of pedagogically sound uses of ICT in foreign language teaching; (2) the extent to which they felt the learning environment succeeded in assisting them to realise the transfer of the course contents to their own teaching practice.

  Both focal points could be derived from an investigation of the teacher trainees' expectations regarding the course before the start of the evaluation project. Together with these expectations, data were collected regarding their learner profile, since it was assumed that both users' expectations and their learner profile would affect the way in which they assessed the functionality and effectiveness of the self-tuition course. Learner profile was operationalised in terms of teaching experience, ICT skills, familiarity with foreign language teaching methodology, familiarity with CALL technology, attitude towards ICT and number and kinds of teacher training courses already taken.

5.2 Research group

On the designers' side the research group consisted of both developers, one Dutch and one Belgian. Both developers are experienced teacher trainers and have been teaching methodology courses in the area of foreign language teaching for many years. The Dutch initiator's experience with the development of ICT-based tools was larger than that of the Belgian project partner.

On the user' side the research group comprised twelve Flemish teacher trainees, who were at various stages in the teacher training programme. No Dutch teacher trainees

participated in the project. All trainees had taken an introductory course in foreign language teaching methodology. Only two respondents were practising teachers, combining a job with their teacher training. All other respondents had only limited teaching experience. All trainees said they used their PC regularly for e-mailing, surfing and word processing. Most students were not familiar with spreadsheets or databases. None of the respondents had a homepage. Generally speaking, the respondents indicated that they find using a computer quite challenging. None of the trainees had had any experience with working on a PC while in secondary school. From this it follows that none of the trainees had had foreign language teachers who made use of ICT tools for language learning.

5.3 Data collection

With respect to the users, three kinds of data were collected: data with respect to the users' profile, data with respect to the users' expectations regarding the self-tuition course, and thirdly, data regarding the future users' views on the functionality and effectiveness of the self-tuition course.

The first two kinds of data were collected by means of written questionnaires, containing open and closed questions. In order to gain insight into the respondents' learner characteristics the respondents were asked to take an ICT-test which inquired into their computer knowledge and skills, the frequency with which they use ICT tools, as well as their familiarity with computer-assisted language learning. They were also asked to score a number of attitude scales inquiring into their attitude towards ICT in general as well as towards ICT in foreign language learning. Some additional open questions inquired into their expectations regarding the self-tuition course: What kinds of materials did they hope to find in the course? What did they hope to learn from the course? What did they hope to be able to do and know after having finished the course?

Data regarding the future users' views on the functionality and effectiveness of the self-tuition course were collected by means of written assessment sheets containing open and closed questions, as well as by means of individual interviews. The students filled out the assessment sheets while working with the tool or immediately after having finished one part of the course; all respondents were asked to process all workshop materials and to complete one evaluation task. The closed questions took the format of 7-point scales, asking the trainees to rate the different components of the self-tuition course with respect to the following features, here formulated positively: 'motivating', 'worthwhile', 'well-structured', 'easy', 'relevant for the foreign language teacher', 'overall quality of content', 'up-to-dateness of content', 'appropriate for home study', 'adapted to the needs of the teacher trainee', 'not too time consuming', 'coming up to my expectations'. The open questions immediately following these rating scales invited the respondents to clarify their overall appreciation of a particular course component and to formulate suggestions for improvement. The interviews, which the respondents took some two weeks after having handed in their assessments and which lasted some thirty minutes, inquired into possible reasons for each trainee's personal appreciation of the course as a whole and of individual course components. An overall picture of each trainee's appreciation was charted on the basis of a rough initial analysis of their individual assessment files.

On the designers' side, data were collected by means of individual interviews with the two designers. The interviewer invited both the Dutch and the Flemish designer to make explicit the educational vision and the key course objectives that had guided their design and development work. In addition, she inquired into the designers' perceptions and convictions regarding the course's overall quality, as well as regarding the quality of individual course components, and asked them what improvements they would like to make to their course. Interview data were complemented with data resulting from a content-analysis of both a number of publications in which the designers describe the basic premises on which the self-tuition course is built, and of those parts of the self-tuition course in which the designers explain what the overall course objectives are and what are the key objectives of individual course components.

The data were collected between January and March 2001

6 Summary of results

In this section the investigation's main findings are presented. The section describes both the designers' and the users' view regarding the usefulness and the effectiveness of the self-tuition course, and points out areas of agreement and disagreement between developers' and trainees' views.

