



Beyond the Rhetoric of the ‘Autonomous Learner’: Combining E-Learning and the Classroom

Hans Werner Hess
(hwhess@hkbu.edu.hk)
Hong Kong Baptist University

Abstract

This article will introduce a model of integrated web-support for the teaching and learning of area studies (*Landeskunde* in the terminology of German language pedagogy) developed for and with undergraduate students in Hong Kong. Data from a recurrent evaluation will be presented and discussed. The author will basically argue that the extent to which information technology facilitates student-initiated or ‘autonomous’ learning is currently massively overrated – unless the independent use of IT components is systematically ‘networked’ with the classroom. The data clearly show that students tend to reject ‘autonomous’ IT-based learning if it is used as a substitute for face-to-face communication. They welcome IT-based learning components if their outcome demonstrably enhances classroom work and discussion.

1 Introduction

This article will introduce a model of integrated web-support for teaching and learning of (German) area studies (*Landeskunde*) developed for and with undergraduate students in Hong Kong. Data from a recurrent evaluation will be presented and discussed. The model requires considerable IT-based self-study efforts from students – but it was found that current theoretical concepts of ‘learner autonomy’ and ‘E-learning’ with ‘multimedia’ need to be rethought and partly modified in light of the actual conditions in which they are to be applied.

2 ‘Autonomous learning’ and ‘E-learning’

There is, in fact, no such phenomenon as a *non*-autonomous learner, as Hermann Funk once correctly remarked in a seminar in Singapore. Regardless of particular methods employed in teaching, it is always the learner alone (‘autonomously’) who makes sense of the input and links new ‘data’ with existing knowledge. Cognitive science calls this networking (*Vernetzung*), and as such it is a normal phenomenon of human life. The process is largely self-organized; it can be influenced but not entirely pre-programmed (cf. Arnolds, 2002, p. 109). Strictly speaking, ‘autonomous learning’ is a tautological misnomer. Nonetheless, learning can undoubtedly be facilitated if teachers or creators of learning materials take account of learners’ predispositions and construct appropriate learning environments (cf. Steinmetz, 2000). Successful settings for learning, in other words, are context-specific and require preparation, even if the learner is then, as it were, ‘left alone’.

The literature commonly understands ‘autonomous learning’ as learning proceeding at a pace and method self-determined by individual learners. Ideally, the learner is able to determine his or her own learning dispositions and needs and, on that basis, select appropriate study materials (Holec, 1981; Little, 1991). Because of the supposed self-determination, ‘autonomous learning’ is

believed to be superior to purely classroom-directed or classroom-initiated learning. This implies that 'autonomous learning' takes place outside formal instructional settings. However, the inherent juxtaposition is to my mind a spurious one, as is the claim that 'independent' or 'student-initiated learning' automatically leads to better learning results. In the context of German as a Foreign Language (GFL), it has led to exaggerated criticism of methodological planning for the classroom ('instructivism') in favor of somewhat nebulous 'constructivist' paradigms (cf. Eck, Legenhausen & Wolff, 1994; Tschirner, Funk & Koenig, 2000). I concur with Rösler's (1998) opinion that the abstract theoretical dispute has little to offer in terms of methodological innovation (see also the detailed critique of 'constructivism' in Rösler, 2004, pp. 213–219). In the British context, from whence much of the literature came upon us, I suspect that the idea of 'autonomous learning' is at least partly born out of a resource-strapped educational sector. The pragmatic urge for learning outside formal settings thus may also be a reflection of decreasing educational budgets. This consideration arguably plays a lesser role in the current East Asian context of higher education.

There are further reasons to regard the juxtaposition as doubtful. For one, it erroneously seems to assume that classroom-centered learning does not require (or lead to) active cognitive processing. To my knowledge, there is no evidence for this assumption in cognitive science. Secondly, it assumes a power of self-motivation, which cannot develop unless a learner first has at least a vague inkling of what he or she wants to know or master. The capacity to set one's own goals hinges crucially on, at first, a non-trivial insight into the extent and complexity of the subject matter. In most circumstances, this insight is developed and fostered through instruction and communicative action in formalized settings – from Confucian open-air 'discussion groups' to present-day university seminars. 'Independent' and 'dependent' learning can very rarely be separated from each other. In reality and outside the confines of laboratory experiments, they are inextricably linked. Thirdly, learning as it concerns us here inevitably takes place in institutional contexts, or is related to it. Rather than belittling formal instruction by contrasting it with allegedly more 'natural' ways of learning, it seems to me that we have to look at ways to optimize knowledge input or skills training of the individual in the situation at hand. We need to relate closely the classroom-based input with activities on the periphery of formal education, based on prior learning experiences and with a view to the scope of later actual usage. I believe that in this complex situation, the purely academic distinction of 'autonomous' versus 'non-autonomous' learning is misleading and not a particularly fruitful one.

One of the most astonishing claims of the last years was that the advent of modern multimedia technology would decisively foster 'autonomous learning'. Thus, Hong Kong's own University Grants Committee (UGC, 1996, para 26.11) stated that information technology (IT) would enable teachers and students to work "faster and more efficiently". It would also be a tool for "enrichment". More importantly even, IT would become a "facilitator of student-initiated learning". The latter claim is based on the assumption that modern multimedia environments such as the WWW provide material-rich "information landscapes" (Hedberg, 1996). The flood of information would, by definition and necessity, lead to "multi-sequential" reading (Landow, 1992, p. 4). Hence, students would build up knowledge individually and thus become – by virtue of the medium alone – "process-driven" and "active" learners (see the contributions in Issing and Klimsa, 1997). Learning "via the Web" was then supposed to "transform hard-copy linear mindsets into web-flexible creative thinking" (Borkowski, Larsen & Mateik, 1996). Multimedia would also help raising "spontaneous interest in and understanding of foreign cultures" (Overmann, 2002, p. 59). These assumptions frequently form the backdrop of proposals ranging from Internet search in the foreign language classroom (for GFL e.g. Halm-Karadeniz, 2001) to calls to develop simulation-type, virtual "language environments" approximating "natural" language learning situations (e.g. Rösler, 2000b, p. 126). In a programmatic article for language teachers, Tschirner 1999 claimed that IT would produce wholesale learning improvements, *inter alia* by fostering "cooperative learning", "authentic communication", "greater learning increases", "more learner autonomy", "increased motivation" and "more identification" (Tschirner, 1999, *passim*). In more or less detailed form, numerous attempts to use IT to these ends are discussed by, for example, Warschauer (1995, 1996), Keating and Hargitai (1999), Felix (2001, 2003) and

Rösler (2004). In recent years, they have all become subsumed under the heading of ‘E-learning’ – an umbrella term for all learning activities assisted by or involving IT, including (but not identical with) multimedia¹.

