Turkish Online Journal of Distance Education-TOJDE April 2004 ISSN 1302-6488
Volume: 5 Number: 2

The puzzle of Virtual Learning Environments: "what criteria should be present in the ideal VLE?"

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INTRODUCTION

"Asynchronous Distance Education", is the educational process in which educators and educated they do not coexist essentially in the same natural space and the simultaneous attendance of both sides is not required during the educational session (Moore, 1977; Keegan, 1996, p. 8).

In nowadays a number of commercial/open source programs exist for the provision of ADE services (Raymond Y, 2002; ELSG, 2003). These platforms so called Virtual Learning Environments (VLEs), constitute systems of software that give the possibility to the teacher of communicating with the students from distance and in not in a real time mode.

Most of these platforms aim not simply to the reproduction of classic educational process in a computational environment, but also to the improvement of the education itself by providing highly sophisticated tools for both teacher and student assistance.

One of the common problems among the Academic population evolve in Distance Education is the identification of the most appropriate VLE for the conduction of DE lessons. The plethora of the platforms and the variety of educational tools available in each of these platforms result to a bigger confusion towards the final (correct?) decision (Hatzipanagos S, 2001)

The present study attempt to acknowledge the most useful, operative and educational important features that should be present in a VLE. The study aims to become a "pre-decision manual" to guide all those who puzzle with the identification of the ideal VLE.

The general idea is a not novel one. In the relative bibliography a number of organizations, institutions and researchers such as, the Western Cooperative for Educational Telecommunications (WCET, 2003) and the Centre for Curriculum Transfer and Design (C2T2, 2003), the Higher Education and New Technologies Center (Edutech project, 2002), Center for Flexible Learning (CFL, 2001), Tsinakos (Tsinakos, 2002), Britain and Liber (Britain and Liber, 1999) and the Centre for the Application of Information Technologies (CAIT, 2000), indicate a list of criteria for the extensive description and evaluation of educational systems that can also be applied to VLEs

The novelty of the study relies to the filtering and the synthesis of the number of evaluating criteria available in the above studies, reconstructed on the basis of the following critical question: Which are the core criteria present in a VLE that, should satisfy the basic elements of educational session, provide the most reliable representation of the "traditional classroom", are technologically compatible with common computer facilities used in a school environment, and can be easily used with out the requirement of high academic skills on the end user?.

In order to answer the above question the following categories of evaluation criteria were selected:

a. - Technical specifications
b. – Teacher's tools.

c. – Student's tools.
d. - Tools of communication
e. – System's administration issues
f. - General characteristics

CRITERIA CATEGORY DESCRIPTION

The purpose of this section is to inform the potential VLE user regarding general categories of the evaluation criteria. A brief description of each category is provided.

A. Technical Specifications

The criteria in this category are related with user-friendly issues during the installation process, and the compatibility of the platform with a variety of operating systems. Most of the ADE platforms are based on "Server Client" architecture; therefore the possibility Windows and Unix/Linux installation should be examined.

Furthermore the dependency of the VLE to the use of a specific web browser in order the end user to access the data that are stored in server, is also examined.

Finally, the issue of additional software that maybe required completing the VLE's installation and system's (server's) resources issues are checked.

B. Teacher's Tools

The comparison criteria of this category are related with the tools that are provided by the VLE that reinforce teacher's potential of drawing, manage and conduct an education session. Criteria that are related with basic pedagogic functional needs of teacher, as the evaluation of students, the follow-up of students' attendance and performance, the existence of procedures that assist the collaboration between the students and the communication with each student separately, are included in this category.

C. Student's Tools

This category deals with the existence of helpful procedures available to the students. The criteria are related with the ability of collaboration between the students, study facilitation, easy navigation among the platform's features, and the process of homework planning and self-assessment procedures.

D. Communication tools

The criteria included in this category concern the tools that are available for student to student(s) or student to teacher, or teacher to teacher(s) interaction. Such tools can evolve the exchange of simple messages, or advanced chat sessions but also the creation of discussion forums for brainstorming or more systematic exchange of ideas between the system's users. These tools contribute in the creation of sense of closed training group activity, acting beneficial towards the isolation feeling that is commonly shared among the ADE participants.

