Univerzita Karlova v Praze, Filozofická fakulta
Ústav anglistiky a amerikanistiky
Studijní obor: anglistika-amerikanistika

Thesis
Diplomová práce

Self-study language learning software for upper-intermediate (B2) adult learners of English: Do existing products meet the requirements?

Výukové programy pro středně pokročilé (B2) dospělé samouky angličtiny: Dosahují existující programy požadovaných výsledků?

Maurice Keller
Vedoucí práce: Doc. PhDr. Jarmila Mothejziková, CSc.
Prague, 2007

Prohlášení

Prohlašuji, že jsem diplomovou práci vypracoval samostatně a že jsem uvedl všechny použité prameny a literaturu, a souhlasím s použitím této práce pro další studijní účely.

V Praze dne 29.8.2007

Dedication

To the staff at our Department of English and American Studies who are always supportive, and have always been ready to make an extra effort, in the face of an appalling lack of government funding.

Contents

Computer-Assisted Language Learning for Upper-Intermediate Learners of English: Can Self-Study Learning Software Meet the Requirements of Adult Learners?

Výukové programy pro středně pokročilé (B2) dospělé samouky angličtiny: Dosahuje Software požadovaných výsledků?

České Resumé

Předkládaná diplomová práce se zabývá soubory programů, které jsou určeny pro středně pokročilé (B2) studenty angličtiny a které představují učební pomůcky při samostudiu anglického jazyka. Práce nahlíží možnosti těchto softwarů v kontextu výuky dospělých. Jejím cílem je podat celistvý pohled na problematiku využití počítačů ve výuce. Aby bylo možné zjistit, zda-li současné softwary splňují to, co výrobci slibují, byl vypracován seznam kritérií, podle kterých byly vyhodnoceny čtyři na českém trhu dostupné výrobky: české produkty Anglicky efektivně, Anglická gramatika od firmy Landi a Angličtina Elements pro středně pokročilé od firmy Langmaster International, dále program Tell Me More (7.0) Angličtina 3 od firmy Auralog, který pro české samouky adaptovala firma Leda, a také světově významný produkt Rosetta Stone U.K. English Level 3 od americké firmy Fairfield Language Technologies. Program Tell Me More byl navíc testován po dobu jednoho měsíce v autentickém prostředí.
Přestože má každý jednotlivý program specifická pozitiva, je zřejmé, že úplný úspěch v samostudiu, které je založeno výhradně na práci s těmito programy nelze očekávat. Práce se dále snaží formulovat možnosti vylepšení, s jejichž pomocí by výukové programy mohly sloužit k samostudiu v rozšířeném smyslu, t.j. studium, v kterém by studenti například využívali kooperaci s jinými studenty.

Abstract

This thesis examines comprehensive self-study software packages for upper-intermediate (B2) learners of English, in the context of adult language learning and computer-assisted language learning. The aim is to provide a holistic perspective. To determine whether contemporary self-study software is likely to deliver on its producers' promises, a list of evaluation criteria is elaborated and used to evaluate the newest versions of four products that are available on the Czech software market: Anglicky efektivně a Anglická gramatika by the Czech company Landi, Angličtina Elements pro středně pokročilé by Langmaster International which is a Czech based company as well, Tell Me More Angličtina 3 by the French company Auralog and adapted for Czech learners by the Czech publishing house Leda, and finally Rosetta Stone U.K. English Level 3 by the American company Fairfield Language Technologies. In addition to the theoretical evaluation, one of the products (Tell Me More) was subjected to a one-month trial in an authentic context.

Although, each program has its strong points, it is pointed out that success can not be expected from learning that relies exclusively on these self-study materials. The thesis concludes by proposing improvements with which learning software could be successfully used in self-study settings in the wider sense, i.e. learning that would for instance involve cooperation between different learners.

1. Introduction

This thesis combines two topics which in recent years have gained considerably in importance. Firstly, Adult language learning in the context of lifelong learning (Commission of the European Communities, 2003) has become a necessity as the result of globalization and a growing mobility of people, know-how and goods. Secondly, computer-assisted language learning (CALL), as made possible through fast technological advancements in various fields of research.

The ultimate objective is to answer these questions: Can self-study software designed for upper-intermediate adult English learners offer a viable alternative to class-based education? What is missing in these products? What needs to be improved? Can we innovate these products with the technology that is available?

To allow for a holistic perspective, chapter 2 attempts at collecting a list of the most important requirements, always with the adult learner in mind. The next chapter will focus on a number of key issues related to language learning software and will try to give the reader an idea what contemporary software technology is capable of.

What follows forms the practical part of the thesis. Chapter 4 presents a one-month study in which subjects were asked to work with one of the available self-study software packages (Tell Me More). In Chapter 5, four packages are evaluated based on the list of requirements that have been elaborated in chapters 2 and 3.

The profile to be examined

Adult language learning is seen here as taking place in the context of further or lifelong education, as opposed to primary and secondary education. The fact that such learning is generally undertaken on an inherently voluntary basis, i.e. outside the context of compulsory education, has an important implications for the motivation behind the learning of language, which explains the prominence given to this aspect in this thesis. We will look at motivationally related learning obstacles.

More specifically, the thesis deals with learners of English who come from a Czech speaking background and are endeavouring to reach the upper-intermediate level, known as B2, as defined in the Common European Framework of Reference for Languages (Council of Europe, 2001). Learning is understood here as the learners' striving for long-term progress, as opposed to for example a quick brush-up before going on holiday. The learning-mode we are looking at is self-study, an extreme form of self-instruction without the presence of a teacher or mentor.

In this thesis, the abbreviations L1 and L2 are occasionally used to refer to the learner's mother tongue (in our case Czech), and the second language to be learnt (English), respectively. The terms target language, second language and foreign language are used interchangeably. Referring to English as the second language does not rule out the possibility that learners have not studied another foreign language prior to studying English.

As to the learning materials, the focus is put on language learning programs which can be characterized as follows: they address the learner profile described above, come as standalone solutions (not web- or network-based), and are intended for home use as opposed to in-class use or use in a self-access centre. Furthermore, software solutions under examination here address language learning as a whole, not only particular skills. Authorware for generating electronic learning content has been equally excluded.

Acknowledgements

This thesis has been made possible thanks to the help of many people around me. In particular, I am grateful to my parents and grandparents for their generous financial support, to my brother for helping to acquire books from abroad, to Konstantin for his indispensable help with the software logistics, to Ondrej for his fitting metaphor ("learning to swim"), to all those who have participated in the empirical research, to Tereza for inviting me to her thesis-writing friendly cottage, to Mrs. Mothejzíková for her unlimited confidence in me despite my disastrous planning skills, to Eve for the Czech translations, and to Pavel and Clara for their help with the book and printing logistics.

2. The adult learner and the learning process

In their comprehensive encyclopaedia on language learning and teaching, Byram et al. (2000) state that in the field of foreign language instruction few theories have been conclusively established (p. 4). In the course of the discussion which will involve a broad spectrum of factors in the learning process, this needs to be kept in mind.

It goes without saying that all these factors are, in some way or another, interrelated and what is dealt with under one heading could with equal justification be treated elsewhere. This also means that a limited degree of repetition is inevitable.

Looking at the eight sections of this chapter, the reader might ask: But where is the teacher, and where are the teaching and learning materials? Every categorization, examination of a particular problem according to specific perspectives needs to be determined by the context of the study. In our case, in self-instructional computer-assisted language learning for adults, the teacher and the teaching materials are one and the same thing, namely a piece of software. As this is where the overall focus of the thesis lies, it will not be discussed in an individual chapter or section.

2.1 Motivation

Models of language learning motivation that seek to explain and possibly predict why individuals invest a particular amount of time and effort in a particular activity, and how long they are able to keep up the effort. For this, they need to take into account a multitude of factors, including the fact that individual variables are likely to change considerably in the course of time, and that these variables may vary with respect to different aspects of the particular subject, for example the cultural background of the target language community as opposed to grammatical aspects of this language (Byram et al. 2000). In the case of language learning, the study of motivation is further complicated by the fact that language and linguistic skills tend to be closely associated with our identities as social beings with regard to our capacities, our origin etc. Investigating how motivation tends to work is especially useful with

respect to adult learners, since as a result of a longer learner history motivational problems are much more common with adults than with children (Mothejziková, 1998).

Crookes and Schmidt (Oxford et al., 1999, p. 107) have proposed seven key components of the motivation to learn a foreign language: interest, success expectancy, relevance, belief in forthcoming rewards, involvement in decision making, persistence and high activity level. These factors will not be discussed individually, but in the context of related concepts.

Intrinsic and extrinsic motivation

Before a number of key factors that determine success in second language learning are discussed in detail, the widely known opposition of intrinsic and extrinsic motivation is introduced, which ought to be seen as two extremes of a continuum rather than a question of either/or (Byram et al. 2000, p. 434). Being intrinsically motivated means engaging in an activity for the pleasure in the activity itself, for example learning English only for the love of this particular language. It is safe to assume that a pure case of intrinsic motivation is improbable, because even the language learning addict is very likely to be influenced by external factors such as the respect which will be gained by linguistic skills. Extrinsic motivation, on the other hand, means that an external incentive provides the decisive reason for the learner to engage in the learning process.

How to build intrinsic motivation

Intrinsically motivated learners tend to be more successful than those that are extrinsically motivated (Reeve, 2004, 255). But how can intrinsic motivation be increased? Perhaps most importantly, language instruction that delivers is able to generate motivation by meeting the need for achievement (ibid.). But due to the complexity of the learning process, persistence will be required until results become visible.

Also, building learner autonomy, which will be dealt with in section 2.8, can be of significant help to fostering intrinsic motivation (Byram et al. 2000, p. 430, and Jensen, 2005, p. 107f). This includes personalizing the learning process by offering a maximum freedom of choice for the learner and adapting to his or her needs, without neglecting guidance. This is

probably where the greatest potential for self-instructional computer-assisted language learning (CALL) lies, as compared to class- and book-based instruction.

On the other hand, extrinsic motivational means can play an important role, as long as they are applied with caution. Just as learner autonomy, genuine interest can not be built over night (Hartl, 1992, p. 132). Misapplication leads to the opposite effect, namely learner dependence. Short-term goal setting in particular should not be done in the case of tasks the learner already takes a genuine interest in, as short-term goals may only boost "performance on uninteresting, straightforward task by generating motivation that the task itself cannot generate" (Reeve, 2004, p. 210).

Long-term goals, however, are to be recommended irrespective of the learner's motivational orientation, because people with difficult but specific objectives "outperform those without goals" (Reeve, 2004, p. 205). In our case, working towards the First Certificate in English could be a good idea.

Both types of goal setting are feasible in learning software, but it is important to add that only accepted goals improve performance (ibid.), so it will be necessary to take learners' preferences into account to the maximum possible extent. Involvement in decision making and the sense of agency is an important source of intrinsic motivation (Reeve, 2004, p. 255).

Games are similar to goals in that they can provide challenge. Incorporating game elements as a motivational factor is certainly advisable, but the problem with games is that we tend to learn what we do (Dewey, as quoted in Postman, 1985, p. 144). In other words, there is a risk that we do not learn what we are supposed to learn through games, but that we rather learn the principles and the ideas of the game itself (see also task-authenticity in 2.4). To avoid this, game principles that have no correspondence with activities outside the learning setting must be applied with caution. Siang Ang and Zaphiris (2006) recommend that learners should be able to turn off game features.

Devoting time to learning on a regular basis and in such a way that it becomes part of the daily or weekly routine is advisable because "frequent and consistent pairings of particular

situations with particular behaviors lead to strong links" between the two (Reeve, 2004, p. 218).

Further elements of motivational benefit that can be offered in learning software include effective learning and reference tools to support learner autonomy and the need for achievement, and models to follow by showing how successful learners have gone about their learning. The need to provide for social interaction, however, is largely incompatible with our learning mode (see section 2.8). Also, it will be difficult for the computer to provide "a variety of relevant experiences" as demanded by Reeve (ibid.). Another huge challenge to learning software developers consists in the need for precise and adequate feedback (see section 2.6) and the need to help the learner to set realistic targets.

Integrative versus instrumental language learning motivation

Gardner's contrast between integrative and instrumental language learning motivation (Byram et al. 2000, p. 425ff, and Gardner, 1960), deals with motivation at the level of orientation. The distinction is very similar, but not identical with the opposition of intrinsically and extrinsically motivated learners, unless one assumes that language and culture are inseparably interconnected.

The integrative type of learner engages in studying English in order to move closer to the culture(s) of the English-speaking world for the wish to know and possibly even become a member of this group. "At a more general level, integration-wise motivated students are expected to be non-authoritarian and non-ethnocentric because the presence of these two personality characteristics reflects adherence to a rigid ingroup/outgroup dichotomy with concomitant suspicion and rejection of all outgroups" (Gardner 1960, p. 18). An instrumental orientation, by contrast, can be found when English is studied for the sake of other objectives such as doing business.

So far, research has failed to provide conclusive evidence for the assumption that learners with an integrative orientation are more successful than those with an instrumental orientation (Oxford, 1999, p. 13). It follows that there is not yet a strong argument for integrating culture

in teaching in English. Accordingly, the requirement for meaningful input (as discussed in section 2.4) could also be met by other means, for example by providing texts of interest to the learner that are not directly culture-bound.

