CHAPTER 2

LITERATURE REVIEW
Peraton (1981: 13) remarked that over twenty years ago, “distance education has managed very well without any theory”. The same can be said today of e-Learning, though whether or not it has ‘managed very well’ may not be so accurate. Still, the incredible weight of published articles, institutional investment in practice and uptake of Web-based education tools in the past decade testifies that e-Learning practice has achieved a momentum that will make it a central part of future education.

Arthit Daengpuangpaiboon (2000: A6) believed that the most effective teaching is the student-centered learning theory. The child is guided by the natural learning power enabling every child to learn effectively, whenever satisfaction and interest are generated, persistence will follow. Once a goal is set in the child's mind, they will do their best. Parents then need only provide advice on how to learn in the most appropriate way. These processes will have a profound effect upon the child's potential and their development greatly.

Home School education is an alternative education system available among a variety of methods offered during the reform period. Arthit chose the Home School system as a strong possibility in their attempt to provide a happy educational life for their children. However, this would not be necessary if children were happy at school, where they can enjoy the school curriculum and company of fellow students. During the changeover period, some schools are undergoing reformation of which prospects are good; still, it is only a faint light at the tunnel's end. The Education Act has thus opened up
a whole variety of alternative opportunities for parents and children who are unhappy with the present established school system and the Home School system serves as a reasonable example of these. He said the basic requirement needed by all parents is not a string of higher education certificates, but the capacity for love, empathy and the ability to provide a natural warmth for the child, all of which are tangible. The next factor is looking up academic contents and the insight of how to organize an educational curriculum for the children.

Training Magazine (2000) said in their annual industry report, some of their latest findings in October of the year 2000, include:

- 80 percent of all training is delivered by live instructors, but sometimes the instructor isn’t in the room with the students (e.g. teleconference, videoconference - which would be considered e-Learning).
- 40 percent of all employer-sponsored training in the United States today is devoted to teaching computer skills.
- 13 percent of all courses are delivered via computer-based training with no instructor in the picture.
- Of computer based training, 19 percent is delivered by the internet.

Ravenscroft (2001: 150) remarks that “given that the pace of change of educational technology is unlikely to slow down, the need for relatively more stable and theoretically founded interaction models is becoming increasingly important.” The more debate that
can take place about e-Learning theory, the more prepared practitioners will be as the continuous winds of technology development blow and as institutional, political and social seasons change.

George Siemens (2002) commented that e-Learning is the marriage of technology and education, and most often, the instructional designer's greatest role is that of "bridging" concepts between the two worlds. This vital role ensures that a subject matter expert's (SME) concepts are properly developed by graphic designers and programmers. Unfortunately, the role of instructional design (ID) in e-Learning is often misunderstood - due to the perceived complexity of the process and to poor understanding of the pedagogical requirements of e-Learning. To a large degree, ID is the process whereby learning, not technology, is kept at the center of e-Learning development.

Instructional design, very loosely defined, is a system or process of organizing learning resources to ensure learners achieve established learning outcomes. As such, it is essentially a framework for learning. From a designers perspective, various models can be followed in the instructional design process. It is important to note that, at best, a model is a representation of actual occurrences and, as such, should be utilized only to the extent that it is manageable for the particular situation or task. Put another way, perhaps one model is more effective for designing a math course, and another model is more effective for designing soft skill courses (like managing people, customer service, etc.).
With a foundation of what instructional design is, and various models for implementation, we will now focus on the WHY of ID in e-Learning. Many classroom activities don't leave a "trail" that can be viewed by others (at least not directly - successes of graduates of a program can be evaluated and the relevance of courses assessed). Online learning is far more transparent. Classroom discussion is generally not archived (though certain lectures can be taped and shown to students)...whereas every aspect of e-Learning is transparent and can be used as a resources for subsequent courses.

Content, discussions, interactions, etc. can all be evaluated and reviewed by persons other than the instructor. As such, quality can be assessed more objectively in e-Learning. ID is a quality process. It seeks to ensure that critical concepts are explored through content presentation and learning activities.

Beyond quality and transparency issues, the greatest value ID offers is to students of online programs. The greatest objective of ID is to serve the learning needs and success of students through effective presentation of content and fostering of interaction.

