Using the World Wide Web for European Area Studies

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Abstract

Web-supported learning (WSL) is by now officially accepted as one of the best ways to induce 'student-initiated learning', although there seems to be little substantial evidence for this claim in Hong Kong. This paper intends to show that WSL can indeed bring about a new quality of learning *if* it is closely related to the curriculum. To that end, a 'global learning environment' needs to be constructed, in which the students have equal recourse to traditional forms of academic discourse *and* WSL. The paper reports on the creation and formative evaluation of a WSL system for second-year students and discusses issues of programme adequacy, layout and structure, instructional adequacy and its relation to the course curriculum. It concludes that it is not WSL *per se* that stimulates 'creative thinking' but the specific type of cognitive tasks set through it. If 'new' learning is to become an incorporated feature of the overall structure of institutionalised teaching/learning, reforms are needed. There are currently objective constraints to use the technology's potential beyond limited experiments.

Background

It is common currency that Hong Kong students should be stimulated to become 'deep' learners, (cf. e.g. Watkins, & Biggs, 1996). Information technology (IT) is often seen as the best way to nurture this new spirit of learning (UGC, 1996). Hong Kong's University Grants Committee distinguishes three IT functions. In its simplest form, IT is a productivity aid to enable students and staff to work 'faster and more efficiently' (ibid. 26.9) Secondly, it can become a tool for 'enrichment'. IT-supported presentation packages for classrooms are assumed to enhance the learning process 'effectively' (Wu, Wong, & Young, 1997). This still leaves the traditional 'linear' teaching mode intact, which, in the Hong Kong context, is understood as the common top-down information via lectures and tutorials. Ideally, however, IT should help to overcome this model and henceforth act as a 'facilitator of student-initiated learning' (UGC 1996:26.11). In new, class-independent 'multimedia environments' students 'roam' or 'navigate' in material-rich 'information landscapes' (Hedberg, 1996). By definition, these are to be read 'multi-sequentially' (Landow, 1992, p.4) and allow students to build up knowledge individually. Learning then turns from being 'receptive' to 'active' or 'process-driven' (Issing, & Klimsa, 1995). The fast expansion of the archetypal IT hyper-structure, the Internet, and the improved accessibility to its resources led to the belief that the advent of such 'independent' and 'autonomous learning' for everyone was now just around the corner (Wolff, 1996). The WWW in particular would lead to an entirely 'new quality of learning individually and in groups.' (Wolf, 1997) and would transform 'hard-copy linear mindsets into web-flexible creative thinking' (Borkowski, Larsen, & Mateik, 1986).

These optimistic views, however, are a classic example of putting the cart (the medium) before the horse (the students), and they utterly neglect the real microcosm of teaching and learning in Hong Kong. The freedom of roaming has long been known as the danger of getting 'lost in cyberspace' (Conklin, 1987, p. 38), and disorientation in multimedia environments is an all too common observation (Haack, 1995). Students exposed to cyberspace within the context of their

studies have rightly pointed out that without structured interface, clear guidelines and 'sensibly selected exterior sources' (Chan, 1996, p.411), flexible web-supported learning (WSL) is a mere fiction. The demand for 'learner autonomy' all too easily becomes a self-serving argument for idle teachers (ibid.).

In the optimistic view, WSL objectives are deduced from a potential the medium allegedly has, rather than from the real context of present university life. In a recent Action Learning Project, Muppala and Ha (1998), for example, investigated the WWW's potential to promote interaction between students and students and instructors. In a similar vein, my own Faculty of Social Sciences applied for funding to develop WSL with the argument that it would allow 'virtual communities'. Why faculty and students, who see each other every day, would need these remain a mystery. With WSL suggestions such as these, it is often unclear what students are to learn, and why, supposedly, it cannot be learned without WSL. Vague cognitive aspects of improved communication and information processing are emphasised ('self-initiated learning'), but there is hardly any reference to content (e.g. a syllabus). It is not clear whether such 'virtual' and, by definition, 'autonomous learning' is actually a feasible option within the institutionalised structure of teaching/learning and its wider social context in Hong Kong. There is a definitive lack of studies, which show the pros and cons of using IT within the specific parameters of courses or subjects as well as a lack of detailed feedback from students and teachers - the horses' view, so to speak.

Goals of this Project

In the context of this project, the WWW was systematically used to fulfill curriculum objectives of a specific course, the BA (Hons) in European Studies. Within the four-year programme, students of its German stream have to become thoroughly familiar with the social, political, economic and cultural life of Austria, Switzerland and Germany. Students' knowledge about Europe, however, is initially, virtually zero (Meissner, 1999, p.13), and consists primarily of prefabricated stereotypes (St. Denny, 1999, p.39). Library resources in Hong Kong are still insufficient to close this knowledge gap. The 'old' continent also receives little attention in the mass media. In such a situation, the WWW is believed to be beneficial for two reasons (Warschauer, 1995): (a) it allows swift access to an unprecedented wealth of up-to-date information about distant regions. The WWW can broaden the general knowledge base of students, without which intelligent (self-) learning is not possible anyway; (b) the availability of such resources significantly boosts student motivation and arouses further curiosity - the second precondition for student-driven, 'process-oriented' learning.

