Themata 3
E-learning Archaeology, Theory and Practice

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Review on e-archaeology, the e-learning application on archaeological heritage management in contemporary Europe

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Introduction

One of the target groups for the e-learning application 'Archaeological heritage in contemporary Europe' is defined as 'professionals employed in local branches of heritage sector in participating countries'. As a participant of this group, I had the opportunity to take part in a test of the application which is the result of a project in the life-long learning programme that is co-funded by the European Commission (Leonardo 11). The project was carried out by a team of lecturers from six European countries (see www.e-archaeology.org).

The test consisted of going through the entire course, within the time frame that will be applied when the course is taken in real life. It was a very enjoyable experience that not only gave me new insights and information on various heritage management issues, but it yielded some thoughts on additions too. As it turned out to be a valuable tool, I would like to share this experience through this review, in which the application's content, educational functionality, appearance and value will be discussed.

Test objectives

The test implied that from the beginning of February until June 2009 fifteen lessons (modules) would be taken at the e-archaeology website (www.e-archaeology.org). This was preceded by a short introductory meeting for the Dutch testing group that was organised by the Dutch participants in the project, lecturers from the Amsterdam Archaeological Centre (AAC) of the University of Amsterdam. The Dutch testing group consisted of four students, which represented the first target group of the application, and seven people from the second target group, that of the professionals. During this introduction information was given on technical and procedural aspects, like log-in names, passwords, course duration, accessibility of the modules, etc. Apart from that there has been no contact with the developers of the application.

My prime intention was to experience the course as a post-graduate retraining module and to see whether the training objectives of the project team were met. Secondly, I wanted to compare the learning objectives for the main target group, master students on heritage management, with the ones we have developed for a master programme on archaeological heritage management at Leiden University. Thirdly, I was interested to see how the application would serve the two target groups. As they start of with a different knowledge and experience levels, they may have different instruction needs. But most of all curiosity was my motivation to take the course. As a developer of an electronic learning instrument in the nineties, I very much liked to experience the results of the developments in e-learning and to get an impression of it's values today.[1]

Working through the module

As the teachers added a new module to the website nearly every week, it was rather challenging to keep up with their pace. To keep up was very important, because each lesson would be accessible for a few weeks only. Presumably, this timetable was imposed to make sure that everybody would reach the same point at a particular moment in order to enable collaborative work (see below). However, this way of working caused some pressure that may not suit my target group very well. It does not go very well together with one of the most attractive elements of e-learning: flexibility. It may even enlarge the risk of learners to give up once they have missed out on one or more of the modules.

Participants from the target group of students may experience this pressure very differently. Perhaps they appreciate this structured way of working very much. But it is known from evaluation studies of e-learning courses that students point out workload as the main reason to withdraw, especially as 40 percent of the students spends more time than is allotted by the teachers (Laurillard 2001: 5). Nonetheless, it does help to keep going and I must admit that it surely encouraged me to finish the lessons in time.

The course is structured in five themes. These are also physically divided into five parts that one can enter separately on the website. The first part

handles the theoretical aspects of archaeological heritage: definitions, concepts and the approaches to archaeological heritage by different stakeholder groups. Furthermore, it is discussed how heritage management relates to the theoretical developments within the discipline of archaeology and how these influence management approaches. This is composed of two modules. The course gets practical in part two, by zooming in on methods and instruments to map archaeological heritage resources, like valorisations, geographic information systems, aerial surveys, geophysical prospection methods. In part three the valorisation of the archaeological heritage is highlighted, including the biography of the landscape as an example of invented images of the past. Protection and management issues are the subject of part four. It provides information on international conventions and the national legal frameworks, on sustainable development and on management cycles. Also in this context commercial archaeology is discussed. Finally, part five looks into politicising archaeological heritage. In three lessons it highlights public archaeology and communication with the public, methods of engagement, publicity and media relationships, and public outreach by museums, schools and other services.

Each module consists of the information and instruction on a particular subject, followed by exercises. These exercises consist for instance of statements which must be recognised as being correct or false or of characteristics that must be linked to the right time period or development. The way the exercises are presented is very user friendly with tick boxes and pictures or textboxes that can be dragged from one place to another. Moreover, one is allowed to check one's answers and to repeat the exercise as often as one likes. This is a very nice aspect of the application.