Some multimedia or E-learning systems, as the literature shows, can undoubtedly be used ‘flexibly’ and towards ‘creative’ ends; their use may also be motivating at times. But it is hardly the system as such that changes its user’s mindset. There is certainly not a linear cause-and-effect relationship between the medium and the learning outcome. Such a view entirely ignores anthropological, social and institutional pre-conditioning factors as well as motivational or affective components. It ignores that media usage is embedded in a larger situational context, in which curriculum, content and teaching methodology also play important roles. It is safe to assume that the use of IT systems is modified (and possibly limited) by these factors rather than the reverse (for an evaluation of IT systems in a formal language learning situation cf. Hess, 1998, 2003, 2006a). This of course does not speak against the implementation of IT in learning. But it warrants caution in the face of market-driven claims as to its benefits in ‘modernizing’, as it were, modes of learning and bringing about qualitative improvements in cognitive processing.

If one, however, accepts the notion that successful learning depends on a multitude of internal and external variables, one is confronted with the dilemma in empirical investigation. None of these variables is sufficient in isolation to explain learning progress – which appears to depend more on their interplay than on one (or several) alone. Moreover, learning increments are notoriously hard to define except in limited experiments and with quantifiable data (e.g. vocabulary or an accumulation of ‘objective facts’). Cognitive learning strategies, finally, are not directly observable but are usually interpreted on the basis of secondary data such as learners’ diaries, ‘think-aloud’ protocols or study process questionnaires (e.g. Biggs, 1992). All the same, asking students about their usage (and their satisfaction in light of formulated goals) appears to be the most fruitful way to build up and improve IT learning systems. This is the approach we have chosen below. But student perceptions may have little to do with the extent of possible ‘autonomous’ learning behavior intended by the system’s authors. We will, in fact, see that students themselves do not give unqualified support to the equation of electronic with independent learning.

Such comments, however, cannot claim to have external validity. They are bound within the parameters of a specific educational situation, which colors the participants’ perception of worthwhile objectives and the particular methods employed to reach them. Satisfaction and a sense of accomplishment in this situation may not be felt in other settings with different learning cultures and traditions. This implies that conclusions drawn with regard to the effectiveness or desirability of ‘autonomous learning’ and IT usage need to be read with full knowledge of the respective learning context. This is a key tenet of qualitative research, which should be adhered to even when quantitative data are available and advances in the theory of knowledge acquisition seem to favor ‘new’ learning approaches. As Miles and Huberman (1994) remark, “It is important not to strip data at hand from the context in which they occur” (p. 11). I will therefore try to outline first the institutional and curricular context in which web-based teaching/learning modules were deployed in our case.

The principle of ‘autonomy’ in learning did not guide the development of these IT modules, nor the belief that the medium as such would foster innovative ways of learning. Instead, the key advantage of IT was originally seen (perhaps naively) in its ‘efficiency’ to tap and deliver enormous amounts of information. But precisely the wealth of information about German-speaking societies available appeared to make a more structured approach necessary, in particular a pre-selection of sources within a coherent framework of interpretation and their embedding into series of online learning tasks. A second issue concerned the possible objective of such learning activities: Under what circumstances can they go beyond mere information retrieval? How can we make sure that the information is not simply ‘consumed’ but used creatively in a way which students themselves perceive as meaningful?

A team of lecturers addressed these questions over a period of five years. We began to experiment in 1995/1996 and refined the approach on the basis of student feedback. Rather than

documenting the entire process, the model presented below is the *outcome* of these five (annual) rounds of IT-supported teaching and learning. Since 2001, the E-learning systems have been continuously updated but kept stable in their basic structure.

3 Area studies and E-learning: background and goals

The overall context here is the European Studies undergraduate programme at Hong Kong Baptist University (cf. Hess, 1999, 2006b). European Studies combines the intensive tuition in language (either French or German) with a broad social sciences curriculum (‘area studies’). Area studies (*Landeskunde*) are not an adjunct of language acquisition, simply underpinning, as it were, the cognitive understanding of linguistic material. Instead, they receive priority over language, the latter being taught intensively as a tool to deepen understanding of the former. This order of priority implies that the curriculum places the onset of structured area studies before linguistic skills are advanced enough to allow substantial knowledge acquisition in the target language. Area studies are, in other words, initially taught in English, with a steadily growing share of target language materials. Knowledge derived from area studies is assumed to contribute significantly to further the motivation for language acquisition (cf. Hess, 2004).

In the conceptual frame of GFL, area studies stand closest to the notion of “kognitive Landeskunde” (Simon-Pelanda, 2001, p. 933). They are anchored in the methodologies and paradigms of established social sciences disciplines. Students are to acquire substantial knowledge of the economic, political and social structures of the German-speaking world (I ignore here the second option of the course, which focuses on the French-speaking area). It is assumed that these structures have to be understood in their historical and pan-European context. Hence, political science, sociology and history set prime parameters. These are complemented by studies of business and economic life – both in area studies proper and in the language training component of the course.

This is necessary because the programme incorporates an entire year (the third out of four) on location in Europe, usually in a combination of academic study and a placement in a German-speaking company environment. The students, therefore, do not only study an area of Europe in class. They are also required to immerse themselves in the life and ‘culture’ of that area for an extended period of time. In GFL terminology, this can be referred to as one year of “erlebte Landeskunde” (Byram, 2001, p. 1318).

