Chapter 4

DIGITALENKLAS AND INTUIT: ICT AND LANGUAGE LEARNING TODAY

4.1 Introduction

At the beginning of the new millennium, SURF, the Dutch higher education and research partnership organisation for information and communications technology (http://www.surf.nl), launched its first call for tender for education innovation projects in the Netherlands. This was the first of a series of government-funded initiatives coordinated by SURF which have had a significant impact on educational innovation in the Netherlands during the last decade (Kruizinga & Bergh, 2005). Together with independent developments in institutions, which largely converged around the same technologies, these innovation projects have helped to shape the technology-enhanced learning environment available for language learning in the Netherlands to date. In this chapter we will use projects that were carried out in the context of these innovation initiatives to describe typical aspects of ICT-supported language-learning today. As in the previous chapter, the focus will be on pedagogy, technology and institutional environment (as key components of integration). Although our own experiences in the Netherlands will be central in the description, similarities and differences with technology innovation elsewhere will be pointed out where appropriate. Together with the information from the preceding and next chapters this provides input for spelling out more generally the options for integrating ICT in language teaching and learning in the blended HE environment.

4.2 Two contemporary projects: Digitalenklas and INTUIT

4.2.1 Tender criteria

The calls for tender published by SURF from 2000 to 2006 invariably emphasised the following conditions under which bids could be made:

- **Innovative design:** The tenders called for a "judicious redesign" of educational programmes, in which ICT could be used "purposefully and innovatively." The innovation should be motivated on didactic or subject-specific grounds and be directed at transforming existing practices or exploring ways in which this could be achieved.

- **Proven technology:** The innovation envisaged should make use of "proven technologies". Technology development should not be the objective of the innovation, although the development of innovative tools on the basis of existing technologies in support of innovative practice was allowed.

- **Substantial impact:** The innovation should apply to a substantial part of the degree programmes, possibly covering the whole period of study (entire Ba or Ma phase).

- **Collaboration between institutions:** Minimally two HE institutions in the Netherlands should participate in the project.

- **Dissemination and consolidation:** A substantial part of the project should be reserved for evaluation and dissemination of the project results. In addition, criteria were set for project management and embedding the project results into the HE curricula to optimise chances for successful consolidation upon completion of the project.

(Main criteria for SURF innovation projects, based on SURF Calls for tender Educational innovation projects 2000-2006)

During later tenders, the calls targeted particular themes for innovation, such as communication and 'digital didactics' (2003), innovation and knowledge development (life long learning) (2004, 2005) or differentiated between exploratory phases/projects and consolidation phases/projects (2005, 2006). The overall criteria, however, remained largely the same.

For the partners collaborating in the Hologram consortium, these criteria reflected the changed realities of teaching and learning innovation with technology in the new millennium. The transformative aspects and the scale of application testified of a gradual shift towards innovative pedagogy and institutional aspects as points of departure for the use of ICT for language learning and teaching. The focus on proven technology rather than the development of technology as a project objective in itself called for a careful negotiation between the use of generic VLEs, such as Blackboard, and the use of applications specific to language pedagogy.

The emphasis on collaboration, dissemination and consolidation of project results reinforced the existing partnerships, for which the Hologram project had established the basis. The Hologram partners continued to work together to respond to the new opportunities for language innovation in their institutions, and submitted three project proposals to the SURF innovation tenders, two of which were successful. These will be used to describe aspects of technology, pedagogy and institutional perspectives that characterise the ICT-supported language learning environment today.

4.2.2 Digitalenklas

Digitalenklas[5] was awarded in 2001. The project was carried out by the University of Groningen, Leiden University, Tilburg University, and Utrecht University in collaboration with a commercial partner. The project was aimed at using ICT innovatively in support of English, Arabic, Dutch and Spanish.

The project was initiated against the background of an agreement made by Arts and Humanities Faculties of the universities in the Netherlands to start using the CEFR for describing language learning outcomes at the end of the

[5] The title of the project is a combination of the Dutch "digitaal" (digital) and "talenklas" (language class), which reflected the project's objective of establishing links between digital technology and instructed language learning.

newly introduced Bachelor phase of study programmes (De Bot et al., 2001). The outcomes were specified for the main languages and skills as follows:

	Listening	Reading	Spoken Interaction	Spoken Production	Writing
1.English	C1	C2	C1	C1	C1
2.German/French	C1	C2	B2	B2	B2
3.Other Germanic/Romance Languages	C1	C1	B2	B2	B2
4.Other	B1	B2	B1	B1	B1

Table 9: Outcome levels Ba-Phase Dutch Arts and Humanities Faculties (De Bot et al., 2001)

The project investigated which language activities were suitable for implementation in VLEs (which had been adopted by all HE institutions in the Netherlands at the time) and which activities could less easily be implemented in such learning environments (Corda & Jager, 2004).

In addition to serving useful functions in general course organisation and communication, VLEs were found to be particularly suitable for open-ended communication tasks which required feedback from peers or from teachers. Because of limited options for automatic feedback and adaptivity, they were considered less useful for delivering tutorial CALL exercises, for which programs such as Hologram were still being used in the participating institutions. VLEs at the time also lacked full Unicode support (Siekmann, 2001), which meant that Arabic or the International Phonetic Alphabet (IPA) could not be supported easily. For these reasons, Digitalenklas emphasised that VLEs and dedicated CALL programs were best regarded as complementary technologies which could be used to support different aspects of language pedagogy. Remaining within the bounds imposed upon software development by the tender criteria, the project used part of the budget to develop a dedicated web-based language learning program, Ellips, which was

to be used in conjunction with VLEs to provide functionality for developing and delivering language learning exercises.

The project responded to this introduction of the CEFR in language teaching at the participating institutions by setting up the metadata scheme in Ellips, which allowed teachers to specify exercises in terms of the CEFR descriptors for the language learning activity involved (the skill taught or acquired), the communicative competences that come into play (including the traditional areas of grammar and vocabulary) and the topics dealt with. For a description of the main features of the Ellips program, see Example 2 below. The description is based on a more extensive account in Corda and Jager (2004).