E. System's administration issues

Criteria of this category are related not only with the existence of administrative features but also with the simplicity of that features. Safety and confidentiality features are the top elements of this category. Therefore the additional provision of technical support, and the availability of remote management tools are also examined. Monitoring features of system's resources is also a requirement of this category.

F. General Characteristics

Finally, an evaluation criterion of this category regards certain characteristics, which are not possible to be included in some of the abovementioned categories. Such characteristics are the existence of easy to use help files, the standardization of educational material and the ability of off-line use of the platform.

CRITERIA ANALYSIS

In this section a detailed description of each criterion category is provided. Each general category is analyzed so that the included criteria to be further defined. In more detail:

A. TECHNICAL SPECIFICATIONS

A.1. Windows Compatibility

This criterion indicates the VLE's compatibility with a Windows based server. Some additional information maybe available for each platform regarding more specific server requirements like free disk space, RAM and CPU. It is worth notice that some VLEs also have specific network requirements.

A.2. Unix/Linux Compatibility

Similarly to the above described criterion, here VLE's compatibility with a Unix/Linux based server is examined. Similar to the above, further requirements maybe available (ie RAM, CPU, network etc)

A 3. Web Browser Dependency

This characteristic this it indicates VLE's independency from the type of the client Web Browser that will be used. A well-designed VLE should be compatible with any kind of browser such as Explorer, Netscape, Mozilla, Opera etc.

Additional attention should be given on the related plug inns that maybe required supporting VLE's functionality. Very often, potential disappointment or confusion may cause to the students due to the complexity of plug inns installations of this processes.

B. TEACHER' S TOOLS

B.1. Course design wizard.

This criterion checks on the existence of a user friendly course design wizard. Such wizard should provide step by step assistance and hints towards the teacher in order to enable him/her to construct the course framework.

Such wizards should be flexible according the general education needs and specifications of the course to develop.

B.2.Simplicity of course design process.

In combination with the above criterion, in this case the simplicity of course design process is examined. A well designed wizard does not require any kind of use of a scripting language (ie. Java, php, html, dhtml etc) on the tutor's part)

B.3. Content Management

The tools of content management allow the teachers to append, delete or update the educational material available to the students. Additionally, teachers can create (self) evaluation tests for the students on fly, create additional notes etc.

B.4. Multiple teachers per course

It characterizes platforms where the tutor has the ability of importing additional teaching staff in the same course. As a result the teacher/student ratio is decreased with the relevant impact on the teacher's workload

B.5. Setting up students collaborative groups.

The tool of creation of students collaborative groups it's critical for the teacher. Teacher's ability to form collaborative groups has multiple impacts not only on content comprehension issues but also on terms of students' relation. Such training microcosm, encourage and support the growth of friendly relations among the students, according to the pedagogic models and challenge against "student isolation" emotions.

B.6. Selective assignment of educational material

This characteristic provides the ability to the teacher to assign a particular project or a set of exercises to a particular student or student group. In certain VLEs some advanced tools have been developed to permit communication between the tutor and each of team separately.

B.7. Adaptive content comprehension

This criterion checks on the existence of a highly sophisticated tool which provides the possibility to the teacher to adjust the content material (ie levels of difficulty) deepening on the knowledge chunk that the tutor wishes to instruct towards individual students. Thus the teacher has the benefit of the intense supervision of the students related to their individual learning needs

B.8. Monitoring of students' participation

Such feature enables the tutor to have a clear follow-up of students' participation by tracing their activities either on the pre-setup conferences or on the on-line educational material (visited links etc.). A detailed archive of log files is kept in the server, available for further elaboration by the tutor.

Monitoring tools includes not only quantitative data, like students' performance and grating info, but also qualitative data like queries, misconceptions and performance problems.

B.9. Construction of table of content (ToC)

The table of content constitutes a central page where all the available titles of instructive material are entered in form of list. Each title usually has a link that leads to the raw content. In many platforms, ToC is manually updated while in more sophisticated platforms specialized tools are available for automating the process of ToC construction.
The existence of ToC is critical to a course since it facilitates a quick browsing of the educational material.