Byram rightly points out that on this ‘micro level’, learners and native language speakers meet each other not as political scientists, economists or historians, but as bearers of a collective “national” or “cultural memory” (*nationales/kulturelles Gedächtnis*; Byram, 2001, p. 1314). The ‘cognitive’ dimension of the course, therefore, should equip students with a sufficient body of knowledge to allow them to decode attitudes, opinions and behavioral patterns of their European counterparts in a non-trivial manner. It should also provide the cognitive tools for comparative approaches (i.e. finding out and communicating about significant differences in the social affairs and ‘culture’ of home and target environment). The course firmly assumes that this is impossible without a preceding ‘cognitive’ component of systematic knowledge acquisition. At age 20, Hong Kong students (probably like most East Asian learners) know initially very little about Europe, and practically nothing about current affairs. The cognitive dimension is therefore vital – and it must be firmly pre-structured so as to avoid reinforcements of existing, trivial stereotyping.

This does not automatically imply an ‘instructivist’ or ‘top-down approach’ of knowledge dissemination. On the contrary, since the interpretative task of ‘decoding’ life in a foreign society entirely falls on the students during that Year III, the preceding phases of education must also suggest methodological approaches to enable students to discover, define and interpret phenomena of that target society either heuristically or comparatively. It must also include an awareness of the subjectivity of one’s own interpretations and, if necessary, ways to enhance (and revise) subjective theories by systematic study of background information. This preparation is to be achieved by a shift in teaching and learning patterns, which increasingly require ‘bottom-up’ or self-directed study and explorations of topics and issues. Asian students are not generally known for a

disposition towards independent learning (largely because the various national systems of education provide little incentive for it)². The motivation to embark on self-directed study is, however, fostered by the prospect of soon having to live in the target society. It is to be noted here that the notion of increasingly ‘independent’ study modes is not derived from cognitive theory but from pragmatic considerations – the pending native speaker contact. This very real perspective, made possible by the specific course structure, should also naturally encourage an affective receptiveness to the issues presented.

Following the conceptual literature quoted above, it was assumed that the use of IT would be helpful in all dimensions – cognitive, pragmatic and, as it were, interpretative and emotional. For one, the proliferation of web-based information could provide a ‘rich’ body of source materials (texts, images, etc.). Secondly, it became possible to verify or question information by direct, electronic contact to native speakers³. Thirdly, it was assumed that the sheer number of electronic resources available (‘information landscapes’) would entail a critical, questioning attitude (‘multisequential’, ‘active reading’) and subsequently ‘creative’ learning in compiling and transmitting information in the local (classroom) context. Finally, an opportunity to assemble ‘projects’ independently would stimulate the interest of students, who have long been known to be dissatisfied with traditional methods of lecturing (Biggs, 1992). Study with the WWW, it was believed, would provide students with an ‘information advantage’ over peers and lecturers – which, in turn, would stimulate confidence in classroom discussion.

4 E-learning: Pre-structuring and integration

These principles were applied to a number of area studies classes in Years II and IV of the course, each of which normally has 15 students enrolled. The corresponding E-learning systems form part of the course’s homepage (<http://www.hkbu.edu.hk/~europe/gindex.htm>)⁴. I am reporting here on one specific subject only – a second-year class entitled “EURO 2120 Contemporary European Societies: The German-speaking Countries I” (for a detailed description of syllabus and rationale cf. Hess, 1999). Its syllabus focuses on the German-speaking world since 1945 and is supposed to lead students from post-war reconstruction and the build-up of modern social welfare states to current social, political and economic issues in the context of Europeanization and globalization issues. Every week, students were given lists of online resources and accompanying exploratory tasks, which led to (written and oral) summaries and classroom discussion. Experiences, however, were initially disappointing, and student dissatisfaction rates in evaluations were high (cf. Hess, 2001a). This was due to several factors clearly at odds with theoretical assumptions about the benefits of ‘self-directed’ work in and with hypermedia systems: students’ inability to assess information quality, their ability to synthesize new information into a coherent framework of interpretation as well as the simple time factor in coping with such tasks.

Contrary to claims about ‘web-flexible thinking’, the avalanche of (online and offline) information available led to clear information overload. As most of the topics were unfamiliar, students working ‘autonomously’ had no guidelines to distinguish between significant and irrelevant information. Moreover, they could not critically assess the quality of information sources. Sifting through, assessing and compiling large amounts of information on a weekly basis are very work-intensive preoccupations in comparison to attending traditional lectures and tutorials. In the latter ‘old’ settings, lecturers have already done that before they transmit information in class. Students can therefore ‘trust’ the lecture (and accompanying reference literature in libraries). E-learning shifts the task from the teacher to the student – although students (at least initially) feel they lack the criteria to assess the information critically. The potential lack of information ‘trustworthiness’ can be very irritating to users – and exponentially increases the amount of time needed to work out reliable, topic-adequate conclusions. Because of this time factor, many students consequently rated ‘independent’ working with the WWW rather negatively.

Moreover, the preparatory use of the WWW led to papers and presentations of considerable length but little formal-logical or stylistic coherence. A possible explanation lies indeed in the

functional complexity of the respective tasks, as Ranson et al. (1997) explained. If facts and arguments about a given topic are already known beforehand, working with WWW resources has a *tutorial function* only, i.e. it merely confirms and enhances already existing knowledge. This may be a legitimate, pedagogically sound endeavor⁵, but it was clearly not the objective of these 'Landeskunde' seminars. If, however, a topic is altogether unknown, as in this case, the WWW use assumes an *image function*, i.e. it serves to explore altogether new conceptual relationships. The majority of students seemed either incapable or unwilling to construct such an 'image' by sifting through large and heterogeneous amounts of online materials. Similar E-learning attempts at the tertiary level led, for example, Hamlett (2001) to the sarcastic conclusion that apparently, "for real academic success, [all] you need [today] is a broadband Internet connection and a laser-colour printer" (p. 2). Students do not automatically react, as it were, 'constructively' when IT is present in the learning environment, and 'interest in foreign cultures' is by no means inevitably fostered by massive electronic access possibilities to them. Instead of 'facilitating student-initiated learning', the presence of IT may instead create a copy-and-paste culture, which is arguably far from helpful for the development of an analytical understanding of the issues at hand.

