

## Changing Classroom-Based Course Material to Online Course

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### **Abstract:**

*This work was motivated by the fact that the number of learners increases remarkably compared to the number of teachers; mainly in rural areas. Another issue was the decrease of attendance rate among students.*

*eLearning seems to provide a reasonable solution for such problems. It is that technology which facilitates running, delivering and*

*administering the learning process, with the help of electronic means via standalone computers or networked, either online or not, under instruction or self-paced.*

*In this paper the teaching staff interest in delivering teaching materials using eLearning techniques and their degree of cooperation in implementing the program was tested. For the purposes of this study, the authors believes that the working environment, namely the faculty of engineering and technology university of Sebha, would be very much helpful and appropriate to launch an eLearning project. Results showed that there is a great interest in using this technology, a high level of cooperation by staff, management and supporting staff.*

*Keywords— eLearning, Online courses, education, internet.*

## **I. Introduction:**

We seem to be in an era when the number of students increases noticeably in relation to the number of teachers. eLearning offers the possibility to restore the balance without sacrificing the quality of teaching. The ultimate goal of the learning process is to help individual performance and development and eLearning is not the exception of that role. It is that form of learning, which uses electronic means for delivery, and administration of that experience via computers either networked or standalone, implementing web technology or not, supervised or self-paced [1].

Web-based learning, intranet based learning, offline learning and interactive distance learning all these names look like different types of

learning technologies delivering different capabilities. However, all supply flexible learning environment, started to agree on common technology standards and delivery infrastructure. And since the invention of this term the interest in eLearning is rapidly growing. However, the use of such technologies in educating and developing individuals is not new and has been around in some form or another [2].

Generally speaking, the current use of eLearning covers the following areas: enabling individuals to refresh, renew or extend their knowledge in order to enhance their performance, using information and/or communication technology in immediate and accessible way. A wide range of electronic technologies is available to educators to manage the delivery of learning. But, other issues than electronics have much more to do, as far as learning is concerned these are: the learner engagement, the learning enhancement, the exploration experience, the ease of use, empowering the learner to control the learning schedule and the execution of the program. Therefore, to make the eLearning experience effective the educator and the student should meet at least in the first instance. And to manage the delivery of learning educators could take advantage of the wide range of electronic technologies available to them [1].

## **II. Why Elearning:**

eLearning is still an emerging field, but offers many benefits that are totally different from a conventional classroom based learning environment and can generate results for students. The electronic technologies offer a wide range of benefits like cost-effectiveness, standardization, flexibility and scalability. In the same way its importance

for the corporate sector, is a result of its ability to track and record exactly the performance of every contributed learner by the use of a learner management system.

Making materials and content to be more accessible, up-to-date, easier to use and cheaper to distribute are a set of benefits that an organisation will gain from adopting e-learning techniques at least. The learning experience itself could be customized to fit the individuals, for example by making it quicker and may be adjusted to meet certain needs, without abandoning the essential learning points. The benefits of eLearning are now well reviewed and are summarized in the list below:

- Delivers the eLearning materials at the most convenient time, segmented into parts and it can be tailored to meet learner needs/capabilities.
- Reduces delivery costs significantly, it appears that reductions in such costs exceed 50%.
- Keeps the contents up-to-date easily, because the information always comes from one central source.
- Guarantees the consistency of materials delivered. Every user obtains the same message from e-learning.
- Compresses the learning time needed to master a particular skill or topic. Reports suggested a 50% reduction in that time.
- Eliminates any socio-cultural bias from personal contact, because learners can study in a more or less anonymous environment without the embarrassment of failure.

- Improves people's IT skills and most people see the interactivity and collaboration features made it more enjoyable than traditional ways of learning.
- Excludes the need to build additional systems for assessing, monitoring, tracking and controlling the learning experience the package usually includes administrative facilities, which besides that may facilitate learner registration, tracking learner progress, testing and record-keeping.

So to benefit the most from adapting an eLearning approach, take into account the following issues and requirements:

- Some learners may not consider eLearning as a legitimate activity but cold and impersonal. In fact, it requires high levels of self-discipline and self-motivation.
- For some soft skill development eLearning is inappropriate, mainly those rely heavily on interpersonal contact for example team building, communication, or presentations. But still useful in such cases as a preparation or follow-up course.
- Still there is a strong need for human support both to learn people how to use the software and to maintain their learning.
- Compatibility with other systems and materials sometimes may not be maintained, however the introduction of standards may overcome this problem or minimizes its effect.