B.10. Quiz/test construction

Many platforms provide to the tutor the ability to create a number of short evaluation tests in the form of quizzes. Tutor has simply to "drag and drop" a set of questions available in a knowledge base. Some other platforms have the ability to construct such quizzes on demand by selecting randomly a set of questions from a knowledge base. The instructor originally creates such knowledge base during the "course set up" phase.

Quizzes may have various forms as: multiple choice, right wrong, "fill the gaps" or "comment the answer" etc and they can be also enriched with other parameters, ie. placed time restriction margins in their conduct, define different gravity factor per question and answer etc.

Such quizzes can be used either for self assessment purposes (by the students), or for formal evaluation purposes (by the tutor).

B.11. Automatic grading

This feature (if available) is extremely useful and time consuming for the tutors. Some VLEs provide this feature not only for reporting the overall students' performance but also for short term evaluation purposes such as the quizzes grating.

Therefore more sophisticated tools include not only quantitative data but also qualitative ones such as tutor's comments regarding the grading policy or student's performance.

B.12. Monitoring of students' performance (index of grades)

Certain platforms incorporate a detailed report of the marks achieved by each student for each activity of the course. Such feature also called "Book of Grades", is manually informed by the tutor in its simpler form while it is possible to be informed automatically in collaboration with the mechanisms of automatic export of grades (B11).

Via the "Book of Grades" the tutor has the possibility of overseeing students' records,

related to the degrees achieved during the course. Such feature in combination with other monitoring tools facilitates the process of intense supervision, as the monitoring of educational process becomes more effective and handy.

B.13. Students' assistance towards performance improvement

The tutor using such feature reports a potential performance problem to a particular student, asking for explanations or reasons why such problem occurred (self-reflection and explanation). Based on student's response, the tutor provides guidance on how such a problem can be remedied. In some VLEs this feature is variously implemented, i.e.:

- **Using forum based discussion.**
- **Posting a simple written memorandum to the student**
- **As attachment comments on the corrected test or work of student in his/hers personal storage space**
- **Automatic student authorization of participating in next course units.**

The interaction-feedback achieved by this feature is considered as critical to content comprehension, since it is personalized according to student's cognitive profile.

C. STUDENT'S TOOLS

C.1. Personal storage space

A common feature among the variety of VLEs is the personal storage space service, for the students. This facility aims to enforce the use of platform by the students, as the latter has the ability of uploading personal material (ie. notes) that is related with the taught course rather than passively downloading information or instructions.

C.2. Student profile card

In order to overcome the drawback of the luck of in person communication during an asynchronous education session, many VLEs provide the ability of students' profile presentation (profile card).

The information included in such card are usually reports, the full name, the age, the e-mail address and potentially a photograph of user. Some platforms even allow more detail description including additional characteristics such as the intellectual background, interests, personal objectives etc. All the above described information have been authorized by the student prior to their publication.

C.3. Search in the educational material

With the development of course, the volume of educational material that is added in the course, can become very big. Thus it becomes almost imperative the need for the existence of some tool that will allow the student to have access to specific training material fast and easily. The localization must be done with the simple apposition from the side of student of key-words like the title, name of file or writer of material.

C.4. Bookmarks

Alike the search tools, bookmarks are a tool that decreases considerably the time of the search of student in the system. With this tool the student can record pages of a course or even web pages in the Internet that he visits regularly, so as to be transported there immediately. As an advantage of the system of asynchronous distance education is also considered the possibility from the user of organizing the bookmarks in files and also the possibility to have access to the bookmarks of his schoolmates, in order to enrich the material for study that he has in disposal.

C.5 Personal notes

This tool provides to the students the advantage of keeping notes that concern the educational process. These notes can either be strictly personal or it might be possible for other students to have access in them.

The tool of online notepad allows the student to record thoughts and ideas that are related

with a specific subject of course or notes on a theoretical text that it will later help him in his study.