It appeared to us that more attention had to be paid to other factors in the overall learning environment. To make 'independent' IT usage more productive, it had to be embedded into a more tightly structured learning environment. It had also to be integrated into a more stringent (and explicit) theoretical framework, which allowed students to see individual topics as illustrative of general social and cultural developments. This conceptual frame should finally assist students to link IT-based and class work with their own situation. To this end, a generational approach developed in sociology (cf. Leggewie, 1995; Mannheim, 1928/1952; Tipton, 2003) was used to structure the seminar. The online topics were now defined in terms of salient features in the collective memory of three German age cohorts: the 'generation of 1945', the 'generation of 1968', and the present post-reunification age group (see Fig. 1). The approach entails a study of key issues and events in post-war history as they are likely to inform the present attitudes and actions of the three groups. It was significant to explain beforehand that students would soon encounter members of all of these generations face-to-face, and that the interpretation of their behavior (or 'culture') required prior study in class and 'autonomously' with IT means. Only through such (non-IT) means could we eventually achieve confirmed learning improvements, which Tschirner (1999) had hypothesized for IT alone.

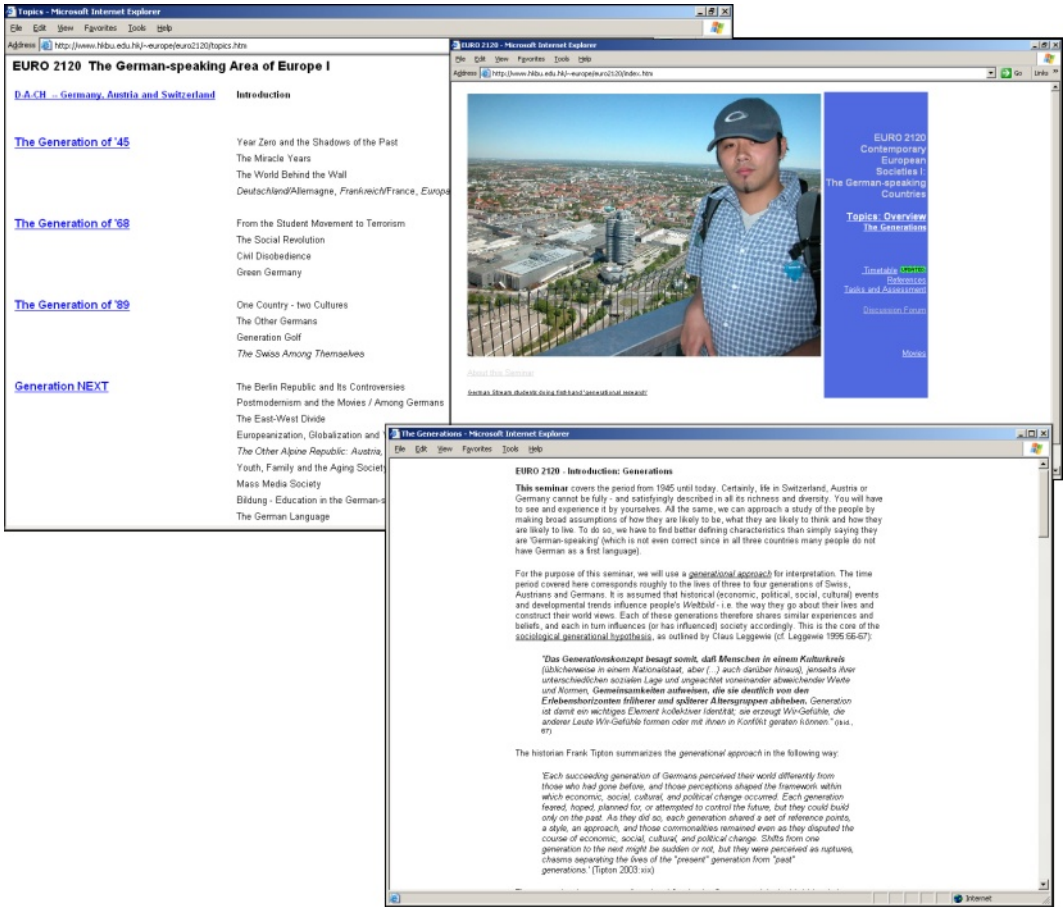


Fig.1: Topic Outline (sample screenshots)

In light of the earlier student dissatisfaction and Rösler’s demand to create “didactic sanctuaries of different degrees, selected according to the needs of the users” (2000a, p. 23), we revised the entire E-learning structure to its present state. ‘Didactic sanctuaries’ are characterized by (a) reduction, (b) pre-structuring and (c) internal segmentation. Thus, the number of electronic resources per topic was drastically cut – without precluding students’ right to investigating further materials, should they wish to do so. Secondly, each topic is now preceded by a concise goal statement, followed by a sequence of explicit ‘reading’ tasks with pre-selected WWW sources (these can be based on photographs, film clips, statistics and other graphics, entire texts, or even entire external web sites). Thirdly, the tasks are sequentially ordered and related to each other. Answers to the search tasks or questions given can then be compiled into a coherent, summative account of the topic (see Fig. 2).