Steve Bishop (www.elearningmagic.com) commented that by the term "e-Learning" refers to a very broad range of educational opportunities within the electronic world, from "live" chat classrooms online to self-paced study through a website or CD Rom, to courses delivered via email. The various delivery methods serve different purposes for the learner, and learners may do better using a particular method over another. For example, someone who has a high level of self-discipline, coupled with a strong desire to learn
may do well in a self-paced study program. Other learners may do better with live interaction through chat groups, message boards, or regular instructor communication to maintain motivation and provide a "real world" feel to e-Learning. With the advancement of technology and increasing availability of high-speed Internet access, it is now possible to earn a degree entirely online or for businesses to provide company-wide training through e-Learning.

(Hunter Stone, USA) a provider of e-Learning and IT tools for Microsoft environments, has introduced Thesis 2.0, an e-Learning application designed to create and deploy Shareable Content Object Reference Model (SCORM) conformant learning content. With an interface design that integrates into Microsoft Office for Word and PowerPoint and manages Microsoft Producer for Microsoft Office PowerPoint 2003 data, content creators can produce media-rich Web-based learning modules and training presentations without knowledge of the underlying rules of SCORM.

With Thesis content data certified as SCORM 1.2 conformant by the Advanced Distributed Learning (ADL) Co-Labs, Thesis is a tool for corporate, education, and government agencies seeking to create e-Learning objects that can be accessed and reused across any SCORM conformant learning management system. Thesis is intended to leverage the familiar Microsoft Office and Producer 2003 tools and reduce the need for custom content development in an effort to serve as an alternative to other content authoring packages.
Mark Nichols (2003) wrote that "e-Learning tools are best made to operate within a carefully selected and optimally integrated course design model," which again left out any sort of open-ended and undersigned learning. Finally, he proposed that "The overall aim of education, that is, the development of the learner in the context of a predetermined curriculum or set of learning objectives, does not change when e-Learning is applied." This got both the overall aim of education wrong, and understates the impact of technology.

Dochy Filip's (2005) literature and research review on students' approaches reveal that the learning approach has a strong relation to the student's assessment perception as well as assessment scores. But the research results do not confirm the relation of a deep learning approach to higher achievement. Students' deep learning approaches are not significantly positively related to academic achievement, students' surface approaches are not necessarily significantly related to assessment scores.

Boon Jo and groups (2005) reported that the results of the evaluation process for the four reports were very similar. All reports had high scores in the 'author and authority' dimension. The dimension 'objectivity' was scored very low. While the reports used persuasive and quite enthusiastic language to predict e-Learning's bright future, they did not pay substantial attention to possible barriers that might have negative effects on the future of e-Learning. Very low scores were observed for the dimension 'accuracy of research and data collection'. The studies were hardly reproducible
by other researchers, as the conceptual framework, data used and the methodology were not made transparent.

Hasanbegovic, Jasmina (2006) reported that in order to shed some light on the future diffusion and exploitation of e-Learning, trend-watching studies are conducted which focus especially on the consequences of e-Learning developments for future HRD practice, investments or policy. The results are cited by authors around the world almost uncritically. This article tries to look behind the scenes and discusses the role, influence and quality of trend-watching reports in the field of e-Learning. A checklist was developed to evaluate the quality of current trend studies.

First, the authors present developments in the e-Learning market which are very complex and non-transparent and therefore demand predictive trend studies that give an overview of providers, target groups and possible eLearning solutions.

Second, the authors discuss the topic of sound trend watching research. They explain the methodical and technical constraints of disruptive technologies which complicate predictions and are exacerbated by market instabilities. Then they present several types of forecasting methods, their advantages and their choice of use.

Third, the construction process of the checklist is described, the quality criteria themselves are presented and their application explained. Next, the results of the conducted evaluation of four selected trend studies are presented. The authors explain the very low scores for the dimension "objectivity" by the fact that the reports used persuasive and quite optimistic language to predict eLearning
future and did not pay any attention to negative effects or possible barriers. Moreover, the mostly quasi-scientific reports showed very low scores for the dimension "accuracy of research and data collection."