### **III. Material and Method**

The faculty of engineering and technology Brack-Libya of Sebha University was the target of this study, which aimed at introducing

eLearning as another means for delivering courses. The university is playing two different roles in the developing community around it: first as a respected and trusted source from which many private and public organisations seek consultancy; second as the main supply of qualified graduates in a wide range of specialities, ranging from medicine, law, business to sports.

In this work the expectations and attitudes of: the management, staff and students towards eLearning were examined. Also trying to explore if they are willing to support, participate and promote the idea of introducing such a teaching tool. And to find out who is looking at E-learning as a threat and who considers it as an opportunity. Such data were be gathered using a questionnaire to be designed for that purpose, add to it the author's past experience who worked for them as a lecturer. That information could facilitate the decision making about the scenario to be followed in relation to course design, implementation and delivery.

Methods of collecting primary data for research purposes is divided into three categories; observations, interviews and questionnaires. Whenever the research is concerned with people behavior, the best method to be used is a systematic observation. This involves monitoring what people do; keeping a note of that inspection then uses that information for analyses and decision making process.

Questionnaires are used mainly to gather people's behavior, believes, opinion and attitudes towards certain idea or experience; Therefore, they are good for explanatory and descriptive researches. There are two types of questionnaires, each of which is either a self-

managed or interviewer-managed questionnaire. The delivery and collection method is also dependent on the type of the questionnaire. Whilst the mail round, post, email or even online forms are appropriate methods for the first type, the telephone or structured interview are the right methods for the second type.

Many issues should be taken into account while designing the questionnaire, since they absolutely affect the response rate, the validity and reliability of the data collected. So, to maximize these ratios the designer has to keep an eye on the following issues while preparing the questionnaire:

- The design of each individual question.
- The clarity of the questionnaire layout.
- Clear and logical justification of the questionnaire goals [3].

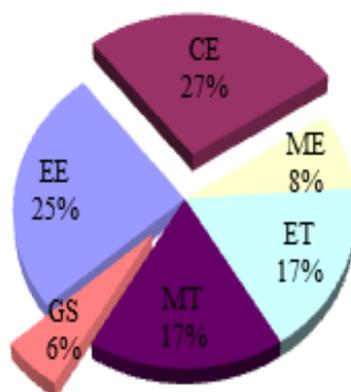
The questionnaire been used in this study was a self-managed one; aimed at collecting data about attitudes, beliefs and behavior of the respondents regarding the introduction of an eLearning program at the faculty. The teaching staff was targeted by the survey to take part in this study to examine their opinions towards eLearning regarding the following issues:

- The usefulness of eLearning techniques and to what extent?
- Their readiness to contribute in the program.
- The culture suitability, and.
- Which type of eLearning they prefer?

The participants responses to the survey questions were collected and analyzed and the following sections discuss the obtained results.

#### **IV. Results and Discussions:**

The faculty consists of seven different departments one of them is the general science and six specialized departments; the total number of the teaching staff is about 90. However, only 75 of them participated in the opinion polling process. Figure (1) shows the distribution of respondents by departments. Surprisingly, none of the respondents work for food technology department, which is disappointing and no reason could be found to explain the situation. Few (precisely four) students responded also, probably the postgraduates, but had been eliminated because of the small sample size.



**Figure 1: Distribution of respondents by departments.**

Please note that CE stands for civil engineering, EE for electrical engineering, ME for mechanical engineering, ET environmental technology, MT for medical technology and GS for general science.

According to their answers to the question regarding the average working hours on computers; about one fourth of the respondents work on a computer for over 20 hours. On the other hand, one in ten of the whole sample is using a computer for less than five hours a week. The complete ratios are illustrated by Figure (2).

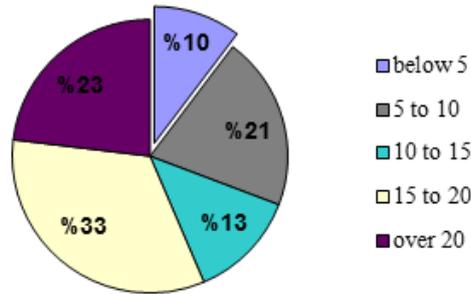


Figure 2: PC weekly usage in Hrs.