6.1 Designers' views regarding the effectiveness of the course

On the basis of an analysis of some publications in which the developers report on the self-tuition course, of the statements of objectives contained in the course itself and of the interviews with the designers, it could be concluded that social constructivist theories and examples of how social constructivism has been actualised in digital powerful learning environments had served as guiding principles for course development. In line with these basic premises the designers described the key objective of the project as follows: "The development of a home study course, inspired by the social-constructivist learning theory that should enable foreign language teacher trainees to acquire the insights and skills, which they need to integrate ICT in a pedagogically responsible way."

In their publications the designers describe their course as "possessing the characteristics of powerful learning environments, developed on social constructivist premises. The environment pays attention not only to contents and information to be passed on, but also to the acquisition of procedures relevant to a particular field of study and to the development of problem solving thinking. Secondly, the different pedagogical approaches in the course aim at supporting learners' constructivist learning processes. These approaches include modelling, explicating, exploration and reflection. Furthermore, the trainees can determine their learning path autonomously. Finally, the learning environment helps the trainees to realise the transfer of course materials to actual teaching practice."

When asked whether they were satisfied with their product, the designers stated that they believed that the key objectives had been realised and that the course possesses the most important features of a powerful learning environment. They are satisfied with *DELLE* because it prepares the future teacher for the meaningful integration of the

computer in foreign language teaching. To the developer's mind, the course not only models, but also helps trainees to reflect on various aspects related to computer-assisted language learning. Furthermore, the course is assessed positively with regard to interactivity, for it offers what trainees need. In their opinion, the course is a good self-tuition course. It not only offers the possibility of choosing different learning routes; it also provides all support needed to successfully and autonomously complete the course. Finally, the course is said to be fit for use in both a Dutch and a Flemish teaching context because of the similarity of the target groups.

6.2 Users' views regarding the effectiveness of the course

The evaluation of the effectiveness of the tool on the side of the users departed from what the users had indicated to be their expectations regarding the course before they started working with it and evaluating it. Our results showed that these expectations ran strikingly parallel. All trainees indicated that they hoped that the course would offer ready-made and readily usable materials, which they would be able to integrate in day-to-day teaching. The interviews revealed that to the teacher trainees day-to-day teaching meant 'teacher-directed' teaching, not coaching learners in a social-constructivist autonomous learning environment. In addition, the interviews revealed that the ready-made materials the trainees referred to were not necessarily materials which would require their pupils or students to use computers for language learning. The materials which the trainees had in mind were also just texts or language exercises which they could find on the internet and print for their pupils or students, much as they would do in an ordinary paper-and-pencil classroom. Other ready-made materials which the trainees hoped the course would offer were links to sites that offer lesson preparations, both preparations that would show them how to integrate ICT in their own teaching practice and traditional ones. In addition to this, the trainees indicated that they expected the course to provide an answer to the following questions: (1) Where can I find practice materials? This question was further realised as: Where can I find language exercises for practising grammar, vocabulary, spelling and sentence structure? Where can I find language games? Where can I find visual materials on the foreign culture? Where can I find writing exercises, gap texts, exercises with feedback? (2) How can I use ICT in a literature class? (3) How can I use ICT to teach culture? (4) Where can I find dictionaries and grammars for my pupils? (5) How can I work with a discussion forum? (6) How can I assess my students with a computer?

Having outlined the trainees' expectations we can now proceed to presenting the results of their assessment of the course. The results are presented in answer to two questions, operationalising the dependent variable 'effectiveness'.

1. *Do the users find the learning environment to be adapted to their level of understanding of foreign language teaching methodology and of pedagogically sound uses of ICT in foreign language teaching?*
   The written assessment data as well as the questionnaire data amply demonstrate that the teacher trainees feel the course is not well-adapted to their learner profile. They mentioned two specific respects in which they judge the course to be defective. For one thing, they felt the course developers' appraisal of their

computer skills was inadequate. For another, they felt that the learning support the course offers is insufficiently geared to their level of understanding of foreign language teaching methodology or of CALL. With respect to the first aspect, the trainees stated that the course devotes too much attention to basic computer skills, such as surfing or e-mailing. Most teacher trainees referred to the workshops designed to practise these skills as 'superfluous', 'patronising' or 'a waste of time'. On the other hand, the trainees voiced the opinion that the course failed to offer them the necessary learning support to acquire less obvious computer skills, such as those needed to design and publish a homepage on the internet, as the trainees are asked to do in one of the workshops. Two quotes from two different interviews point towards the insufficiency of the learning support offered. The quotes both refer to the evaluation tasks which users are required to complete at the end of their course work. Adequate completion of the tasks demonstrates that they have acquired "the knowledge and skills needed to meaningfully integrate ICT in their foreign language teaching", to use the course developers' words regarding the key objectives of their self-tuition course.