On average, each of these modules kept me occupied for nearly one hour, that is if I was lucky not to be disturbed. One (on aerial survey) took more than ninety minutes, another just twenty minutes. As it was not immediately clear how the course was structured (because I did not read the instructions carefully in advance), I missed the second module of the first part. The first screen of the course shows the entrances to the five main parts, but the underlying modules are not yet visible at that point. After finishing part one I waited for part two to be added. It was only when module two of part two was added that I understood the system and that I realised that I may have missed something in the beginning. By then the module was already closed for entry. Probably any new 'real' student will prepare himself better than I did, and will read the instructions carefully, but it may be something for the teachers to keep an eye on during the actual trainings.

Altogether I have spent nearly 12 hours on the course.[2] This may seem rather long if you must find the time in between other activities during working hours. But actually it is not very long if you compare it with an ordinary academic course, in which each meeting usually takes two hours plus some time to travel back and forth. Fortunately e-learning enables you to choose a moment that suits you best or even to stop during a session, go shopping and finish it later. This is a huge advantage, for both target groups, as it allows you to take the course in calm hours.

How this result relates to the amount of time my target group is expected to spend and whether I was slow, average or swift in comparison with the other test participants of both target groups, can be found in chapters by Šne and Marciniak & Chwieduk in this volume. The application can record the time that one spends on each module, one's progress and achievements in the exercises. This is very useful for the teacher who wants to monitor the process. It may also give an indication of the efficency of the modules and the application as a whole.

In addition to the modules and associated exercises, communication facilities are offered to add some interactivity. One could join more interactive activities in which one would communicate directly with the teachers and fellow students. These facilities consist of a public forum, a chat room and a consultation panel. A public forum was started after part one, three and five on the associated subjects. The participants could react to a proposition or a point of view of one of the teachers. Moreover, part two and four were followed by an assignment to write an (collaborative) essay.

Unfortunately, I cannot comment on these two interactive elements, because I did not participate actively. I even dodged from the duty to write the second essay. But I can contribute my observations on their degree of use. As the managerial facilities allow you to see the use statistics, I noticed that the communication facilities were not yet very intensively employed by the Dutch learners. The first forum discussion had a few contributions, but the other two had none. Curiously however, the first two did score a lot of views. This could be an indication that the community of learners suffered from some initial hesitation and were only looking instead of contributing. So did I, allowing myself the excuse of having to write this review to just look rather than to participate actively. On a few occasions I visited a chat room

too, but since no specific time was set for chatting, I did not find anybody else in there. Like all others, I did not explore the opportunities of the consultation panel either.

Due to this rather passive behaviour, I experienced that it is rather easy to miss out on these interactive elements of the course. The learner is expected to be attentive and actively looking for things that have been added, and is not prompted – either personally by means of an e-mail or publicly by a message on a bulletin board. But if one is not alert all the time, it may not be noticed that something is expected from you. This not only happened to me but to several other members of the testing group: we all missed the assignment to write the first essay. Probably this was due to the experimental circumstances that we were not reminded by the teachers. I presume that this will happen in real training life.

Although they were not yet heavily exploited during this test, these interactive elements and managerial tools surely enhance the value of e-learning for both students and teachers. The monitoring and interaction facilities enable teachers to notice backlogs or other problems immediately and at any moment during the entire course. As such, the application can be categorized as a rich virtual learning environment (VLE).[3]

Content

With respect to the content of the modules, the trainers did a great job. Right from the beginning the lessons were interesting and also very worthwhile for someone who is already fairly acquainted with most of the subjects.[4] This has to do with the way the topics are presented. It is made clear that one can look at all topics from various perspectives and it is explained that the way one perceives the various aspects of heritage management is influenced by one's interest, background, social and political context, etc. To emphasize this is not only relevant for practitioners in the field of heritage management, but for students as well. The application allows them to get acquainted with the different aspects of managing archaeological resources, the aims, the legal frameworks, the processes and instruments, but also the various approaches and stakeholders and the dilemma's which this brings along.