What Gardner was able to confirm, however, was that bad attitudes on the learner's part towards the L2-culture correlated with underperformance (Byram et al. 2000, p. 425). Thus, rather than the absence of a interest in, a negative attitude towards the target language communities will impede learning. The status of English as today's lingua franca, presumably the first truly global lingua franca in the history of mankind (Crystal, 2003), can influence the learners' attitudes towards its speakers both ways.

On the one hand, there is the diversity of Anglophone cultures and the fact that, as has been estimated, up to four out of five conversations taking place in English do not involve any native speakers (Byram et al. 2000, p. 357). The dislike of the culture of a particular English speaking country – in the context of contemporary politics this will most likely be the U.S. – therefore does not necessarily imply a negative attitude towards the English language itself. On the other hand, if globalization is seen as a negative development, which it undoubtedly is by many, then this negative attitude will also apply to the rise and influx of the English language as an accompanying process.

Again, this could well be taken as an argument for not limiting culture-related content to the British and American peoples in order to do justice to the sociolinguistic reality.

Success expectancy and self-efficacy

Success expectancy (Oxford et al., 1999, p. 107) is a subjective assessment of a multitude of factors that may determine whether the learning objectives will be reached or not. Self-efficacy may be regarded as a subcomponent of success expectancy and refers to how learners see themselves with respect to their own skills. This is relevant because negative self-perception can have a harmful effect on the individual's learning ability (Hartl, 1992, p. 125ff) and tends to influence learners both in terms of choice and avoidance, i.e. with regard to the

means chosen to achieve a particular objective. For example, if learners regards themselves as poor writers, they might deny themselves a very important tool for developing fluency.

Adults have, of course, a longer and potentially troubled learning history (as opposed to children) which might involve, for example, successive failed attempts to become fully fluent in English. Past success makes people more likely to engage in learning (Oxford et al., 1999, p. 125) as a sense of achievement tends to generate intrinsic motivation, and once "one's personal behavior history has produced a strong sense of efficacy, an occasional incompetent enactment will not change self-efficacy much" (Reeve, 2004, p. 230), but sadly, this principle applies also vice versa. The problem with this acquired self-perception consists in the fact that, very often, it is deeply flawed. Learners may wrongly attribute failures to their own shortcomings. What will be needed are opportunities in which learners may test their abilities to gain better knowledge of themselves.

Learned helplessness

In the worst case, what we have to deal with is learned helplessness (Reeve, 2004, p. 238ff), a psychological state in which learners believe they have no influence on outcomes and therefore display a decreased willingness to approach challenging tasks. They fail to use feedback as an important indicator which tells them "they need more effort, better strategies and more resources" (p. 238). Learned helplessness prevents personal initiative - one of the key characteristics of successful learners (Dickinson, 1993, p. 129).

What can be done to overcome this serious learning obstacle? The recommendations are similar to the ones need for building intrinsic motivation (further above). Firstly, the case of learned helplessness calls for a strong emphasis on the learning process. Instead of telling learners only what they need to achieve, they need to be told how to achieve it by offering them a model and concrete ideas to follow (Burden, 2002). The problem of applicability in the teacher-less self-instructional setting will be discussed in section 2.8. Secondly, there is a need for anticipating obstacles that are likely to crop up along the way (Reeve, 2004, p. 215ff). It is helpful to know about the difficulty of a given task in advance in order to gather strength,

to mobilize supporting resources, and to prepare remedial or backup plans to make up for failures. I am also convinced that telling learners about the complexity of the language learning process, which is discussed further below, will help them carry on in moment where they feel not to make any progress at all. Thirdly, learners should be given a clear idea of the relative importance of individual linguistic skills. For example, over-concern with accent should be discouraged, as well as completely abandoning fluency for the benefit of grammatical correctness (Burden, 2002).

Relevance

Relevance refers either to the importance of English skills as a whole or to how helpful a particular activity will be for making progress. In both cases, perceived irrelevance is one of the main reasons for which adults abandon language courses (Rowsell, 1992).

As to the importance of the English language, it goes without saying that in the Czech Republic, increasingly some knowledge of English will be required in most non-manual jobs. In addition to practical reasons such as better access to information resources and increased mobility, the notion of whether or not particular skills are important is also influenced by our cultural values. Views as to the importance of English range from regarding skills as useful, desirable to considering them a matter of course. It remains to be seen whether language policies at national and supra-national levels, particularly the official objectives of lifelong learning and extensive multilingualism all across the European Union (Commission of the European Communities, 2003) will have a profound effect on the mentality in individual member states. But why should it be necessary for a learner to improve his knowledge of English, if he or she can get by with her current level? For our profile, that is adults on their way to reaching the upper-intermediate level, the need for basic communication will hardly suffice to make learners seriously engage in the learning process.

Relevance is also linked to confidence. If the teacher, in our case the learning software, is not regarded as trustworthy in terms of being able to help learners to achieve their goals, their advice will not be followed (Reeve, 2004).

Persistence

Learning a foreign language requires commitment on a long-term basis. The need for learners to keep up their effort is complicated by the fact that such learning is gradual, accumulative and non-linear (Hartl, 1992), which makes it sometimes difficult to track progress and provide adequate feedback. For example, knowing lexical items involves knowledge about meaning, formal aspects and a series of constraints, such as collocational combinability and style. Combined with homonymy, polysemy and other relationships between different items, it will be quite impossible to learn vocabulary items as a whole at one go and in a simple, straightforward manner (Nation, 2001). What is more, delays in learning, not yet supported by a lot of evidence but easy to observe at all levels of learning (Ruin, 1996, p. 94), as well as phases of seeming stagnation, present a serious motivational challenge.

2.2 Readiness to learn: aptitude, anxiety and physiology

This chapter unites three concepts which refer to the learning capacity of the adult learner in terms of readiness to learn, as opposed to the willingness to learn which was treated in the preceding section. While aptitude is seen here as a general factor that is unchangeable in principle, anxiety and physiology are understood as factors that are related to the learner's momentary condition and that can optimized in the short-term.

Aptitude and age

Aptitude then is a stable variable describing cognitive abilities in the context of language learning (Byram et al., 2000, p. 37). It can vary with respect to different subskills, and it is influenced by the learning history, above all the length of initial learning, the period that has passed since learning was discontinued and the line of work. This means that learners with higher education are better prepared for adult learning than those with basic education only (Hartl, 1992, p. 124).

I personally have not encountered a single person who would provide real evidence for a genuine inaptitude to achieve at least medium communication skills in a foreign language. All

cases of failure to do so that I have been able to study and observe can be satisfactorily explained on motivational grounds.

The good news with regard to adult language learning is that „age-related changes are no obstacle to learning " (Byram et al., 2000, p. 15). Although it is true that after a critical age of around 15 or 16 years, the chance of achieving native-like proficiency is very low (Ruin, 1996, p. 76), but even for such ambitious objectives cases of success are reported (Byram et al., 2000, p. 23). The cognitive factor that has significant consequences on adult language learning is the presence of a fully developed L1, treated also elsewhere in this thesis (see 2.4 and 2.6). Information on the foreign language tends to be subordinated to the set of acquired L1-specific schemata (Leaver & Shekhtman, 2002, p. 18). Of particular importance is the fact that adults have lost the ability to discriminate different sounds in general, as opposed to the phonetic inventory of their mother tongue (Wilson & Keil, 2001, p. 789). This goes hand in hand with a reduced flexibility in general and worse motor skills, compared to children. Conversely, adults are in possession of a better general memory and better learning skills (Mothejziková, 1998, and Hartl, 1992). Also, their attention span is longer (Jensen, 2005)

Other factors that cannot be altered but need to be taken into account when designing learning materials include physical disabilities, the likelihood of which is growing as the learner is becoming older. For instance, at the age of 40, almost half of the population is visually impaired. It can be helpful if adult learners are told that their perceptive faculties tend to be worse than earlier in life and that therefore they will need to concentrate more (Hartl, 1992, p. 113ff).

Anxiety

Eskanzi (1999) says that learners need to feel at ease for learning to be effective. Similarly, Krashen, in relation with his affective filter hypothesis (Mitchell & Myles, 2004, p. 44ff), claimed that anxiety can act as a mental block. This is closely related to what has been said about self-efficacy and learned helplessness (in section 2.1). Anxiety may impede learning for example because adults, when they are convinced that they are unable to solve a given task,

tend to automatically filter out important information as they perceive it to be meaningless (Hartl, 1992). In language learning, anxiety is often the result of confusion, reliance on the part of the teacher on reward and punishment to generate motivation, or embarrassment of the learner to speak in front of the class. For the last mentioned problem, computer-assisted self-instruction might well offer a solution.

Physiology

There are two ways to approach this aspect. On the one hand, much can be achieved by adapting learning schedules to the biological rhythm of the individual (Hartl, 1992, p. 110), which is more easily achieved in self-instruction than class-based learning. On the other hand, performance can be enhanced by appropriate nutrition, drinking enough water in particular, and physical activity. Jensen (2005) gives a detailed account of the important role movement plays in learning. He quotes a series of studies carried out by Dwyer et al (p. 63) which showed that better performance can be achieved by devoting some of the study time to physical exercise. Kinesiology researchers (e.g. Krebs & Brown, 1998) have elaborated a comprehensive set of methods to improve and stimulate mental activity. For instance, the benefit of cross-lateral movements such as crossing over a right arm to one's left side and vice versa has been pointed out (Jensen, 2005, p. 51).

Sadly, such knowledge has not yet been implemented on a broader scale. To quote Jensen again: „It's truly astonishing that the dominant model for formal learning is still 'sit and git.' It's not just astonishing; it's embarrassing" (p. 60). While progressive teachers are using for instance role-play involving physical movement, the problem of computer-based learning is that it invites learners to do the exact opposite of what has been said about movement. What can and should be done with regard to biorhythm, nutrition and the need for movement is to include practical and transparent advice in self-study materials.

2.3 Time

Time is a relevant topic because it is increasingly considered a scarce commodity, these days. This applies to adults to a much larger extent than it does to children at the age of

compulsory education, because their daily rhythm is determined by full time jobs and family-related responsibilities (Byram et al., 2000, p. 8). Time dedicated exclusively to learning is not easily available, and when there is time, it might be at times inappropriate in connection with people's biorhythms, i.e. before or after work – unless there is an employer who is particularly favourable to education. If language learning takes place during the work day, especially freelancers and people in leading positions run the risk of being constantly interrupted by phone calls and visitors. But fully dedicated time is necessary to allow intentional learning to happen (Byram et al. 2000, p. 666), to allow learners to concentrate and engage actively in the learning process (see section 2.4). According to my experience, there is not a real chance of success if too little of such quality time is available is available. Not even the best English course can then be of any help.

Learners also need to realize that learning a foreign language is incomparably more time-consuming than for example acquiring basic driving skills. Although it is generally believed now that first and second language acquisition are very different from one another (Mitchell & Myles, 2004), it is helpful to keep in mind that learning one's mother tongue is neither a pain- nor effortless task, but a long process involving countless hours of practice and exposure (Mothejziková, 1988).

Many cases of adults giving up a learning project are linked with irregularly or unexpectedly occurring events, such as illness, changes in the housing situation, and work- or family-related problems (Rowsell, 1992). As has been pointed out in the preceding section, such threats can be significantly reduced by plans how to resume work and to make up for interruptions.

2.4 Effective learning

The past two centuries have seen a number of fundamental shifts as to what effective teaching, or learning, looks like. I find it important to stress that there is some truth in all of the major approaches, and what will emerge from their contributions to our understanding of learning will hopefully be a highly flexible and balanced approach. It would be wrong to regard many of the principles established by the various movements as mutually exclusive or

contradictory - instead, they ought to be regarded as complementary (Mothejziková 1998, p. 43, Nation, 2001, p. 2ff, and Byram et al. 2000, p. 666), as it has been put forward by constructivist theorists: learning is fundamentally pluralist and relativist in nature (Naidu 2003, p. 74).

Scaffolding as one of the key concepts put forward by constructivist theorists is a metaphor that can be usefully applied to various aspects of learning, notably to improving intrinsic motivation (see section 2.1), to building learner autonomy (2.8), and to fluency development. It is useful because it describes that balance that has to be struck so often between guidance and independence.

Firstly, in language learning there is both a place for a cognitive approach, i.e. learning through conscious processing of information, as well as a mechanic, behavioural approach, i.e. the use of drills to effect habit formation. A similar contrast exists between implicit (meaning-focused) and explicit (form-based) teaching. Often both are needed, and the optimal balance will depend on the particular learner profile and on the skill to be acquired. For example, pronunciation requires more of an implicit approach than other skills. Conversely, difficult grammatical points - this might apply to some aspects of the learners mother tongue as well - are more suitable for explicit teaching.

Secondly, adult learners, more than children, require new information to be brought into connection with existing knowledge, but at the same time there needs to be a certain element of newness to ensure their attention.

Thirdly, early practice is needed, because the earlier knowledge is put into practice, the better. This again holds for adults in particular (Hartl, 1992, p. 142). On the other hand, if a learners are forced to produce language at a level that is beyond their current skills, as this is quite likely to lead to fossilization, discussed in section 2.6. If both fluency and accuracy are to be achieved, there needs to be a balance between learning new structures and practicing them.