C.6. Use of vocabulary

The existence of vocabulary helps the student to comprehend the meaning of terms that he meets during the study of the course without having to consult exterior sources. Because the lack of direct communication, the professor is not available in order to clarifies terms, which are of critical importance for the comprehension of e.g. a theoretical text. In most platforms, the enrichment of the vocabulary with terms is a responsibility of the professor, and the student, apart from the explanation of specific word, can also view where else this term is met in the existing material of the course.

C.7. Printing ability of the course material

The possibility of printing the material of the course direct it from the environment of platform can be particularly useful for students that prefer reading in paper than on the screen of a computer. Thus it can be very useful to those students who wish to keep files of the course in printed form after its completion.

C.8. Agenda – Calendar

The agenda of the course can be filled in from the professor in order for the students to be informed in advance for the syllable of the course. It can contain information relative with the scheduled assignments that are to be completed by the students, for the office hours of the professor, for likely deadlines etc the existence of such tool helps the students to make more effectively the scheduling of their studding.
In a lot of platforms of asynchronous distance education, the student has himself the possibility to keep his personal agenda or his personal timetable, in which, he can keep a record of his already submitted assignments in order to be able to estimate at any time his progress in the course.

C.9. Setting up collaborative groups.

Apart from the groups which are formed with the initiative of a professor and which are administrated by himself, it is also considered advisable the existence of the possibility to set up groups that would be formed and managed exclusively from the students that participate in the course. Such a tool allows the students to form groups of study, clubs that are constituted by individuals with common interests and generally teams of collaboration. In this way is encouraged and supported in still bigger degree the forming of relations of collaboration among the students. The exclusive participation of students without the physical presence of the professor facilitates the growth of friendly relations and it helps in the "bringing of" distance among the students who are not found in the same physical space.

C.10. Anonymity

In many cases, the teacher might ask his students to evaluate the quality of the course which he teaches. Moreover, the administrator of the system might ask the users to evaluate the system itself. Finally, in a discussion in real time among the members of the team it can be asked from participating members to express freely their opinions. In similar cases, the possibility exists that a student might be embarrassed to deposit his option with sincerity. For these reasons, the possibility of sending messages anonymously is considered as a characteristic that should exists in a platform of asynchronous distance education. However, the activation of this tool should be done by the teacher, because the absolute freedom on behalf of the students can lead to various problems, even moral order.

C.11. Personal progress monitoring.

In the achievement of the objectives of educational process contributes greatly the ability of the student to monitor his progress in the course, that is to say to have constantly possibility of checking which objectives from those that were set at the beginning of the course he has achieved and to compare his progress with the total progress of his class. This ability facilitates the student to re-define his personal objectives, to focus his efforts in sectors of the course in which he presents certain weaknesses and generally to have a more active role in the course.

C.12. Homework reminder.

The student should be reminded at regular time intervals about arraignments that pending and also about the deadlines on which should these be completed. The reminder can be done via automated briefing of the table of announcements or by sending messages individually to certain students.

C. 13. Self-assessment.

The tools of self-assessment allow the students to practice usually by making use of on line tests or questionnaires of evaluation. Usually these tests are not notified to the professor to count for the outcome of the official grades of the student. The process of self-assessments encourages the students to actively participate in the process of learning and to have a clear picture of their personal progress, so if it is necessary the try harder (show greater effort) for the improvement of their record.

C.14. Personal grade information.

During the process of improving his record, the student must have access to his individual grades. Apart from the grades that are exported from the answers given to various test with the initiative of the student, there are also the official grades that the outcome of the projects test evaluation even the participation of the student in the course. Thus, the professor should inform immediately the student for any changes in his grades and to supply any comments and advice on his improvement.

C. 15. Students' queries database.

Almost in every system of asynchronous distance education the student can pose his queries to the professor either via a separate tool that is used exclusively for the sending of queries or via messages by using the mechanism of exchange messages. This communication is rarely notified to the other students and the possibility is that common queries to be repeated from the side of the students, overloading in this way the time schedule of the professor.

Consequently, a very useful tool is the updating of a database with the frequently asked question of the behalf of the students. Thus, every trainee can find the answer in his questions by consulting this base before addressing to the professor himself. Advanced systems have the capability of cross-correlation of queries that is posed by the students with queries that already have been inserted in the base and thus can give automatically answers to the questions of the students without the intervention of the professor.

