Using various types of learning in higher education

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Abstract

Traditional learning with presence on campus remains the most used instruction method. Still, the number of alternative systems is continuously growing. Instead of choosing between the different types of learning systems, it is better to use a mixed system by combining different types of learning and providing support for both synchronous and asynchronous learning. This article presents a platform that provides support for both blended learning and vicarious learning but also for the three types of instruction proposed in the article: dependent on time and space, dependent only on time, and simultaneously independent of time and space. This platform is different from other platforms as it was designed to have a character of complementarity to the traditional teaching-learning-evaluating methods and not to replace the activities deployed in the class.

Keywords: assisted instruction; synchronous learning asynchronous learning; blended learning; vicarious learning;

1. Introduction

The differences between the skills and abilities of students raise the need for an instruction method complementary to the education process with presence on campus. Such a method with a character of complementarity is the use of an educational platform. In the class, students attend the same courses and seminars, but their capacity to understand and acquire the information taught varies from one student to another. In order to clarify the concepts they didn’t understand, students can logon to the educational platform they have access to. Thus, the educational platform provides students with learning materials and with computer support for the activities they conduct and facilitates the communication between them.

Such a solution was implemented starting with 2012 for approximately 75 students enrolled in learning with presence on campus in the first year of the Faculty of Business Administration in Foreign Languages, French section, from the Bucharest Academy of Economic Studies. In the first phase, the platform provides support only for disciplines of informatics. The faculty chosen for implementation does not provide learning at distance, so the instruction platform represents a complementary resource for instruction of students, allowing them to study at distance, individually or in group, in parallel with the classical activities from the course class or from the laboratory of informatics. In order to build the platform dedicated to the 75 students, Joomla! open source content management system was used. The platform was structured so it meets as many as possible requests of the professors and students implied in the instruction process. Our platform is different from others as its purpose is to complement the traditional education methods and not to replace them.

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2. Types of instruction

The educational process specific to learning with presence on campus developed around the class, learning institutes and instructors. Main tools used are blackboards, books or different other printed materials, beamer or interactive board. In order to conduct this type of educational process, learners and instructors must be present in the same place at the same time (Singh Khasawneh, Bowling, Kaewkuekool, Jiang, & Gramopadhye, 2004). The technologies used for communicating also provide support for the instruction process. Based on this, we can classify the instruction depending on direct, real time, or indirect involvement of the actors implied. Depending on the time and space variables, there are three types of instructions: instruction dependent on time and space variable, represented by the instruction in the classroom specific to traditional learning; instruction dependent only on time variable, known also as synchronous instruction, which can be deployed both in the class, during traditional learning with presence on campus, or at distance, when learners are located in different geographical positions but they have either to be present at the same time in front of a videoconferencing system or connected to an educational platform or to a chat session; instruction simultaneously independent of time and space variables which provides flexibility to the actors involved in the educational process, regardless their role. This type of instruction is done as a distance-learning instruction through means of Internet, using different educational supports like audio recordings, videos, electronic mail, discussion forums, and indications written as text, graphical representations or images. Such defined instruction, represented as asynchronous instruction, revolutionized the educational process because it can be accomplished at request at any moment in time regardless of the location of actors involved (Singh, Khasawneh, Bowling, Kaewkuekool, Jiang, & Gramopadhye, 2004). In order to successfully accomplish the process of distance instruction, the instruction dependent only on time variable should be combined with the instruction independent on both of time and space variables. Thus, synchronous instruction and asynchronous instructions should be mixed and the two types of instructions should be regarded as complementary means of distance instruction (Hrastinski, Keller, & Carlsson, 2010).

3. Blended learning and Vicarious learning

When using the educational platform within the traditional learning, a mixture between the facilities provided by the traditional instruction and those provided by the instruction through the platform is created (Ion & Vespan, 2011). The combination of the two instruction methods is known in the literature as blended learning (combined or mixed learning). Blended learning aims at providing instructors and students with an environment where the instruction process is as more efficient as possible (Garrison & Vaughan, 2008). According to Gálvez, Guzmán and Conejo (2009), the ideal instruction process is the one where students attend courses in the class, solve exercises and get immediate feedback from the instructor.