Fourthly, learning ought to be seen as a cooperative as well as an individual process. We will return to this point in section 2.8.

Lastly, Bjork (1996) points out that what delivers results very quickly may not necessarily lead to optimal performance in the long run. This is an argument which points to the need for active learning, for the deep-level processing of information. But immediate results are sometimes needed to boost motivation (see 2.1). The need to learn and revise at adequate intervals will be dealt with in section 2.7.

Cognitive or explicit approach

There are a series of differences between the conditions of first and second language (L1 and L2). The significantly smaller amount of time available in L2-learning has been referred to. Also, unless in an immersed setting, there will be a lack of exposure, especially with regard to meaningful interaction (Leaver & Shekhtman, 2002, p. 18). If these disadvantages are to be compensated, adult learners need to make use of their relative advantages, particularly their better cognitive skills (Ruin, 1996, p. 123). And finally, in contrast to children acquiring their mother tongue, in the case of adult learners there is the presence of the well developed first language to be reckoned with.

Focus on form or explicit instruction, which should not be limited to phenomena at word or sentence level, but ought to include "features of discourse, sociolinguistic rules of appropriacy, and communication strategies" (Byram et al. 2000, p. 127), brings a number of benefits. First of all, I am sure that many adult learners in this country will be used to this approach from their school days. Secondly, it will create the kind of metalinguistic knowledge need for learners to monitor their own output (self-monitoring) and build structures that will make sure that knowledge will remain accessible "as time passes and contextual cues change" (Bjork, 1996, p. 187). A conscious, logical understanding of the matter may allow learners to reconstruct knowledge that has been impaired by longer periods during which they have had not contact with the foreign language in question. This metaknowledge also facilitates the use of reference sources. For example, knowing what a conditional is allows learners to find it

very quickly in all sorts of materials. Thirdly, explicit instruction is needed to achieve accuracy, as learners are likely to overlook many formal elements unless forced to notice. (Chapelle, 2005, p. 747, and Ruin, 1996, p. 122).

Implicit learning and habit formation

The problem with explicit knowledge is that our capacity to pay conscious attention is limited. Comprehension and production of fluent language are far too complex to be achieved without a high degree of automatization (Hulstijn, 2003, p. 419). Stephen Krashen introduced the useful distinction between learning and acquisition to refer to explicit and implicit knowledge (Mitchell & Myles, 2004, p. 44). To allow learners to apply knowledge in spontaneous production, learned skills have to become acquired skills, i.e. they have to become automatized (Ruin, 1996, p. 56). This will be particularly useful in the case of frequently needed knowledge. Fast access to basic phrases will give learners a sense of fluency and help them keep up a conversation in the foreign language. Tozcu and Coady (2004) recommend the automatization of core vocabulary items as this will also facilitate the use of monolingual dictionaries, for instance, because automatization decreases reaction time for word recognition and frees up attention capacity for unknown items and overall understanding. Moreover, drill or habit formation plays an important role in eliminating intractable errors which have become fossilized in the course of many years.

Active learning

A third perspective relates to the notion that our memory is fundamentally different from the way computers store and retrieve information. Most importantly, accessing knowledge will effect, to a certain degree, its consolidation and reconstruction: "Rather than being left in the same state it was in prior to being recalled, the retrieved information becomes more recallable in the future" (Bjork, 1996, p. 187f). The impact is greater if the retrieval takes place in the context of a problem-solving task that requires creative and productive thinking. One example for such a task is writing a little story about a given topic.

Active learning relates also to the amount of active practice. Mackey, as quoted by Morton and Jack (2005, 172) found that learners who actively participated in an interaction produced more advanced structures than those learners whose participation in the interaction was less active.

Active learning relates also to the amount of active practice. Mackey, as quoted by Morton and Jack (2005, 172) found that learners who actively participated in an interaction produced more advanced structures than those learners whose participation in the interaction was less active.

There are two important points to be derived from what has been said so far: one, reliance on input alone is a very ineffective form of learning (Gass, 1997, p. 138). Two, introducing difficulty tends to benefit long-term performance, or in other words, mechanic reproduction is less effective than problem-solving.

While both explicit and implicit instruction are relatively easily to implement in self-study CALL, the need to include creative problem-solving tasks and opportunity to speak in meaningful settings, represents a real challenge for learning software developers because it requires the computer to process not just predictable choices, but to process natural human language in its full complexity. Attempts to provide such capability will be looked at in chapter 3.

Variety

The need for variation as a result of our brain's tendency "to learn from experience and to slowly lessen the response" (Jensen, 2005, p. 37) applies to all aspects of the learning process, ranging from a multitude of topics in a range of formats to the physical location, manner of interaction and the learning mode. The former are undoubtedly feasible in self-study learning software, but there is not much room for variation with regard to the second set of conditions.

Relating new to existing knowledge

It is one of the central claims of Piaget and his followers that individuals build knowledge by integrating new with existing information (Leaver & Shekhtman, 2002, p. 18). Put differently, knowledge that remains isolated is worthless and will quickly become inaccessible. Adult learners in particular tend to regard new information as irrelevant and meaningless if they cannot see any connection with what they are familiar with (Hartl, 1992, p. 76). This holds for topics, i.e. the need for content with appeal to the individual learner, the learning method, as unfamiliarity with the chosen approach is also one of main reasons for which adults abandon language classes (Lamping, 2003), and the need to take into account existing linguistic skills including the mother tongue: „The new language must be firmly linked to the universe of things and events which learners have, for the most part, already experienced through the mother tongue" (Byram et al. 2000, p. 416). Also, adults are significantly worse at remembering meaningless syllables (Hartl, 1992, p. 138), which explains the need for mnemonic aids. For instance, Nation (2001) describes ways of remembering the form of new lexical items by likening them as much as possible to parts of items the learner already knows.

To stick to the monolingual principle, especially in a non-immersed setting, means opening the door for interferences and failing to take advantage of positive transfer (Mothejziková, 1998). What is more, the greater the amount of new information, the greater the need for processing, integrating and organizing it. All of these requirements could be met by sophisticated learning software, for instance by offering a wide choice of topics and providing vocabulary management tools such as mind maps.

Authenticity and level

In my understanding, authenticity in learning can either refer to the language material or the learning activities. Texts are regarded as authentic if they have been produced without the intention for them to be used as an instrument in second language learning (Byram et al.

2000). Activities are authentic if they correspond with functions the language fulfils outside the language instruction.

Aist says that in order to maximize transfer from the assisted to the unassisted task, the ought to look as similar as possible (1999, p. 169). According to Naidu (2003, p. 74), authenticity is able to generate meaningfulness, and this is what is needed to get the attention of adult learners. Buchholz (1992) reports that learners prefer authentic materials, and Chapelle (2005, p. 748) adds that, instead of simplification, extra information should be provided for learners to be able to cope with authentic language, for example in the form of glosses.

According to Krashen's input hypothesis (Mitchell & Myles, 2004, 44ff), opportunities to learn arise from linguistic input which is slightly above the learner's current competence. If a new item is surrounded by familiar context, there is a real chance that its meaning can be inferred – a very effective way of learning (Mothejziková, 1998, p. 33). At lower competence levels, few appropriate authentic texts and activities are available, but for learners approaching the upper-intermediate level, a huge range of authentic learning opportunities become available. While contemporary human-computer interaction technology is unable to simulate most of the real life tasks, computers are able to offer both a broad selection of topics to allow for choice on the part of the learners, and the tools to work with them. However, such assistance needs to be as comprehensive as possible, for the adults' reduced tolerance towards ambiguities (Hartl, 1992).

Learning style and learning strategies

To begin with , I find it useful to state the basic difference and relation between these two concepts, and point out their significance in our context. Both refer to the learners approach to learning, but style refers to permanent cognitive characteristics that determine their approach to tasks and situations, while strategies are regarded as acquired over time and therefore as changeable, at least to some degree (Byram et al. 2000).

It follows that our task is to get learners to know their style and providing them with instruction which takes individual learning style into account. Widely know is the distinction between the holist and the serialist (Byram et al. 2000, p. 346).

As to the strategies, it will be both necessary to base instruction on the set of strategies the learners already use, as well as gradually alter this set in accordance with general learning principles and with the individual style, because a mismatch between style and strategies is a learning obstacle (Bull and Yingxin, 2001). However, we do not know enough yet about strategies to be able to design sophisticated training of language learning strategies. For the time being, we cannot not do more than help learners „engage as fully as possible in the reflective tasks of planning, monitoring and evaluating their own learning" (Byram et al. 2000, p. 579f) to build autonomy (such skills must not be taken for granted by learning software designers, see section 2.8), and enrich the repertoire of strategies they use, because successful learners are the ones who look for alternative ways of solving a task instead of „sticking stubbornly with one approach", which makes learners more susceptible to obstacles and irrelevant details (Reeve, 2004, p. 255). In particular, learners need both skills for generalizing and accuracy (see 2.6), and that they need to actively seek out opportunities for practice and interaction.

In the case of adult learners, it will often be necessary to „undo some of the ill effects of school" (Curtin, 1979, p. 284), for instance the dependence on written language. This obstacle can be the result of outdated teaching methods based on the instruction of the classic languages, or of misconceived parallels to the instruction of the learner's mother tongue which rightly focuses on written aspects of the language. This calls for an emphasis on spoken language beyond initial stages (Mothejzíková, 1988).

2.5 B2 - The upper-intermediate level

The Common European Framework of Reference for Languages (CEF or CEFR) defines six reference levels not in terms of structural, but communicative skills in a foreign language (Council of Europe, 2001). The learner profile dealt with in this theses is represented by

learners who have, by reaching the third level, named the Threshold Level or B1, become independent language users. On the way to the next level, known as the Vantage Level or B2, independence is being redefined; instead of merely being able to move for example in a foreign country where the second language in question is spoken, learners will be able to account for their opinions; instead of only taking part in social discourse, they will be expected to be able to organize it, for example by inviting others to join a discussion etc. (ibid., p. 35). By and large, the focus is shifting from being able to express an idea at all to being able to express it in an appropriate way.

The same holds for knowledge of language structure as well; once the basics have been acquired, it is time to work on refined skills – at all levels of the language. In pronunciation, learners need to focus on suprasegmental aspects (Eskenazi, 1999, p. 63). Morphological and syntactical areas to be studied include finer points of both the verb phrase, for instance conditional, reported speech and the contrast between simple and continuous forms, and the noun phrase, for example countable versus uncountable nouns and article use (Natural English upper-intermediate ESOL curriculum guide, 1996). At the level of lexis, there is a transition from the core vocabulary to specialized words according to the interests and the profession of the learner (O'Dell, 2007).

2.6 Fossilization and the importance of feedback

In the preceding section, the intermediate level was described as having achieved communicative competences at a basic level. From a pragmatic point of view, this may well be the most important step in the language learning process altogether. There might be no need to learn about finer aspects of the language, or this need might not be immediately perceptible. And indeed, according to Lewis (as quoted in Williams, 2002), a majority of learners will not manage to advance further from here. If there is a lack of progress despite continued effort and exposure to the target language, we are presented with a case of fossilization. Other terms to refer to the same phenomenon include frozen system, stabilized errors, learning plateau, and false automatization (Han & Selinker, 2005, p. 455).

Altough this is a widespread problem, the good news according to Ruin (1996, p. 121) is that „there is no empirical basis for concluding that fossilization constitutes a serious restriction on the learning process of advanced learners generally".

Interlanguage

Before we take a closer look at fossilization itself, it is useful to get familiar with one of the key terms in the field. Interlanguage as originally put forward by Selinker (Mitchell & Myles, 2004, p. 15ff) refers to the individual learner's grammar, i.e. his skills in the target language (L2), which is both different from the L2 and the learner's mother tongue (L1). The learning process can be described as the effort to make this interlanguage as similar to the L2 as possible, wherefore the interlanguage is an dynamic system. The point of departure for this evolving grammar is the L1 and possible other foreign languages the learner knows, but according to research findings not all deviations, i.e. the difference between the interlanguage and the L2, can be attributed to interferences from this existing knowledge (Ruin, 1996, p. 67). Also, interlanguage does have its own "own system of rules" (ibid.), which has important implications for error management. It remains to be said that deviations are present not only in the form of wrong application of particular structures, but also in the under-use of structures that are typical for the L2.

Fossilization and its causes

This term too can be understood in two different ways. It can refer to the retention of errors in spite of on-going learning, or it may depict stagnation in the learning process as a whole. It includes instances known as backsliding where the learner knows the correct structure (in terms of the L2-grammar), but frequently, especially in spontaneous production, resorts to a different structure (Byram et al., 2000, 308).

But what are the causes of fossilization? Han and Selinker (2005) name the following:

problems that lead to fossilization: a lack of good input, an absence of corrective feedback, an absence of good learning principles, and also motivational, attitudinal and cognitive constraints (see section 2.1).

In the context of bad learning principles, there is one in particular that deserves closer inspection. "Communication before structure" means that learners have communicate beyond their competence (Mothejzíková, 1998, p. 29). To make up for their shortcomings, they have to rely on structural knowledge of other languages, but usually their mother tongue. By using the same of these wrongly transferred structures over an extended period of time, bad habits are formed which will become increasingly difficult to eliminate.