Information in cyberspace however, is inherently chaotic, especially for WWW users who do not yet have fixed, elaborate notions of what they are actually looking for. The cyber information (i.e. relevant parts of it) has to be brought within the range of existing cognitive and conceptual structures. To this end, Barson and Debski (1996) proposed a model of 'global learning environments' (GLEN), which take the learner as the principal agent. Around her/him, 'supporting environments' are grouped (the teacher, conventional and electronic resources, the classroom) within one conceptual structure (the course or subject). The learning activities of the principal agent are ultimately dependent on the extent to which these elements interact. A WSL system, therefore, needs to make constant reference to other GLEN constituents. It cannot, as it were, 'stand alone' but must contain information relevant to the learner's tasks - and these are primarily determined by the curriculum. It must be intricately linked to the objectives of the course syllabus, and it must also bear in mind the extent to which learners at a certain stage are able to process the information made available.

Our students have long had the necessary technical infrastructure to make use of the WWW for study purposes. However, earlier projects showed that the WWW was mainly used for

'relaxation' purposes, and that none of the students actually perceived it as the 'cognitive tool' it is supposed to be in the new world of learning (Hess, 1997). However, the picture became different when (a) WWW resource pages for specific subjects and (b) tasks to use these resources for work on specific topics were set up. Resource (links) pages and online questions together formed the WSL system for the Year II subject 'The German-speaking area of Europe I'. A pilot project in 1997 centred on the Holocaust, a key issue for German area studies. A survey revealed that 82% of all students thought they had learned more through this WSL system than would have been possible without it, and 91% reported that their interest in the subject matter was decidedly stimulated by the use of the WWW.

The goal of the present project was therefore to extend web-supported forms of learning to all topics of this subject and other subjects of the same course. The WSL systems should be consistent with the curriculum of European Studies and its specific objectives (cf. Hess, 1999) - and they should, in each case, bear direct relevance for classroom action and discussion. Teaching and learning should form one coherent whole ('GLEN'). We then wanted to investigate how students worked with WSL and how they themselves perceived its (possible) functions within their overall learning environment. Of particular interest was the question whether (and under what conditions) WSL can indeed fulfill all three IT functions listed as desirable by the UGC: productivity gains, enrichment and facilitating student-initiated learning.

Cycle I – Building up a WSL System

During the first action cycle in 1998, four WSL systems were constructed and used during the corresponding semester-long subjects. All of them are accessible on the WWW directly or through the homepage of the European Studies course (http://www.hkbu.edu.hk/~europe/gindex.htm):

- German-speaking Area of Europe I (Introduction to the post-WWII societies of Germany, Austria and Switzerland) (http://www.hkbu.edu.hk/~europe/euro2120/euro2120.htm)
- The German-speaking Area of Europe II (The Social Market Economy) (http://www.hkbu.edu.hk/~europe/euro3120/eu3120.htm)
- German III (Economics and Business Administration in Germany) (http://www.hkbu.edu.hk/~europe/germ3111/germ3111.htm)
- German III – Special Topics (Current Issues in the German-speaking countries of Europe) (http://www.hkbu.edu.hk/~europe/germ3910/germ3910.htm)