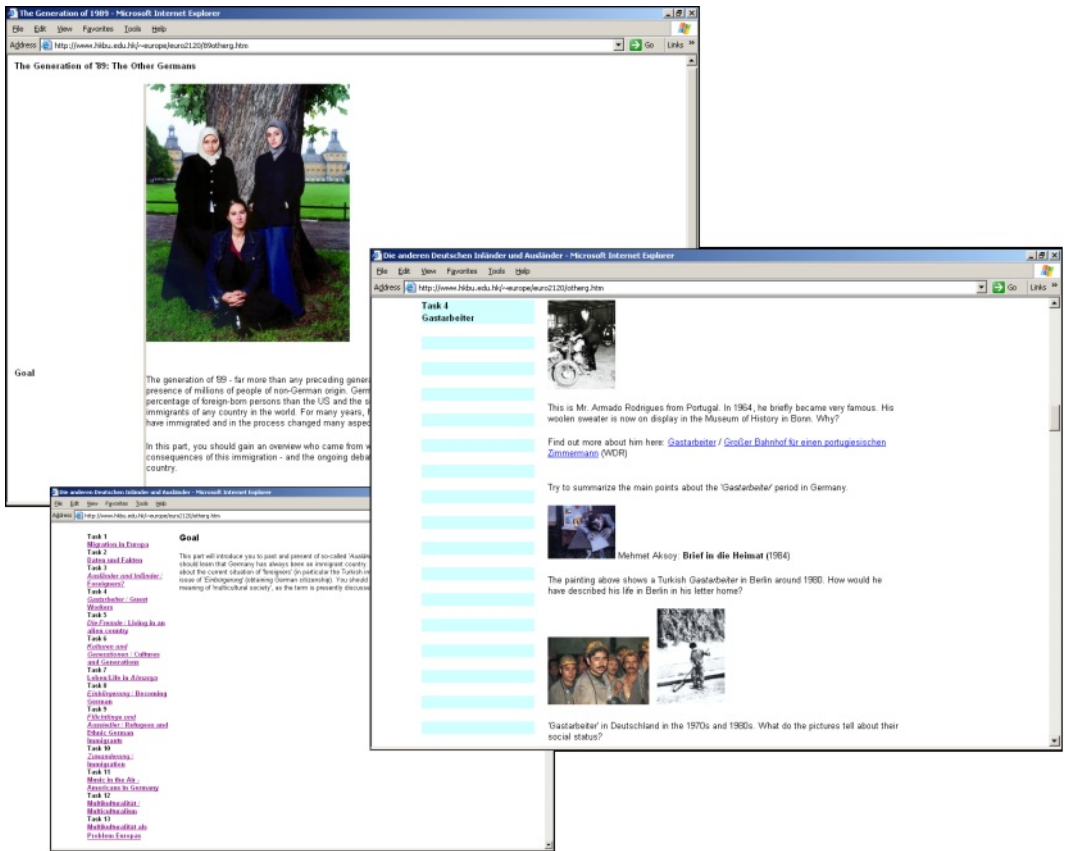


Fig.2: Pre-structured E-learning tasks (sample screenshots)

This still leaves the main task of selecting, compiling and assessing information to the individual student. To ensure that this does not stop at simple information retrieval, it became crucially important to integrate work with the electronic system into the overall learning/teaching context. Kerres (2001, p. 81) rightly states that IT-assisted learning requires a setting supportive to self- and group-organized learning activities. In our own observation, these are mutually dependent. So as to motivate the individual learner, the content of the online modules and the results of ‘independent’ work need to be discussed intensively in class. The discussions, in turn, quite obviously profit from preceding (individual and small-group) E-learning activities. Thus, before the class meets, all students are asked to browse through the WWW system each week to gain at least a basic impression of a given topic. More importantly, however, one or several students are asked beforehand to make use of the full range of tasks/materials to prepare a summative ‘expert’ presentation in class (which can incorporate the electronic resources via large screen projection). These presentations are normally discussed (and subsequently refined) in small-group tutorials before class. Eventually, the students (not the lecturer) will lead the discussion in class. This complex arrangement of online and offline phases normally results in lively and confident debates, as all students have previously formed their own conceptualizations through the WWW component – but not all possess the same degree of knowledge. Moreover, all sources plus accompanying goals and questions remain on the WWW throughout the semester, thus allowing easy cross references and re-checking of information. Classroom and WWW (IT) therefore form a coherent web in which information sources and actions are closely interrelated (see Fig. 3).

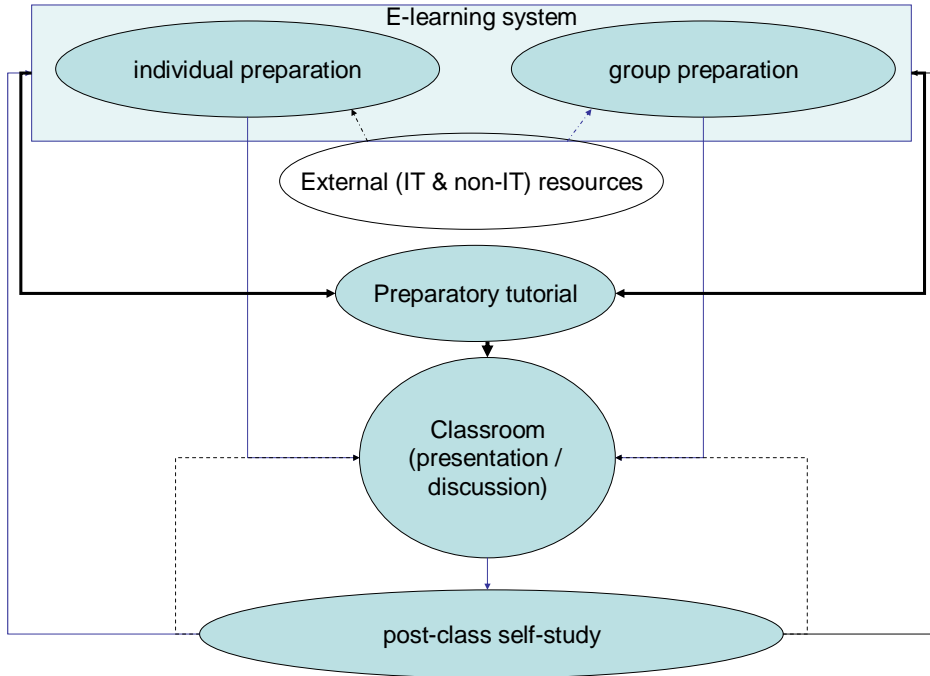


Fig. 3: Linking E-learning and the Classroom

To some extent, this construction goes against the tenets of ‘learner autonomy’ and ‘web-flexible thinking’ because it is based on robust pre-structuring, a limitation of sources to be used and clear guidance of learners throughout the entire semester-long exercise. It corresponds, however, to the learning conditions to be found in the overall educational field of Hong Kong undergraduate studies and their subsequent, legitimate demands. These were in my opinion superbly summarized by a student of Hong Kong’s University of Science and Technology, as early as 1996:

On the whole I do believe that all teachers could be more helpful if they would design and establish a more structured and centralized course based interface with sensibly selected exterior sources from reputable programmes in similar disciplines for meaningful navigation for the purpose of self-accessed learning rather than letting us, the undergraduates, be jettisoned into the wild, wide world of the Internet. (Chan, 1996, p. 411)

This is certainly not the opinion of a ‘typical’ Asian student untrained and unwilling to be ‘autonomous’. It appears to me to be a sensible (and after 10 years still meaningful) request in a study system, which is costly to the student and geared towards maximum efficiency in a limited time. As we found, such pre-structuring of E-learning, rather than the mere existence of IT in the learning environment, was the precondition of ‘more cooperative learning’. It was only the pre-structuring and the embedding of IT which ultimately made successful ‘independent’ learning possible and worthwhile. However, because such student remarks, our own experiences and the theoretical postulates quoted earlier were so clearly at odds, we felt it was necessary to investigate further how our students perceive benefits and (possibly) disadvantages of E-learning structured in varying degrees. We wanted to have a better understanding of what exactly students referred to when assessing E-learning. The following chapters will present selected, unedited data from a corresponding evaluation.

5 Evaluating E-learning: method

The methods used to evaluate (and subsequently improve) the web-supported subject(s) followed the action research paradigm (see Kember, 2001). Before and during the seminars, formative evaluations were carried out and students' comments duly noted. Towards the end of each semester, our students are routinely asked to fill in a detailed questionnaire. While doing so, they are allowed to access the E-system, if necessary. The questionnaire for the subject in question contains 40 questions to be answered on three or four point Lickert scales. In addition, students can add open-ended comments to each question. The answers are anonymous, but each questionnaire is numbered so that open comments and answers on the Lickert scales can be correlated. The questionnaire reported here was administered in April 2001 and documents the fourth round in conducting the seminar with an E-learning component⁶.

Response frequencies are calculated in terms of percentages of respondents. There were no further univariate or multivariate analyses as the group samples (max. 15 participants per learner group) are too small to allow statistically significant conclusions. All the same, the percentage distributions in conjunction with the comments provide substantial qualitative insights into students' attitudes and modes of learning.

The questionnaire is divided into five parts, addressing all issues believed to be of importance in assessing the effectiveness of computer-aided instruction or CAI (Hannafin & Peck, 1988, pp. 303–316):

- General attitudes towards working with electronic support
- Program adequacy
- Cosmetic adequacy
- Curriculum adequacy
- Instructional adequacy

Students were first asked to comment on their *general attitudes* towards the use of the WWW. If students had rejected the medium outright as inappropriate or insufficient for academic studies, one would have to assume that subsequent answers to specific aspects of E-learning would be colored negatively in principle.

Program adequacy describes the ease of information flows within the E-learning system and the extent to which effortless program execution is possible. This is foremost a question of the technical infrastructure available (both hardware and software) and is then sometimes referred to as 'connectivity'. We know from earlier evaluations in other E-learning contexts that easy program execution is a crucial factor for student acceptance (Hess, 2001b, p. 368). Concerns about technical issues such as slow Internet access and loading times strongly influence content assessment and can even override it. Negative comments on program adequacy would have cast doubts on the validity of content and structure ratings.

To a lesser extent, this also holds true for the *cosmetic adequacy* of the system. The term refers to the graphic layout in the context of the specific learning tasks. The layout may or may not stimulate students' interest and willingness to work online. It may render E-learning 'dull' or, if too fanciful designs are applied, may even insult adult users.

Moreover, one needs to find out whether the E-learning system is considered compatible with the course curriculum. *Curriculum adequacy* is not primarily concerned with technical aspects but with the chosen topic outline. Its assessment is, however, important because inadequate topic selection would clearly exert a negative influence on ratings of other E-learning components.

Provided that the general attitude towards E-learning is positive and free of anxieties and that cosmetic and curriculum adequacy are established, one can finally address the issue of instructional adequacy. *Instructional adequacy* forms the core focus of this evaluation. The questions in this part aim to assess the extent to which the E-learning system provides support and features conducive to the stated teaching/learning objectives. The answers reveal the students' own rating of the effectiveness of the system – both in terms of internal structure and by comparison to

non-electronic teaching/learning contexts. Effectiveness ratings can then be related to the issue of 'autonomy' – by asking which forms of E-learning and classroom practice stimulate students' motivation to go beyond a mere tutorial mode of learning.

6 Evaluating E-learning: Results

General Attitude towards E-learning: The participating students had no qualms about E-learning support systems. This has not always been the case. Several years back, a substantial number tended to reject 'the computer', often citing "danger to eyesight" or sheer "boredom" (Hess, 1998). Such concerns have disappeared altogether. The medium as such does not cause excitement or stimulate motivation, but its utility value is readily acknowledged:

1. How do you *generally* rate the use of the World Wide Web for academic study?⁷

Useless	Occasionally Useful	Often Useful	Very Useful
-	-	55%	45%

2. Working with the WWW is

Boring	Just O.K.	Often Interesting	Exciting
-	12%	88%	-

Cosmetic and Program Adequacy: After several revisions in the light of earlier student comments and continuous infrastructure upgrading (broadband access in the university and at home), *program and cosmetic adequacies* had been rated progressively higher with every subsequent year of the evaluations. Frequency distributions now showed that students feel comfortable with E-learning systems and are sufficiently satisfied with the ease and speed of the program flow as well as the graphic design. It can be safely assumed that neither the 'look' of the system nor the design of the information flow distract from learning and thereby disturb assessments:

31. Please rate the appearance of the homepage:

	Visual Layout (the way it looks to you)	Colour	Typeface (easy to read?)	Screen Density (screen too crowded/fu ll?)	Display Clarity	Graphics (Pictures)
very poor	-	-	-	-	-	-
average	34%	45%	12%	45%	23%	
very good	66%	55%	88%	55%	77%	100%

32. Was the homepage of EURO 2120 (technically) easy to handle (or did you feel you did not have enough computing knowledge for this purpose)?