J.V.: These [evaluation tasks] were really too much. I think the other students will agree with me. The instructions were very confusing and too demanding if you see what we had to go through first. Even if you could do all the workshops successfully, even if you understood everything, if you read through the whole reference section, even then … it remained an impossible task. You could spend hours and hours and hours on it, maybe then you could solve such a task but still … from the reference section to these evaluation tasks, such as designing a lesson plan using ICT or adapting an existing reading grid, or developing courseware, really far too difficult.

H.V.: The last three tasks were very difficult, e.g. courseware, my God, I didn't have a clue how to begin. I really don't think that you are prepared for the evaluation tasks when you have done all the workshops, you are not ready for doing such a task. The task is far too difficult, too elaborate. I miss a few links. Adapting an existing reading grid, I remember that I thought: Oops. A lesson plan using ICT, OK, that seemed something I could do and something realistic, but the task turned out to be something completely different from what we saw during the course. Evaluating existing courseware. That is important but I don't know if could have done it.

A comparison of the way in which the Dutch developer defined the user profile during the interview, with the actual profile of the Flemish teacher trainees, derived from the data which the respondents themselves provided in the written questionnaires, sheds additional light on why the trainees feel that the course is not well-adapted to their learning profile (see Figure 2).

In the light of the obvious differences between the hypothesised and the actual Flemish user profile it should not surprise that *DELLE* induced feelings of frustration with the Flemish trainees. Students reported that their motivation, which was high at the beginning, gradually diminished, also in the light of the unrealistically

The hypothesised user profile	The actual Flemish user profile
The user has a thorough command of basic computer skills. S/he can work with a word processor, send e-mails, use the internet. S/he can print, save, delete, …. Users who are not familiar with these skills can take a remedial course before they start work with *DELLE*.	Most of the Flemish users can use a word-processor, e-mail and the internet. Some respondents could be described as 'digi-illiterates'. A remedial course is not available.
The student has already had an elaborate theoretical and practical introduction into the foreign language teaching methodology before taking the course.	The student has already had an elaborate theoretical introduction into foreign language teaching methodology before starting with *DELLE*.
The student has had an introduction into the 'studyhouse methodology', which aims at enhancing pupils autonomous learning skills.	The trainees have not been introduced to the 'studyhouse methodology'. Their training mainly and almost exclusively prepares them for traditional teacher-centred teaching.
The students alternate home study with studying at the teacher training college. Regular contact hours are provided for when students work with *DELLE*.	The course was introduced as a self-tuition course in Flanders, with the possibility to contact a tutor. However, no contact hours were provided for.
In the curriculum, some 120 hours are available for course work aimed at the promotion of trainees' overall ICT skills and at raising their familiarity with pedagogically sound uses of ICT in the subjects they will teach.	In the teacher training programme, some 30 hours are available for course work specifically focusing on ICT and CALL
The students often combine their teacher training with actual teaching.	The teaching experience of most students is limited, if existent at all.

Fig. 2. Hypothesised and actual user profiles.

high amounts of time they were required to invest in the course if they wanted to meet the course requirements.

The most important difference to our mind seems to be the difference in teaching experience and methodological preparation, both with respect to the studyhouse methodology and with respect to foreign language teaching methodology. The lack of teaching experience especially prohibited the trainees from taking maximum advantage of the workshops and course materials offered. Students repeatedly reported that they did not understand why particular materials had been included in the course.

Also, though communicative competence is the goal of foreign language teaching in both Flanders and the Netherlands, the differences in educational philosophy should be taken seriously. From the data obtained in this study it is clear that a self-tuition course designed for the Dutch educational system, which systematically promotes the acquisition of autonomous learning skills, cannot be implemented in a Flemish teacher training programme just like that. The Flemish

users, having grown up in a different educational system and being prepared for a different educational system, may not recognise sequences of learning activities, such as modelling, explicating, reflecting, scaffolding, coaching, co-operation, typical of learning environments designed to foster learner autonomy, or they may do so less easily than their Dutch counterparts.