EXAMPLE 2: ELLIPS

Ellips is a web-based successor to the Hologram program described in chapter 3. It is intended to be used together with VLEs and offers support for closed language learning exercises, providing students with automatic feedback, and for pronunciation exercises, providing them repeated practice and the option to make recordings and upload these to their portfolios for reviewing by the teacher. The standard exercise types include multiple choice, multiple correct, pick and click, fill-in and transcription. Content pages in which additional information can be presented are also available. Exercises can be coded with descriptors from the CEFR. These descriptors or metadata ('data-about-data') can be used by teachers to find suitable learning materials when they want to set aside new sets of exercises for students. The metadata are also used for the semi-adaptive mechanism which allows the program to generate extra practice materials when students obtain insufficient scores in specific language learning areas. An example of an Ellips exercise is shown in Figure 7:

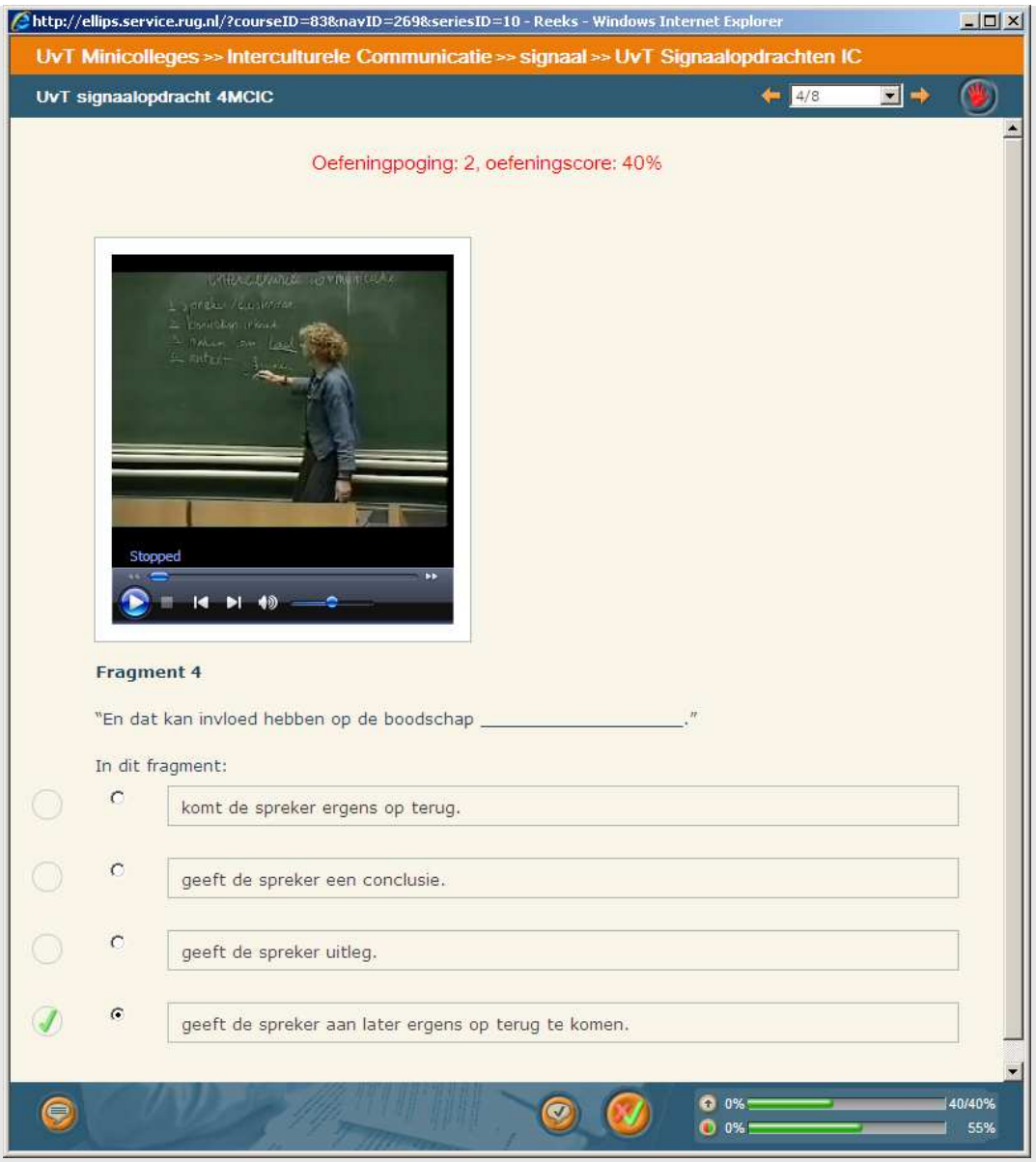

Figure 7: Ellips exercise screen

The exercise is from a series of mini lectures developed at Tilburg University as part of an SL/FL Dutch course. It is based on a mini lecture on intercultural communication. This exercise is intended to train students in listening for signal words. It is an example of a multiple choice exercise in which the user has found the correct answer upon the second attempt. The two bars at the bottom-right of the screen indicate the exercise score and the score on the set that this exercise belongs to. After completing a set of

exercises, students can compare their results with the results of the whole group. While this type of exercise could have been implemented using the quiz facility in Blackboard, Blackboard does not allow extra exercises of the same type to be offered if students fail to meet the required threshold.

Ellips provides this type of adaptivity on the basis of a metadata system derived from the CEFR. The metadata were originally developed by the University of Ghent in the context of another software development project. The metadata system distinguishes between three different taxonomies for each of the relevant CEFR descriptors Activity, Competences and Topics. The taxonomies were implemented on the basis of specific learning technology standards (the now superseded IMS Learning Resource Metadata Specification 1.2.1, see http://www.imsproject.org/metadata/). This and other mappings to the IMS specifications were made to facilitate future porting of the data to other systems if needed. The top level attributes of the CEFR descriptive categories are presented in Table 10 below.

The teacher or content developer can use these metadata for retrieving exercises from the shared database. These exercises can then be used for composing practice sets for students. On the basis of the metadata the program can automatically add extra exercises if students have not yet mastered specific linguistic areas.