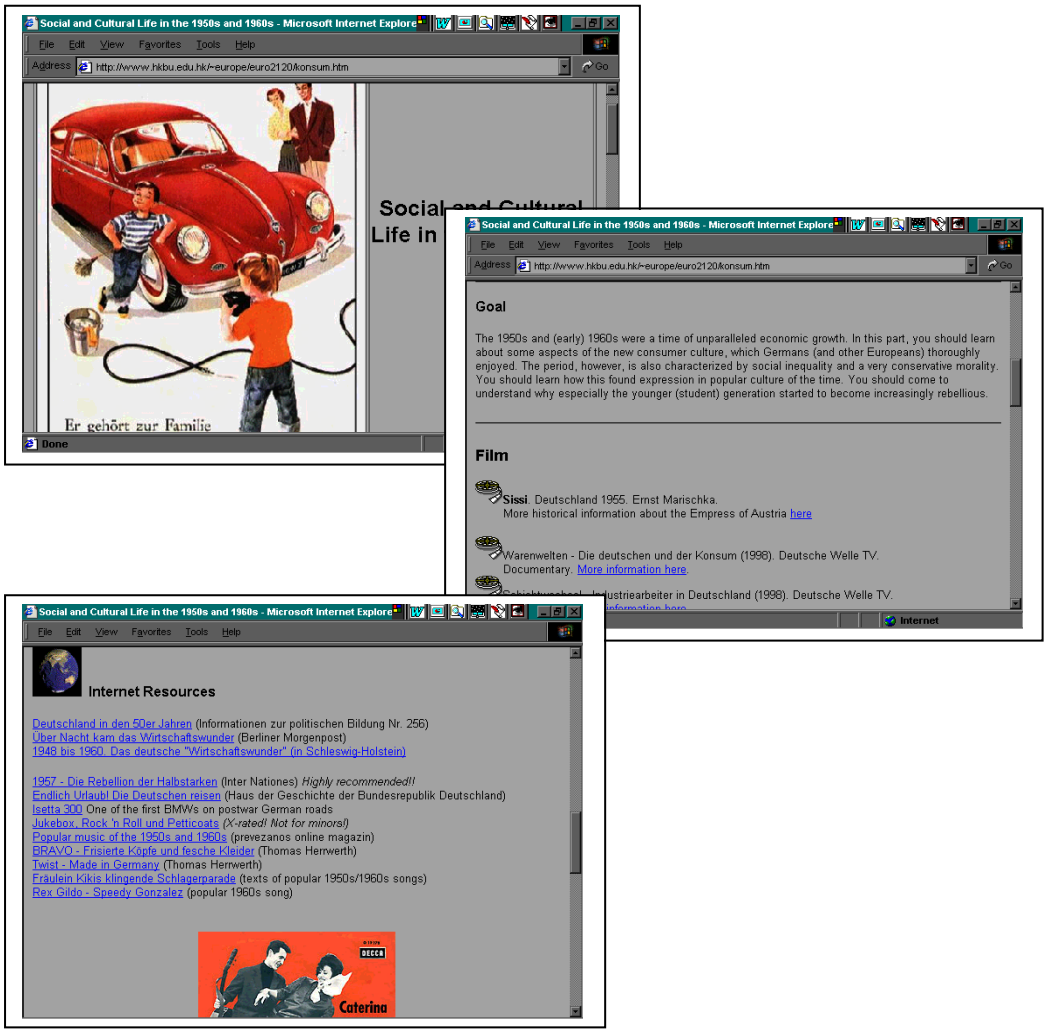
The following illustrations refer to the 'German-speaking Area of Europe I', a second-year subject. The opening screen (Figure 1) provides a concise overview of the subject's goals, expected student performance and the necessary tools (texts, WWW resources, references). Students are then referred to a schedule, which lists all sub-topics (Figure 2). These topics cover the German-speaking world since 1945 according to the 'generational approach' in the social sciences (cf. Hess, 1999). They focus on key concepts (and corresponding political decisions or social changes) of three age cohorts: the 'Generation of 45' (actors in the post-war 'economic miracle'), the 'Generation of 68' (which triggered profound cultural change) and the present 'Generation of 89' (i.e. the same age cohort as our students). According to the course curriculum, all students of this subject will spend an entire year studying and working in Germany or Switzerland. They should therefore possess sufficient background knowledge to be able to interpret actions and attitudes of Europeans they will eventually meet as products of (generation-) specific collective experience. A member of the 'economic miracle' generation is, for example, bound to react differently to 'green issues' than younger Germans, and he/she is likely to hold personal opinions about lifestyle, gender, sex or educational issues significantly different from the 'generation of 89'. No seminar could even attempt to 'teach' a comprehensive overview of all these topics in 'top-down' fashion,

when (as in Hong Kong) even basic knowledge of post-war social developments in Europe is non-existent. It can, however, provide clues, which will make later cultural interpretation possible beyond the mere cliché and will hopefully trigger a desire to study selected issues more in-depth.

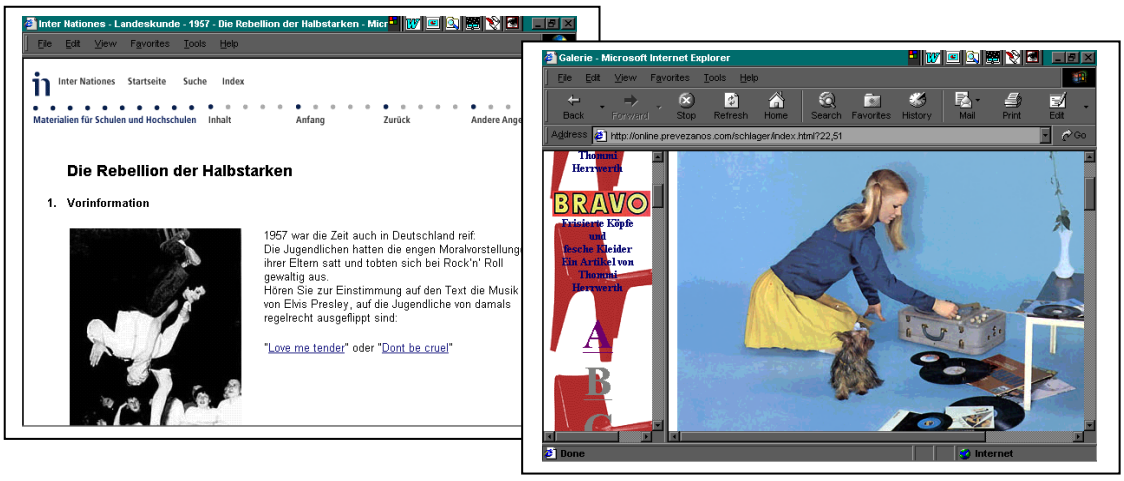
Figures 1 + 2: Opening screen and sub-topics

These clues have to be worked out by the students themselves, even though they may initially not even be aware of their significance. For each topic, they are guided to one or more resource pages with carefully selected 'primary' sources (Figures 3-5). These can be WWW sites of relevance, references to audiovisual material or conventional reading texts. In combination, the sources provide a fairly broad picture of the particular topic. The pre-selection of sources, however, guarantees that students are not distracted from the specific task at hand. An explicit (learning) goal statement at the beginning of each WSL segment further focuses the attention, as the following example shows. It deals with the conservatism of the 1950s' consumer culture and the seeds for subsequent student unrest in the 1960s. The selected sources lead students to visual material, music, 'oral history' documents and subsequent analyses of this decade (Figures 6-7). The sources are partly in German, although the class itself is still conducted in English:

Figures 3-5: http://www.hkbu.edu.hk/~europe/euro2120/1950s.htm (Introductory pages)



Figures 6+7: Selected web sources for http://www.hkbu.edu.hk/~europe/euro2120/1950s.htm



None of these sources in isolation would make sense for our students nor even meet their initial interest. Taken together (and guided by the initial goal statement), however, they provide a

material-rich 'information landscape'. Students were then asked to prepare for classroom discussions by browsing through the system. One student, who had made use of the full range of provided (and other) sources, normally led the discussion. His/her eventual task was a comprehensive 'expert summary' of the topic. This led to frequent lively debates, as all students had previously formed their own conceptualisations through WSL – which were not always congruent with the 'expert' opinion. The direct relationship between face-to-face interaction in the classroom and individual online work (where each 'feeds into' the other) seemed to us the single most important aspect of WSL.

Cycle II: Formative Evaluation

On the face of it, the seminar sketched above worked extremely well. However, we wanted to know in detail how students rated the WSL system and whether they themselves felt that IT indeed provided a 'new quality' in learning. To this end, a detailed questionnaire was administered at the end of the fourth semester (n=14). Codes in brackets below refer to individual questions and student answers. The questionnaire dealt with the WSL system 'The German-speaking Area of Europe I' and addressed the following issues believed to be important in CAI (computer-aided instruction), as outlined by Hannifin and Peck (1988, pp. 303-316).

- Programme Adequacy
- Cosmetic Adequacy
- Instructional Adequacy
- Curriculum Adequacy

Programme Adequacy describes the easy flow of information modules within the WSL system and the extent to which effortless programme execution is possible. Programme Adequacy is, in fact, also an evaluation of the technical infrastructure available, and is sometimes referred to as 'connectivity'. Cosmetic Adequacy refers to the graphic layout and its appropriateness in the context of a given topic or lesson; it may or may not stimulate students' interest to work with the computer. Instructional Adequacy is understood as the extent to which a WSL system provides support and features to reach stated learning/teaching objectives. Finally, one needs to ask whether the use of a WSL system fits into the curriculum of the course (or whether it may lead students - unintentionally - astray from the overall goals of their studies). This is referred to as Curriculum Adequacy. Results from the questionnaire were then enhanced by casual observations made during the classroom sessions.

Programme Adequacy

For the Current Generation of our Students, WSL is 'no big deal' Anymore. The Available Technical Infrastructure, however, is Hard Pressed to Keep up with the Demands of Fully-fledged WSL.

There is, by now, general acceptance of the WWW in the context of academic study. 86% of our students found it generally 'useful', and 7% 'occasionally useful (q0-1[1]). 79% thought that using the WWW was 'interesting' (q0-2), 43% agreed that it was 'stimulating' or at least 'manageable' (57%) (q0-3). There was no recorded negative response at all to WSL. Students felt comfortable with the medium (86%) (q3-1) and possessed, without exception, the skills required to manage it successfully. 79% subsequently thought that the homepage was technically easy to handle (q3-

[1] The abbreviations are internal codes and refer to items in the questionnaire and students interviewed.

2). This was to some extent the result of its consistent structure (see Figures 1 and 2), which orders general aspects horizontally, and material referring to individual topics vertically (see below).

Easy access to sufficiently fast computers is a *conditio sine qua non* of WSL. Students used the system in three places: the course's own Self-Access Learning Unit (SALU), general computer rooms on campus, and at home. The majority of students rated the programme execution from all of these locations only as 'average' (57%) or 'too slow' (21%) (q3-3). The state of campus infrastructure and - in particular - remote connectivity through modems is apparently the most critical factor for WSL. The current version of the homepage did not, for example, make extensive use of graphics or online streaming of sound / video files. These could easily enhance the WSL system (and would undoubtedly be welcomed, see below Cosmetic Adequacy), but the slow programme execution would severely influence students', so far, positive feedback. Byte-intensive material should, at any rate, never be placed on initial pages in the WSL system, as excessive loading times appear to be the surest way to deter initially willing learners.

Cosmetic Adequacy

Authoring Tools Need Not Be Fanciful, and Design Overkill is to be Avoided.

We knew from earlier feedback that students sometimes feel overwhelmed by colourful web sites, or rate seemingly mesmerising screen designs even as repulsive. Colour, sounds, typeface, etc. can influence enormously a student's disposition for WSL activities. The evaluation included questions about the cosmetic adequacy of the present version. The answers did not yield a clear picture - apart from the self-evident maxim that usually less is more. They indicate, however, that currently available authoring tools (MS Frontpage in this case) are sufficient for the purpose.

50% thought that the visual layout was just 'average', while the other half declared it to be 'very good' (q2-1). The use of colour was rated as 'very good' by 64% (vs. 36% 'average') (q2-2). The opinions were equally divided with respect to typeface ('Arial'), screen density, display clarity and the use of graphics / pictures (q2-3-6). If anything, students would welcome 'more graphics' and 'more pictures' to 'jazz up' the WSL system (including video streaming) - if such material was demonstrably meaningful in its particular context. There were no student remarks (either in the questionnaire or informally) that currently en vogue two-way communication tools, chatrooms or discussion forums were desirable.