(2) *To what extent do the users judge the learning environment to succeed in assisting them to realise the transfer of the course contents to their own teaching practice?*
From the above, it will be clear that the overall answer to this second question will be negative in tone as well, though some aspects of the course will be shown to have been positively evaluated. The testers did appreciate the fact that the course offers a lot of internet website addresses that offer authentic materials or language exercises which teachers can integrate in traditional lesson preparations. At the same time, they raised the question of whether this is what the use of ICT in foreign language teaching is all about, and whether many of the exercises towards which they were pointed could not just as well be offered to pupils on paper instead of via ICT. The quotation below testifies to both the tester's appreciation of the reference section, as well as to his critical attitude towards the value of this course component with respect to learning how to meaningfully integrate ICT in foreign language teaching.

K.B.: I have the feeling that the course is useful for teachers who are looking for materials, which they can use in their classes without having to integrate the computer in their teaching practice. The reference section is, in my opinion, the most important part of the course because it is the only part of the course that deals specifically with the class situation and with what you can do in your class. It points towards exercises, you get a whole survey of all kinds of exercises. What is interesting is the fact that you can print them and give them as hand-outs. For me personally, this is very important, but… I haven't got enough … I think that the course doesn't suffice if you are a complete layman. At the end of the course you know more about the internet and about ICT but not enough to use it in your own classes. That's also the reason why you – as a layman like myself – keep falling back on this reference section to find authentic texts in order to use those in a traditional way instead of working with ICT itself. Lots of these things can be done on a sheet of paper as well, sometimes even better.

In general, the teacher trainees felt the course centred too much on general ICT skills and was not sufficiently directed towards the introduction of ICT in foreign language teaching, as is voiced by one of the computer illiterate teacher trainees in the following quotation:

B.B.: What I did think, maybe it was a wrong expectation of me, but I thought that the course would be more directed towards ICT in the classroom. I had the feeling that the introduction lasted too long, the getting to know the internet. I learned a lot of course. But really, what you can do with ICT in your own teaching

> practice?? Most of the time we had to reflect on that. Maybe I expected more sample lessons, more concrete examples of what to do, more tips and hints. The course deals with it but rather in a vague way. For the evaluation task I thought I was going to have a look at the CNN-newsgroup website and that I would be able to make out whether I thought the site was fit for a particular learner group, but I couldn't do it. Maybe this is the case for me because I am not teaching right now. I didn't know if I could use it in my own teaching practice and I still don't. I don't know which tasks I could set my pupils when they work with this website. I wouldn't know how I can use the site myself.

7 Changes brought about by the evaluation

The results of the evaluation project reveal, first, that *DELLE* does not meet the Flemish users' profile. On the one hand, the course focuses too much on basic computer skills, which most trainees already possess; on the other hand it provides too little feedback and guidance when dealing with more advanced computer skills. Also, *DELLE* does not take account of the fact that the Flemish trainees have only minor teaching experience and have not been introduced to the characteristics of and principles underlying autonomous learning environments. Secondly, *DELLE* was assessed as focusing too much on general ICT-skills, not on potential uses of ICT in foreign language teaching. The trainees feel the course is insufficiently geared towards actual foreign language teaching. For them, bridging the gap between the self-tuition course and actual teaching practice was too large a step to take. As a result, the necessary transfer to the teacher trainee's teaching practice cannot take place.

These insufficiencies incited us to thoroughly revise the self-tuition course before introducing it in the teacher training programme of all trainees. In order to gear the course better to the Flemish users' profile, the selection of workshops now contained in the course will be revised, leaving out the workshops that focus on basic computer skills, and revising and enlarging existing workshops that focus on advanced computer skills of use to foreign language teachers. In order to allow every student, each with his/her own CALL-background, to map out his/her own learning path, the transparency of the course will need to be enhanced. An initial test will reveal to learners where their shortcomings lie and which workshops will help them to acquire the skills they will need to meaningfully integrate ICT in their foreign language teaching. A clear statement of every workshop's objectives will help learners decide on the relevance of the workshop in the light of their present understanding and skills. The home-study approach, already realised in the present course, will be maintained, but additional step-by-step learning support will be provided for. Trainees who feel they need face-to-face tuition, will have the possibility to attend face-to-face monitoring sessions. The results of the evaluation project also made it clear that the course should be offered at a later stage in the students' curriculum, namely after they have received a thorough theoretical and practical introduction to teacher-directed foreign language teaching methodology as well as to autonomous learning theory, and after they have had a sufficient amount of teaching experience.