Dalsgaard, Christian (2006) said the concept of social software is defined with regard to the educational setting. It comprises networked applications which encourage people to learn together. Examples for such tools are blogs, RSS-software, social bookmarking tools, and wikis. However, in order to actually use these applications for learning, a certain organization of social software seems to be required. In order to integrate social software into current perceptions of learning, the author refers to the pedagogical approach of social constructivism which conceives learning as a problem-based, self-directed and collaborative process. Thus, the individual is responsible for his or her own learning, while resources or tools have the potential to support this process. However, these tools should not pre-determine learners' activities which leads to the necessity of creating an open-ended learning environment. Social software applications might be able to provide such a learning environment. With social software, learning processes such as knowledge construction, presentation, communication and collaboration can be supported. At the same time, learners retain the responsibility for their own learning.

Phil McBride, the NUFC Learning Centre Manager (2006), recognised that the powerful draw of the football club could be harnessed to help learning. Phil was keen to ensure that all learning
was delivered electronically, meaning that pupils did not have to bring anything with them. Three hundred young learners each week now extend their learning in a completely paperless environment.

Following the Centre's success with schoolchildren, demand arose to provide similar access to learning for adults. The successful formula that worked for younger learners was used to attract adults who would not attend traditional educational institutions.

In order to develop sustainable adult and family learning, the Centre's management realised that additional funding streams would be required. Partnerships with the main lifelong learning institutions, Newcastle College, University of Northumbria and Newcastle University, were formed to help provide this funding. The challenge was to create an informal, relaxed, welcoming and inclusive atmosphere in which adults and families could learn, using resources provided through e-Learning. The new centre was located inside the main stand at the football ground in order to provide an exciting, informal and attractive environment.

Working with their partner organisations, a range of e-Learning opportunities have been developed to initiate and sustain individual adult and family learning. The Centre now offers a wide variety of ICT courses, including both informal and accredited courses. Informal courses are run in topics such as basic use of a PC, digital photography, using email and the internet. Accredited courses on offer include New CLAIT, CLAIT Plus and the European Computer Driving License, in addition to the full range of learnerdirect courses.
All adult courses are offered on a drop-in basis in three hour slots throughout each week. As part of the process of encouragement, the Centre Manager personally meets every learner as they first arrive at the Centre in order to put them at ease. There are no formal or set teaching sessions - instead adult learners are encouraged to select activities from the extensive range of learning programmes on offer.

The e-Learning is delivered using a mixture of online materials, including both commercially produced materials and those that have been devised in-house. The aim is to empower learners by adopting a user-centered approach to e-Learning. Online materials used include interactive tutorials in basic skills in which learner actions influence the outcomes. Other materials are learning objects in a variety of subjects with learning contextualised around a focused activity to achieve a set outcome. In addition, a range of simulation packages are available which allow learners to apply knowledge in a meaningful context.

In the more formal courses such as ECDL, online activities are supported by booklets that have been created in-house, which learners work through at their own pace. Although there are no formal taught sessions, a team of 40 tutors are available throughout each week for learners to call upon to support individual learning.

While adult learners are completely free to pick and choose their own learning programmes, many choose to move on to accredited programmes once they have used the Centre for a substantial period of time. Progression is offered through the partnership organisations to further and higher education.
Adult learners who wish to move on to higher education, but lack the necessary study skills, are helped to develop a 'toolbox' of study skills based around the use of e-Learning.

The researcher concluded that the effect of the surveyed trend reports is rather the setting a required system than watching of trends. Thus the practitioners should focus on the quality of trend studies in the domain of e-Learning. In spite of some limitations of the article, such as the limited number of tested trend studies and intransparent derivation of quality criteria, the checklist presented in the article provides a useful conceptual framework to evaluate the quality of trend studies. Even if the e-Learning trend reports of the recent years are much more sounded than in earlier years the constraints of predictions and still valid. Most of the reports rather set trends than to watch them. They advise readers to be more critical of the quality of trend studies in the domain of e-Learning and to demand sound methodology.