The scope of the course is fine as well. There are no obvious issues or aspects missing, for attention is given to the main topics and to recent developments, discussions and dilemmas. An absolute advantage of the fact that it was produced by participants from several countries is that experts from all kinds of fields are involved. They bring in various perspectives, point out multiple points of view and provide examples from different countries. This does not mean that there is nothing left to wish for if there would be an opportunity to develop a second version of the course. One possible addition concerns the geographic scope. For clear reasons the course is primarily directed towards issues in European heritage management, although relevant developments in the Unites States are of course mentioned as well. It would be useful however to include issues from other parts of the world too. For instance the module on legislation and international treaties shows which treaty was signed by which countries and when. This is now restricted to the countries that cooperated in the project of making this e-learning application, but it would be useful to provide a broader view and to include the information given by various organisations that keep a register of signatories, like the Council of Europe.[5]

There are also more fundamental issues that the course could be extended with, such as dealing with indigenous communities, illicit trade, repatriation, heritage management in conflict areas etc. Although they do not play such an important role in the archaeology of North-West Europe as in other continents, it would be useful to introduce these issues to students as well.

Finally, there is a matter of scales. Obviously an international focus is obviously very useful: the user gets to know heritage management aspects that may not (or not yet) occur in local situations or may not be prominent issues in the national archaeological discipline and they can learn a lot from developments, difficulties and solutions from elsewhere. But this could be balanced a little bit more with information on national issues as well. This would not only serve the students from a particular country, but the international community of learners as well. The challenges that for example Polish or Latvian archaeologists face are not just of interest to local students. Both the local state of art and the various approaches to common challenges in heritage management can be interesting for everybody.

Inevitable, choices must be made with respect to the issues included in order to keep the workload acceptable. All learners will realise that. For more experienced practitioners it may also be clear what topics have been left out, but for students this probably is less obvious. From an educational point of view it may therefore be valuable to give some information on the meta level by explaining why the choices are made, what other aspects are relevant as well and where one can find more information on these subjects.

Educational aspects

In an introductory document that is part of the e-archaeology website, the project team has defined their training objectives. As was said above, they expect to serve two target groups with this course, students and professionals. Although the team does not make an explicit distinction between the two groups in a sense that they formulated specific training objectives and a different approach for each group, the two groups are expected to profit differently from the training. According to the introductory document, the professionals are expected to efficiently implement the information that is provided in their own practice, whereas students are meant to enrich their qualifications for the job market with the help of this course.

More concretely, the learning objectives are directed towards acquiring knowledge on the topics that the application covers, but also towards developing skills. For instance, after the course the learners should be able to recognize numerous stakeholder groups and to identify their needs and expectations, to approach an archaeological heritage issue with better understanding of its numerous facets and to understand the significance of valorisation of archaeological sources. These objectives are surely met, as these are precisely the issues that are comprehensively covered: the course provides a lot of information on these topics. Moreover, it gives insight in the scope of the domain, its issues, dilemma's, discussions and prevailing opinions. In addition, the learner can get an understanding of the development of heritage management in an international perspective.

With respect to the development of skills, the introductory document states that learners are expected to 'know how to deal with challenges posted by commercial archaeology', to 'efficiently deal with the general public' and to 'deal with the media'. It is absolutely laudable that attention is given to these issues and that it is acknowledged that it is important for archaeologists to develop skills on these matters. I am not really convinced however, that these objectives are met by the course. Undoubtedly, it helps you to get to know about the challenges, about the principles of dealing with the public and the media, but in order to be able to actually apply this knowledge effectively, you have to practice it and to experience it in the real world. The application however does not provide a practical environment in which these skills can be practiced. Only if a work placement or another variety of an internship is offered, a practical experience can be offered. But since this is extremely difficult to implement, this can hardly be seen as fundamental critique.

In comparison with the learning objectives that we formulated for master students on heritage management at the University of Leiden,[6] there are mainly similarities. The issues we want the Leiden students to gain knowledge of are comparable, although some differ. We pay less attention to issues like geographic information systems, aerial survey and geophysical prospection at this level. This is something they learn in bachelor courses.