It should be noted, however, that the metadata system has not been used widely by exercise developers (usually teachers) to date. Possibly, the extra effort needed to add the metadata or difficulties in interpreting the CEFR descriptive categories have played a role in this. Another factor may be that the taxonomies of CEFR descriptors are better suited for describing complex activities (tasks) than individual exercises. As noted above, in the context of the Digitalenklas project tasks were typically implemented in the overarching VLEs, while exercises were made available to students in Ellips.

Ellips continues to be used by a consortium of universities today, on the basis of an annual fee. The number of active courses is approximately 25, while the number of active student users is about 600. The stronger focus on designing for activity and using existing

content materials from the web have slowed down the production of new exercise materials. Materials originally developed in Hologram are still imported into Ellips today and re-used in technologically and pedagogically altered learning contexts.

1. Activity	**2. Competences**	**3. Topics**
1.1. Production	2.1. General competences	3.1. Arts
1.1.1. Speaking	2.1.1. Knowledge	3.2. Business & Economy
1.1.1.1. Spoken Production	2.1.1.1. Background knowledge	3.3. Computers & Internet
1.1.1.2. Spoken Interaction	2.1.1.2. Socio-cultural knowledge	3.4. Education
1.1.2. Writing	2.1.1.3. Intercultural awareness	3.5. Politics & Government
1.2. Reception	2.1.2. Know-how	3.6. Health
1.2.1. Listening	2.1.2.1. Intercultural skills	3.7. Law and Justice
1.2.2. Reading	2.1.3. Existential competence	3.8. News and Media
1.2.3. Audio-visual Reception	2.1.4. Ability to learn	3.9. Recreation and Sports
1.3. Mediation	2.1.4.1. Study Skills	3.10. Regional
1.3.1. Oral Mediation	2.1.4.2. Strategies	3.11. Sciences
1.3.2. Written Mediation	2.1.4.2.1.Communication Strategies	3.12. Society
	2.1.4.2.2. Cognitive Strategies	3.13. Nature and Environment
	2.2. Communicative competences	
	2.2.1. Linguistic competence	
	2.2.1.1. Vocabulary	
	2.2.1.2. Grammar	
	2.2.1.3. Semantics	
	2.2.1.4. Phonology	
	2.2.1.5. Spelling	
	2.2.2. Sociolinguistic competence	
	2.2.2.1. Register	
	2.2.2.2. Variants of the standard language	
	2.2.2.3. Politeness conventions	
	2.2.3. Pragmatic competence	
	2.2.3.1.Discourse competence	
	2.2.3.2. Micro Functions	
	2.2.3.3. Macro Functions	

Table 10: Ellips metadata taxonomy

Meeting the tender requirement for redesigning aspects of the curriculum, Digitalenklas defined typical language learning scenarios for VLEs on the one hand and complementary CALL programs, particularly Ellips, on the other. In following up on these suggestions, VLEs were used to implement communicative, group-oriented activities in which student-centred, collaborative tasks were actively promoted. These included activities such as peer-reviewed writing and web quests (i.e. web-based projects, using a predefined model for exploration and reporting; see section 6.3 for an extensive description and analysis).

The complementary program Ellips was used to implement exercises in listening, reading, grammar, pronunciation and vocabulary, with a different language and skills focus in each of the participating institutions.

The project also demarcated the role of the classroom in this ICT-enhanced environment by proposing that any task that students could sensibly do outside class (with or without the use of technology) should be programmed as such. Spoken student interaction, for instance, came out as one of the activities which could well be accomplished in the classroom without students using technology (PC's, headsets). Further details about the design and implementation can be found in the project reports (Jager, 2002; Jager, 2004a).

4.2.3 INTUIT

INTUIT ('English Tutoring through IT'), which was granted in 2005, built on the existing partnerships from the Hologram and Digitalenklas projects, but the area of application shifted to the language centres in the participating universities (with the exception of Tilburg University, participation in the previous projects had been in academic language departments). The partners involved were the University of Groningen, Leiden University, Maastricht University, Radboud University Nijmegen, Tilburg University, and Utrecht University.

INTUIT focused on the language centres within these institutions because they were faced with the challenge of providing large-scale, differentiated English language teaching to staff and students working in increasingly international study programmes. At the time, more than 1000 English-taught programmes [6] were offered in the Netherlands, language teaching in the language centres was predominantly classroom-oriented and relatively little use was made of ICT. In this context, INTUIT promised to develop and implement an ICT-integrated language learning environment at six university language centres (INTUIT, 2006).

The backbone of the environment would be provided by a VLE along the lines developed in the Digitalenklas project. Blackboard had become institutionalised as the leading technology in all of the universities involved, although less clearly so in the language centres. This was partly due to their positions in the academic community, which did not always allow them to use technology that was standard to the community as a whole. With Blackboard as the overarching technology, it was envisaged that the learning environment would incorporate many additional programs for English language learning and teaching, which the language centre teachers would critically assess, deploy in pilot projects with students and staff, and implement into their language provision by the end of the project (which ran from December 2005 to April 2008).

Targeting one language (English) taught in comparable contexts of use, the project was more pedagogically focused than the previous projects. The project was grounded in principles of learner autonomy (Little, 1991; Little et al., 2003). This was particularly relevant, because the teaching of English provided by the language centres was often condensed in short courses or modules. This put into focus the need for preparing students for independent learning during and after formal teaching.

[6] This has risen to 1400 English-taught study programmes by now (http://www.nuffic.nl).

The use of the CEFR was no longer restricted to describing target language learning outcomes in course outlines and study guides. Language centres had started to integrate principles and practices related to the CEFR into the curricula as a basis for learning and teaching. This brought into focus the question to what extent technology could be used in CEFR-based language courses or curricula.

The project looked at three areas of application which were particularly relevant for teaching the language concerned:

- **Assessment:** Many academic learners (students and staff) already command a high level of English. How could technology be used to determine these levels and for which skills could it be applied?

- **Practising:** Independent practice for remedying specific language areas was deemed essential in view of the limited time available for practice during language courses or modules. Which programs could be used for allowing independent practice? To what extent were they compatible with principles of autonomy and the CEFR?