To bridge the gap between theory and practice and make it possible for trainees to transfer the course's contents to actual teaching practice, it is vital that the course not

only provides information on how ICT can be integrated in foreign language teaching, but also assists them in the acquisition of the insights and skills they need to actually apply that knowledge. The course should introduce teacher trainees in a more systematic way than is presently the case to the state of the art in computer-assisted foreign language teaching, offering a frame of reference that will allow trainees to make their own decisions as to what tools or methods to choose and how to assess existing CALL software. In addition, the course will need to offer exemplary lesson plans, that will help trainees realise what preparation and teacher decisions the integration of ICT in teacher-directed or pupil-directed learning environments requires. The variety of lesson plans should reflect the variety of topics dealt with in foreign language teaching. Thus, lesson plans should be included that focus on practising reading, writing, listening and/or speaking skills, or on the acquisition of vocabulary or grammar. Also, lessons should illustrate both teacher-directed approaches to teaching and autonomous learning approaches. Once teacher trainees understand what planning computer-supported foreign language lessons involves, the course should provide them with tasks and workshops that will enable them to design their own lesson plans and, thus, transfer what they have learnt to their own teaching practice.

8 Conclusion

We will not repeat the concrete points on which the designers' and the users' views regarding the effectiveness of the course differ, and neither will we review the recommendations for revision that ensued from our evaluation project. Rather, we want to finish with some general conclusions regarding the development of ICT applications.

A first general conclusion concerns the importance of involving the future users of a web-based self-tuition course in the design and development process. We hope to have shown that the hypothesised user profile may not coincide with the actual user profile, and that it may be different in more respects than designers of learning environments realise. It is our conviction that evaluations of ICT applications for education should focus foremost on the educational features of the learning environment and not in the first place on technical or technological aspects (Salomon, 1994). Before proceeding with the development of a learning environment, especially a self-tuition learning environment, it is crucial that designers investigate whether their hypotheses about the educational context and the learner profile are true to reality.

A second conclusion regards the fact that an ICT tool which on the face of it looks as if it might be internationally applicable, may not be so. It is quite surprising that educators who continue to be critical of traditional textbooks contending that they are usable worldwide, are far less critical in this same respect when ICT applications are concerned. Just like traditional teaching materials have had to be adapted to local educational contexts and learner profiles, web-based courses too have to be approached critically and scrutinised with respect to their functionality for the local teaching context.

Our third and last conclusion concerns the transferability of what is learned to reality. The problem of transferability is of course not unique to self-tuition learning environments. The problem is well-known to teacher trainers. Even if theoretical methodology courses are complemented with seminar activities in which learners are assisted in transferring theory to practice, it is not uncommon to find that trainees fail to transfer the

up-to-date teaching approaches with which the teacher training institute has familiarised them to their teaching. Rather, trainees may be found to apply more traditional and old-fashioned approaches, which they have seen used while in secondary school. Yet, the transfer problem appears even more acutely with respect to self-tuition courses. The data we obtained clearly point to the fact that the learning support which a self-tuition course offers needs to be fine-grained and very explicit, without being patronising. Asking learners to reflect on the applicability of particular materials will not suffice to actually realise transfer.

From the above, it will be clear that e-learning involves a learning process on the side of both users and designers of web-based learning environments. It is only when the co-operation between both parties is taken seriously that the educational potential of e-learning will be further enhanced.

References

Elen, J. (2000) Technologie voor en van het onderwijs. Een inleiding in onderwijstechnologische inzichten en realisaties. Leuven: ACCO.

Elen, J. and Lowyck, J. (1995) Constructivistisch ontwerpen. In: J. M. Pieters and T. Plomp (eds.), *Ontwerpen van opleidingen*. Deventer: Kluwer.

Rowland, G. (1992) What do instructional designers actually do? An initial investigation of expert practice. *Performance Improvement Quarterly* **5**(2):65–86.

Salomon, G. (199) *Interaction of media, cognition and learning*. Hillsdale, NJ: Lawrence Erlbaum.

Selinger, M. and Pearson, J. (eds.) (1999) *Telematics in Education: Trends and Issues*. Amsterdam: Pergamon Press.

Winn, W. (1990) Some implications of cognitive theory for instructional design. *Instructional Science* **19**:53–69.