With regard to competence building, we would like students to develop their ability to analyse and discuss literature and to present their own informed opinion. This is being achieved through student presentations and discussions in the class room. The e-learning application pays attention to this as well by offering forum discussions and by the assignment to write an essay. However, an important aspect of having live discussions in a group is that one can learn a lot from interaction with each other. This can only partly be realised by organising a (obligatory) forum or a chat room or by writing an essay. Perhaps a video-conferencing session could be offered to simulate a live class room. In advance of the course one could set a few dates at which a conference will be held and for which everybody will be invited to prepare oneself with specific lessons or literature.

Whether and to what degree the lessons have contributed in the end to the development of the learners is difficult to say. Through the questionnaire (see chapter by Šne and Marciniak & Chwieduk) the test participants indicated that they were satisfied with the content and the skills they had learned. But apparently, it is generally hard to demonstrate that e-learning has particular good effects on students. This was found in various studies (e.g. Burridge and Ötzel 2008). In addition to a questionnaire it would therefore certainly be interesting to perform a test with students to assess their gain of knowledge, as one would do with a face-to-face training.

Learner needs

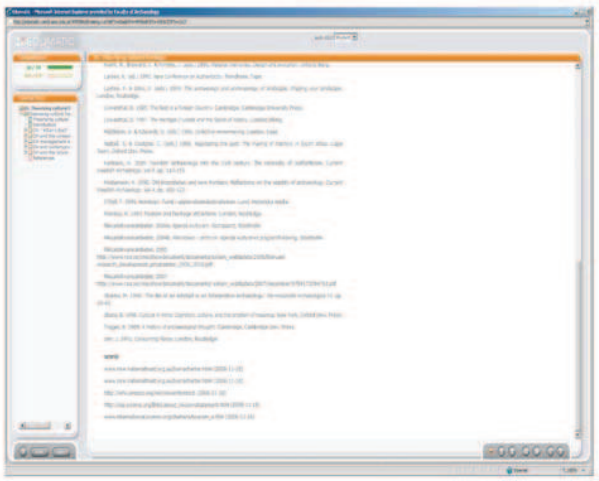
Whether the training objectives of the trainers are met is only one part of the story. It is just as interesting to evaluate whether the learner's needs have been satisfied as well. For me it is difficult to say anything on behalf of the students, as I am not a member of that target group. Articles of Šne and Marciniak & Chwieduk presented in this volume on the results of the questionnaire gives a good impression however. The students reported that they were predominantly satisfied with most aspects of the course. I would not be surprised that – when asked – they would indicate that they missed the

interaction with fellow students. Young learners seem to 'show a preference for socializing with peers, participating in group activities and working in groups' (Siozos & Palaigeorgiou 2008, 7). Several of the students did express a preference for a traditional course. As a representative of an older generation, I would certainly miss the contact with the students. That is probably also the reason why often blended models of teaching are applied, in which e-learning is combined with face-to-face teaching.

Here again, differences surface between the two target groups. I am inclined to say that, in comparison with the students, it is slightly more difficult to meet the needs of the target group of the professionals. Undoubtedly, the content of the course is interesting and very useful for professionals as well. They get information on contemporary best practices in dealing with various management dilemmas which can be rightly incorporated in their work. But heritage management practitioners may want to gather information and knowledge in a different way than students. As most of them may want to broaden or deepen their knowledge on particular issues, they already know more precisely what they want to know. This will make them more selective. Yet, a lot of knowledge and information in the present course may be known already. There is nothing wrong with refreshing your knowledge, on the contrary, but it is not the most efficient way if you want to broaden or deepen your knowledge.

Therefore, it would be worthwhile to think of a more individual approach in which the material is adapted to the learning needs. One might think of dividing the modules into different levels of knowledge which the learner is assigned to on the basis of a preceding determination of the learning needs. Another option is that you can make a selection of lessons and themes that you are interested in most or know of least.

Most of the other needs that I had as a learner were rather practical. In this respect the particular aim of the teachers that learners are expected to efficiently implement the knowledge in their daily practice, my expectations were not completely met. It would for instance be helpful not just to give good (and bad!) examples but also to add documents that can be employed right away, like for instance a good example of a management plan or other best practices. It would be efficient too to either include references or to have a direct link to the sources and literature that are mentioned in the modules, or to the place where you can obtain it. In the present application the references are not linked to sources (see Figure 1), while one more or less expects



from an on-line training environment to get rather easy access to the digital sources. Especially for people who are at a large distance from physical sources, like a book shop or a library, it would be a great service to get direct access to on line sources, such as the growing number of journals that is available through the Open Access. In its turn a structural demand for educational purposes may even help to stimulate on line publishing (see Carver 2007).