D. COMMUNICATION TOOLS.

D.1. Exchange of messages.

The mechanism of exchanging messages is a tool similar to the programs of e-mail (electronic post), which are used today. In the case of the systems of asynchronous distance education, the tool of sending / receiving e-mails make possible the reading and sending of messages exclusively in the boarders of (inside) the course or alternatively via contacts with the exterior e-mail addresses of students, so as to ensure communication among them. A lot of systems allocate internal mechanism of messages, while other uses some commercial program of electronic post (eg. Outlook Express).

D.2. File sharing.

The tools of file exchanging allow the users to transfer files from the hard disk of their computer to the system and to share them with the other users in the context of the course. It must be noted that attached files are not included in this category, but are part of the mechanism of exchanging messages and of the discussion groups. The tools of file exchanging make possible the transportation of the files from the platform to the hard disk or to personal space of each inside the system. Via this tool, the educational material that each student has to his disposal is enriched even more, since each user can allow in the others access to the material haw collected himself and is considered useful for the study of the course.

D.3. Forums.

The discussion groups are usually formed under the initiative of the professor and more rarely by the trainees themselves. The discussion groups is "a tool" that promotes the climate of collaboration in the class since it supports the exchange of ideas and opinions on a subject among people who share common aims and interests. Every message that is send by a member of a the groups of discussions is received by all the other members. The messages that are exchanged and that can cover a time period of days, weeks or even months are stored and can became a useful tool of study for all the students. The members discussion groups can be categorized so that the messages that are exchanged to get grouped and thus to be located easily. The messages can either follow a time collocation or to be organized thematically.

D.4. Chat.

The direct communication or discussion of real-time (real-time chat) takes place among the users of the system and includes the exchange of messages at the same time. The discussion can include individual services such as the Internet Relay Chat (IRC), direct exchange if messages or texts. Certain applications allow the keeping of a record of the discussions for future reference. Also there might be a central administrator that coordinates the discussion, while certain discussions between students can be possibly observed by the professor, without his presence becoming noticeable by the interlocutors.

The advantage of this tool is that the communication among the users is direct and without any time delays. Thus the student can receive fast answer to a problem that concerns the course by asking the opinion of his fellow-students.

D.5. Whiteboard

This tool includes the electronic publication of a school notice board (in which someone can write and delete). Thus the professor can draw plan or write anything on his computer, that is immediately notified to his students , who can in turn make their intervention. it can also include the service of real time, as the allocation of applications and group surfing in the Internet. The allocation of applications allows the user to monitor or even check programs that run in a remote computer. For example, with the use of this tool a professor can perform an experiment of chemistry or an application to students that use their personal computers in the same or at a different place and offer them the possibility of running this application on their computers. The group surfing on the Internet allows the professor to guide the students at a tour in the Internet by making use of a common window of the web browser.

D.6. Bulletin board

The table of statements constitutes an autonomous tool of a system of asynchronous distance education that is used for the publication of announcements to all the students. These announcements concern subjects of general interest, reminders of work, notices for communication among the members of a discussion group at a certain time etc. In most systems, the students immediately after entering in the course are led to the table of announcements. The usefulness of such a tool relies to the fact that the students are quickly informed and as a group for any progress or change in the educational procedure.

E. SYSTEM MANAGEMENT ISSUES

E.1. Username and Password authentication

In many VLEs the authentication process involve a simple log on using a username and password entry, which is a method that make the system most vulnerable. Other systems include advanced safety layers with different logins for each layer separately, or using IP access lists.

The processes of authentication exist for the safety of all the electronic material available inside the platform, ie. files, notes, records grade, as well as for the recording-monitoring of the "log files" of the platform.

E.2. Multiple Rights of Access

The above mentioned tools of authentication in a platform can also be used for the

allocation of certain privileges of access to the material of a course of tools depending on the role that each user has i.e. if he is student, professors, assistants professors. For example, the students can have access in the pages of a course, while the professors can create these pages. The students and the professors usually need different tools in order to achieve their obligations in the frames of a course. Most systems of course -management provide a motive for its predetermined users. Alternative, certain systems allow to the educational institutions to categorize their users.

