

Migrating to e-Learning in secondary education

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Abstract

Traditional face-to-face instruction in secondary education has been tested for hundreds of years now and has proven successful, but after the tremendous expansion of computer and internet use in several sectors of our day to day lives, e-Learning has been spreading its wings. During the last years e-Learning has been proving through numerous case studies that it can be beneficial either on its own, or combined with traditional methods of teaching. In secondary education in particular, it can undoubtedly offer a much more fruitful experience to the pupils and complement the teacher's traditional instruction methods. Migrating to e-Learning in a secondary education setting influences a number of stakeholders: pupils, teachers, parents and administrators and is thus not something that can be accomplished overnight.

In this paper we present six design patterns that propose solutions to some of the situations that frequently occur during this migration. These are:

- **LESSON TRANSFORMATION**
What a teacher has to do when he/she has a conventional lesson and wants to convert it into an e-Learning based one.
- **PARENTS' DISCOMFORT**
Solutions proposed concerning the relief of the parents who do not feel comfortable with e-Learning.
- **GETTING ACQUAINTED WITH E-LEARNING**
What someone has to do in order to get acquainted with e-Learning.
- **PUPILS' SOCIAL INTERACTION**
How e-Learning can in fact support social interaction among pupils.
- **HELP FOR USERS**
Solutions for overcoming problems that new users might face with e-Learning.
- **THE SUCCESSFUL INTERFACE**
How to provide the most suitable interface for the different stakeholders.

Name:

LESSON TRANSFORMATION



Problem:

When migrating to e-Learning, teachers have to “transform” lessons that possibly had been prepared and delivered in the traditional way, to e-Learning based ones. Typical problems that teachers face in this phase are:

- All material (notes, handouts, tests, problem sheets, etc.) has to be in electronic format.
- A textbook might also be better accessed from the e-Learning environment.
- Assessments and tests that might have been in a printed/handwritten format have to be now included in the new environment, so as to get automatic grading.
- Existing software and files have to be adapted to “fit” the e-Learning environment.

Analysis:

Teachers are normally well prepared for their lessons, having devoted much time in developing notes, handouts, etc., especially if they have been teaching them for years. If an e-Learning program is to be implemented in their school, then those years of work should certainly not be lost. Therefore, everything they have prepared must be converted to a form that can be used in the e-Learning environment.

Solution:

The following constitute steps a teacher can follow to convert a traditional lesson to an e-Learning based one:

- Handwritten notes can be typed with a word processor or can be scanned by an advanced program that can convert them in electronic documents.
- Electronic textbooks (e-books) can often be found free online, or a link can be available for a price.
- Printed material can be scanned (if not already available electronically) and saved in electronic format.
- Test and quiz material can be entered appropriately in the relevant e-Learning environment component.
- Electronic presentations that might be available, can be used as they are, or can be reformatted to comply with e-Learning standards (e.g. SCORM)
- The help of the administrator responsible for supporting the e-Learning environment should be taken advantage of. He/she will be able to solve any technical problems that might arise, such as software incompatibility, etc.

Name:

PARENTS' DISCOMFORT



Problem:

In their majority, parents are not familiar with e-Learning. Since they are not involved in the electronic way of learning and thus do not know its strengths, they are hesitant to let their children learn this way. They believe that:

- They will not “see” the teachers
- They will not know the other parents and they will not be able to have a parents’ board
- They will not be able to check on their children’s progress
- They will not be able to help their children with their homework, since they will not know how

Analysis:

Parents who are often unaware of an e-Learning environment’s potentials tend to reject it. The lack of in person communication scares them and drops their trust level in this way of learning.

Solution:

First of all, if possible the parents should be trained in e-Learning. Often, this is hard, so the program’s operators and school’s teachers should focus on the following:

- Teleconferences on a weekly basis between the faculty and the parents in order for the parents to be able to see the teachers. Also the CV of every teacher should be online.
- Parents should have their own account from where they can find tutorials on using the e-Learning program, check on their children’s progress and chat rooms where they can talk to other parents and teachers.
- During the teleconferences all parents and faculty should vote to form a parents’ board, which will be given a special account with properties on arranging teleconferences, creating new threads in forums and even arrange fieldtrips and other activities for the children they are responsible.
- Parents should be able through their accounts to access their children’s curriculum, as well as guidelines on how to help their children in different lessons. Also, a 24/7 online help must be accessible from these accounts, where parents can reach a specialist, or a teacher through email, chat room or forum.

Name:

GETTING ACQUAINTED WITH E-LEARNING



Problem:

Even if a user is familiar with using computers he/she has to learn how to take advantage of everything that an e-Learning environment has to offer and start using it. During this procedure many problems may occur:

- Discomfort with learning new methods and tools
- Fear of others having access to personal information
- Impression that e-Learning will completely eliminate social interaction amongst pupils
- Uncertainty about being able to cope with the new system without help
- Scepticism regarding the “new” environment: will it be able to cope with stakeholders different needs?

Analysis:

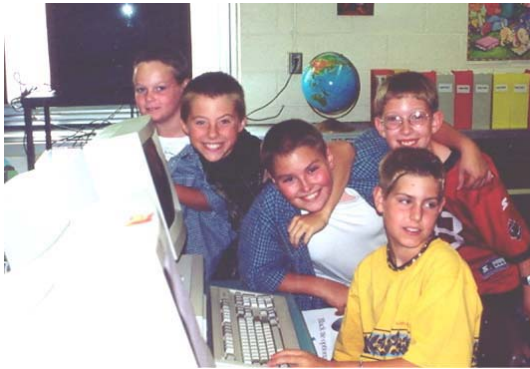
When being presented with a new way of doing things, it is normal to feel slightly challenged at the beginning. These feelings however disappear as soon as you learn it and get used to it. Starting to work with an e-Learning environment might seem difficult at start, but becomes easier when one is convinced about its strengths and learns its capabilities.