Furthermore, it would be useful if it would offer facilities to enlarge your business network, for instance if you could get in touch with (some of) the experts who are mentioned in the course, to ask them a question, feedback, additional information, etc. In general the networking facilities could be extended as a whole, for instance by adding web pages or e-mail addresses of experts on a particular field or heritage site or of projects you might be interested in to participate.

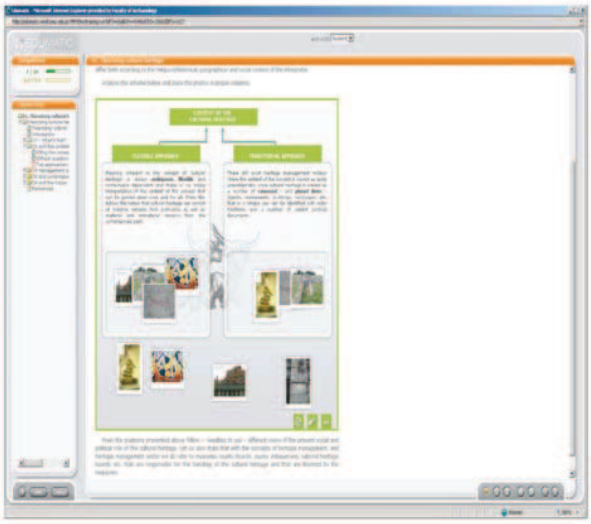
Figure 1 Links to sources would contribute to the efficient use of the information that the application offers.

Another practical need that I had was to be able to print some parts and to read it on paper rather than on screen. This does not seem to be an exceptional need. Even students of a generation that is used to working on the screen seem to have it, as was shown by an evaluation of an electronic IT-programming course that was carried out by the Open University of the United Kingdom (Laurillard 2001, 5). They witnessed that their students printed out a high proportion (up to 54%) of the online material. The archaeological heritage project does not provide this facility yet. Nor is it possible at the moment to save a text, illustration, exercise or reference list other than by copy-paste. And some texts are included in boxes that cannot be reproduced by copy-paste but only by capturing a page through a screen dump. A printing facility therefore is something to wish for in a future version. It would already be very convenient if only a summary of each module could be saved or printed.

The fact that the individual modules were locked after some time was not very practical either. This made it impossible to go back to former lessons and to re-read particular parts or references, while in fact this is stimulated by the teachers as at several places in various lessons cross-references are made to other modules. To keep students going is a legitimate reason to lock the former lessons, but it may be worthwhile to reconsider this constraint when it is going to be used for real by professionals. Perhaps it is possible to treat the two target groups differently in this respect?

Another need I discovered after a while was to go through the exercises a little bit more quickly or to skip them. For the reasons mentioned above, some (parts of the) lessons are not highly relevant for all professionals. Therefore some exercises are not very challenging either, especially while some are meant to assess correct reading and factual knowledge – like the historic order of events – rather than comprehension.

With respect to the exercises, it would also be helpful to add feedback when mistakes are made in the exercises. In the present situation one does get to know that an answer is incorrect but not why it is incorrect. One can even discard the wrong answers and try again repeatedly till all answers are correct. I tested this deliberately in order to find out what this would provoke, for instance redirection to the start of the course. But nothing pedagogically happened. Therefore, I am curious to find out what is being recorded for statistical purposes and how corrections are documented and I look forward



to an evaluation of the exercises. Although it may not give a hundred percent reliable results due to my experimental behaviour.

Some of these needs are of course personal and may not be relevant for others at all, as can be concluded from the positive results from the questionnaire (Šne; Marciniak & Chwieduk in this volume). Others appear to be rather common however. For instance the principles of flexibility, personal attention and significance of the training material are acknowledged by developers of e-learning applications as main criteria for a successful development process (Girona 2008, 35 – 40). They add to a considerable degree to the acceptance and success of an e-learning application. If the project team wants to serve my target group just as good as the students, it may be worthwhile to look into the possibilities to meet these principles. Although I realise that the personal needs are highly individual and more difficult to satisfy.