A lack of exposure to good L2 language can also mean over-exposure to bad L2 language. Specifically, today's learners of English are confronted with the omnipresence of global English. Those who have participated in international meetings with a only small proportion of native speakers have witnessed the kind of English that is commonly used in such contexts. Another common risk to pick up faulty habits are texts on the internet, where authorship is often obscured and the learner is unable to find out whether the text has been written by a native speaker or not.

Learners are more prone to develop fossilized errors that are shared by learners of the same L1-background in general (Han & Selinker, 2005, p. 455), but they are less likely to fossilize deviations that present obvious communication obstacles (Byram et al., 2000, p. 218).

How can fossilization be overcome?

Exposure to the target language, not even full immersion in the L2, will hardly achieve to change faulty habits that have become firmly fixed (Byram et al., 2000, p. 218). How then can the encrusted system be broken up? To put it simply: As long as errors are exploited, learning will continue (Rozzi, 2007). There is the need for comprehensive feedback based on a learner-specific analysis that takes also the learners linguistic background, i.e. his or her mother tongue, into account. To get rid of bad long-term habits in terms of spontaneous production, drills may also be necessary.

Feedback which leads to learning can come in different forms. Apart from explicit feedback by a professional, there are implicit ways for learners to learn about their mistakes. The term "negotiation of meaning" describes the clarification process after an error by the learner has

led to a breakdown of the conversation (Gass, 1997, p. 104). Ideally, such settings provide learners with opportunities in which they can test their knowledge and where they are forced to notice shortcomings in their skills. Recasts are equally attractive because they interfere less with ongoing interaction than explicit feedback (Morton & Jack, 2005, p. 172). Bell (2005) points out the positive effects of humour and language play in foreign language learning, because they tend to destabilize the interlanguage. By contrast, both simple right-and-wrong feedback without further specification and incessant feedback should be avoided, otherwise learners are likely to adopt a trial-and-error approach to learning (Bjork, 1996) and might become dependent on feedback.

Feedback needs to be consistent and should be provided in ways and at intervals which take the individual learner into account (Eskenazi, 1999, p. 63). For instance, for learners with "high reactivity or with chronic anxiety and stress, it is often preferable to provide additional time between the learning event and the feedback on their performance" (Jensen, 2005, p. 55).

2.7 Priming, revising and planning

This section deals with two aspects of scheduling; one, the need to introduce, review and revise learning content in a reasonable manner, and two, the need to limit the amount of new information and to allow for pauses. Further principles such as the need to structure content adequately, in particular the ordering from simple to complex (Hartl, 1992, p. 107), are equally important but will not be discussed in detail.

Pre- and post-instruction phases

Jensen (2005, p. 38ff) proposes five phases for teaching and repetition in addition to the actual instruction itself. Pre-exposure and priming are implicit forms of presentation which should take place weeks or months, and minutes or seconds, respectively, before the principal instruction. Pre-exposure allows learners to, unconsciously, summon up existing knowledge and create a basis for the integration of new content; so does priming, which can be regarded as a warming-up activity. Previewing also is intended to prepare the ground but is

an explicit form of preparation and is to be scheduled minutes or hours before instruction. For example, it is a good idea to tell learners what a particular text is about because it will lead to a better understanding (Hartl, 1992, p. 141).

As to the consolidation of knowledge after instruction, Jensen makes a distinction between reviewing and revising. Compared to revising, reviewing tend to be more of "rote process" (p. 40). Accuracy is of particular importance here. Revision, by contrast, is understood as deep-level processing of what has been learnt. This step, which should be repeated in the beginning at shorter, then increasingly larger intervals (Nation, 2001), involves the kind of active retrieval described in section 2.4. Monitoring and feedback is needed throughout the revision process, because retrieval comprises the risk of gradual distortion. The maximum number of repetitions needed to consolidate vocabulary items is generally at around seven (ibid., p. 81).

It should be added that frequent and massed repetition is to be avoided. With regard to habit formation, reinforcement that takes place on an occasional, irregular basis is more effective (Hartl, 1992, p. 107). Cognitively, pauses are also important – this is the focus of the following paragraph.

Limited capacities

The general principle to be respected to make sure that information is remembered can be summarized as "one thing at a time". On the one hand, this relates to the fact that adults need to focus on one activity at a time (Hartl, 1992). Adult learners in particular struggle if advised to keep a particular piece of information in their short-term memory while doing something else. On the other hand, learners must not be expected to pay attention to new input and process earlier input at the same time (Jensen, 2005, p. 36f). Adults are even more susceptible to interferences than children, that is the mutual impediment of old and new information (Hartl, 1992, p. 177). This calls for the provision of pauses to give learners enough time to fix knowledge internally. In order to avoid interferences, it will also be

necessary not to study similar content in direct succession, and in some cases even to offer contrastive instruction (ibid., p. 179).

There are also limitations as to the length of instruction units and the amount of information that can be processed in one session. For instance, Goodfellow (1999) found that the acquisition of more than eight new items per hour is not realistic in the long run. Though adults are able to concentrate for longer periods, their attention span is also fairly limited. 18 minutes of direct instruction should not be exceeded (Jensen, 2005, p. 37).

2.8 Self-study

In a study comparing different learning modes, Vančová found that the attitude of a majority of adults is not favourable towards teacher independent learning modes (2007, p. 74). But the wide range of products offered for this very purpose indicates quite clearly that there is a demand for such alternatives to class-based instruction. While the reasons to opt for self-study are manifold, according to my experience most cases fall into two categories. One is that no appropriate course is offered at the time and place and for the level needed, the other is a general lack of time; learning can, it is sometimes assumed, can somehow be squeezed into the busy schedule without allocating fully dedicated time; that this is unlikely to work has been explained in section 2.3.

Before self-study is discussed in detail, it will be helpful to make a distinction between self-study itself and two closely related concepts, learner autonomy and self-instruction.

Learner autonomy, to begin with, does not refer to a learning-mode but rather to a set of skills on the part of the learner, notably the capacity for „self-evaluation and self-determination" (Schwienhorst, 2003). It is at the same time a precondition for and a driving factor behind self-instruction, which sees the learner taking on as much responsibility for the learning process as possible. Its importance lies in the fact that, firstly, adults are used to take decisions themselves (Hartl, 1992). Participation in the decision making process is likely to boost their intrinsic motivation (see 2.1). Secondly, adult learners form a highly heterogeneous group in terms of differences in age, learner history, interests, and abilities as

well as differing possibilities to interact with native speakers. Autonomy will help to take these specific profiles into account in that it allows learners to seek out and make use of opportunities to practice and to get corrective feedback outside the language classes (Dickinson, 1993).

As to the difference between self-instruction and self-study, it is important to stress that self-instruction involves both interaction with peers as well as assistance by teachers or mentors (ibid.). By contrast, self-study, as it is understood here, does not provide for learner cooperation nor for assistants. Who then will know enough about learning and learning materials to guide the process? Obviously, it would be foolish to assume that the average learner is capable of coping with such a challenging task (Goodfellow, p. 199). Not only would it be wrong to expect that learners in general have the same methodological know-how as trained teachers, it is also true that few contemporary educational institutions have begun to prepare their students genuinely for autonomous learning (Byram et al., 2000, p. 13). What follows then is that good self-study materials need to cope with unskilled autodidacts. They need to help learners to improve their self-study skills, but at the same time this effort must not dominate the learning programme as a whole in such a way that it becomes more important than the actual aim, the improvement of the learners knowledge of the foreign language (Dickinson, 1993).

The major problem of self-study: the lack of human interaction

The self-study setting is problematic not only in terms of guidance, planning, and monitoring, or for the fact that the presence of a human tutor "who models how to set goals, develop strategies, formulate implementation intentions, monitor performance, monitor performance, and evaluate [the learning] process," enhances learning (Reeve, 2004, p. 222). It has also been claimed that cooperation between learners in general is advisable (Naidu, 2003, p. 29, and Jensen, 2005, p. 94), based on Vygotsky's hypothesis that learning and language learning in particular has a strong social component (Chapelle, 2001, p. 31). This seems convincing with respect to verbal interaction as an opportunity for active practice, if peers possess similar

skills in the foreign language. The benefits of negotiation of meaning have been pointed out in connection with fossilization (section 2.6). But human interaction is important on motivational grounds as well. Other learners can be a source for creativity, humour and inspiration, for example as to new learning strategies. Because peers can provide learners with models to follow, their presence may be helpful to overcome learned helplessness (Hartl, 1992, p. 144, see also section 2.1). It is not surprising that, reportedly, more than a quarter of adults who attend classes do so in order to meet and to identify with other people (ibid., p. 135).

Requirements for self-study materials

In this subsection, a number of fundamental requirements are listed, on the bases of self-study and self-regulation principles as laid out by Dickinson (1993), Reeve (2004), and Hartl (1992).

In a first phase learners should be helped to gain knowledge about themselves, with regard to three aspects; firstly: Where are they now (i.e. what are their current skills)? Secondly: Where do they want or need to go (i.e. what is the overall objective)?
And thirdly: What are the personal factors that should to be taken into account, in terms of individual learning style, aptitude, learning history, motivation, personal interests and individual access to native speakers? As to the overall objective, it has been pointed out that a strong end goal, typically passing the First Certificate in English examination, is helpful in general, regardless of differing motivational characteristics.

To allow for the use of data already known or for reusability of the data gathered, skills ought to be measured and described in compliance with the Common European Framework of Reference. Preferably, once it will be generally available, learning software will offer an interface for the electronic version of the European Language Portfolio.

On the basis of this extended wants- and needs-analysis, it will be necessary to work out a detailed action plan which includes sub-goals and time limits. Many cases in which people failed to achieve their objectives can be traced back to problems at this stage – in particular

the failure to specify not just what goals one wants to reach, but also how to reach them, and the failure to anticipate problems that can occur on the way and plans how to cope with them (Reeve, 2004). For instance, all self-study materials should remind learners of the need for social interaction. They ought to suggest ways to make up for these learning mode-related deficits.

The question as to the size and difficulty of sub-goals depends on the motivational profile of the learner (see section 2.1). In the case of less experienced autodidacts, it might well be necessary to adapt plans after some time has elapsed, on the basis of more precise self-knowledge.

Goals are only useful if there are reliable ways of testing progress. This calls for benchmarks, tests and review sections. Also, Dickinson (1993, p. 185) suggests the use of learning diaries to track progress and improve self-knowledge. Each record should include the date, the learning unit(s) and the activities that have been done, information on how the learner performed and the difficulties that have been encountered, and intentions with respect to the following session.

During activities, clear and comprehensive instruction as to the tasks and learning objectives are key (Hirata, 2006, p. 282), and both performance and self-monitoring can be enhanced if learners are told about the level of difficulty of individual tasks. Also, more than basic computer skills must not be taken for granted; Dickinson (1993) recommends the use of the learner's mother tongue for instructions and explanations.

For feedback to be helpful, it needs to be as specific as possible. Additionally, as questions and doubts that may arise during activities are difficult to anticipate, learners should be offered comprehensive reference sources (Hartl, 1992) which can be accessed through different means (for instance, grammar reference that can be searched both by linguistic terms and by frequent examples of the particular phenomenon).

Learners can be significantly empowered if they have the chance to learn the grammatical terminology needed to access reference works effectively, if the learning process is

transparent to them so they can gradually take on more responsibility for the process, and if they are provided with useful knowledge with respect to effective learning. What is more, learners should be informed about alternative means and sources for improving their skills.

3. Selected aspects of computer-assisted language learning

In the preceding chapter, the focus has been on the learner and the learning process. Now it is time to discuss software-related issues. The first section positions the software we want to examine in terms of four perspectives. This will be followed by an examination of human-computer interaction and a short section on the potential with regard to internet-based services. The chapter is concluded by a discussion of two manifestations of artificial intelligence, that is learner modelling and natural language processing.

3.1 Dimensions of description

Firstly, we are concerned with CALL in the narrower sense and therefore with applications that have been developed with the express purpose of supporting foreign language learning. Richmond (1999) uses the term "dedicated CALL" as opposed to "integrated CALL" which refers to software that serves general purposes but can play an important role in language learning, particularly word processors, internet communication applications (text, voice and video messaging clients), and programs for playback of multimedia content.

Secondly, the focus is put on system-driven programs, that is intelligent tutoring programs that take or help the learner to take decisions as to the choice and sequence of activities and content for learning. The notion of intelligence refers to the "preliminary or continuous" monitoring of the user's performance (Colpaert, 2004a, p. 227) to take these decisions. A typical example of the user-driven approach, the opposite case, are electronic reference works.

Thirdly, because programs are intended to fully substitute class-based instruction, and because we deal with learners who seek overall progress, what is needed is comprehensive learning software that teaches all important aspects of the English language (in the context of the given level). By contrast, specialized learning software addresses only particular areas, for instance pronunciation, vocabulary, or spelling.

Lastly, this thesis confines itself to standalone software. Standalone, as it is understood here, refers to the idea that all parts of the software including the learning content and user data are stored on the computer itself, as opposed to web- or network-based solutions. It also means that the learning software is not an added component of a different application, as proposed in the framework of integrated micro learning (Gstrein & Hug, 2006). Such technology, for instance screen savers which teach the learner a new word every time he or she resumes computer work, integrates language learning into the routine use of other software.