In fact, different organizations and institutions offer often very expensive trend reports without describing the author and authority, research methods and data collection, but which are then anticipated uncritically and cited by many researchers, which are interested or engaged in the diffusion research of educational technology which use new methods for this research (e.g. network analysis) and which especially unfold their methods, data collection and results. In summary, this clear and sound article opens the e-Learning community's eyes to reflect on and question results of trend reports.
The researcher proposes an approach to e-Learning which uses an learning management system (LMS) for administrative purposes only, adds social software tools for personal use and above all for social networking. The usage of a blog could be an example for personal use. In order to support exchange and net-working among learners, collaborative tools such as file sharing could be used. Even though the learning process is not to be structured, support is still needed to avoid that students feel lost facing the vast amount of resources available on the internet.

The Office of the National Education Commission (ONEC), (2006), as Thailand's national education policy organization, has conducted research on Thai knowledge in order to revitalize and return it to our educational system.

In retrospect, there are three main reasons why Thai indigenous knowledge has faded away from our Thai way of life. First, it was the system of education that we adopted from the West, which focuses on modern knowledge, such as mathematics, sciences, etc. Along with the system is the professional teachers, who have also been trained by the modern system of teacher training. Second, it was the lack of research and development in the field of indigenous knowledge. Most of the research both in educational and research institutes is conducted in the field of modern science. Third, the status of indigenous knowledge specialists was not recognized when compared to modern knowledge educators.

ONEC has proposed to the government the national policy on Thai knowledge, establishment of the organization in charge,
establishment of the Thai knowledge learning centers, remuneration
for Thai knowledge teachers, and the government’s commitment to
support the operation of the learning centers.

Our research-based policy was accepted by the cabinet, allowing the implementation of the policy through the main
strategies as follows:-

**Strategy 1** Establishment of Thai Knowledge Council, which consists of Thai knowledge specialists, who will decide over the matters relating to a curriculum, instruction, and promotion of Thai knowledge.

**Strategy 2** Establishment of the National Research Institute for Thai Knowledge and Education, which will promote the research on Thai knowledge.

**Strategy 3** Establishment of Thai Knowledge Fund to provide support for the research, education and teachers of Thai knowledge.

**Strategy 4** Promotion of Teaching and Learning Thai Knowledge in the three systems of education: formal, non-formal, and informal.

**Strategy 5** Honoring and Rewarding Thai Knowledge teachers, who have developed their expertise through informal education or self-learning, so that they will be recognized at the same level as certified school teachers. They will be encouraged to set up their own learning centers to transmit their Thai Knowledge to the young generation in the community.
**Strategy 6** Formation of the Thai Knowledge Information Network System to collect and disseminate information on Thai knowledge. The network will also be a channel that Thai knowledge learning centers can communicate and exchange information through the internet system.

Realizing that there exist in the community experts of Thai knowledge who have already operated their own learning centers, the National Education Commission has searched, selected, honored and promoted 30 local knowledge experts to be honored as the so-called "Thai Knowledge Teachers." They are representatives of diversified areas of local knowledge. These teachers must have accumulated their knowledge and skills for many years and been recognized for their contribution to the transmission of local knowledge to the communities. After being selected, they are required to organize a program of teaching Thai knowledge to young people and receive financial support accordingly.

Thai knowledge learning can be categorized in three types: Thai knowledge Learning Unit where an individual knowledge
teacher operates his or her own learning center; Mobile Thai knowledge Learning Unit where the teachers will move from place to place; and Thai knowledge Learning Center where Thai knowledge teachers of various fields will take turn teaching at these rather large-scale centers.

The Office of Basic Education Commission (OBEC), (2006) organized the pilot trial from July to September 2005 and selected two schools in Bangkok and schools in three provinces, Nonthaburi, Khon Kaen and Uthai Thani, introduce eLearning to support the mathematics curriculum in five schools. The e-Learning materials were used by the Thai Mathayom 2 students aged 12-14 years for the first semester in 2005. The paper highlights the readiness of the schools’ administrators, teachers, technicians and students to accept the new technology and provides lessons learned to help to understand the key issues involved.

OBEC said The Ministry of Education (MOE) has a policy to expand utilizing ICT in all schools and a plan to implement the policy, which involves four major activities :-

- Allocate 250,000 desktop computers to equip all schools to reach at least a computer to student ratio of 1:20, and provide Internet connection for all schools.

- Develop content according to the curriculum and extend it for students’ use which includes purchasing some advanced content, especially for English language study.