Easy	Average	Difficult
77%	23%	-

33. How was the speed of program execution on your computer?

Sufficiently fast	Average	Too Slow
23%	77%	-

Curriculum Adequacy: Students rated the curriculum adequacy of the E-learning system consistently high. The content met expectations, and learning gains were felt to be high. This lends (internal) validity to subsequent statements about the instructional aspects of the system: Since there was little if any criticism of the content outline, it is fair to assume that answers quoted below indeed refer to the effectiveness of the E-learning system rather than to the syllabus of the overall seminar:

35. The focus of EURO 2120 is the post-1945 German-speaking world. At the end of this semester, do you think you have achieved a better and/or more systematic understanding of the topic?

Better	Better in most aspects	Haven't learned much new	Topic remains unclear
66%	34%	-	-

36. Did the content of EURO 2120 meet your expectations of (German) Area Studies in the second year?

Yes	Undecided	No
88%	12%	-

38. Was the content of this subject sufficiently up-to-date?

Yes	Undecided	No
88%	12%	-

Instructional Adequacy: The follow-up question #39 provides a hint that students appreciate E-learning not primarily because it changes cognitive patterns (towards 'web-flexible thinking'). They focus on its *functional* value in light of their overall study goals. Within that frame, the speed of access to new information and the structuring of resources are appreciated, as shown by the sample open-ended comments to #39:

39. If yes, could the same effect have been achieved *without* the WWW?

Yes	Undecided	No
12%	22%	66%

Student comments:

B	Since preparing for writing a book takes longer time, some of the content may be changed before the book is published. WWW can provide more up-to-date information.
E	Because www provides a more easy and clear way to understand the topic.

Common concerns about 'the Web's' information superficiality were not shared, provided that pre-structuring takes place. The web-supported subject was then compared favorably with the more common formats of lecture and tutorial – but also with seminars based on oral presentations of classmates alone:

10. Subject homepages cannot gather enough material to understand a given topic. They are too superficial.

I agree	No difference	I disagree
-	34%	66%

EURO 2120 is a 'web-supported' subject and makes systematic use of its own homepage on the World Wide Web. Compare this subject with other, more 'traditional' lesson formats. How would you rate it in comparison to:

5. Lectures (given by teachers)

Better	No difference	Worse
100%	-	-

6. Seminars (presentations given by classmates, *without WWW support*)

Better	No difference	Worse
100%	-	-

7. Tutorials after conventional reading assignments (*without WWW support*)

Better	No difference	Worse
100%	-	-

8. Working with the subject homepage is better than searching material in library books.

Better	No difference	Worse
100%	-	-

9. I learn more when working with the subject homepage instead of conventional study material (books, articles).

More	No difference	Less
77%	23%	-

There was a general feeling that E-components stimulate interest and lead to better learning results than any of the other tuition forms, which are conventionally supported by library study. In addition to ease of access, the 'information richness' of the multimedia format plays a significant role:

11. The subject homepage with all its attached sources (images, movie clips, etc.) lets me understand a topic far better than 'traditional' sources.

I agree	No difference	I disagree
88%	12%	-

12. The subject homepage makes Area Studies too 'light' and not academic enough.

I agree	No difference	I disagree
-	34%	66%

13. Did the homepage contribute to stimulate your interest in the topic (i.e. the post-1945 German-speaking world)?

Yes	Often	Sometimes	Not at all
66%	12%	22%	-

Student Comments:

B	Some of the topics interest me, so I continue to read the materials in the topic.
C	I like the homepage with video clips & songs!
G	In the homepage, the topics are clear [so] that I know what's important, and the pictures, clips & etc together with the texts are very interesting materials
H	Very. As some of the materials are first-hand which may not be found in ordinary books
I	The video, songs and some picture from the homepage are very attractive and vivid to learn

It appeared that in students' minds, stimulation of interest depends on variety and technical aspects, i.e. the possibility to retrieve study materials in heterogeneous formats without delay. But in order to reach curricular goals, the arrangement of sources (the information sequencing) is vital, as answers to the following questions show:

15. Do you think the homepage presents a clear / logical structure of the topic (i.e. the post-1945 German-speaking world)?

Clear	Mostly clear	Just O.K.	Confusing
34%	66%	-	-

16. Could the same clarity be achieved without a WWW homepage?

Yes	Mostly	Not quite	No
22%	12%	66%	-

14. Do you think the homepage is an effective way of introducing and structuring the topic (i.e. the post-1945 German-speaking world)?

Yes	Often	Sometimes	Not at all
88%	12%	-	-

Student Comments:

B	The homepage is divided into different topics, which is easier for me to understand the situation in Germany.
C	Sometimes documentary clips/sound files help us more than a plain text book.
G	Even if one didn't read the whole thing, one could understand easily by reading the headings. By finishing the tasks, one can already understand well about the topic.

That such high agreement is indeed a function of pre-structuring and guidance is further corroborated by the following questions:

22. The homepage indicates lesson goals. Please rate their usefulness.

Useful	Often useful	Quite useless	Useless
55%	45%	-	-

23. The homepage provides WWW links to sites of interest in each segment. Please rate their general usefulness:

Useful	Often useful	Quite useless	Useless
45%	55%		

26. Would you like to have guided reading comprehension tasks (i.e. study questions) when working with German-language websites?

yes	undecided	no
77%	23%	-

19. Does the fact that the WWW is used help you prepare the subject matter?

Yes	Mostly	Not really	No
66%	34%	-	-

20. Did the homepage (and the links it contained) help you understand your classmate's presentations?

Yes	Mostly	Not really	No
77%	23%	-	-

21. Does the fact that the subject is available on the WWW help you revise the subject matter?

Yes	Mostly	Not really	No
77%	23%	-	-

Hong Kong students are generally familiar with the public discussion about education reform and the perceived need to encourage 'independent learning' and 'critical thinking'. As outlined above, the local authorities intend to employ IT to achieve precisely such aims. We therefore asked the students directly what they thought about E-learning in the light of this debate. It appeared they are far more realistic than many educationalists. They maintained, in essence, that 'effective learning' is based on guidance while at the same time allowing sufficient room to pursue individual initiatives. A desire to be 'autonomous' in principle is not on the agenda, but neither is there a perceived discrepancy between 'independence' and guidance – the latter simply prepares the former. The students also indicated that the motivation to learn can only partly be influenced by medium and method. This is reflected in answers to questions #18, #27 and #28.