3.2 Human-computer interaction: the user-interface

The term user interface, as opposed to functional elements of a computer software, refers to those parts that are responsible for processing input from and generating output to the user. It may be regarded as the communication channel(s) between the learner and the actual program itself (Plass, 1988, p. 35). Contemporary technology uses text, graphics and sound for output; keyboard and pointing devices (mouse or touch-pad) are the primary means of input, sometimes complemented by audio input (processing of microphone signal) or even video input (processing of camera signal). These means provide users with navigation and access structures to retrieve and alter stored data.

The demands on the user interface depends on two factors, that is the range and complexity of tasks the program can carry out, and the amount of training that its users may be expected to have received prior to use. This explains why, in most software for non-professionals, the user interface accounts for huge proportions of the source code and the design effort (Wilson & Keil, 2001, p. 379), because sophisticated technology is worthless unless a good user interface guides and allows people to use it effectively (Eskenazi, 1999, p. 71). This involves a balancing act between patronizing and empowering the user – once more the notion of scaffolding suggests itself (see chapter 2). Holland et al. report that learners want to be able to navigate as freely as possible through the learning software (1995, p. 16), but as they are given more freedom of choice, there is also a greater risk of misapprehension on the users' part (Goodfellow, 1999, p. 110).

Metaphors

Of primary importance in today's user interfaces is the use of (predominantly) spatial metaphors. By alluding to objects and their behaviour we are used to from everyday life, the purpose of these metaphors is to allow for intuitive use.

Metaphors range from low level elements such as buttons, scrollbars, tree-structures and drag-and-drop mouse-actions, to higher level metaphors which are responsible for the organization of entire applications and operation systems. Such elements want to make the overall structure of the program transparent (Lonfils & Vanparys, 2001). In this context, the findings of Schcolnik and Kol (2006) according to which users get a better feeling of orientation through a-z indices as opposed to access through hyperlinks only, are not surprising, because people are more used to linear organization of content than to networking.

Common examples of complex metaphors include the comparison to a book, which is convenient for the notion of linearity described above. The window metaphor, by contrast, helps users to understand that more than one process can be active at a given time, just as one can have different documents and books on the table, on top and next to each other. A third kind of metaphor, the idea of multiple rooms, associates different types of activities, for example vocabulary learning versus pronunciation training, with different locations in a virtual building.

Sophisticated user interfaces go beyond the general idea of a given metaphor and address associated details as well. In the case of a book, for instance, highlighting, annotation and book marking would be supported, and an extended multiple-rooms metaphor would allow users to get a general idea of what is offered by taking a quick tour through the different rooms.

Further ways of improving the user interface

Manuals on cross-platform programming languages such as Java point to the fact that interface design needs to be consistent with the interface behaviour of the given operation

system. In other words, porting (i.e. adapting) software designed for Microsoft's Windows operation system onto the Mac OS X environment should include changes with regard to the user interface as well.

In order to facilitate navigation, users are to be offered multiple paths to access a particular sections of the program, and access to its main parts ought to be available at all times. Also, in the different screens of a program we need to find control elements arranged in a consistent manner, and the proposed activities grouped in a logical way. Specifically, related tasks should be put together and ordered according the progression of the superordinate task (Lonfils & Vanparys, 2001).

The dilemma between offering immediate access to many program parts with the risk that the user will get lost, and offering only the most relevant options but annoying more experienced users by forcing them to click their way through endless dialog boxes, so-called wizards, can be solved if the interface adapts to the evolving program-related skills of the users. For instance, for novice users, the choice of easily accessible options could be limited; later on, when they have gained a basic understanding of how the program works, the number of controls available at one time could be increased. Holland et al. present another good idea to address the problem: after a certain amount of time has elapsed during which the user has remained inactive, the system could prompt the user with an information box offering additional advice of what to do next (1995, p. 18). In a similar way, user interfaces need to be foolproof as to typing errors or other unintended input on the part of the user (Lonfils & Vanparys, 2001).

A last point regarding user interfaces concerns the choice of language – in our case, should we opt for Czech or for English? For more advanced learners, Melton (2006) found no significant between interface language and user performance; but because in the context of self-study confusion has to be avoided at all costs, Dickinson (1993) recommends using the learner's mother tongue.

3.3 Outside-world interface

In this short section, we are going to look at a different kind of interface. Although the software profile under inspection has been specified as not requiring network or internet services, supporting the use of such connections to the outside world can be very useful in different regards.

First of all, software is subject not only to programming errors (so-called bugs), but to incompatibilities arising from evolving operation systems and other computer components as well. Ideally, an application is able to download and install updates automatically through the internet.

But on a more advanced level, internet services can play a role in learning. On the one hand, programs could support learner interaction in terms of a learner networks, tandem learning, and computer-mediated communication (Chapelle, 2001). Study results, for consultation, and learner input the program is unable to process adequately, for correction, could be sent to licensed trainers for evaluation (Colpaert, 2004a). On the other hand, updated or tailor-made learning content could be delivered via the internet to the learner.

3.4 Learner profiling

Good teachers are well acquainted with their students' wants and needs, and the same should be the ambition of a intelligent tutoring program. The technology needed to allow this involves artificial intelligence – a term which in the context of learning software, according to Chapelle (2001), is sometimes used only to refer to natural language processing, but quite clearly applies to advanced learner profiling as well. This section deals with adaptability as to the objectives, interests, linguistic skills, learning style and strategies of the learner. The question of how familiar the learner is with the software, indeed also part of a comprehensive learner model, has already been treated in section 2.2.

In a first step, learners should be given the opportunity to define general goals and anticipate the amount of time they will be able to invest in the learning process. Dickinson (1993)

proposes that learners indicate the following, albeit based on subjective knowledge: a definition of the goal, its relative importance, and the current as well as the target competence level.

Then, the learning software needs to gain better knowledge of the learner to translate this goal into a detailed action plan. Shortcuts are needed to spare learners the need to undergo extensive testing before they could finally begin to study. In this respect, it will be useful to take into account subjective knowledge learners already possess about themselves (Byram et al., 2000, p. 438), namely through self-report questionnaires.

Discrete point tests based on a minimum of questions, though their reliability is contested (Byram, 2000, p. 181), can also make sense, provided that the learner profile will be refined later on. The "Compleat Lexical Tutor" (sic) of the Université du Québec à Montréal, intended for vocabulary profiling, offers a good example of existing technology for such purposes (Dodigovic 2005).

As to the difficulties learners face as a result of differences between their mother tongue and the target language, thanks to the International Corpus of Learner English (ICLE) L1-specific interlanguage profiles are already available for a number of languages, including Czech .

To find out about individual learner style and strategies, Bull and Yingxin (2001) have developed an ambitious electronic algorithm which is based on R. Oxford's learning strategies questionnaire (SILL) and Myers and McCaulley's learner style questionnaire (MBTI).

Data based on continuous monitoring will not only be needed for precision, but also to account for the fact that all factors (except for the learner's style and language learning aptitude) tend to change over time (Eskenazi, 1999). Most importantly, the system needs to build a learner-specific error database to counteract fossilization and detect error patterns that point to shortcomings at higher levels.

3.5 Natural language processing

Due to technical feasibility, language learning software has always been better at presenting content, rather than receiving and processing it, and better at processing written rather than spoken text. Multimedia made audio and video playback possible, but did not change the inherent weakness as to the productive skills. Without any natural language processing (NLP) capability, software was only able to match a string of characters entered by the learner against one or a set of defined words and at best tolerated spaces that had been added by mistake at the end or the beginning of the character string.

In the advent of advancements in NLP research, the hope is that one day language learning software will be able to actually understand human language, be it spoken or written, in its full complexity. While processing of learner input in restricted contexts has become possible and increasingly higher level structures are addressed as well, this ultimate objective will remain wishful thinking for many years to come. „Complete coverage of a human language is impossible", Holland et al. (1995) wrote more than a decade ago, and explained why natural language processing for use in language learning presents an even more challenging task: While the input of (educated) native speakers is highly consistent with a given norm, learner input is based on their interlanguage grammar (see 2.6). As pointed out, interlanguage is partially systematic, but it is difficult to describe in exact terms because it is individual and it is evolving in a non-linear manner (Chapelle, 2001). Thus, there is no exact model against which to match learner input.

Reflecting on how native speakers manage to understand non-native speakers, often even despite serious deviations from the standard grammar, tells us what would be needed for computers to deal comprehensively with learner input: the use all clues that are available to them in order to disambiguate the unfamiliar structures. In addition to grammatical knowledge, such clues may relate to the following: semantic knowledge, knowledge about the world, knowledge about the particular context (including the particular discourse situation and knowledge about the interlocutor), and possibly even knowledge about the non-native speaker's linguistic background.

While many of these issues remain unresolved for the time being, the question of the learner's background may well turn out to be one of the great potentials of CALL. Models (see preceding sections) based on the learner's performance and on knowledge about mistakes that are typical for the particular L1-background, allow systems to take decisions according to probabilities.

Holland et al. point out the need for NLP systems to be robust, as incorrect feedback leads to confusion or even mis-learning (1995, p. 4). Sadly, this is often the case in commercial learning software. Wildner (as quoted in Morton & Jack, 2005, p. 176) reports that in some systems it could happen that a native speaker was rated worse than non-native speakers.

4. Explorative study: self-study learning software put to the test

Testing a product under authentic circumstances means gaining priceless first-hand experience, and empirical evidence gained through such testing will always be needed to prove or disprove theoretical claims. Though my resources did not allow for a large-scale trial which could actually provide conclusive evidence for any hypothesis, the study which is described in this chapter served to explore the major aspects of our complex problem.

4.1 Objectives

The main objective of the study was to find out whether one of the best selling language learning tutors, the software Tell Me More by Auralog, would be able to meet learners needs in a teacher-less self-instructional setting. Not least because there were no means available of verifying whether learners had made any real progress during the short time span of the study, the focus was put on motivational aspects of computer-assisted self-study. It was hoped that results would reveal the strong points as well as the shortcomings of the learning software and thus provide support for the evaluation criteria used in chapter 5.

4.2 Method and materials

In the course of one month, 10 participants were asked to invest a minimum of 2,5 hours per week in the learning project, preferably on almost a daily basis. For a lack of resources (especially, the small number of subjects) and the huge range of factors at play, a quantitative approach was chosen, with an explorative objective.

Pre-Study questionnaire

At the start of the self-study trial, subjects were required to answer a number of questions relating to their individual background including age and professional setting. They were asked about past language learning, whether they had any professional experience with languages, for instance as translators, editors or teachers, whether they had experience with self-instruction, what their computer skills were, and if they had any experience with language

learning software including electronic dictionaries, both standalone and online. Three further questions explored the reasons for which they wanted to improve their English language skills, their attitude towards the language and its associated cultures, and their subjective wants and needs as to particular subskills such as pronunciation or morphosyntax.

Installation and instruction

The initial inquiry was followed by setting up the learning software products, listed in the following section, on the computers of the participants. If preferred by the subject, the software setup was carried out by me. This phase also involved providing for hardware including headsets in case participants did not have adequate equipment at their disposal, basic training as to how the individual programs were to be used, and instruction what they were to do in case of technical failures or learning difficulties. Subjects were also informed about the background and the aim of the study.

The actual trial and the learning software Tell Me More

Once subjects had begun the one month trial, I did not interfere unless contacted by participants for any study-related problem (technical failures, need for assistance with the learning software or inability to invest the weekly amount of time required).

Post-study questionnaire

A second questionnaire provided additional information on the exact conditions of the trial as well as an evaluation on the part of the participants of the computer-assisted self-study setting. With respect to the conditions, subjects were asked if they had engaged in additional activities related to learning English, especially with regard to interaction with other learners or native speakers. They were also asked whether they had been able to find the required time for studying on a regular basis, and whether they had experienced disturbances during study sessions. As to the evaluation, subjects specified what they had liked, not liked or missed about the software and the learning mode. They were also to indicate to what extent they had engaged in additional language learning-related activities.

4.3 Participants

The 3 men and 7 women who took part in the trial all come from an educated background. All possess university education, most in the field of the humanities, and their age ranges from 26 to 50. Needless to say, participation was voluntary.

4.4 Reservations

There is a wide array of reasons for which the study needs to be regarded as qualitative and exploratory; first and foremost, the small number of participants and their similar educational background means that results can only indicate tendencies, not reliable data which is representative for the entire population. Secondly, the time span of one month is simply too short to make reliable statements about the learning process as a whole. What would be needed is a 6 up to 12 month study – the time typically needed to advance from B1 to B2. Thirdly, there was no control group (for instance autodidacts who would be using only conventional materials), and results may rely too much on self-report (Ruin, 1996). See also the introduction to chapter 5.

4.5 Results

Installation-phase

The software installation was carried out by me in seven out of ten cases. 3 subjects did not have a computer at their disposal that would meet the technical requirements of the software, and only half of the participants possessed a headset, which made it necessary to organize quite a lot of technical equipment.