- **Portfolio-based learning and teaching:** In view of the principles of autonomous (life-long) learning, and the promotion of portfolios by the CEFR, what role could (digital) portfolios fulfill in this context of academic English language teaching?

Although based on the same ideas about complementarity of VLEs and language-specific programs as Digitalenklas, the project involved the use of many more programs, this time for a single language. The ICT-integrated learning environment that emerged at the end of the project centred on the concept of the Language Tool Box (LTB). The LTB is implemented as a component in Blackboard. It provides access to the English language learning tools that have been validated by the language teachers during the project. It is simply a folder system containing links to the tools, which are usually available

online, but may also be hosted on the networks of the universities concerned. The LTB serves two main functions:

1. It is a tool for learners. The LTB is intended to be presented to learners in different courses or modules for the same language and to remain available after formal teaching has ended. Language learning tasks or exercises make specific reference to the tools in the LTB to help students accomplish the tasks while learning to use the tools at the same time. This serves to prepare them for independent learning and using the language learning tools later on when the scaffolding provided by the course context has disappeared.

2. It is a tool for teachers to document and share information about programs and sites used for language learning. The LTB is a user-friendly template for adding additional sites. It is shared between teachers in institutions and between institutions as an instrument in exchanging information and experiences about tools that have been found useful for language learning. The implementation in Blackboard makes it easy for teachers to make modifications to the tool. The LTB can be exchanged through a standard import and export system available in Blackboard.

It should be noted that the type of linking to existing resources provided by the LTB is not in and of itself a learning innovation. Sites offering this kind of reference abound on the web. But the way in which the LTB has been conceived pedagogically and organisationally makes it potentially innovative for language learning. Through these two major functions the LTB contributed to the main project objectives: to promote the use of technology in the context of autonomous, life-long language learning and to facilitate the exchange of information about the potential for use between the project partners. The longevity of the LTB is still to be proven, but institutions outside the INTUIT project have started using the LTB, adding to it and

sharing this information with other institutions using the LTB. More details about the LTB are provided in Example 3 below:

EXAMPLE 3: INTUIT LANGUAGE TOOL BOX

The INTUIT Language Tool Box (LTB) is a 'content area' in Blackboard that provides access to English language proficiency tools relating to the following areas of language learning: assessment, practice and reference. The LTB was originally developed by the University of Groningen, Leiden University, Radboud University Nijmegen, Tilburg University, and Utrecht University. It was extended and documented later by these same universities in collaboration with the Technical University Delft and The Hague University of Applied Sciences. The LTB is exchanged by these institutions in the form of a zip-file exported from and into each institution's Blackboard environment. A collaboration and information sharing site (available to Dutch HE institutions through the education and research partnership organisation SURF at no extra cost, see http://www.surfgroepen.nl) is used for exchanging the files, while a public website (www.intuitproject.nl) is used for making documented versions of the LTB available to a wider audience.

The LTB is basically a folder system implemented in Blackboard. Implementation in Blackboard rather than as a separate website was motivated by the requirement to allow each teacher to contribute to the LTB themselves and use it and adapt it if needed in the context of their own language courses. An example of the LTB linking to one of the tools contained in it (Digitalent, http://www.academic-reading.nl/) is shown in Figure 8 on the following page.

A selection of the programs and sites included in the originally developed and documented LTB is given below:

Assessment:

- **Dialang Plus:** DIALANG Plus offers students step-by-step instructions in using the CEFR-based self-assessment tool DIALANG (http://www.dialang.org). It

focuses on the reading and writing tests in DIALANG. An extensive description of the use of this component is given in section 7.3.2.

Figure 8: Language Tool Box, showing entry for DigiTALENT - Academic Reading program

- **Versant Spoken English Test:** This is a spoken language proficiency test delivered to test takers through a telephone or internet connection and providing them and test supervisors with automatic scores, which are related to the CEFR (http://www.ordinate.com).

- **European Language Portfolio:** This refers to the validated Dutch version of the European Language Portfolio (http://www.europeestaalportfolio.nl), which was used in the project in support of spoken production and spoken interaction. More details about the use of this portfolio can be found in section 7.3.3.

Practice:

- **Ellips:** The Ellips program described above, primarily used for grammar in the context of INTUIT (http://www.ellipsconsortium.nl).

- **Englishpage.com:** An extensive web-based resource, which offers tutorials and self-check exercises. It was used specifically for grammar. The grammar materials are organised primarily by linguistic category (adjectives, verbs, etc.) (http://www.englishpage.com).

- **DigiTALENT:** A Dutch resource, specifically designed in support of Academic Reading. It includes diagnostic intake testing, extensive practice and final testing and expresses outcomes in terms of the CEFR (http://www.academic-reading.nl/).

- **AWL Highlighter** and **AWL Gapmaker**: A set of tools (http://www.nottingham.ac.uk/~alzsh3/acvocab/) in support of academic vocabulary, based on the Academic Word List (http://www.victoria.ac.nz/lals/staff/Averil-Coxhead/awl/). A more extensive discussion of the use of these tools can be found in section 6.7.

- **Online Writing Lab:** Purdue University Online Writing Lab (http://owl.english.purdue.edu/owl/), which provided an important resource for information on academic writing, supplemented with online exercises on e.g. grammar and mechanics.

Reference:

- **Collins Cobuild Concordance and Collocations Sampler:** An online resource, based on the Collins WordbanksOnline English corpus, which makes it possible to see how words are used in context in real English texts

(http://www.collins.co.uk/corpus/CorpusSearch.aspx). An extensive discussion of the use of such tools is given in section 6.7 below.

- **Merriam Webster Online:** One of the online dictionaries used in the project. The online version offers, for instance, the possibility of hearing dictionary entries pronounced (http://www.merriam-webster.com/).

4.3 ICT integration in Digitalenklas and INTUIT

The two projects can be used to demonstrate developments in pedagogy, technology and the educational environment that are relevant for implementing innovative practices in language pedagogy more generally. In this section, the core components of integration will be discussed in more detail to identify critical aspects of implementation.