In group activities, students are able to learn from each other using different methods of text, audio and/or video communication in real time provided by the assisted instruction collaborative platform. They can also clarify various notions they didn’t understand very well from the course of the professor or from the individual study. This method, known as vicarious learning, allows learning by observing the others. Vicarious learning represents the learning process where the student has a passive role and does not interact with other students or with the professor. He learns by simply observing the activities, the speeches or the interactions of the other students with the professors (Craig, Driscoll, Sullins, & Gholson, 2003). Using computers in tertiary courseware leads to changing the process of learning by observing to Computer-Supported Vicarious Learning – CSVL (Monthienvichienchai &Sasse, 2003).

4. Analysis of instruction methods preferred by AES students

In order to analyse both the instruction and learning methods preferred by the students and the impact of using information technology for these activities, a study was made in 2011 within the students enrolled at bachelor and master studies at the Bucharest Academy of Economic Studies, grouped by informatics specialization and other specializations. For this purpose, a survey was conducted and 400 students answered: 244 students from bachelor cycle and 156 students from master cycle; 254 students were enrolled at the faculty of Cybernetics, Statistics and Economic Informatics (CSEI) and 164 students were enrolled at other economic faculties without informatics specialization. One of the questions from the survey was “What do you think about the following statements:
Computer based learning or web based learning should play a more important role; Web based learning programs cannot replace traditional courses; Computer based instruction or web based instruction should be available supplementary to classes”. From the survey data we can deduce that students consider that computer based learning or web based learning should play a more important role in the educational process (85.88%), that web based learning programs cannot replace traditional courses (83.53%) and that computer based instruction or web based instruction should be available supplementary to classes (82.35%). Although the percentages related to the different types of study cycles or specializations are slightly different, the trend is generally the same. Asking for opinions on “Why computer based instruction cannot totally replace classic instruction ”, 30.61% of the students consider that the interaction between the students and the instructor is limited, there is no possibility to ask for explanation on fuzzy concepts right away and there is the lack of verbal explanations of the instructor. 44.90% of the students mentioned the hardware and software problems that may occur (slow transfer speed, Internet connection problems, software incompatibilities, educational platform design issues) and 24.49% of the students mentioned other issues like: mistiming, the fact that not all the students are familiar with the method, the concept and the use of eLearning platform, the abandonment of the learning process if the materials are not easily accessible, dependence on computer and internet, or the lack of extrinsic motivation. When asked “What types of learning would you prefer for the future: computer based instruction or traditional instruction?” 58.82% of the students sustained the traditional instruction while 91.76% considered that it should be supplemented by the computer based instruction.

5. The proposed educational platform

In the context presented above, we provided the 75 students in the first year of a faculty with economic profile with assisted instruction support for the informatics disciplines, in parallel with course and seminar classes, as we wanted to raise the level of knowledge acquired during the educational process. The platform www.info.ase.ro/fr, implemented for the students of the Faculty of Business Administration in Foreign Languages, French section, provides them with educational materials, video tutorials, bibliographical references and Internet resources.

In order to build the educational platform, we started from the structure of a content management system which we customized by including components, modules, and plugins specific to the deployment of the educational process. These components provide support for creating multiple answer questions tests, visualizing test results and statistics of results, facilitating synchronous communication in order to improve the communication between authenticated users, like the chat component, or asynchronous communication, like the e-Mail component, searching for information, publishing information on the Wiki-like dictionary and on the forum. We also installed plugins that integrate photo galleries, PDF viewers and WYSIWIG editors for content authoring on the platform. The educational platform provides the authenticated students with access to supplementary resources through the registered user menu that allows them to access resources published on the private section of platform. In this section, the educational platform includes a personalized search system through the integrated search module. The student may search in his own resources, in the course resources or in the seminar resources.

Search results are displayed on another page of the platform. This page also includes the options for advanced search that may be used in order to conduct a more accurate research by selecting one of the following types of search: search all the words given, no matter the order; search any of the words given and search the entire phrase, in the order indicated. The search is conducted within all the articles organized in categories, the contact list, RSS flows, Web links published on the platform and own private messages. The student may opt to search using one, more or all the search options displayed. The authenticated student may select also the order to display the results, depending on publishing date or on number of accesses, alphabetically or grouped on categories, Figure 1.