- Expand web portals to facilitate access of e-Learning content by students and teachers.
• Train teachers in pedagogy to utilize ICT and the integration of ICT in teaching and learning. All activities are planned to be completed by the end of 2006.

The schools administrators working on the advice of the OBEC officers determined the number of classes to join the pilot trial.

There are 71 English programme (EP) schools in Thailand, which mostly have two groups of students in each class and normally have smaller class sizes than the non-EP schools. In four of the five participating schools, English programmes were operational and in these schools classes were selected to include students who were being taught in English and students who were being taught in Thai.

A total of 451 students participated in the pilot trial. Of these, 187 were studying in English programmes and 264 were studying in Thai programmes. The average size of the classes was 31 students per class for the English programmes, and 44 students per class for the Thai programmes.

The students accessed the e-Learning content for 1 hour per week in three of the schools and for 2 hours per week in two of the schools. The students worked in the classrooms under the supervision of their teachers, who guided the students to the content to be studied during each one-hour lesson period. The pilot trial was therefore a precursor to e-Learning when the students would study on their own and at their own pace.

OBEC officers arranged to visit each of the schools during the pilot trial to monitor the progress and to have discussions with the schools’ administration, heads of departments and teachers and to
observe the students in the classrooms. In all schools except one, each student accessed the content on a dedicated computer. In the other school two students shared one computer.

It was observed that the students were able to navigate around the content well and generally the contents, technology and methods of presentation were in accordance with the needs of the students and the teachers, useful for the teaching procedures and interesting and suitable to support the curriculum. The students were attentive and absorbed by the content and the students gained more understanding of the content and knowledge of the subjects covered.

The schools were able to access the Internet without difficulty. Most schools had at least 2 Mb/s access to the Internet although some schools outside Bangkok experienced some delays accessing the Internet especially during the morning periods. The schools publicized the pilot trial with banners and signs near to the classrooms where the e-Learning was taking place and some schools made a point of announcing the pilot trial to the parents.

The Internet capacity should be increased in schools and the e-Learning timetable should in the meantime allocate the lessons to be when the network is not heavily used or congested. The directors and senior administrators at the schools play a very important role and where they are enthusiastic for the new procedures and new technology this has a critical impact on the head teachers and teaching staff involved in the e-Learning programmes. This interest is noted by the students as well, especially where banners publicize and promote the e-Learning programmes. Some of the directors of the schools said that they would ensure that more capacity building
opportunities for teachers in e-Learning would be provided through appropriate training and that network capacity would be added to provide faster and more reliable Internet access. It was suggested that knowledge networks could be created among the schools adopting e-Learning so that experiences could be shared.

The motivation of the teachers towards the new technology is very important. Some teachers even at the prestigious schools selected for the pilot trial had not used e-mail before. Some teachers do not have a computer at home and need support to understand how to navigate around a web site and plan and prepare for the e-Learning lessons.

The mathematics content should include sufficient explanation to illustrate the principles of each topic in the curriculum. Where the concept is difficult for the students to comprehend more worked examples should be given and these should use colour and animation to emphasise each step in the logical process. Students like the moving objects and the colourful representations. It is worth noting that several students who previously had found mathematics boring or difficult were starting to take a real interest in the subject.

Although a comprehensive training programme was organized to train the teachers in the use and value of the LMS features before the e-Learning commenced in the schools, not all the teachers who attended the training were actually engaged on the e-Learning programme. Teachers who did not attend the training received additional training at their schools. Some teachers needed to
receive assistance in signing-up for an e-mail account but soon became confident.

In general, the students in the English programmes made faster progress than the students in the Thai classes. This is because there are smaller numbers of students in a class, they have greater computer literacy, they appear to adapt to the e-Learning because it seems natural for them and they can use their competence in English to help them to quickly understand mathematical terms in English.

In Thailand there are only 71 schools running English programmes and while this number is increasing every year the needs of the students attending the Thai programmes have to be addressed by making the content available in Thai.

As might be expected, there is a lot of debate concerning the use of e-Learning for students younger than middle school. Opponents of e-Learning claim that students who are younger than 12 do not have the necessary cognitive abilities to learn via a strict e-Learning environment. Opponents are also concerned about the social development of young students and claim that young students in an e-Learning environment will fail to develop appropriate social skills.