Figure 2 The e-learning module looks attractive, with colour pictures, graphical features, etc. Even the exercises are vivid due to high-tech features, like drag-and-drop-facilities.

Figure 3 Some texts are a little bit long for reading on the screen.

Appearance

The graphic design may not seem to be the main thing to look at critically. Yet, besides the pedagogical and functional design, this is considered to be the third crucial element in developing a digital learning environment (e.g. Girona 2008). As style and aesthetics highly contribute to quality it usually requires the involvement of a specialist.

The first impression is very positive: the application looks appealing (see Figure 2) and is user friendly. One quickly gets acquainted with it. The buttons for instance are clear and uniform throughout the entire course. This is highly admirable since various modules were developed by various teachers in different countries. Moreover, you cannot get lost in a module as you can always see your progress and how many pages are left to work through.

A minor point of attention concerns the texts which are incorporate as a scanned image. Their quality is not always optimal for reading. Furthermore, some texts are a bit long for reading from the screen (see Figure 3). The illustrations are functional, but in addition it would be interesting to add other multimedia tools like sound, animations, video, simulations etc.

Compared with the technical facilities that were available two decades ago, when I started to build electronic applications for teaching use-wear analysis on flint tools (Van den Dries 1998), a tremendous progress has been made. Back in the nineties we were very happy that the technological developments only just enabled us to incorporate digital photographs directly taken from the microscope (although the resolution was not very good yet), digital drawings, and graphical features like menu boxes, tic-boxes etc. Today large amounts of hard disc space are available and there are hardly any restrictions as to working memory left. So beautiful graphics can be included, sound and video, animations, virtual reality and all sorts of facilities to enable interactivity.

Yet, not a lot of the technological innovations, such as multimedia facilities and internet connectivity have been applied in this application so far. Usually this has to do with the limitations of the applied software environment rather than with the limited creativity of the building team, but in either case the learner may miss such things. The contemporary client of e-learning courses can be expected to have rather high expectations and wishes with respect to the technological functionality of such facilities. Not merely because the new generation of students grew up in a digital age, but also because most of today's learners will be used to high standards of information technology. Moreover there is a lot of information available on advancements in information technology and on the contingencies they offer for education (see for instance Siozos and Palaigeorgiou 2008). Presumably nobody expects the latest innovations in information technology to be applied immediately, but one does count on facilities which are already fairly common, like links to websites (for instance of heritage sites and organisations, museums, libraries and repositories), direct access into catalogues or other databases, connections to web cams and maybe even the incorporation of virtual reality (reconstructions, simulations).

Value

What is the value, the educational gain of the new e-learning application? In the nineties, the expectations of e-learning were very high, as with all new developments in this field. In the last decade a number of examples showed

that these high expectations have not been fulfilled. For example a comprehensive inventory, that was carried out in 2005 by the Organisation for Economic Co-operation and Development of universities in 13 countries, made clear that e-learning had not yet had a significant impact in the classroom (OECD, 2).

The reasons for the shrinking enthusiasm are manifold. One is that employing e-learning at educational institutions does not reduce costs. Not only its development is time consuming, but it still requires teacher guidance and support (Laurillard 2001, 6). A more important reason probably is that various empirical studies have not yielded clear and substantial evidence that students increase their academic achievements as a result of using information technology (see Cuban 2001, 133), although there does seem to be a positive relationship between the use of online multiple-choice exam and student performance in summative examination (Burridge & Öztel 2008).

Another reason for the dimmed enthusiasm is that e-learning has not brought as much pedagogical renewal as was expected. According to Cuban (2001), 'an overwhelming majority of teachers employed the technology to sustain existing patterns of teaching, rather than to innovate' (134). Innovation does take place in education, but not as a result of the introduction of technological features, rather the other way around. It must be admitted that with this training as well, we act contrary to the modern tendency in teaching theory to apply cooperative learning, using work environments as training environments. An e-learning course like this holds on to the traditional way of teaching with teacher instructing a particular issue in a particular order. Also the full potential of the internet technology, like interactive engagement and interconnectivity has not yet been exploited.