In summary, the overall feedback to both technical and cosmetic aspects of the WSL system was positive:

> The structure of the homepage is very clear and well-presented and very useful. (q2 / A)
>
> Homepage is carefully and prudently designed. (q2 / K)

Instructional Adequacy

Our Students Appreciate WSL When and If it is Well Structured and Adapted to Their Learning Needs.

The systematicity of both the classroom teaching and the web site is a key to student acceptance. The difference between the two modes of teaching / learning lies in the explicitness of stated goals. While students intrinsically 'trust' that conventional lectures / tutorials are structured, this structure must be made explicit once the learning process is partly or wholly transferred to the WWW. Students must be able themselves to recognise instantly the logical coherence and the objectives of the WSL system. Quite clearly, they do not arrive at value judgments in favor of or

against WSL in general as the literature seems to suggest. WSL is rated positive if it supports classroom activities in a straightforward way.

In our particular case, 64% thought that WSL was better than 'traditional' lecture formats (36%, however, found 'no difference'). 86% rated WSL better than the seminar format (i.e. presentations given by classmates alone), and 79% found WSL better than conventional tutorials (q1-1 to q1-3). 86% maintained that the homepage presented a clear and logical structure of the class topic (q1-6). This clarity of the syllabus could 'not quite' be achieved without the homepage, according to 93% (q1-7). 71% thought that the homepage was an effective way of introducing and structuring the topic (q1-5). 85% 'never' or 'rarely' 'got lost ' in the hyper-structure (q1-8), and two thirds stated that directions given on-line were clear enough for the purpose of the seminar (q1-9). Open-ended questions yielded further positive comments:

> Very clearly structured. (q1-5/A)
>
> Very clear! (q1-5/D)
>
> Clear and direct. (q1-5/M)
>
> The structure of the homepage can give readers the feel of the structure of the topic easily. For example, something can be clarified in a page linked to the original so that the coherence of the original page can be kept. (q1-5/N)
>
> It (the homepage) is more clear and the time spent to find info is lesser. (q1-6/I)
>
> The theme and material are connected in a clear way. (q1-7/C)
>
> When topics and its structure are put on homepage, I can have a look whenever I need, without searching in piles of notes and paper. (q1-7/M)
>
> It is very well presented. (q1-8/A)
>
> The layout of the homepage is quite clear. (q1-8/J)
>
> Students are told what to learn and focus before they start to read the notes. (q1-9/D)

Because of the structuring, 93% agreed that WSL 'before class' helped them to understand the subject matter of the class (q1-10). 71% found WSL useful to 'revise the topics later,' e.g. before examination or whenever they wanted to refresh their memories about previous points (q1-11):

> I can check out / further enrich my knowledge about certain topics after presentation. (q1-11/D
>
> The information was well organised. When I want to find the information concerning about the previous lecture, I can get it. (q1-11/J)
>
> I can get the info as I want. There are great varieties for me to choose. (q1-11/L)

It appears here that the major advantage of WSL is the continuous 'virtual' presence of all seminar parts and topics throughout the entire semester. But it is equally important that the homepage clearly states the purpose of each of its sub-chapters. Students should, in other words, know the purported goal of each learning module in advance. They should also know how the individual parts relate to each other. The 'lesson goals' indicated in each module were rated as 'useful' by 93% of the students (q1-12) because they provide such a clear focus (see Figure 4 above). While this is not new pedagogically, it is paramount for WSL to prevent students from 'getting lost in cyberspace':

> Maybe sometimes we can't accomplish these goals, but it gives us a guide to understand the topic. (q1-12/A)
>
> Without lesson goals, students are brought to the endless sea. (q1-12/B)
> I can know what I need to achieve. (q1-12/C
>
> It is good for us to know what we are supposed to learn or study from a certain topic before the lectures. The lesson goals can help us to prepare ourselves better. (q1-12/E)

The homepage provided selected links to related web sites for further study, to obtain background information, or to provide alternative views on the topic in question. All students, in fact, made use of these 'Internet Resources' (q1-14/15). 64% found the links useful (q1-13) - mostly because it saved them time. The difficulty of finding and assessing web material on their own should not be under-estimated, as students' level in the foreign language was still at a lower-intermediate level. Fast browsing/scanning of foreign-language sites is therefore not an easy task:

> The sites linked helped me understand the topics, and it's much better than looking for sites on our own. [Our own search] could be painstaking and without much reward, especially when it comes to German sites. (q1-13/M)

Tellingly, a majority rated original *German-language* sites included in the 'Internet Resources as 'just o.k.' (71%) rather than 'useful' (21%) (q1-15,YrII-2). The extent to which 'independent' and 'autonomous' use of the WWW is possible is clearly related to the level of language acquisition. The lower the level, the higher the guidance or structuring necessary:

> It always have to deal with our standard of German. The sources benefited these students with better German. (q1-15/D)
>
> Sometimes, I cannot understand the German, or I have to spend more time on reading these pages. (q1-15/J)
>
> The sites are a bit difficult to understand, especially as we have great workload already and cannot spend too much time on one subject. (q1-15/N)

A clear majority of students (93%) therefore suggested to tag guided reading comprehension tasks (study questions) onto German-language web sites (q1-15/YrII-3).