An emerging solution is what we call blended learning. In a blended learning environment, students do part of their instruction online, supplemented with face-to-face interaction in the traditional classroom environment. Curriculum designed within the blended learning environment hopes to incorporate strengths of both e-Learning and the traditional classroom to assist student learning.
Nordic (2006) Many Nordic schools work with differentiation in general, for example using Dunn’s different learning styles or Howard Gardner’s many intelligences as a point of departure. Some children learn better by listening, other by viewing pictures and processes or by reading. These theories acknowledge that pupils learn in different ways and recommend that different learning styles be supported. ICT has the potential to reinforce these theories in practice as ICT in itself offers the possibility to communicate content in many different ways and to challenge pupils at different levels. By planning and carrying out teaching where pupils work individually or together using ICT, the teacher is given a great tool to differentiate the learning processes for all pupils in ways that meet their special learning styles and needs. The results of this study show that pupils, teachers and parents assess that the use of ICT has a positive impact on the school’s overall target – improving the pupil’s learning. For instance, the results show that ICT has a positive impact on basic skills such as reading and writing as well as basic calculation skills. The study furthermore indicate that the assessed impact is slightly higher for boys than for girls. Focus has often been primarily in relation to enhancing and supporting the academically weak pupils’ learning processes, but ICT can also be used as a valuable tool to challenge stronger pupils as well. This study shows that ICT is an important tool for differentiating pupils’ learning processes, both for academically strong and weak pupils and thereby improving their individual learning.

The pupils themselves are a bit more critical than the adults. In Finland, Sweden and Denmark, there are two large and equalized
groups of which one assesses that they learn more when they use ICT, while the other assesses that ICT has no impact on their learning (i.e. they assess that they learn neither more nor less with ICT). However, in Norway, the pupils experience a more positive impact on their learning. In Norway, the majority experience that they learn more when using ICT.

Learning basic skills such as reading and writing is another area where a positive impact of ICT is experienced :-

- ICT is seen by teachers to be a valuable tool to support differentiation. The use of ICT to support differentiation also has a positive impact; this study shows that the majority of teachers have experienced that ICT has a positive impact on both academically strong and academically weak pupils.

- Avoiding exclusion is still an issue with the use of ICT in schools. The study indicates that girls, as well as pupils with other native languages, are more dependent on learning ICT at school.

- According to pupils they generally use the computer more outside school than in school, but there are differences in what types of ICT competences they learn each place. Standard office programmes are learned in school, the rest outside school.

The results from this study show that the respondents assess that ICT has a positive impact on pupil performance and the study indicate that the more ICT is used, the greater the impact. The study also indicates that schools where management systematically follows up on the use of ICT are the schools where the greatest impact is experienced.
The study shows that ICT is a valuable tool for improving basic skills such as reading, writing and calculation. Furthermore ICT provides teachers with the possibility of differentiating their teaching because pupils can work at their own pace, in accordance with their preferred learning styles and with different subjects when at the same time teachers can provide each of them with personal support and feedback. However, this potential could be used better.

ICT is a strong tool when it comes to motivating pupils to learn, to giving them confidence in their own capabilities and to enhancing their learning. This study shows that ICT is assessed to have a positive impact on pupil performance in basic skills such as writing, reading and calculation skills, especially in the 5th and 8th grades. The impact can be seen among both the academically weak and the academically strong pupils while at the same time teachers assess that the use of ICT does not increase the differences between these groups. Furthermore the study indicate that ICT improves pupils’ skills the more ICT is used, the more different types of ICT that are used and the more varied pedagogical methods that are used.

The learning of basic skills such as reading and writing is another area where a positive impact can be observed. The study shows that teachers assess that there is a positive impact on basic reading and writing skills. Writing skills display the most significant results as 60% of the teachers reported that they experience a moderate or high degree of positive impact. The impact of ICT on the basic calculation skills is more limited in Sweden, Norway, and Denmark. But in Finland teachers actually see a greater impact from use of ICT for basic calculation skills than for basic reading skills.
According to pupils and teachers at Greve Gymnasium (a secondary school in Denmark), ICT supports a more varied learning situation. The teachers experience that the easy integration of pictures, illustrations and simulations in e.g. Power Points makes it possible to present a topic in many different ways, which again promotes better understanding. Also the internet makes possible the presentation of a theme in a more varied way. A pupil who had problems understanding a particularly difficult theme in biology chose to surf the internet where he found material that explained the subject. By using more media – pictures, illustrations, and simulations – he was finally able to achieve a strong understanding of the theme. He did not believe he would have understood it without.