4.3.1 Pedagogy

Establishing innovative pedagogical practices was the main objective targeted by the SURF tenders. Inspired by the CEFR, cognizant of TBLT in several respects, and implementing communicative language teaching methods more generally, Digitalenklas and INTUIT may be said to be more representative of contemporary language pedagogy than the Hologram project described in the previous chapter.

Digitalenklas acknowledged the potential of VLEs for language learning by highlighting their usefulness for communication and general course organisation. These aspects relate directly to the flexibility of pedagogical approach that is afforded by technology (Collis & Moonen, 2001). The web-based delivery accomplished by VLE and complementary programs provided more flexibility than previous LAN-based or CD-ROM based programs had been able to afford. In particular, it allowed students greater independence of place and time, while simultaneously allowing teachers to stay in touch and

distribute or update course materials (including computer-based learning resources).

As described above, innovation was not only achieved with respect to pedagogical *approach* (as was typical of the Hologram project described in the previous chapter), but more fundamental changes relating to contemporary pedagogical *models* for language learning were in evidence as well. All institutions professed supporting a student-activating language learning environment, similar to the pedagogical model underlying the Flexibility-Activity Framework.

Digitalenklas marked a gradual shift from the content-oriented design that had characterised the Hologram project to an activity-based design, in which the role of various technologies in supporting student activities was carefully considered. More specific to language learning, the relevance of the CEFR was introduced in relation to defining curriculum outcomes and communicative, task-based, collaborative practices were introduced in peer-reviewed writing assignments and project-based tasks on the basis of web quests. The development of the Ellips project, however, harked back to pedagogy underlying the previous Hologram project and showed a continued commitment to (and investment in) content-oriented, form-focused work as an essential component of language learning. Significantly, in the Digitalenklas project, the design of the metadata system in Ellips for describing content demonstrated one of the rare areas where the relevance of the CEFR for language learning was made explicit. It was far less evident as a guiding framework informing the actual tasks and activities offered as part of the language learning curriculum.

By the start of the INTUIT project, the focus had clearly shifted to an activity-based design in the sense of the Flexibility-Activity Framework guidelines on aiming and designing for activity ('Lessons 13 and 14', Table 5, cf. also p. 71 above). Key roles of the instructor were in planning and

monitoring student activities and using technology in support of these. Although content remained important, the emphasis was no longer on developing new content, but on integrating existing content resources into the tasks to be carried out by students.

The CEFR had been more firmly embedded in the provision of language learning at the participating institutions. The Language Centre at the University of Groningen, for instance, had started to integrate self-reflective student reports and awareness-raising activities for English into the curricula at the faculties of Economics and Business and Law. Language portfolios were used for reflection and assessment of written student work. And task-based communicative approaches to language teaching were being adopted through the introduction of methods such as *Market Leader* (http://www.market-leader.net/) for the development of business-related vocabulary. These innovative methods were introduced in the wake of the adoption of the CEFR as a guiding framework for English language teaching at the Language Centre (Haines & Tommassen, 2006). Similar developments were under way with other partners in the project.

In the face of the problem of offering differentiated English-language instruction in an increasingly international context, these innovative local practices served as a common ground for establishing pedagogical innovation in the context of the INTUIT project. The project explored the potential of using technology in a context where a basis for pedagogical innovation had already been established locally.

The INTUIT project demonstrated several principles and practices associated with TBLT (overall meaning focus, attention to form, authentic tasks, learner independence). Nevertheless, it cannot be claimed that the project, or rather the local language curricula or courses that it supported, consciously sought to implement the research-based principles of TBLT outlined in chapter 2. Neither can these curricula or courses be said to be direct implementations of

the teaching-oriented TBLT frameworks developed by Willis (1996), Nunan (2004) and Willis and Willis (2007). The attention to form which is evidenced by the use of resources such as Englishpage.com in the context of the project was not consistently or systematically embedded in the task-based pedagogical cycle on the basis of the guidelines in these TBLT frameworks. Tasks were definitely not the basis for all student work accomplished in the context of the project and focus-on-forms approaches to explaining grammar were also used on occasion. Grammar was taught as a course in its own right in some of the language centres. In this sense, the partners involved in the project were not "doing task-based language teaching". As Samuda and Bygate (2008) point out, this is a general problem with TBLT as there are very few curricula or programmes of study that could justifiably claim to be fully task-based. We will come back to this issue as we confront the use of technology more directly with the use of TBLT frameworks as point of departure for ICT integration in language teaching and learning in the second part of this study.

4.3.2 Technology

VLEs are the main technology used in the projects described above. During the first years of the new millennium, VLEs were positioned by many institutions as central technologies in implementing strategies for e-learning, which was primarily employed as a way of enhancing on-campus delivery of courses (OECD, 2005). Systems such as WebCT, Blackboard, Fronter and other learning systems spanning the institution as a whole quickly made their entrance into learning and teaching.

VLEs constitute the main 'proven' technologies upon which these projects were built. During the last ten years, VLEs have contributed substantially to the standardisation of educational technology in the Netherlands, not only by offering standard sets of features in support of learning and teaching, but also by complying with technology standards (such as IMS, http://www.imsproject.org/, or SCORM, http://www.adlnet.org/). VLEs

have become institutionalised much like email and word processing, even though the practices surrounding them may have been institutionalised for only a limited number of functions (communication and distribution of course materials).

The projects demonstrated how VLEs may be used together with other programs in service of flexible pedagogical approaches and innovative pedagogical models of language learning. Both organisational and didactical aspects of language learning and teaching are supported by these complementary technologies. In the non-distance, ICT-supported context targeted by our study, these technologies in conjunction with classroom-based interaction provide the environment in which teaching and learning takes place. Using a distinction made by Garrison and Anderson (2003) between 'teaching presence' , 'cognitive presence' and 'social presence', as three core elements that must be present if learning is to be successful, it would seem that in the context exemplified by our projects VLEs make a major contribution to providing 'teaching presence', thereby meeting the "inherent need for an architect and facilitator to design, direct, and inform the [learning] transaction" (Garrison & Anderson, 2003: 29). 'Cognitive presence' relating to the processes of learning and the subject matter to be learnt is often provided by resources and programs outside the VLE proper, but the learning is initiated and also partly supported through the VLE (e.g. through its functions for communication and collaboration). Finally, 'social presence' in our context is typically provided in the classroom, which provides an additional platform for cognitive and teaching presence.