WSL is Appreciated Primarily for its Convenience Rather than its Alleged Innovative Potential in Learning/Teaching.

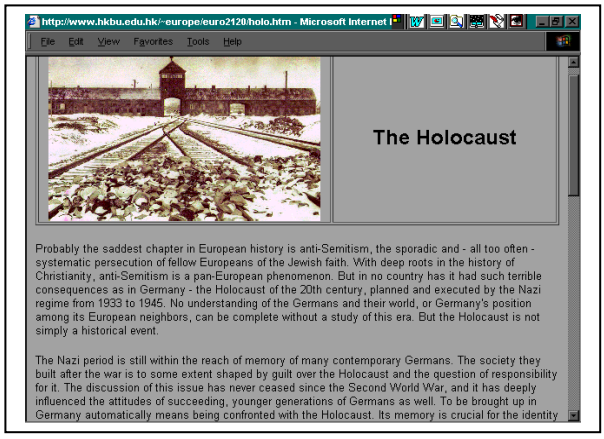
As an interesting side note, we found that 64% would actually welcome having the entire study material for the course transferred to the WWW - i.e. including full-length reading texts not normally available on public web sites (q1-16). The reason was simple convenience or, in the words of one student, 'it will save the time of looking for the books and photocopying' (q1-16/N). The argument of convenient access to a large number of resources shows up again and again in our data. In this respect, WSL compares favorably with conventional, library-based work:

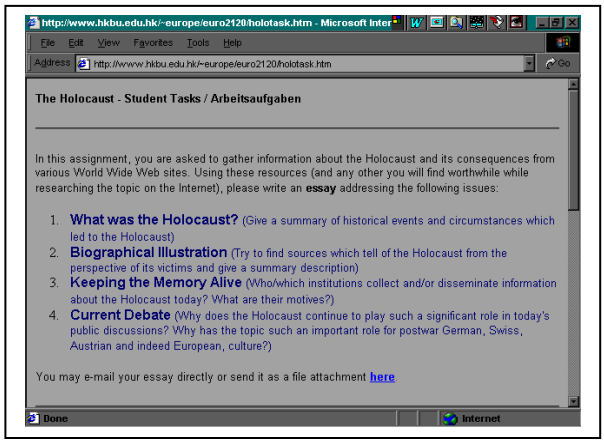
> Very convenient to check the course information. (q0-4/A)
>
> I can have a guide to study, find out information, since I need to prepare a presentation that needs huge amount of internet source and book lists. I think a homepage can give us a more clear and concise information. (q0-4/C)
>
> It [the homepage] contains several links related to the topics and we can do our research online more easily. It can be accessed easily too. (q0-4/E)

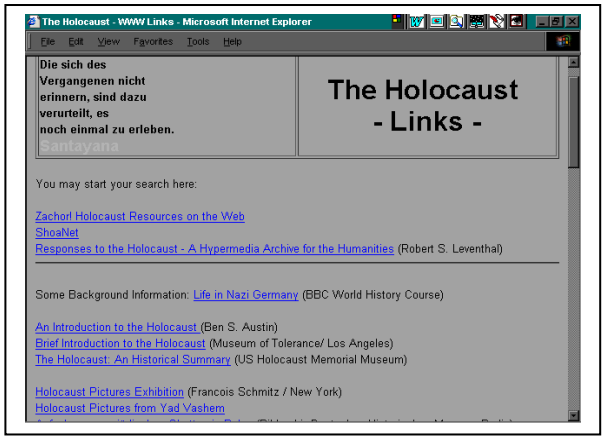
> Time for searching the materials is reduced […]. (q0-4/F)
>
> We can obtain any new information of the course immediately at anytime and anywhere. (q0-4/H)
>
> Informations are highly accessible. (q0-4/K)
>
> The student can easily assess the corresponding relevant information of the course with many options. (q0-4/L)
>
> It is easier to navigate to relevant web resources, and it also facilitates preparation for the lessons at home. (q0-4/N)
>
> I can get more first-hand information, which can hardly be collected in local libraries. (q0-4/L
>
> It is convenient to use the homepage [rather] than having piles of notes. The information in the homepage, esp. the WWW link, is more up-to-date, and the sources is wider. To have a more complete view on German-speaking area's culture, we need sources from all social class or age group. Usually, reference books and journals generally present the view of professionals or elite. (q0-4/M)

The comments reflected the perception of 'effective' WSL as a productivity aid in the UGC definition. For the students, the major WSL advantage was the reduction of both non-intellectual (library research) and intellectual efforts (selection and structuring of information). This is a far cry from the utility value promise usually given by IT enthusiasts (and the UGC).

Figures 8-10: The Holocaust Pages of http://www.hkbu.edu.hk/~europe/euro2120/euro2120.htm







WSL Systems Can Enrich Learning - But They Do Not Necessarily Facilitate 'New' Learning.