Pre-Study questionnaire

Not surprisingly, all subjects already had some experience with self-studying, and all possessed at least basic computer skills (for instance browsing the internet, and using standard programs such as Microsoft Word). All had used electronic dictionaries before (web-based or standalone), but none had any experience with language learning software in the narrower sense.

As to their motivation for studying English, there was only one person with a real interest in the English language for its own sake or any of its associated cultures; instead, most named the general relevance in the job market and the expectation that sooner or later not knowing enough English would have negative consequences for them. While there was no true low-confidence case with respect to foreign language learning, none of the subjects considered themselves extraordinarily talented for this task.

Observations during the study

Lamping (2003) reports that during a combined self-study trial subjects had made very little use of assistance, and my experience was exactly the same. I was contacted only once, because of a technical failure of one of the borrowed computers.

Post-study questionnaire

Most importantly, only half of the participants managed to invest the amount of time required. Those who failed to attend on a daily basis to the learning task pointed to a lack of time (usually because of too much work), and to being unable to study during late evening hours (often the only time available for learning during the week). These subjects also tended to be the ones whose profession involves a lot of computer work.

As far as the learning software (Tell Me More) is concerned, it was praised for its game elements as well as the dialogue based interactivity by those who felt less confident with learning languages; by contrast, it was severely criticized by those with higher self-confidence: These learners were unwilling to subject themselves to the learning method of the program. Most subjects felt at a loss at one point or another, and most missed the presence of comprehensive grammar reference. Also, most preferred an external dictionary such as the bilingual dictionaries by Lingea, to the limited internal dictionary of Tell Me More.

The worst judgement on the learning software was passed after the trial had ended: none of the participants seemed inclined to continue using Tell Me More.

Further findings include the fact that most subjects missed the presence of a human teacher, and most made an effort to supplement the computer course with other forms of learning, be it through films, books, or conversation courses.

5. Evaluation of four comprehensive software packages

While every evaluation must begin with a description of and start from the intended use of a product, with the language learning potential of the software as the ultimate criterion (Chapelle, 2001), there are two ways how to approach the task of evaluation itself. A judgemental analysis, the theoretical approach, is carried out by looking at the software and trying to answer a set of questions. An empirical analysis, by contrast, involves long-term field testing, ideally under circumstances that are as close to the authentic conditions as possible.

Understandably, since second language acquisition remains a field where few controversies are settled for once and for all, practical long-term field testing or 'empirical analysis' (Chapelle, 2001) is the only way to prove whether a product is useful or not. And as Park (2006) points out: "The current evaluation tools can hardly be trusted because of lack of empirical evidence from research on the effectiveness of software programs."

But to make things worse, a large part of the small amount of empirical data on learning software we do possess is not fully trustworthy. Hubbard (2005) names the following reasons: in many cases, the number of participants is far too small and the training and support they receive before and during the trial is insufficient. Most research is restricted to the initial stages of a learning project, takes place only over a short period of time, and deals with novice learners, i.e. subjects who are unfamiliar with the tasks or programs in question. What is more, Hubbard reports that many researchers rely too much on subjective data based on self-report questionnaires, as opposed to performance data gathered by tracking and monitoring software.

At best, conclusions are the result of a systematic application of a balanced and purposeful set of questions. To my knowledge, all information provided by the Czech Ministry of Education through the so called 'Evaluační Web' (MŠMT, 2007) is exclusively based on theoretical analyses.

The need for reliable information

As a result of a lack of empirical data, there are very few experts learners can turn to for good advice; teachers usually know as little about learning software as sales assistants in software shops.

But why do we need reliable evaluation data? If companies such as Fairfield Language Technologies allow their customers to try out their products for up to six months and fully refund them if they are not satisfied, why not let users choose themselves? On motivational grounds, a trial-and-error approach can be disastrous for learners who suffer from learned helplessness, as every negative experience will worsen their attitude; and for all learners, the prospect of success needs to be real for them to fully engage in the learning process (see 2.1). With respect to fossilization and learning strategies, bad learning practice may not only be ineffective, but can indeed even be counterproductive; both fossilized structures and bad learning habits can become even more difficult to eliminate (see 2.6). And as to the availability of time and money, few adults will be neither able nor willing to invest in successive individual testing.

The problem, of course, becomes worse as the market grows. In 1992, Buchholz predicted that not until long there would "be as many different CALL programs as there are language learning textbooks on the market" (1992, p. 137). A glance at the Czech market for language learning software will convince those who doubt that Buchholz was right: Czech based suppliers range from well-established publishing houses (Langmaster and Leda) to small enterprises (such as Langsoft, Terasoft, and Eddica) and one-man companies (e.g. Vitware).

The internet has brought down costs for publishing and distributing software, and allows companies to sell their products in the entire world. But constructive competition is hardly possible unless customers are able to choose products on the basis of transparent information.

On the selection of programs

There were two main criteria which led to the present selection of four learning software packages. One, the choice was restricted to programs that are both available on and intended for the Czech market. Specifically, only software that uses either Czech or English for its user interface was considered. Two, the objective was to choose products that are representative in terms of their market position.

5.1 Background information: company, availability, product description etc.

	Anglicky efektivně a Anglická gramatika	**Rosetta Stone English (U.K.) Level 3**	**Angličtina Elements pro středně pokročilé**	**Tell Me More Angličtina 3**
Company	Landi, Czech Republic	Fairfield Language Technologies, U.S.	LANGMaster International, Czech Republic	Leda, Czech Republic, and Auralog, France
Website	www.landi.cz	www.rosettastone.com	www.langmaster.com	www.leda.cz, www.auralog.com
Product version	2003	3.0 (August 2007) English (U.K.) Level 3	2003 Středně pokročilé	7.0 (2005) Level 3
Language level within a line of products	3 of 3 (levels seem to apply to grammar only)	3 of 3	4 of 5 (according to a company representative, this level corresponds with the B2 objectives)	3 of 4 (level 4 deals with English for special purposes: Business English)
Indication of the Level according to the Common European Framework (CEFR)	-	-	Not clearly	Yes
Single-unit price	998,- CZK at www.landi.cz (for the entire set - required level not available separately)	≈ 5000 CZK (239 USD) at www.amazon.com When buying the entire set (3 levels), you still pay more than 150$/set.	1248 CZK at www.prekladace.cz When buying the entire set (5 levels), one level costs less than 600 CZK.	1590 CZK at www.leda.cz When buying the entire set (3 or 4 levels), one level costs a bit less.
Can you try out the program before buying it?	-	Comprehensive online demo or free demo disc including free delivery	Online demo, 1 month full trial	-
Can you find out exactly what is in the course before buying it?	-	-	Yes - the content of all lessons can be previewed online, free of charge	-
Unconditional money-back guarantee	1 month	6 months	-	-
License model	Standard	First-sale restriction (resale is prohibited)	Standard	Standard
Availability in the Czech Republic	Few bookshops and websites	International websites only	Many national bookshops and websites	Many national bookshops and websites

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Purpose	Implicitly, all four products are claimed by their companies to be suitable for adult learners and to fully replace conventional ways of second language acquisition (that is teacher-based language courses, and/or interaction with native speakers). Interestingly, however, none of the companies makes such claims explicitly.			
Claims and promises as found on the websites of the individual companies	Complex multimedia course which uses tried and tested technologies	"The Fastest, Easiest Way to Learn a New Language" "Contains everything you need to start learning a language" Learn "a new language naturally - the same way you learned your first language"	Based on modern teaching methods Fast and effective preparation for everyday communication Cultural immersion	The most successful program for foreign language learning worldwide Contains all essential components of language learning, including cultural knowledge and grammar reference Communicate with the computer as if it were a human interlocutor
Method	(not indicated)	Implicit teaching, immersion	Blend of different methods	Implicit teaching, immersion
References	All four companies name well known enterprises who, they claim, are among their customers; but none names specific studies, i.e. scientific evidence for their implicit and explicit claims as to the effectiveness of their products			

5.2 Evaluation criteria

a) Setting goals and tracking progress

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Role of the learner	Learner needs to select activities	Learners can either follow the proposed sequence of activities or choose their own path		Learners can choose between three modes: 1. Free-to-roam mode (user-driven approach) 2. Guided mode (activities and progression determined by learning objectives) 3. Dynamic mode: entirely program-driven – learning path seems to be determined by a dynamic learner profile
Entry-test (existing knowledge, learner's learning style and strategies)	-	-	-	-
Long-term goals setting	(claimed, but integrated function seems to be of little use)	Learner may select to work on all skills or individual skills only	-	Learner may select to work on all skills or individual skills only
Working out a specific action plan	-	Automatic, no explanations offered	-	Automatic, not fully transparent and no explanations offered

Learner diary (subjective progress-tracking	-	-	-	-
Advanced learner modeling	-	At least partly, but not transparent	-	At least partly, but not transparent

b) Motivation

	Anglicky efektivně a Anglická gramatika	**Rosetta Stone English (U.K.) Level 3**	**Angličtina Elements pro středně pokročilé**	**Tell Me More Angličtina 3**
Working towards a certificate (end-goal)	-	-	(not at this level, according to the company's website)	Yes
Improving learner's self-knowledge	-	-	-	-
Cultural immersion	Partly	No (pictures and topics are culturally neutral)	Yes	Partly (many pictures and topics are culturally neutral)
Short-term goals	-	Limited, e.g. stopwatch mode	-	Limited, e.g. stopwatch mode
Advocating regularity	-	-	-	-
Success-model to follow (e.g. successful autodidacts describe how they achieved their goals)	-	-	-	-
Advice on demands of lang learning in terms of amount of time, persistence, and what learning is in general, what is needed around learning	-	-	-	-
Cooperative elements, or advice on cooperation	-	-	-	-

c) Learning

	Anglicky efektivně a Anglická gramatika	**Rosetta Stone English (U.K.) Level 3**	**Angličtina Elements pro středně pokročilé**	**Tell Me More Angličtina 3**
Clear structure of lessons - with warm-up activities, and practice involving all skills	No structure at all	Yes, and very clearly presented	Only partly; similar to a text book	Yes, but not clearly presented
Variety of activities	No - practice consists mainly of learning sentence pairs	Limited - within one hour one is likely to know all exercise types		
Explicit grammar teaching	Yes	-	Yes	Partly - learners can look up grammar topics in the reference section

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Implicit grammar teaching	-	Yes	Yes	Yes
Meaning-based approach (relevance), including list of topics dealt with	-	-	Partly	Partly
Behavioral approach for automatization	-	Partly	Partly (thanks to the Re-Wise function)	no
Active retrieval through free language production	-	-	-	-
True speech recognition technology	Only self-comparison; speech recognition technology for voice commands with which users can navigate etc. – this is totally unnecessary	Yes, moderately advanced technology	Only self-comparison; speech recognition technology for voice commands with which users can navigate etc. – this is totally unnecessary	Yes, advanced technology
Building on L1, and contrasting	Yes, but not effectively	-	Yes, but not effectively	-
Comprehensive feedback	-	-	-	-
Fossilization identification and elimination	-	-	-	-
Priming	-	Only within the framework of specific units		
Revision	Simple repetition module	Claimed - not transparent	Yes, both in the form of review units and in the form of a vocabulary trainer (the 're-wise' function)	Claimed – not transparent
Interaction with other learners	-	-	-	-
Interaction with teachers	-	-	-	-
Quick look-up of words the learner does not know	-	-	Yes	Yes
Grammar reference	For selected points; not easily accessible	-	Simple	Simple
Content export	Audio content to audio CD or MP3 files	-	-	Audio content to audio CD

d) The user interface

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Explicit higher-level metaphor	-	-	-	-
Implicit higher-level metaphor	-	Text book	Text book	-
Clear and intuitive navigation	-	Yes	Too many controls and too many different types of navigation controls. Learner choice is not restricted to the relevant context	Only partly - in many instances the navigation is confusing.
Comfortable navigation	-	Yes - program moves automatically on to the next step	No - a lot of scrolling required.	Instead of moving to the automatically to the next step, learners are required to make a mouse click which often involves having to move the mouse pointer from one end of the screen to the other
Suitable for impaired eyesight	No - fonts are too small	Yes - clear contrasts	Fonts tend to be rather small	No - contrasts are too soft
Tutorial or guidance	-	Good guidance - the program offers assistance throughout the course	Short tutorial	Good guidance - the program offers assistance throughout the course
Help	-	Only elementary	Only elementary	Only elementary
Clear instructions	-	Yes	Mostly	Mostly
User interface is in Czech	Yes	(the user may choose between several major languages such as French or German, but currently not Czech)	Instructions are in English, help is available in Czech	In Czech or in English, but if the learner chooses English then dictionary help is not available)

e) Technical aspects

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Program runs smoothly	Fairly	Yes	Fairly	Fairly, except for the dynamic mode where learners are forced to wait between each step
Software is stable	No - during the test, the program crashed repeatedly			Yes
Run from CD or DVD without installation	-	-	-	-

	Anglicky efektivně a Anglická gramatika	Rosetta Stone English (U.K.) Level 3	Angličtina Elements pro středně pokročilé	Tell Me More Angličtina 3
Possibility to install entire contents on the hard disk without further need of inserting CDs/DVDs	Yes	-	-	-
Ease of installation	Instead of providing free updates to solve problems that arise from changing operating system environments, the company describes on their website how users can solve the problems manually. These tasks, however, are too complicated for average users.	Yes	Due to the fact that the product comes on 8 CDs, it can take a while. But the installation process is well guided.	Yes
Technical support	By e-mail only	By phone and e-mail	By phone and e-mail	By web-form (Leda) or e-mail or phone (Auralog)
Guided backup and retrieval of user data	-	-	Yes	-

5.3 Summary

Sadly, none of the four language learning software packages qualifies for a general recommendation. Before we put this harsh judgement into perspective, it will be useful to name the deficiencies common to all four programs.