The use of ICT to ensure differentiation has an impact. Teachers have been asked to assess to what extent the use of ICT in their own teaching has influenced the performance of the academically strong and the academically weak pupils. The results show that more than 60% of the teachers find that there is a positive impact on both groups and hardly any (1-3%) find that there is a negative impact on the two groups. Neither do the teachers assess that the differences between the academically strong and weak pupils are being increased with the use of ICT.

As delegates to the www2006 symposium prepare to meet in the capital, keynote speakers reveal why e-Learning is vital to future prosperity. The school of tomorrow will not be at the end of your street. It will be everywhere, and getting there will only take a click of a mouse. In this vision of the future, every school will have a web
portal where the pupils, parents and teaching staff will have the opportunity to interact and share information. In this virtual space, lessons will be beamed direct to anyone who wants to attend, while all the teaching materials required can be downloaded in a trice.

Academe Learning Solution said we have one of the best e-Learning development teams in the UK and we have developed bespoke e-Learning programmes for some of the world's leading organisations in both the private and public sectors.

We believe that e-Learning should be interactive, engaging and accessible and should accommodate a range of different learning styles. Our expertise in experiential and blending learning enables us to design either fully integrated or standalone e-Learning solutions, according to your needs.

Academe is a leader in the development of collaborative learning environments and we can supplement your e-Learning solution with a range of online coaching and collaboration options to help your learners get the most from their learning experience. In addition to fully bespoke e-Learning solutions, we are also able to customise our generic e-Learning products to meet your needs. You can take a look at our full range of off-the-shelf courseware in the Academe Shop.

Bruce (2006) As delegates to the www2006 symposium prepare to meet in the capital, keynote speakers reveal why e-Learning is vital to future prosperity. The school of tomorrow will not be at the end of your street. It will be everywhere, and getting there will only take a click of a mouse. In this vision of the future,
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Brahm, Taiga (2007) This research focuses on social software and its impact on learning management systems. Although universities across the world have implemented learning management systems (LMS) by now, the author argues that it is necessary to move beyond LMS in order to effectively use the internet as a teaching tool, especially within the framework of social constructivist pedagogy.

First, the concept of social software is defined with regard to the educational setting. It comprises networked applications which encourage people to learn together. Examples for such tools are blogs, RSS-software, social bookmarking tools, and wikis. However, in order to actually use these applications for learning, a certain organization of social software seems to be required. In order to integrate social software into current perceptions of learning, the author refers to the pedagogical approach of social constructivism which conceives learning as a problem-based, self-directed and collaborative process. Thus, the individual is responsible for his or her own learning, while resources or tools have the potential to support this process. However, these tools should not pre-determine learners' activity which leads to the necessity of creating an open-ended learning environment. Social software applications might be
able to provide such a learning environment. With social software, learning processes such as knowledge construction, presentation, communication and collaboration can be supported. At the same time, learners retain the responsibility for their own learning.

The author proposes an approach to e-Learning which uses an LMS for administrative purposes only, adds social software tools for personal use and above all for social networking. The usage of a blog or a wiki as an e-portfolio could be an example for personal use. In order to support exchange and net-working among learners, collaborative tools such as wikis or file sharing could be used. Even though the learning process is not to be structured, support is still needed to avoid that students feel lost facing the vast amount of resources available on the internet.

In conclusion, it is not necessary to use an expensive LMS for online collaboration; "small pieces loosely joined" could provide an adequate learning solution as well. In fact, social software might provide a starting point for the personalization and individualization of learning.

The author provides a good introduction to the potential of social software as tools for learning including examples on how to use the different applications. The article falls short of solving the problem between self-direction of the learning process (implying that no structure should be imposed on the learners) and the necessity of supporting students by scaffolding the learning process.

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