The comments do not indicate that students were generally enthusiastic about fully web-based learning. This became obvious when we asked the students to assess specifically the Holocaust segment of the subject, which (in its 1999 revised form) was solely based on the use of electronic resources. In this case, all students had to write an online essay before class. From the lecturers' point of view, this was only a qualified success. Although pre-structured, and guided by online-research questions (Figure 8), about half of the students did not manage well and had difficulties in ordering information in a hierarchical structure of argumentation. As such, this problem is not

WSL specific. WSL, however, compounded the problem because the screen habitually presents only a fragment of texts / arguments, and many students failed to gain an overview of the entire document(s). The ensuing 'papers' clearly show that original text fragments were mostly copied and pasted verbatim into the assignment's text body, whenever they fitted, by simple association of terms. But there was often little regard to their hierarchical position both within the original document and the created text. Abstract or summarising arguments, for example, were not clearly distinguished from (often gruesome) illustrations of arguments. The particular point of view (or bias) of original authors was frequently lost or not reflected at all.

The writing assignment all too clearly highlighted the need to discuss students' WSL. It also illustrates the real issue was not whether WSL in general was beneficial - but rather which typology of cognitive tasks were embodied in it in each specific case. One can use one or a few web sites to highlight a specific point already established elsewhere (e.g. by asking students to collect biographical material to understand the Holocaust victims' plight). Alternatively, the web (without specifying the number of sites to be accessed) can be used to work out a new, broader understanding or conceptualisation (in our case, for example, question 4 - the Holocaust's ongoing significance in German culture). The second task was of a higher cognitive order and could not be fulfilled by simply taking material verbatim from the net. This functional difference was highlighted by Ranson et al (1997) who distinguish a tutorial function, elaborating on already known aspects, from an image function, where the material serves as a starting point for an altogether new exploration of conceptual relationships. In the first case, the relationship is straightforward and linear, and the web site is an enhancement (or enrichment in the UGC definition). In the latter case, there is, on the surface of it, no linear relationship between learning and the WWW material. The availability of material to work on such a question, however, does not automatically trigger 'student-initiated learning'. It may, on the contrary, deter them.

This crucial distinction showed up in students' ambivalent comments about the electronic project, which were significantly different from a general assessment of 'the' effectiveness of 'the' Web for study purposes. While 57% of the group still maintained that electronic projects could be 'easier' or 'more effective' than traditional paper assignments (q1-18-YrII-1), it is worth looking at comments of those students (21%) who found the assignment 'too complicated' or 'irritating'. These comments were a reflection of the specific type of question asked - precisely the kind of 'process-driven', 'web-flexible' learning that is erroneously believed to be fostered automatically by the medium:

> It was difficult to manage so much information about the Holocaust and make good analyse out of them. (q1-18 / D)
>
> It's because we don't know what to write and how and how long to write. (q1-18 / H)
>
> There is too much Internet linkage. I don't know whether I find all the info or not. (q1-18 / J)
>
> I think it's more convenient to add information, pictures and graph & to make the paper look better [sic!] and more contentful. But at the same time we might concentrate more on the method of presenting than the analytical approach. (q1-13 / M)

The medium, in short, did little to stimulate new learning in these students. The problem was compounded because web sources have no 'guaranteed reliability'. Unlike lectures and conventional library books, students instinctively mistrust them. The necessary assessment of the electronic material's 'trustworthiness' was a step few students were willing to take or were capable of taking. 86% of our students therefore agreed that such an assignment was appropriate to gain a first overview over the topic (q1-18-YrII-2) - but that they would rather prefer to be presented with critical assessments by a third party, i.e. 'books' and 'teachers':

> Books give me the impression that they are more well-structured & more serious. (q1-18/A
> I always prefer to have some explanations by the teachers first, in order to have a better understanding of the topics and also know the expectations and requirements of the teachers. (q1-18/D)
>
> Internet sources are sometimes unreliable, and contain biased information. (q1-18/M)

Rather than welcoming the WSL potential for 'independent learning', some students were rather critical of such claims:

(Q1-18-YrII-3) It is said that Internet-based forms of studying give students more room to become 'independent learners'. Having done the Holocaust assignment, would you

Agree	Partly agree	Disagree
43%	43%	14%

(Q1-18-YrII-4) It is said that Internet-based forms of learning stimulate students' critical thinking. Having done the Holocaust assignment, would you

Agree	Partly agree	Disagree
29%	64%	7%

Opinions here clearly oscillated between the sceptic and the positive - which may also reflect the established difference between 'surface' and 'deep learners' in the Hong Kong context (cf. Watkins, & Biggs, 1996). The diversity of arguments, however, clearly indicates that the medium itself is not the decisive factor in improving learning (and certainly not for all students across the board):

> It [the Internet] does no great help. I think they [forms of WSL] are not relevant. (q1-18/C)
>
> It's more accurate to say that stimulate student's critical thinking after the homework is correctly [done]. (q1-18/D)
>
> One can have critical thinking even without the Internet. (q1-18/K)
>
> Advantage: Because information are piecemeal, we have to form/organise the argument/framework ourself. Disadvantage: When we don't have any knowledge in the subject, [it is] difficult to formulate a framework. (q1-18/A
>
> Students can chose whether to read more and use more materials or not. If they want to get a better result, they should find more resources to support his/her idea. Everything is not required by the teacher. (q1-18/C)
>
> I have really more chances to decide which material is relevant, and I learn more through this process. But sometimes, I haven't got the information, which the others have. I think that is a little unfair. Maybe I will get lose in the abundant Internet information. (q1-18/J)
> Students are encouraged to look up and look at information on their own. Also, there isn't an authoritative figure like a teacher in front of them. So it is easier to find their own focus and formulate their opinion. (q1-18/N