Firstly, learners who are yet untrained in self-studying are highly unlikely to achieve their learning goals, because none of the programs warns them of the pitfalls of the self-study learning mode, particularly the lack of social interaction, and the fact that contemporary computer technology can deal with free language production only in very limited contexts. The lack of transparency of the learning process as a whole, that is an absence of advice for the learner on the importance of individual steps and of an explanation of the underlying concepts of the course, as well as a total lack of advice on learning strategies, will not help users to become more autonomous and better learners. Those, on the other hand, who already possess a certain degree of autonomy, will miss important tools such as comprehensive grammar reference.

Secondly, none of the products welcomes new users by giving them the opportunity to find out about their existing knowledge and determine their wants and needs. Further serious doubts relate to the lack of adequate feedback.

a) 'Anglicky efektivně a Anglická gramatika' by Landi

There are a couple of good ideas in the program, but as a whole and in the context of its intended use, there is hardly anything positive that can be said about this product. It lacks reference to the CEFR, it lacks reliable guidance and indeed even a help section, almost any form of motivational elements (such as long-term goal setting), progress-management, well structured content, convincing teaching methods, as well as a stable, easy-to-understand user interface. Is seems highly improbable that any teaching professional has ever been involved in the development of the software.

A couple of months ago, the company has shut down their phone lines and it looks as if there will be no further development of this product.

b) 'Rosetta Stone' by Fairfield Language Technologies

Very recently, at the end of August 2007, Fairfield Language Technologies have presented the newest version of their language learning software. While a lot of the criticism that applies to Landi's program applied to Rosetta Stone version 2 as well, version 3 comes with so many improvements that the product advances to be one of the best internationally. The user interface now provides reliable guidance, exercises are now integrated into well structured, transparent lessons instead of being grouped according to one of five skills, and the product now seems to contain an advanced speech recognition engine.

Still, criticism applies not only to the high price (around three times the price of Tell Me More) and the fact that resale is prohibited. In addition to the defects that are common to all four programs, major weak points of this product include that fact that there is no working towards a specific end goal (possibly an international certificate), and that its methodology is based on the assumption that second language learning in adulthood can be compared to first

language acquisition in childhood. The reasons for which I consider such an approach as deeply flawed have been laid out in chapter 2.

c) 'Angličtina Elements' by Langmaster

The second Czech made language learning program profits considerably from the fact that it is, so it seems, to be based on a text book. Thus, navigation is facilitated because the lesson structure provides an implicit metaphor for orientation, and there is a clear, transparent path to follow.

A major disadvantage of the product consists in the absence of advanced speech recognition technology for training pronunciation. It is not a good idea to use the integrated voice command functionality to improve one's pronunciation skills, because the technology used there is intended for native speakers and unable to provide corrective feedback.

The current version dates back to 2003, and this software will require a general overhaul in order to keep pace with Auralog and Fairfield Language Technologies.

d) 'Tell Me More' by Auralog

Unlike the three other companies, Auralog and Leda give the potential buyer little opportunity to take a closer look at the product before buying it. Once bought, unsatisfied customers will not be reimbursed.

Similar to Rosetta Stone, this program follows an implicit and monolingual approach, but not as stubbornly. Translations of individual words into Czech and a simple grammar reference are provided, which is a positive point. While navigation is considerably worse than in Rosetta Stone, speech recognition technology in Tell Me More seems more advanced and provides more detailed feedback. Further advantages of Tell Me More are the interactive dialogues which can provide real opportunities to practice speaking skills, and the integration of the CEFR, including the possibility to work towards a specific examination.

6. Conclusions

The criteria established in the theoretical part of this thesis were fully confirmed by the practical study, and it has to be concluded that long-term learning progress using exclusively contemporary learning software is improbable.

Many defects can be eliminated, for instance the lack of transparency in the learning process which prevents learners from gradually taking over responsibility for their learning and moving from a fully program-driven to a more user-driven learning mode. What is needed in this case is more and better explanation on how and why exactly learners are supposed to carry out particular activities. Many other desirable improvements are technically feasible: an entry-test in which the current level, the learning style and the preferred learning strategies are determined prior to learning; a scheduling module which promotes regular learning and includes a learner diary; and a wider choice of content to allow learners to choose texts and videos which would naturally appeal to them and thereby base learning more on intrinsic motivation.

But there are two major obstacles to learning progress in our setting which are much more difficult to remove: Firstly, the inability of contemporary computer technology to adequately train the productive skills (speaking and writing), especially free production, will remain for many years to come. Secondly, the need for social interaction can and should not be met by computer simulations nor by computer mediated communication (social interaction through communication technology). Or as Holland et al. put it: We ought to see "technologies as ways to buttress lived experience" (1995, p. xiv), not as ways to replace it.

For both problems, the solution that is now beginning to emerge is called blended learning (Lamping, 2003), i.e. a hybrid approach which combines computer-assisted language learning and group-based learning. Developers and researchers ought to invest their efforts in this direction.

7. Sources

Agran, Martin et al. 2003. Self-Determined Learning Theory: Construction, Verification, and Evaluation. Mahwah NJ: Lawrence Erlbaum Associates

Aist, Grogory. 1999. Speech recognition in CALL. In CALL: Media, Design and Applications. Edited by Keith Cameron. Lisse: Swets & Zeitlinger. pp 165-182

Anderson, Neil J. 2005. L2 Learning Strategies. In: Hinkel, Eli (Ed.). Handbook of Research in Second Language Teaching and Learning. Mahwah NJ: Lawrence Erlbaum Associates. pp 757-772

Barr, David. 2004. ICT - Integrating computers in teaching: Creating a computer based language learning environment. Oxford: Peter Lang

Bell, Nancy D. 2005. Exploring L2 Language Play as an Aid to SLL: A Case Study of Humour in NS-NNS Interaction. Applied Linguistics. Vol 26 No 2. pp 192-218

Bjork, Robert A. 1996. Memory and Metamemory Considerations in the Training of Human Beings. In Metacognition: Knowing About Knowing. Edited by J. Metcalfe and A.P. Shimamura. London: MIT Press

Bosch, Stephen et al. 1994. Guide to Selecting and Acquiring CD-ROMs, Software and other electronic publications. Chicago: ALA

Buchholz, Edith. 1992. Factors Influencing the Acceptance of CALLware. Literary and Linguistic Computing. Vol 7 No 2. pp 132-137

Bull, Susan, and Yingxin, Ma. 2001. Raising Learner Awareness of Language Learning Strategies in Situations of Limited Resources. Interactive Learning Environments. Vol 9 No 2. pp 171-200

Burden, Peter. 2002. A Cross Sectional Study of Attitudes and Manifestations of Apathy of University Students Towards Studying English. The Language Teacher (Okayama Shoka University). March 2002. Retrieved July 13, 2007 from http://www.jalt-publications.org/tlt/articles/2002/03/burden

Byram et al., Michael et al. 2000. Routledge Encyclopedia of Language Teaching and Learning. London: Routledge

Chang, Mei-Mei. 2005. Applying Self-Regulated Learning Strategies in a Web-Based Instruction—An Investigation of Motivation Perception. Computer Assisted Language Learning. Vol 18, No 3. pp 217-230

Chapelle, Carol A. 2001. Computer Applications in Second Language Acquisition. Cambridge: Cambridge University Press

—. 2005. Computer-Assisted Language Learning. In: Hinkel, Eli (Ed.). Handbook of Research in Second Language Teaching and Learning. Mahwah NJ: Lawrence Erlbaum Associates. pp 743-756

Collentine, Joseph. 2000. Insights Into The Construction Of Grammatical Knowledge Provided By User-Behavior Tracking Technologies. Language Learning & Technology. Vol 3 No 2. pp 44-57

Colpaert, Jozef. 2003. Dedicated Call Technologies. Computer Assisted Language Learning. Vol 16, No 1. pp 1-4

—. 2004a. Design of Online Interactive Language Courseware: Conceptualization, Specification and Prototyping. Research into the impact of linguistic-didactic functionality on software architecture. Doctoral dissertation. University of Antwerp

—. 2004b. Editorial: Transdisciplinarity. Computer Assisted Language Learning. Vol 17 No 5. pp 459-472

Colpaert, Jozef and Decoo, Wilfried. 1999. User-driven development and content-driven research. In CALL: Media, Design and Applications, edited by Keith Cameron. pp 35-58. Lisse: Swets & Zeitlinger.

Commission of the European Communities. 2003. Promoting Language Learning and Linguistic Diversity: An Action Plan 2004 - 2006. Brussels. Retrieved July 14, 2007 from http://ec.europa.eu/education/doc/official/keydoc/actlang/act_lang_en.pdf

Council of Europe. 2001. Common European Framework of Reference for Languages (English version). Retrieved July 12, 2007 from http://www.coe.int/t/dg4/linguistic/Source/Framework_EN.pdf

Crystal, David. 2003. English as a global language. 2nd edition. Cambridge University Press

Curtin, John B. 1979. Attitudes to Language Learning: the Adult Student. ELT-Journal. Vol 33. pp 281-284

Davis, Chris, and Kim, Jeesun. 2001. Repeating and Remembering Foreign Language Words: Implications for Language Teaching Systems. Artificial Intelligence Review 16. pp 37-47

Davies, Graham. 2006. ICT4LT Module 1.4: Introduction to Computer Assisted Language Learning. Retrieved October 11, 2006. http://www.ict4lt.org/en/en_mod1-4.htm#anchor96130

—. 2007. Computer Assisted Language Learning: Where are we now and where are we going? Retrieved April 20, 2007. http://ww.camsoftpartners.co.uk/docs/UCALL_Keynote.htm

De La Fuente, Maria. 2003. Is SLA Interactionaist Theory Relevant to CALL? Computer Assisted Language Learning. Vol 16 No 1. pp 47-81

Dickinson, Leslie. 1993. Self-instruction in Language Learning. Cambridge: Cambridge University Press

Dodigovic, Marina. 2005. Vocabulary Profiling with Electronic Corpora: A case study in computer assisted needs analysis. Computer Assisted Language Learning. Vol 18 No 5. pp 443-455

El Hani, Omar, and Gouarderes, Guy. 1992. Standardized Architecture for Integrated Open Courseware. Berlin: Springer

Eskenazi, Maxine. 1999. Using Automatic Speech Processing For Foreign Language Pronunciation Tutoring: Some Issues And A Prototype. Language Learning & Technology. Vol 2 No 2. pp 62-76

Fairfield 2007a. Rosetta Stone English (U.K.) Level 3 [Computer Software]. Arlington

Fairfield 2007b. Rosetta Stone. Retrieved August 31, 2007 from http://www.rosettastone.com

Frankenberg-Garcia, Ana. 2005. A Peek Into What Today's Language Learners As Researchers Actually Do. International Journal of Lexicography. Vol 18 No 3

Funderstanding. 2001. About Learning. Retrieved April 15, 2007 from http://www.funderstanding.com/about_learning.cfm

Gardner, Robert C. 1960. Motivational Variables in Second-Language Acquisition. Unpublished Ph.D. Dissertation. Montreal: McGill University. Retrieved April 18, 2007 from http://publish.uwo.ca/~gardner/Bob's%20Ph.D2.pdf.