Solution:

- Almost everyone feels uncomfortable learning something entirely new. To confront this attitude, users should be shown existing e-Learning environments and be left free to play with them. After this stage users must be trained within the environment by the experts. The training will help them understand the advantages of the program and the best way to move and work in it.
- Demonstrate security measures and tell people how their information is being used and who has access to it. Treat all information extremely sensitively.
- Demonstrate and convince other stakeholders that **PUPILS’ SOCIAL INTERACTION** can be preserved and even augmented through e-Learning.
- Assure users that they are not left on their own to deal with the new system in front of them. Make sure that they are all aware that **HELP FOR USERS** exists.
- Realise that indeed different stakeholders have very different characteristics and preferences. **THE SUCCESSFUL INTERFACE** should take these into account and offer a customised experience.

Name:

PUPILS' SOCIAL INTERACTION



Problem:

Since e-Learning's goal is to implement distance and stand-alone learning, pupils are afraid to use it because they feel they will not have any interaction with other pupils. These are the problems that have to be solved in order to make e-Learning more social interactive:

- Exclusively personal assignments and tests
- Lack of a place where pupils can talk to each other
- Pupils do not know who else is in the same class
- Activities are only web-based

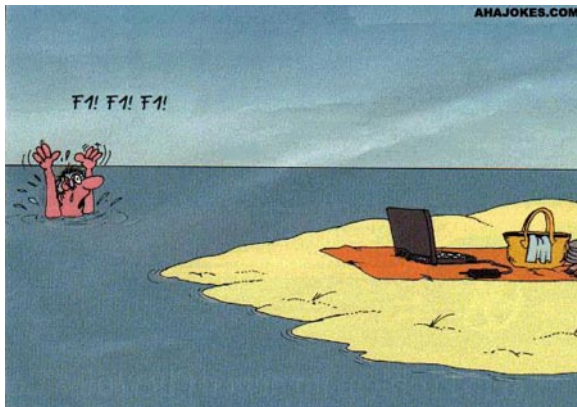
Analysis:

Many e-Learning environments are not designed to provide social interaction to the pupils. Therefore, designers should consider that the users will need to interact to each-other and also want to cooperate.

Solution:

- Teachers should not always assign personal tests and homework. They should also try to give assignments that would allow pupils to work in teams. Exercises in groups will lead pupils to interact socially while learning and trying to solve them.
- Forums are easy both to design and apply in an e-Learning program. Pupils can share opinions on various topics. In a more advanced program, a chat room would boost there social interaction.
- Every pupil should have a profile where he/she could provide personal details and even a photograph.
- Teachers can occasionally ask for a face-to-face presentation of pupils' teamwork at schools where everyone can go. Also, every month pupils can perform activities such as fieldtrips, visits to museums, labs etc.

Name:
HELP FOR USERS



Problem:

Every user while trying to work or navigate in an e-Learning environment will definitely need help at a time. The help needed may have to do with the environment's functionality, abilities and features as well as with terms used. Since the help will be needed at any time or place, is impossible to offer a person-to-person help.

Analysis:

This is a very common problem for any program or software but often someone can find an expert to help him in person. Since an e-Learning environment is hard to provide in person help, it should have a strong infrastructure concerning the area of help for users.

Solution:

The following features should appear in every e-Learning environment in order to provide easy and immediate help to the users:

- Online tutorials with animations and videos showing movie recordings that describe the use of the environment.
- Links to a glossary that will explain terms used in the environment
- A short description for hard to conceive features should appear when a user moves the mouse over them.
- Frequently Asked Questions and their answers.
- Help forums, chat rooms and 'e-mail to the expert' features.
- A place in every page of the environment where tips will appear. This should be a random tip and should refresh when changing page. The user should also have the option of being linked to a "Tips Bank" where all the tips could be found.

Name:

THE SUCCESSFUL INTERFACE



Problem:

Since an e-Learning environment is being used by different kinds of users the interface is a critical part since each of these users should be happy with it.

Often a high level user needs a simple interface without animations in order to be able to work fast. On the other hand pupils will be more easily attracted to the e-Learning environment if it included animations, 3D toolbars and menus and of course a lot of images and sounds.

Analysis:

Catering for the variety of characteristics, needs and preferences that users have, can be a problem. One of the factors that make an e-Learning environment successful (apart from its functionality, etc.) is its attractiveness for its users: whether users like the interface they see in front of them.

Solution:

The solution for the interface problem is to try to satisfy the demands of every kind of user that will be using the environment:

- Create a simple interface for the administrators
- Create a dual account for each teacher. One for the editing mode where the interface should be simple and with help in every possible position. Also, a mode where the interface will be just like the pupils in order for the teacher to know if the things he/she edited will look good.
- Create a simple interface for the parents but also provide to parents the ability of switching to pupil's mode.
- Create an exciting interface with 3D menus, animations and toolbars as well as with sounds and videos and of course if possible with a help friend (for example an animated cartoon that will help in anything a pupil will need).
- Since everyone likes to be more or less creative at times, the interface in each of the above accounts should be customizable, i.e. have the option of changing colours, sounds and even creating or choosing a theme.