The combination of a learning platform and additional programs is not in itself unique. The INTUIT project helped to conceptualise and develop this combination further in the form of the Language Tool Box, which contributed to disseminating the use of tools to other teachers and promoted autonomous learning at the same time. By helping to make more users (teachers and learners) use technology in more innovative ways, the LTB

addressed both the quantitative and the qualitative dimensions of the potential-practice gap in the use of technology for language learning.

The actual programs used showed a continued interest in tutorial programs. Although partly reflecting a vested interest in Hologram and Ellips, the use of tutorial programs for grammar, reading, writing and other skills continued alongside the adoption of more innovative approaches to language learning. Although tutorial software has shifted to the background in the professional literature on CALL, Godwin-Jones (2007) notes that self-paced language instruction (in the form of 'self-correcting web exercises', 'self-paced instructional materials and courses', or on a smaller scale, 'Intelligent Tutoring Systems') continues to be developed and used and that technology standards characteristic of VLEs (IMS, SCORM, see above) are beginning to be applied to these language-specific tools. The Digitalenklas and INTUIT projects demonstrated the continued use of such tutorial software in practice, although the emphasis gradually shifted from producing exercises (content) to using exercises that had been produced elsewhere.

As described in chapter 1, the continued use of tutorial software is widely reported in the literature, where it is often associated with lack of innovative pedagogical practice. The list of validated tools and sites produced in the context of the INTUIT project, however, suggests increased use of resources with tutorial functions for reference purposes rather than as leading components in curricula or courses. The use of the Purdue Online Writing Lab is an example of this. It provides an extensive resource of materials in support of writing, and the grammar and ESL exercises contained in it serve a subordinate function in honing in the mechanical aspects of the writing process. The use of this and several other resources with reference and tutorial functions may be indicative of the primacy of meaning-oriented work and the independent learning modes that the INTUIT project sought to promote.

Of the programs for assessment, DIALANG has become most firmly established in language provision in the institutions concerned. The fact that DIALANG is available for free and that it has been conceived as part of the CEFR, which was rolled out as a guiding framework for language teaching, learning and assessment at the institutions concerned, may have contributed to this. A critical assessment of the use of DIALANG will be provided in chapter 7, but an important aspect of use was that DIALANG became popular in spite of extended periods of downtime, minor inconveniences in use, and uncertainty about the future of the program.

The programs used for assessment also included the Versant Spoken English Test, which may be regarded as an Intelligent CALL (ICALL) program, since it is built around advanced automatic speech processing techniques (Bernstein & Cheng, 2008). The program was rated positively in the context of the project, although it was considered not to discriminate sufficiently between English language learners at very advanced levels of proficiency. By contrast, the ratings of another program based on speech processing technology (Eyespeak, http://www.eyespeakenglish.com/) were less positive and the use of this program was not continued in the context of the INTUIT project. Possibly the fact that the latter program was intended for pronunciation *practice* requiring more detailed feedback than the former (which is intended for global proficiency *assessment*) has played a role in the difference of appreciation. For, as Neri (2007) has pointed out in her extensive study on the pedagogical effectiveness of computer-assisted pronunciation training, providing detailed, reliable feedback at the segmental level remains one of the greatest challenges for automatic speech recognition to date.

In view of the low frequency of use of ICALL applications in the CALL field generally, it is hardly surprising that the Digitalenklas and INTUIT projects did not make use of such applications on a more substantial scale. More unexpected perhaps is the fact that CMC, a technology featuring prominently in the CALL research literature (Blake, 2000; Pellettieri, 1999; Kitade, 2000;

Leahy, 2004; Sotillo, 2000; Toyoda & Harrison, 2002; Tudini, 2003) and at CALL conferences from the beginning of the 21st century, remained very much a minority option for technology in the context of these language learning projects. Apart from its use as a supporting tool in the collaborative writing assignments, project-based web quests and other open-ended tasks, asynchronous and synchronous communication technologies were hardly applied in the projects.

Given the scale of these projects, this suggests that CMC has not yet been incorporated into the mainstream of technology-enhanced language learning and teaching in HE in the Netherlands. On the other hand, some institutions report positive experiences with CMC-based language learning. The University of Utrecht, for instance, has successfully employed videoconferencing in Spanish degree programmes for a number of years now and has recently started experiments with real-time simulations in virtual worlds in this context, as is evidenced by projects such as NIFLAR (Networked Interaction in Foreign Language Acquisition and Research**,** http://cms.let.uu.nl/niflar/). These projects demonstrate that there may considerable potential for CMC in the blended HE language teaching and learning setting, particularly for aspects of intercultural communication.

4.3.3 Environment

Whereas previous innovation projects such as Hologram had primarily focused on resolving problems experienced by teachers and students in the existing curriculum, the SURF innovation projects from 2000 onwards were more strongly oriented towards strategic innovation at the institutional level. Some of the strategic initiatives and policies which were relevant for language teaching and learning and which cut across disciplines and institutions have been mentioned in the descriptions of the Digitalenklas and INTUIT projects above. These include the implementation of e-learning strategies, the adoption of the CEFR for defining language learning outcomes and the

increase of English-taught study programmes in the context of growing internationalisation in HE institutions.

Representing top-down initiatives beyond their immediate sphere of influence, there is an inherent danger that language teachers do not experience these developments as dealing with their personal concerns and problems. Collis and Moonen (2001) argue that this is an important factor in the acceptance of technology for learning-related problems. The projects, however, were focused on the connections between these institutional developments and the teaching and learning practices at grassroots level.

The role of VLEs, the main e-learning technology, in supporting organisational and pedagogical aspects of language learning either directly or indirectly (by facilitating access to additional tools and resources) was emphasised in the projects throughout. This heightened the awareness of the usefulness of VLEs for language learning with language teachers, in addition to making them aware of the general advantages for enhancing flexibility of learning and teaching.