There are, on the other hand, positive experiences as well. Evaluations have for instance pointed out too that people surely are interested in e-learning (Laurillard 2001) and that actual learners – also of archaeological applications – highly appreciate their use (see Carreras 2008, 70 – 75). This was certainly the case with the participants of the testing group of the application on archaeological heritage in contemporary Europe. Even though we noticed some imperfections, we had a very positive experience (see Šne; Marciniak & Chwieduk in this volume).

Moreover, there is surely a potential market for this kind of applications in archaeology. Not only are there lots of potential students in remote locations that may not have the opportunity to attend a classroom course on a weekly basis and for whom e-learning would be a fine alternative. There are also numerous professionals for whom it is important to keep developing their skills and knowledge and to take post-graduate courses. So, as long as it serves a demand, there is sufficient reason to keep developing e-learning applications such as the one discussed.

For the application discussed, it can in any case be claimed that it fulfils the need from the international community of heritage managers to embed more employability within the academic curriculum by preparing students for the complex and demanding context of contemporary archaeological resource management (see for instance Bender & Smith 2000; Aitchison & Giles 2006). It is needed, for example, to raise awareness with students of the systems, institutions, issues and dilemmas they are going to be confronted with in there professional work, to develop skills like intellectual curiosity, personal responsibility and initiative. The application addresses such issues, as was pointed out in the former paragraphs. It even provides case studies from acknowledged good practices, invites to debate and to write an essay and offers enhancement of social skills by including team-working (writing an essay together). Merely the practicing of more practical skills by means of work placements could be added to enrich the student's qualifications for the real world of heritage management even further.

Whether it should replace face-to-face learning in the class room is something else. I am inclined to say that it would not be ideal for graduate students if e-learning would substitute the class room meetings entirely. It impoverishes their academic training due to a lack of personal contact with fellow students and with the teachers. But I certainly would accept this module it as an introductory course and enhance it with both face-to-face courses and training in a practical environment.

Conclusion

It shows off clearly that the project team has put a lot of effort in building the e-learning application on heritage management. This worked out very well. Technically it works smoothly, graphically it is looking good and its content truly suits its educational purposes.

It can be very useful for both heritage management students and practitioners. The latter get a refreshment of both theoretical aspects and practices and an up date on discussions and developments. While there is a growing tendency to stimulate life-long learning and, consequently, a growing

demand for post-educational education (at least in the Netherlands), the supply is not adequate yet. Applications like these can help to fulfil this demand.

There are some wishes left as well, but they primarily belong to the category of enjoyable extra's rather than of the necessary improvements. For instance, a further exploitation of the comfort that the internet technology offers would surely add to its value. In any case it would make its use more efficient for the target group of the professionals.

The differences of needs between the two target groups illustrate however that it is difficult or maybe even impossible to serve both target groups equally with one application. Probably it would be much easier to develop tailor made modules if different types of learners are to be satisfied.

But for both target groups the present application is already a valuable starting point. And I hope it will be employed heavily. At the same time I hope that this fine basis will be developed further. There lies a beautiful challenge to further exploit the abilities of the internet in a way that the next generations of students will expect, or – even better – will astonish. I am already looking forward to it.

Notes

1 It was not intended to include an assessment of the benefits versus the costs of development in this review. Information on this is provided by in other chapters in this book.

2 For a total of thirteen modules rather than fifteen. Apart from one lesson that was missed, one lesson was not provided.

3 A VLE is defined by Wikipedia as 'a software system designed to support teaching and learning in an educational setting […]. A VLE will normally work over the Internet and provide a collection of tools such as those for assessment (particularly of types that can be marked automatically, such as multiple choice), communication, uploading of content, return of students' work, peer assessment, administration of student groups, collecting and organizing student grades, questionnaires, tracking tools, etc. New features in these systems include wikis, blogs, rss and 3D virtual learning spaces.' See http://en.wikipedia.org/wiki/Virtual_learning_environment (Entered on August 1st 2009).

4 This was not just my conclusion. I asked another member of the test panel, who was part of my target group, for her opinion, and she was very positive on the contents as well.

5 See http://conventions.coe.int/

6 See http://archaeology.leiden.edu/graduate-school/masterprogramme/programmes/heritage-management-in-a-world-context.html.

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