Curriculum Adequacy

If students reacted negatively to the WSL system used, the reason might well lie in the fact that the material and tasks embodied in it are not clearly related to their 'normal' studies. This was, for example, the case when (in an earlier project) we investigated the use of language learning software in our course (Hess, 1998). For the purpose of this project, we therefore needed student confirmation that the WSL material was indeed closely tuned in to the syllabus of the subject, and that the subject itself was seen as meaningful within the overall study context. This was indeed the case. 93% stated that the seminar (and, by implication, the WSL system on which it was largely based) helped to achieve a better and more systematic understanding of the German-speaking world (q4-1). It met the expectations of 71% (q4-2) and was considered sufficiently up-to-date by 79% (q4-4). Students believed that without WSL, this would have been impossible (79%, q4-5). Apart from occasional criticism that Austria and Switzerland were not sufficiently covered, students had no further topic suggestions for the class (q4-3). One can therefore safely assume that students' comments in this report are (internally) valid, i.e. indeed refer to WSL (rather than a general criticism of the subject).

Conclusion: WSL and the Workload Factor

The project demonstrated unambiguously that WSL can be rewarding for both students and staff, and goes a long way in raising the quality of learning. But there were also telling reservations about precisely those of its aspects which aimed towards the transformation of 'linear mindsets' into 'web-flexible thinking'. It may well be that such 'new learning' is, as yet, simply an unfamiliar experience. This was, after all, the first subject these students attended which did not rely on the traditional lecture format. Despite the above criticism, a large majority (71%) would welcome similar WSL opportunities in other course subjects as well (q1-20). Nearly one third (29%), however, indicated categorically that 'one seminar of this kind is all I can manage'.

One of the major differences between subjects as habitually taught in Hong Kong and web-supported subjects is, indeed, the time factor. Lectures do not require students to be actively involved over an extended period of time, and students openly admit that they do not do the required reading on a regular basis. They may even take turns in taking lecture notes - which, at the end of the semester, are exchanged and reviewed for final examinations. A seminar with active discussions, however, requires constant attention throughout the semester. Similarly, WSL without the opportunity to discuss its results in class (whatever the individual student has drawn out of it), seems pointless. If WSL is to 'enhance' or 'enrich' learning in the university, it necessarily demands a time investment equal to, if not greater than, other, non-WSL class preparation (reading, preparation of presentations, etc.), since the character of web materials is quite different from academic print literature. This time investment grows even further once a switch from tutorial to image function is intended - as does the need to discuss the WSL outcome. This is not inherently WSL-specific. But whoever propagates the 'new learning' qualities inherent in IT usage needs to bear in mind that the present institutionalised system of learning in Hong Kong does not encourage such activities. It is not surprising that student criticism becomes relatively stronger exactly at the point when cognitive activities called for become more complex.

In this context, it is rather irrelevant whether or not WSL (or IT in general) 'promotes discussion and communication' via e-mail (i.e. in new 'virtual communities'), as Muppala and Ha (1998) have asked for. That discussion needs to be led face-to-face between students and teachers, anyway. Nor would it be possible to induce 'student-initiated learning', as the UGC wishes for, unless students are given more time / space (and acknowledgement) for explorative, independent activities. WSL, as we have seen, can stimulate students - but to be 'effective' it requires more, not less, staff time for 'quality discussion'. It also requires more student effort. It is academically

not satisfactory to transfer 'communication' entirely online. Besides e-mailing lecturers (which was done only by a few, supposedly courageous students anyway), Muppala and Ha, for example, suggested automated online quizzes for self-assessment. These, however, can at best serve tutorial revisions, but they can certainly not replace a thorough discussion of student-initiated, individual images (newly formed conceptualisations). Tellingly, Muppala and Ha's quizzes were mostly used immediately before examinations - a clear indicator that their WSL system did not stimulate critical, innovative thinking.

Because of the increased demands on academic discourse, it is perhaps unrealistic to expect WSL to become a regular feature of university subjects in Hong Kong - not least because the number of students catered for per subject often serves as an indicator for the 'efficiency' of the academic system. It is perfectly possible, as Hong Kong's UGC 1996 Report on Higher Education seems to suggest, to increase 'efficiency' by having more students work on standardised online (off-campus) study modules (UGC, 1996:26.12). But at least in the social sciences, it would be erroneous to believe the technology would then 'facilitate new learning' for large numbers of students. Students would become 'active' learners (ibid:26.13) only if there were a parallel increase in quality contact time between staff and students. That, in turn, could happen only if staff-student ratios were kept favourable and the number of obligatory subjects per semester was significantly reduced.

A final word of caution is also warranted about the UGC's claim that 'technology will relieve staff of some of the drudgery associated with (repetitive) teaching' (UGC 1996:26.14). To stay in the metaphor we used in the first chapter: that again amounts to the expectation of the cart pulling the horse. We can confirm that our WSL system significantly 'enabled more satisfying class discussion among better prepared students' (ibid.). But the construction of a WSL system such as we have presented here, is an enormously time-consuming endeavor, and this cart needs constant maintenance and periodic upgrading. WSL, therefore, does not only increase students' workload per subject. It also places significantly more demands on teachers - and that is a price that not everyone may be willing to pay.

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