Gass, Susan M. 1997. Input, Interaction and the Second Language Learner. Mahwah: Lawrence Erlbaum Associates

Goodfellow, Robin. 1999. Evaluating performance, approach and outcome. In CALL: Media, Design and Applications. Edited by Keith Cameron. Lisse: Swets & Zeitlinger. pp 109-140

Gstrein, Silvia, and Hug, Theo. 2006. Integrated Micro Learning During Access Delays: A New Approach to Second-Language Learning. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 152-176

Han, Zhao Hung, and Selinker, Larry. 2005. Fossilization in L2-Learners. In: Hinkel, Eli (Ed.). Handbook of Research in Second Language Teaching and Learning. Mahwah NJ: Lawrence Erlbaum Associates. pp 455-470

Hartl, Pavel. 1999. Kompendium pedagogické psychologie dospělých. Praha: Karolinum

Hincks, Rebecca. 2003. Tutors, tools and assistants for the L2 user. Phonum No 9. pp 173-176

Hirata, Yoko. 2006. Evaluating Students' Perceptions of 'OnlineCounselor' for Independent Language Learning. 2006. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 278-303

Hoeflaak, Arie. 2004. Computer-Assisted Training in the Comprehension of Authentic French Speech: A Closer View. Computer Assisted Language Learning. Vol 17 Nos 3-4. pp 315-337

Holland, V. M., Kaplan, J.D., and Sams, M.R. 1995. Intelligent Language Tutors: Theory Shaping Technology. Mahwah: Lawrence Erlbaum Associates

Hubbard, Philip. 2005. A Review of Subject Characteristics in CALL Research. Computer Assisted Language Learning. Vol 18 No 5. pp 351-368

Hulstijn, 2003. Connectionist Models of Language Processing and the Training of Listening Skills With the Aid of Multimedia Software. Computer Assisted Language Learning. Vol. 16 No 5. pp 413-425

Hunter, Madeleine. 1999. Účinné vyučování v kostce. Transl. by Eva Vodraková. Praha: Portál

Hwu, Fenfang. 2003. Learners' Behaviors in Computer-Based Input Activities Elicited Through Tracking Technologies. Computer Assisted Language Learning. Vol 16 No 1. pp 5-29

Invitational Symposium on Assessing and Advancing Technology Options in Language Learning. 1998. Checklist: Evaluative criteria for computer-delivered language learning systems. Honolulu: University of Hawai'i. Retrieved November 4, 2006 from http://nflrc.hawaii.edu/NetWorks/NW31/NW31t.pdf

Jacko, Julie A., and Sears, Andrew. 2003. The Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications. Mahwah NJ: Lawrence Erlbaum Associates

Jensen, Eric. 2005. Teaching with the brain in mind. Alexandria: ASCD

Jokisch, Oliver et al. 2005. Pronunciation Learning and Foreign Accent Reduction by an Audiovisual Feedback System. In: Tao, Jianhua et al. Affective Computing and Intelligent Interaction, First International Conference - Lecture Notes in Computer Science 3784. Berlin: Springer. pp 419-425

Jones, Francis R. 1998. Self-Instruction and Success: A learner-profile study. Applied Linguistics 19/3. pp 378-406

Jurafsky, Daniel, and Martin, James H. 2000. Speech and language processing : an introduction to natural language processing, computational linguistics, and speech recognition. Upper Saddle River NJ: Prentice Hall. Chapter 1

Kaiser, Mark. 1997. Review: The Rosetta Stone for Russian. CALL@Chorus. Retrieved June 4, 2007. http://www-writing.berkeley.edu/chorus/call/reviews/rosetta_russian/index.html.

Kaur, Jagdish, and Hegelheimer, Volker. 2005. ESL Students' Use of Concordance in the Transfer of Academic Word Knowledge: An exploratory study. Computer Assisted Language Learning. Vol 18 No 4. pp 287-310

Khalifa, Said et al. 2000. Educational computer software, technical, criteria, and Quality. In: The Proceedings of ISECON 2000. Vol 17. Philadelphia. §402

Krebs, Charles T., and Brown, Jenny. 1998. *Lernsprünge. Eine bahnbrechende Methode zur Integration des Gehirns.* Kirchzarten: VAK

Kovalchick, Ann, and Dawson, Kara. 2004. Education And.Technology An Encyclopedia. Santa Barbara CA: ABC-CLIO

Landi. 2003. Anglicky efektivně a Anglická gramatika [computer software]. Praha

Landi. 2007. Angličtina efektivně, Angličtina gramatika. Retrieved August 31, 2007 from http://www.landi.cz/anglictina-gramatika.php

Langmaster. 2003. Angličtina Elements pro středně pokročilé [computer software]. Praha

Langmaster. 2007. Angličtina Elements - kurz a studijní slovník Lexicon. Retrieved August 31, 2007 from http://www.langmaster.cz/

Latour, Larry. Microworlds. Retrieved July 4, 2007 from http://www.umcs.maine.edu/~larry/microworlds/microworld.html

Lamping, Alwena. 2003. Supported Steps. Adults Learning. Vol 15 (Nov)

Leaver, Betty L., Shekhtman, Boris. 2002. Developing Professional-Level Language Proficiency. Cambridge University Press

Leda. 2005. Tell Me More 7.0 Angličtina 3 [computer software]. Praha

Leda. 2007. Výukové programy nakladatelství Leda. Retrieved August 31, 2007 from http://www.leda.cz/t/vyukove-programy.php

Levy, Michael. 1997. Computer-Assisted Language Learning. Oxford: Clarendon Press

—. 1999. Design processes in CALL: Integrating theory, research and evaluation. In CALL: Media, Design and Applications. Edited by Keith Cameron. Lisse: Swets & Zeitlinger. pp 83-108

Lonfils, Colin, and Vanparys, Johan. 2001. How to Design User-Friendly CALL Interfaces. Computer Assisted Language Learning. Vol 14 No 5. pp 405-417

Lonsdale, D., Graham, C.R., and Madsen, R. 2006. Learner-Centered Language Programs: Integrating Disparate Resources for Task-Based Interaction. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 116-132

Ludewig, Petra. 2005. Korpusbasiertes Kollokationslernen (Computer Studies in Language and Speech, vol. 9). Franfurt a.M.: Peter Lang

Maa, Qing, and Kelly, Peter. 2006. Computer Assisted Vocabulary Learning: Design and Evaluation. Computer Assisted Language Learning. Vol 19 No 1. pp 15-45

Moustroufas, N. , and Digalakis, V. 2005. Automatic pronunciation evaluation of foreign speakers using unknown text. Computer Speech and Language. Vol 21 No 1. Available at http://www.sciencedirect.com/. Accessed 5/6/2007. pp 219-230

McKenzie, J. 2000. Scaffolding for Success. Beyond Technology, Questioning, Research and the Information Literate School Community. Retrieved October 12, 2006 from http://fno.org/dec99/scaffold.html

Melton, Jay. 2006. The Effect of a Native-Language Interface vs. a Target-Language Interface on Students' Performance. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 234-256

Mitchell, Rosamund, and Myles, Florence. 2004. Second language learning theories. London : Arnold

Mooney, Raymond J. 2004. Learning Semantic Parsers: An Important but Under-Studied Problem. In: Papers from the AAAI 2004 Spring Symposium on Language Learning: An Interdisciplinary Perspective. Stanford CA. pp 39-44

Morton, Hazel, and Jack, Mervyn A. 2005. Scenario-Based Spoken Interaction with Virtual Agents. Computer Assisted Language Learning. Vol 18 No 3. pp 171-191

Mothejziková, Jarmila. 1988. Methodology for TEFL teachers. Praha: SPN

MŠMT (Czech Ministry of Education), 2007. Evaluační Web. (Various documents) Retrieved August 31, 2007 from http://web26.e-gram.cz/

Ndiaye, M., and Vandeventer Faltin, A. 2003. A Spell Checker Tailored to Language Leaners. Computer Assisted Language Learning. Vol 16 No 2-3. pp 213-232

Naidu, Som. 2003. Learning & Teaching with Technology: Principles and Practices. London: Kogan Page

Nation, I.S.P. 2001. Learning Vocabulary in Another Language. Cambridge University Press. Cambridge University Press

Natural English upper-intermediate ESOL curriculum guide. 2006. Oxford University Press. Retrieved July 8, 2007 from www.oup.com/pdf/elt/gb/esol/ccg/naturalenglishupperint.pdf?cc=gb

Neudecker, Sigrid. 2006. Psychologie Des Aufschiebens: Morgen. Versprochen! Spiegel Online. Retrieved April 14, 2006 from www.spiegelonline.de

Nicholas, N., Debski1, R., and Lagerberg, R. 2004. Skryba: An Online Orthography Teaching Tool for Learners from Bilingual Backgrounds. Computer Assisted Language Learning.Vol 17, Nos 3-4, pp 441-458

O'Dell, Felicity. 2007. Teaching advanced learners. Retrieved April 26, 2007 from http://www.cambridge.org/elt/resources/methodology/articles/

Oxford, Rebecca L. et al. 1999. Language Learning Motivation: Pathways to the new century. University of Hawaii Press

Park, Jinkyu Seam. 2006. Language Learning Software Evaluation: Top-down or Bottom-up? Asian EFL journal. Vol 16. Retrieved April 26, 2007 from http://www.asian-efl-journal.com/pta_july_06_jsp.php

Pelikán, Jiří. 2004. Výchova pro život. Praha: ISV

Postman, Neil. 1986. Amusing Ourselves to Death: Public Discourse in the Age of Show Business. New York: Penguin

Reeve, Johnmarshall. 2004. Understanding Motivation and Emotion. Hoboken NJ: Wiley

Richmond, Ian M. 1999. Is your CALL Connected? Dedicated Software vs. Integrated CALL. In CALL: Media, Design and Applications, edited by Keith Cameron. Lisse: Swets & Zeitlinger. pp 295-314

Rimrott, Anne. 2005. Spell checking in Computer-Assisted Language Learning. A Study of Missspellings by Non-Native Writers of German. Unpublished Thesis. Burnaby BC: Simon Fraser University

Robin, Richard. 2007. Commentary: Learner-Based Listening And Technological Authenticity. Language Learning & Technology. Vol 11 No 1. pp 109-115

Rowsell, Lorna V. 1992. Adults dropping out? Try Repgrid! ELT-journal. Vol 46/4

Rozzi, Ana M. et al. 2007. Exploiting Students' Errors [Blog]. Retrieved Feb 20, 2007 from http://bloggingpractices.pbwiki.com/Errors

Ruin, Inger. 1996. Grammar and the Advanced Learner - on learning and teaching a second language. Stockholm: Almqvist & Wiksell International

Park, Jinkyu Seam. 2006. Language Learning Software Evaluation: Top-down or Bottom-up? Asian EFL journal. Vol 16. Retrieved April 26, 2007 from http://www.asian-efl-journal.com/pta_july_06_jsp.php

Plass, Jan L. 1998. Desing and Evaluation of the User Interface of Forgein Language Multimedia Software: A Cognitive Approach. Language Learning & Technology. Vol 2 No 1. pp 35-45

Postman, Neil. 1985. Amusing Ourselves to Death. New York: Penguin Books

Schcolnik, Miriam, and Kol, Sara. 2006. Reading and Learning from Screen. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 257-276

Schmalhofer, Franz. 1998. Constructive Knowledge Acquisition: A Computational Model and Experimental Evaluation. Mahwah: Lawrence Erlbaum Associates

Schwienhorst, Klaus. 2003. Learner Autonomy and Tandem Learning: Putting Principles Into Practice in Synchronous and Asynchronous Telecommunications Environments. Computer Assisted Language Learning. Vol 16 No 5. pp 427-443

Siang Ang, Chee, and Zaphiris, Panayiotis. 2006. Developing Enjoyable Second Language Learning Software Tools: A Computer Game Paradigm. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 1-21

Simpson, James. 2005. Learning Electronic Literacy Skills in an Online Language Learning Community. Computer Assisted Language Learning.Vol 18 No 4. pp 327-345

Sternberg, Robert J., and Zhang, Li-Fang. 2001. Perspectives on Thinking, Learning and Cognitive Styles. Mahwah NJ: Lawrence Erlbaum Associates

Tschichold, Cornelia. 1998. From CALL to ICALL: The bumpy road from computerized language drills to intelligent language tutors. http://www.isn.ethz.ch/3isf/Online_Publications/WS2/tschichold.htm. Accessed 8/11/2006

Thomson, Greg. 1993. Leave me alone! Can't you see I'm learning your language? - 5.2.7. Avoiding fossilization. SIL International. Retrieved May 5, 2007 from http://www2.sil.org/LinguaLinks/LanguageLearning/EssaysOnFieldLanguageLearning/LevMAlnCnTYSIMLrnngYrLngg/LevMAlnCnTYSIMLrnngYrLngg.htm

Tozcu, Anjel, and Coady, James. 2004. Successful Learning of Frequent Vocabulary through CALL also Benefits Reading Comprehension and Speed. Computer Assisted Language Learning. Vol 17 No 5. pp 473-495

Vančová, Silvie. 2007. Teacher in E-Learning. Unpublished thesis. Univerzita Karlova. Praha

Vinther, Jane. 2004. Can Parsers be a Legitimate Pedagogical Tool? Computer Assisted Language Learning. Vol 17 Nos 3-4. pp 267-288

Vrasidas, Ch. et al. 2006. Language Learning and User-Centered Desing: The Development of the Electronic European Language Portfolio. In: Zaphiris, P., and Zacharia, G. User-Centered Computer Aided Language Learning. London: Information Science Publishing. pp 304-323

Wikipedia. http://en.wikipedia.org/

Williams, Bruce. 2002. Collocation with advanced levels 1 - not entirely...proper/appropriate/good?_Retrieved October 1, 2006 from http://www.teachingenglish.org.uk/think/vocabulary/collocation1.shtml

Wilson, R.E., and Keil, F.C. 2001. The MIT Encyclopedia of the Cognitive Sciences. Cambridge MA: The MIT Press

Witt, Silke Maren. 1999. Use of Speech Recognition in Computer-assisted language learning (dissertation). Cambridge: Univ. of Cambridge. Retrieved June 20, 2007 from http://mi.eng.cam.ac.uk/reports/svr-ftp/auto-pdf/witt_thesis.pdf

Witt, Silke M., and Young, Steve. 1997. Computer-assisted Pronunciation Teaching based on Automatic Speech Recognition. Cambridge: Univ. of Cambridge. Retrieved June 20, 2007 from http://mi.eng.cam.ac.uk/reports/svr-ftp/auto-pdf/witt_ltlt97.pdf

Yannibelli, V. et al. 2006. A Genetic Algorithm Approach to Recognise Students' Learning Styles. Interactive Learning Environments. Vol 14, No 1. pp 55-78