The use of the CEFR for establishing comparable curriculum outcomes for language competence at the end of the Bachelor phase prompted teachers and others involved in drafting curriculum outlines and study guides to relate current practices to the specifications outlined in the Framework. While this may not have resulted in immediate changes to existing practice, the projects, particularly through the involvement of departments and language centres where a basis for communicative, task-based language learning had already been established, further promoted the use of the principles underlying the CEFR and established various roles for technology in that context.

Finally, the English-taught programmes set up in the wake of the institutions' internationalisation strategies precipitated the development of new methods for training staff and students in English language proficiency. The sheer numbers involved (the INTUIT project estimated the number of potential

language learners within the institutions at 10,000 (INTUIT, 2006: 7))) called for a greater emphasis on the use of technology to support these groups in independent language learning. This gave practical urgency to developing autonomous forms of language learning which the CEFR promoted on principled grounds.

4.3.4 Implementation

Before assessing the implementation of these projects in terms of our model of implementation, we will summarise the relevant aspects from each of the areas above, as was done with the Hologram project above. A summary of the key aspects in pedagogy, technology and the educational environment is given in Table 11 below:

Pedagogy:	• Transformation of teaching and learning practice as point of departure; • Flexibility of use and student-activating learning as overall goals; • Contemporary language pedagogy showing aspects of CEFR, TBLT and CLT, but no direct implementation of existing frameworks; • CEFR as basis for learning outcomes; CEFR gradually embedded into language learning tasks and activities; apparent in self-assessment, portfolio use and autonomous language learning; • Form-focused work in addition to meaning-focused core; • Activity-based design, design for content of secondary importance, mainly on the basis of existing resources; • Activities that could be done outside class programmed as such; • Existing innovative language teaching practices integrated into the projects; • Roles of various tools and resources, including classroom, defined in context of technology-enhanced learning;

Technology:	• Proven technology as basis for implementation; • Growing importance of compliance with technology standards (IMS, SCORM); • VLEs as leading technology, with standard features for teaching and learning, • Broad range of complementary tools and resources, mainly catering to language needs in areas of assessment, practice and reference; • Software development gradually less prominent, and less needed; • CEFR metadata system, compliant with technology standards, implemented in Ellips; • Language Tool Box to consolidate use among teachers; to foster autonomous learning by students; • Dialang main program for testing in spite of technical restrictions, different types of tutorial and reference programs, sometimes integrated in one site. • ASR used on limited scale; • CMC applications: minority option in Dutch HE blended context.
Environment:	• Institutional dimension of innovation criterion for funding. • Internationalisation, CEFR and VLEs important elements of institutional environment; • Top-down implementation strategies, consequences felt at grassroots levels. • National scope for projects and wider applicability promoted by funding organisation; • Collaboration between institutions in projects; • Collaboration at discipline-level between universities; collaboration within institution at technology level.

Table 11: Key aspects of pedagogy, technology and environment in Digitalenklas and INTUIT

The implementation of ICT in language teaching and learning accomplished by the SURF innovation projects demonstrates a number of aspects which the Hologram project had already shown to be key factors for success. First and foremost is the importance of collaboration. The Hologram project had shown the benefits of staff working together within a single institution, and, after conclusion of the project, continuation and extension of collaboration at

the national level. The Digitalenklas and INTUIT projects, involving partly the same institutions but different groups of language teachers, showed the undiminished importance of cooperation across institutions. Digitalenklas, in assigning a significant role and a considerable part of the budget (€ 240,000) to developing the Ellips program, was still inspired to a considerable degree by the need for collaboration to reduce the high cost in content (exercise) development by producing the content together and sharing it through a web-based system. INTUIT was more focused on the importance of exchanging experience and expertise on English language teaching and learning with technology generally. It facilitated this exchange by setting up teams of experts and instituting workshops in which language teachers informed each other about teaching and learning with specific technologies.

Collis and Moonen (2001) stress the importance of collaboration between institutions from the point of view of setting up the required infrastructures and exploring new options for learning through joint partnerships. They regard collaboration between staff during the implementation process as a way of carrying innovation beyond the level of enthusiastic pioneers to get it "out of the niche". A dimension of collaboration brought out by these national innovation projects relates more specifically to collaboration at the discipline level. Laurillard argues that "[t]he responsibility for developing best uses of new technology in each subject area will rest primarily with the discipline area itself" (Laurillard, 2002: 223). As indicated in the context of the Hologram project, the most expedient lines of development within disciplines, such as teaching languages, often cut across institutions. A common framework of reference, a common learning technology and common challenges arising from growing internationalisation helped to foster the collaboration between institutions, which the tender criteria required.

In the project context, the way in which teachers learned with and from each other bears characteristics of situated learning in communities of practice (Lave & Wenger, 1991; Wenger, 1998). This learning took place via face-to-

face contacts and group meetings, supported by online exchanges through a groupware system which was also used for developing common versions of the LTB.

Characteristic of the implementation of technology in the context of these projects is the choice for one leading technology (VLEs) complemented by a whole range of other technologies. This is in line with lesson 9 of the Flexibility-Activity Framework, "After the core, choose more". VLEs had become well established as core technologies in the institutions locally. Collis and Moonen (2001) recommend using a core technology, which has usually "been determined by history and circumstances" as a basis, while allowing individual instructors to "make choices about complementary technologies" (pp. 2-3). Using VLEs as a basis is an important strategy for achieving 'vertical integration' (cf. section 2.3.3 above). It contributes to incorporating technology and the practices that surround it (pedagogic use, training, support, technology provision) more firmly into the organisation. This promotes wider use of learning technologies in the institution and contributes to sustainable use in the longer term. On the other hand, the freedom of choice associated with the complementary technologies not only helps to achieve links with discipline-oriented learning materials, but also contributes to 'horizontal integration', i.e. is a method which allows technologies with which users (teachers and students) are familiar outside the formal educational context to be used for teaching and learning. This has the additional effect of allowing pioneers new venues of exploration on the basis of new technologies, which through encapsulation in the overarching VLEs may in due course be further integrated into institutional practices. The LTB serves these two forms of integration and may therefore be regarded as an instrument which helps to achieve 'continuity' between vertical and horizontal integration, in the sense advocated by Levy and Stockwell (2006).