The existence of multiple access rights renders more flexible and structured the management of platform while it contributes also to the safety of data.

E.3. Safety of Data

With the term data safety we describe all those procedures inside the platform which guarantees the safe exchange of educational material inside and outside of it. These procedures can be simple infiltration of certain types of files, coding ie. with the use of cookies, of viruses checking of the files that are inserted from the external environment, firewall and other. Interrelated is the data safety and the process of authentication with the username and password, since it is ensured in this way the locking of the platform to those users who are not certified.

E.4. Management of Educational Material

It is referred to the tools that are in the disposal of the administrators and which allow them to interfere in various ways in the stored educational material inside the platform, either of the data base or of the personal briefcases of students. The interference includes control of the space that one has available and its quality, transfers and deletions of material. Such tools also enable the administrators to assist the tutors towards the management of the electronic material.

E.5. Statistical view of Resources

It is referred to in the VLEs that incorporate mechanisms of recording generally all interactions users with the system. The number of visits to certain pages is recorded, results of examinations, time exposure of educational material per user etc. Also they constantly record the available resources of the system i.e. space available on the disk, rate of utilization CPU and RAM, network load etc. these elements are processed statistically and are given for study to the administrators of the platform, facilitating in this way the decision-making process.

E.6. Technical Support

For the fast resolution of problems that users might have and the offering of instructions for suitable use of the platform is particularly useful the formation of a support team (helpdesk) that is constituted by specialized personnel. Moreover, the disposal by the platform of special management tools facilitates the administrators of the system and the personnel that are charged with the service to correspond effectively in the calls of help on behalf of the users. The help that can be usually provided by a users service department concerns subjects that have to do with the wider structure of course and no with the content of course for example, with the creation or the deletion of accounts, the entering of new courses etc

E.7. Remote Management

The existence of tools of remote management for the system facilitates the work both the administrator and department of the technical support, as well as of the users. With the term remote management we mean the possibility of implementation of administrative work from the authorized personnel not from the server itself that supports the platform, but from a remote computer that has access to the server. Thus it can be ensure a 24hour support of platform and the benefit of offering help to the users even in hours beyond the operating hours of the service department.

F. GENERAL CHARACTERISTICS

F.1. Multimedia support

A basic criterion of evaluation of a system of asynchronous distance education is the facility with which the user has access multimedia files. It is a great advantage the possibility of importing files of multimedia (pictures, sounds and videos) in the system, since the course becomes more interesting and lively, while there are also subjects that are not possible to be developed completely with the exclusive use of exclusively text files (courses of music, information technology etc).

F.2. Working without connection

The possibility to work in the environment of asynchronous distance education without being connected to the network can turn out to be exceptionally useful in cases where the telecommunication connections are expensive or unreliable. With this tool it is provided to the user the ability "to load" the course in the hard disk of his computer and to work locally, while in case of reconnection the system is updated for all the changes that have been done during the no-connection work. Thus the user can be online for shorter time interval with all the positive consequences for his change and also he can have quicker access to the course, from the moment that he has stored the course on the hard disk.

F.3. Content in Cd-rom version

The imprinting of the material of a system of asynchronous VLE constitutes a useful tool for the following reasons:

- **Before the user enters in the system (after of course he is connected to the network), he can have a picture of the content of the course by simply navigating in the Cd-rom. When he locates the material that he interest, can work online on it.**
- **The course might include great loads of data, to which the user that possesses simple telephone line finds hard to have access.**

F.4. Use of metadata

With the term metadata we mean information on the data that constitute the educational material. For example, metadata for a file of text that is included in the course might provide information for its writer, the language that is used, a description of the subject that is negotiated, the date of publication, the rights of use etc In order to be effective, any form of metadata must follow certain models that are set by the relevant organizations, so that the material can be used from any other system. When I insert material in a new environment of asynchronous distance education it keeps the metadata that it describes.

F.5. Multilanguage support

The initial materialization of system of asynchronous distance education is usually done in one or two languages. However, the system can allocate publications of more languages or it might support them easily, by simply entering the necessary files.