18. There are two possible ways of working with the WWW: (a) pre-structuring of search tasks [by the lecturer], (b) free search on the WWW [by yourself]. Which one would you prefer?

<i>Pre-structuring of tasks</i> because it leads to precise results without wasting time for searching appropriate materials	66%
<i>Free research</i> of the topic on the WWW because it gives me more freedom / because I can be more creative	12%
<i>Undecided</i>	22%

Student Comments:

B	Without pre-structuring of tasks, the topic will be too wide and it would be difficult to start with.
C	In fact, I'd do "free research" as well with the help of the resources in the hp.
E	After reading the pre-structuring of search tasks by the lecturer, the students can also find the other related material on the WWW by themselves. The pre-structuring task can provide a guide for student to search the relevant materials.
G	I think both (a) & (b) are important because with the help of lecturer we can already get access to appropriate materials. But it's also important to explore on my own.
H	I think both should be used. The pre-structuring paves the way for our own research.

27. Internet-based forms of studying are supposed to give students more room to become 'independent' learners. Having done this subject, would you

Agree	Partly agree	Disagree
66%	34%	-

Student Comments:

A	When my lecturers are busy I can also do my own work with WWW
B	Based on the materials on the homepage, we can learn the topics in this subject, when we want to get more information, we can find in the www links, so we can learn depending on our own needs.
C	Advantages: - it stimulates my interest by self-reading, and I learn more by self-discovering.
G	Adv. We have to read & explore the topics ourselves before lessons → more time to think & digest. Of course this could be done without internet, but it's faster & easier in a way
H	Adv: independent learning → very important. Not the Peking Duck system of stuffing informations. Dis: really self-initiative. Sometimes need more effort to be "independent"
I	From reading info on www to organizing well the presentation, I can do mostly by myself with clear guideline on homepages

28. It is said that Internet-based forms of learning stimulate students' critical thinking. Having done this subject, would you

Agree	Partly agree	Disagree
23%	77%	-

Student Comments:

B	After I have finished the reading comprehension tasks, I know most of the facts of the topic, then I can think about the influence of different incident to the topic.
C	By reading and self-exploring, we have the chance to think, and to judge.
G	When we are reading online materials, we would get a basic understanding on the topics & also reading how the others think & elaborate the issues. It could help stimulating students' critical thinking if students have interests in it and are willing to rethink what the others say.
H	To think or not is the student's choice. One may, after independent learning process,

learned how to think critically. But one may also be buried by the avalanche of information & swallowed them without thinking. So it really depends!

7 Conclusion

The evaluation by and large supported the current basic structuring of our E-learning system(s). We learned that, perhaps paradoxically, student motivation to learn ‘independently’ increases when the ‘autonomy’ principle is at least partly suspended. The degree of pre-structuring can probably vary, depending on students’ study experience, motivation and the overall contextual conditions (as it does, in fact, within our own curriculum from Year I to Year IV of the course).

However, “the criterion for [...] success is not just the availability of material but the didactic use made of it”, as Rösler (2001) poignantly writes. In that perspective, it is not only (and not even decisively) the online information sequencing which leads to student approval. To reach optimal effect, E-learning systems should not be confined to individual tutorial purposes only. Instead, work with them should include a group component – both in the preparatory phase and the classroom. It should also have a product orientation. This can be the requirement to compile online research projects into coherent, topic-specific web pages, with the purpose of building up a student-made online library available to later student cohorts. But even more important is the fact that electronically supported learning activities are systematically alternated with good old-fashioned debate in the classroom. The complementary use of both – E-system and face-to-face debate – is all the more necessary when new concepts (‘images’) are to be formed by using electronic sources. Students have commented on that in all evaluations we have done so far:

WWW can help me to obtain the necessary information I need. Seminar helps me to understand the topic through discussion and lecturer’s guidance and explanation. (Student A)

I do believe direct face-to-face conversation and discussion can help all of us to better understand the topics. Group discussion can arouse more interest and incentive in learning than facing a computer screen. (Student F) (cf. Hess, 2001c).

The student comments overall point to the necessity of developing mixed offline/online systems, which recently have become known as ‘blended learning’ (cf. e.g. Kröger & Reisky, 2004; Reinmann-Rothmeier, 2003). ‘Blended learning’ concepts, such as we have arrived at after extensive trial-and-error phases, seem to find widespread user approval. They also de-link E-learning from an unproductive association with misguided ‘autonomy’ concepts. Quality education, it appears, does not depend on leaving classroom instruction by the wayside, nor is it dependent on IT. Instead, quality education needs to combine aspects of all of these approaches in one coherent learning environment.

Notes

¹ The term is problematic, though, not the least because it classifies very different learning/teaching approaches exclusively by the *medium* involved. See Rösler (2004) for an extensive discussion.

² For a discussion of this – possibly erroneous – perception, see Watkins & Biggs (1996).

³ Since 2000, this has been done through structured e-mail tutorials between Hong Kong students and GFL students at Giessen University and Technische Universität Berlin. For details, see the comprehensive analysis in Tamme (2001).

⁴ Individual subject pages are password-protected and only accessible to registered students.

⁵ Thus, DiSessa writes about IT usage in educational settings: “Schools need to become places where children feel that they are competent and get to enjoy their competence, even if it means repetition, apparent inefficiency, and so on. The alternative is the present situation, where students are kept off balance, where the least sign that competence is developing means it is time to move on to the next topic. We need exercises after ‘mastery’, in addition to exercises toward mastery.” (DiSessa, 1988, p. 52–53)

⁶ For further comments in this and later evaluations, see Hess (2003).

⁷ Question numbers refer to the order of the original questionnaire.

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