Unlike the main menu from the public section, the menu from the private section provides the authenticated student with sub-menus for each discipline described in the public side. Also, it includes other options required for the activities on the educational platform like knowledge assessment, connection to the discussion forum or to the Wiki-like explanatory dictionary.
Course and seminar supports are created according to pedagogical practices and methods, with respect to the study methods preferred by the students. These are then uploaded on the platform in order to be accessed by the students after they authenticate. Each support is firstly presented to the students in the course class or in the informatics laboratory through the teaching-learning-assessment activities specific to learning with presence on campus. Due to publishing the supports and other educational materials on the platform, the students may individually study outside the class hours also. Using the supports during the class hours, especially during informatics laboratories, allows more advanced students to finalize their tasks earlier and those who have difficulties to benefit from the increased attention of the instructor. Thus, a personalized instruction process is encouraged, with the purpose that, at the end of the course, all the students attending the same course assimilated the information presented by the discipline in an even percentage, using different study means.

On the platform, students can also access a forum used for requiring information regarding the accomplishment of homework or of a project. Some uncertainty regarding homework or a project is written and published on the forum by a single student and the answer is useful to more students. So, learning by observing is encouraged in the instruction process. All the information, questions, answers, documents attached and Internet resources are published on the forum after they have been validated by the administrator, in order to avoid materials or information with wrong or inappropriate content being published. The forum on the educational platform allows a permanent communication between the students and between students and instructor. Possible identified problems may be discussed again during traditional meetings, in the class room. The wiki-like dictionary has the role of explaining terms, concepts and methods presented through the instruction process during course and seminar hours or through recommended educational materials in informatics. All integrated resources of the primary courseware educational support are accessible to the students in the private section of the platform through authentication using a username and a password assigned individually to each student (Figure 2).

Although the Wiki module is administered by the instructor, its educational content is created in collaboration with the students. The instructor is the one publishing in the module the information presented during course or seminar classes. Students may visualize this information but they also express their interest on other information that
is not yet published in the Wiki module. They participate actively by adding information from the studied domain to
the module. Also, they have editing rights, in order to complete some information or to correct possible mistakes.
Information published on forum, answers to the questions, recommendation and suggestions, concepts defined in the
Wiki module, course and seminar supports created by the instructor or by the student, all of these represent
educational materials for the next promotions or for anyone being able to access the platform who consider this
information useful. Based on this information published on the platform, the dialogue is encouraged between all the
actors implied: students and instructor. Given to the recursive character of the learning process, the instructor may
analyse the new subjects proposed for debating in order to create new educational materials.

6. Conclusions and future directions

One of the main advantages of the system developed for the students presented in this paper is that it provides
support for both blended learning and vicarious learning and also for the three types of instruction: dependent on
time and space variable, dependent only on time variable and simultaneously independent of time and space
variables. This way it fulfils the requirements of the modern student which prefers to use the types of instruction he
best fits on for learning at his own pace, without being restricted to a specific type of instruction.

When the student gets a quick answer he has the ability to correct the information before he actually acquires it.
If the answer comes too late then the student faces the following situations: the student may rapidly correct the
information without being disturbed by the delay of the answer; the student acquired wrongly some pieces of
information and the process of correcting it may be difficult as long as, during waiting time, the student may have
also acquired wrongly other related information; the student already lost the interest for the subject and he may not
be interested in coming back to correct the wrong information.

For the educational platform dedicated to the group analysed, there is a permanent communication between the
actors involved through the integrated e-mail and chat modules. Even when the instructor does not identify any
problem after a test or a project evaluation, sending a feedback, even just to inform that there was no problem, will
have a positive impact on the student, encouraging him and giving him the safety that he correctly acquired the
concepts he got in touch with at the discipline studied.

The attention of those implied in educational activities, desire that the instruction process is as attractive as
possible for the new generations of students already familiarized with using computers and mobile devices and with
browsing the Internet, should focus also on social networks, virtual 3D platforms and micro blogging. The
educational domain may take advantage of using these technologies for deploying educational activities, but we still
consider that, even if hardware and software issues are solved, they cannot replace the face-to-face interaction
between students and instructor, so giving up entirely the traditional learning in the class room is not an option.

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