F.6. Help files and Tutorials

Most systems have central units of technical support with which he might have the user of VLE can communicate any problem, he might have preferable for online help to be offered, under the form of handbooks, tutorial or demo to which can easily refer the user, without being addressed to the departments of support (helpdesk) or to the web page of the system in the Internet. The existing aids must cover all the categories of users: administrators, teachers and students.

F.7. Standardization of courses

An important criterion for the evaluation of system of asynchronous distance education is its compatibility with certain prototypes, so that material which has been created/developed in certain VLE can also be supported from some other environment. Various organizations of standardization for the interoperability of systems of asynchronous distance education.

Generally, the use of VLEs that follow the instructions and regulations that are placed by the organizations of standardization ensures the future use of the same content to a different VLE.

BRIEF DISCUSSION

As it is already stated in the introduction section, the evaluation issue of VLEs is not a novel idea. Although the problem of "identifying the ideal VLE platform to use", becomes a complicated puzzle for the Academic community in a regular basis.

Among the variety of evaluating criteria referred in a dozen of "education evaluation projects", the person in judgment should identify those criteria and parameters that will guarantee the easy, problem –free and most reliable conduction of the education session. These premises should be fulfilled both for the teachers and the students involved.

The purpose of the current study is to assist Academic personnel to conclude regarding the ideal VLE that should be used when a ADE session is designed. For that reason six (6) different evaluation tables, assigned to each general evaluation category, are proposed in the Appendix section.

The use of these tables during the evaluation phase, can act as a safety valve towards the selection of the most appropriate VLE platform. Furthermore, it should point out that the quality of an education session derives mostly, not from the VLE in use, but from the teachers' competencies and skills.

CONTENTMENT

Many thanks to my colleagues Evangelos Grigoropoulos, Dimitrios Vagianos and Matina Papageorgiou for their valuable input in this study.

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APENNDIX

A. TECHNICAL SPECIFICATIONS

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	*VLE n*
1	Windows Compatibility										
2	Unix/Linux Compatibility										
3	Web Browser Dependency										
	TOTAL										

B. TEACHER' S TOOLS

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	*VLE n*
1	Course design wizard.										
2	Simplicity of course design process.										
3	Content Management										
4	Multiple teachers per course										
5	Setting up students collaborative groups.										
6	Selective assignment of educational material										
7	Adaptive content comprehension										
8	Monitoring of students' participation										
9	Construction of table of content (ToC)										
10	Quiz/test construction										
11	Automatic grading										
12	Monitoring of students' performance (index of grades)										
13	Students' assistance towards performance improvement										
	TOTAL										

C. STUDENT'S TOOLS

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	*VLE n*
1	Personal storage space										
2	Student profile card										
3	Search in the educational material										
4	Bookmarks										
5	Personal notes										
6	Use of vocabulary										
7	Printing ability of the course material										
8	Agenda – Calendar										
9	Setting up collaborative groups.										
10	Anonymity										
11	Personal progress monitoring.										
12	Homework reminder										
13	Self-assessment.										
14	Personal grade information.										
15	Students' queries database.										
	TOTAL										

D. COMMUNICATION TOOLS.

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	*VLE n*
1	Exchange of messages.										
2	File sharing.										
3	Forums.										
4	Chat.										
5	Whiteboard										
6	Bulletin board										
	TOTAL										

E. SYSTEM MANAGEMENT ISSUES

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	*VLE n*
1	Username and Password authentication										
2	Multiple Rights of Access										
3	Safety of Data										
4	Management of Educational Material										
5	Statistical view of Resources										
6	Technical Support										
7	Remote Management										
	TOTAL										

F. GENERAL CHARACTERISTICS

	CRITERIA	VLE 1	VLE 2	VLE 3	....	....	....	...	....	...	VLE n
1	Multimedia support										
2	Working without connection										
3	Content in Cd-rom version										
4	Use of metadata										
5	Multilanguage support										
6	Help files and Tutorials										
7	Standardization of courses										
	TOTAL										

Biodata of author:

Dr. Avgoustos Tsinakos received the following degrees:
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