This perspective on the role of complementary technologies in serving institutional and individual, vertical and horizontal, consolidatory and

exploratory aspects of learning is described by Collis and Moonen (2001) as follows:

> In our opinion, WWW-based course-management systems, integrating information handling, communication, and collaboration tools, with learning-specific resources and tools and authoring capabilities are the core technology of the future, when more-flexible learning is the target. Such systems, when well designed, can fit with different teaching situations and approaches; can support new types of assignments and activities that would not be feasible or as likely to be carried out in practice without them; can make use of a variety of tools and resources easy in that they are integrated in one system via one interface; and when adopted by an institution in a way that includes recognition of implementation and pedagogy, can be associated with a strong environmental component.
>
> (Collis & Moonen, 2001: 77-78)

The implementation in the context of these projects can be analysed in terms of the critical factors of the 4-E model, used by the Flexibility-Activity Framework to predict the successful implementation of technology for learning-related purposes.

The **institutional environment** was supportive by providing essential tools and support for innovation, making available the necessary funds (particularly for releasing teachers from other duties), and identifying relevant factors of change in the educational environment as a basis for outlining a vision on the use of technology in the context of language teaching. **Pedagogical effectiveness** was considered by not enforcing a radical departure from existing practices and targeting changes in relation to the existing curriculum. **Ease-of-use** was ensured through a primary focus on VLEs (which also prompted the implementation of the LTB in Blackboard). **Personal**

engagement was served by allowing teachers to introduce technology into the projects with which they had previous positive experiences and which fitted with their personal needs and views on learning.

A summary of aspects of implementation in relation to the 4-E model is given in Table 12 below:

4-E Model	**Implementation Digitalenklas and INTUIT**
Institutional aspects (Environment)	
• Vision about technology within the institution.	Institutional aspects relating to e-learning, internationalisation, CEFR put into focus by funding body requirements. View on role of technology established in project definition phase.
• Actual level of technology use in the institution.	All staff and students were considered to be using VLEs (although possibly not innovatively);
• Readiness to change in the institution.	Participants in projects were ready to change educational practices by using ICT; strategies set up to involve others, who were possibly less willing to change;
• Funding and incentives available.	National funding matched with local funds; decreasing funds for technology development; increasing funds for involving teachers in designing new language learning activities. Other incentives for teachers (prestige, tenure) generally lacking.
• Experiences in the past with technology in the institution.	Partners had positive experience using various programs (including Hologram) and were willing to adopt new technologies;
• Adequacy of the technical infrastructure in the institution.	An adequate infrastructure for students and staff was generally available in HE institutions.
Effectiveness	
Learning effectiveness	
• The innovation can solve personally relevant educational problems;	Shift of emphasis from how to teach a particular skill or aspect of language learning using technology to using technology more generally to deal with increasing numbers of students of differing competences; or how to use technology in the face of environmental constraints such as limited contact time.
• The innovation provides new forms	Both enhanced flexibility and more innovative forms of learning (based on

of learning experiences;	CEFR or task-based principles) supported.
• The innovation provides support for the existing curriculum;	Projects invariably targeted implementation in existing curricula, not setting up new curricula or new modes of learning such as distance-only learning.
Long-term pay-off	
• The innovation is likely to result in eventual financial gain for the institution.	Financial aspects addressed indirectly. Operating in and preparing for international markets required more English-language programmes. Technology use in this context intended to enhance competitiveness.
Ease of use	
• Ensure that the instructors have up-to-date computers and good connections.	No longer an issue at the time of the projects. High-end facilities available for general-purpose use.
• Arrange for network connections to be subsidized for home use, for both instructors and students.	Permanent home connections, important for realising the potential for flexibility, established in context of general technology integration in the Netherlands.
• Choose a software environment that does not require training in order to use and does not require special client software that is unfamiliar to the user.	Promotion of VLEs (and selection of most suitable variant) on the basis of this criterion.
Engagement	
• Take care that the first experiences of working with the technology 'fit' with the instructor's experience and beliefs about the learning process.	Connections with existing teaching practices and prevalent tool uses established in projects; practices re-defined and extended in light of new possibilities.
• Build the instructor's self-confidence by starting with a successful experience.	Use of proven, easy-to-use technologies and immediate impact on existing curriculum contributed to heightening self-confidence.

Table 12: Assessment of Digitalenklas and INTUIT implementation in terms of the 4-E Model (based on Collis and Moonen, 2001: 52-56)

The SURF criteria for strict project management and the requirement to work on the basis of a detailed project plan (controlling document) contributed to making the goals and results of the projects more specific and measurable in the sense propagated by the Flexibility-Activity Framework (Lesson 1: "Be specific"). The project team, consisting of a project manager and local coordinators who had backgrounds in language teaching themselves and

different levels of experience with the use of technology, gave direction to the implementation process through regular meetings, project plans and project reports, under more strictly regulated conditions (project reviews, intermediate evaluations and adjustments) than at the time of the Hologram project.

The implementation teams thus established complied with Collis and Moonen's recommendations on setting up teams combining technical and educational skills and having practical and personal experience with technology. Most of them held key positions in implementing ICT further in their respective institutions.

As indicated, the teachers involved in the projects were receptive to using new technologies and innovative pedagogical approaches. Aspects of CLT, TBLT, and the CEFR had already been introduced into the curricula. The projects therefore did not confront the project team full scale with the problem of winning over teachers who were less open to change. Nor did they seek to implement pedagogies explicitly modeled on the TBLT-frameworks outlined in chapter 2. In the second part of this study, a more detailed analysis of technology use in the light of these frameworks will be given (chapters 6 and 7) and guidelines for implementation will be provided in which the transition from traditional, form-focused approaches to language teaching to contemporary, meaning-focused approaches will be more fully addressed (chapter 8). In the analysis, some patterns of use observed in our projects such as the continued interest in tutorial software and the limited use of CMC will also be explored in more detail. But before that, the next chapter will report on the outcomes of a survey conducted among language teachers around the world. This may shed more light on whether the pedagogical practices supported by technology in the context of these Dutch innovation projects are representative of patterns of use more generally

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