Figure (3) summarizes the responses to questions (5, 6 and 7). The graph shows that 62% of the respondents believe that eLearning is a very helpful tool to deliver or support teaching process; however the other 38% of them believe that it is only helpful. But, 11% of those choose not to contribute in the program if introduced, saying so without giving any reason.

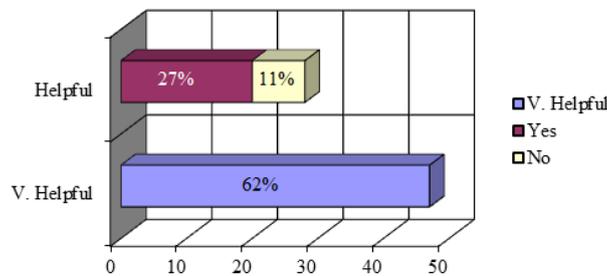
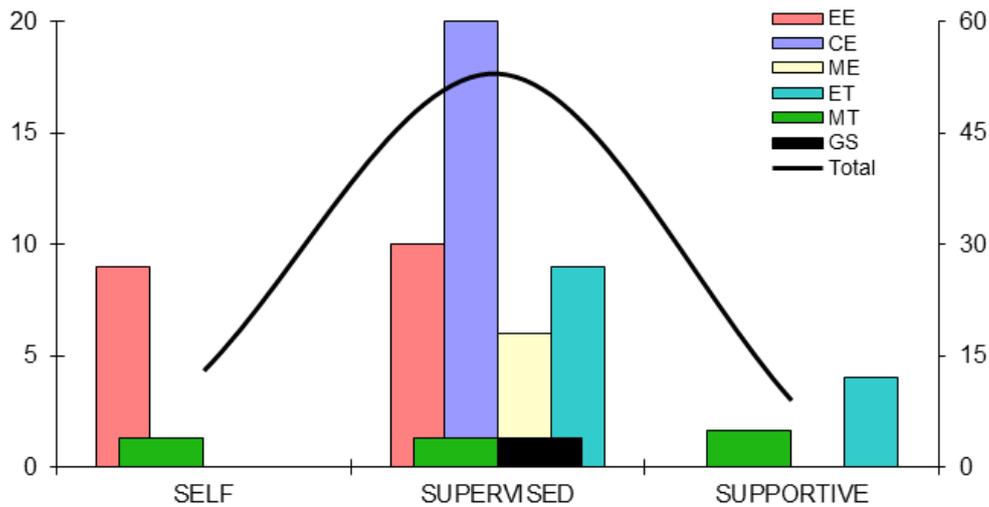


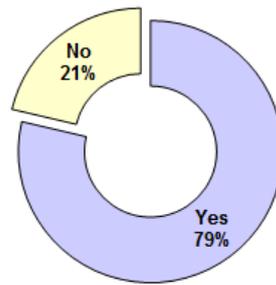
Figure 3: participants attitudes about elearning helpfulness and their willingness to participate.

The vast majority of the staff believes that the supervised eLearning type is the most appropriate one for implementation. Figure (4) below shows both: the total number of responses each type of eLearning has accumulated as the preferred delivery method, in terms of percentages 71% for supervised, 17% for self-paced and 12% for supportive; and the distribution of responses by department to the proffered eLearning type.



**Figure 4: Preferred eLearning type.**

21% of the people expressed that the environment (culture, people etc.) is not appropriate to introduce an eLearning course, as shown by Figure (5). But, again with no clear explanation of why or how they have come up with that conclusion. Three quarters of respondents believe that there is no single course, which may not benefit from employing eLearning techniques.



**Figure 5: Appropriateness of culture for e-learning**

However, the rest of the sample mentioned that the practical modules like engineering drawing and workshops; and modules aiming at teaching the students certain skills like anatomy or fieldwork are not appropriate choice for an eLearning program. By looking closely to their answers to other questions, the following facts have to be highlighted. Only 63% of them have access to a home computer and 89% of this group is using computers for less than five hours a week.

The last three questions were designed to collect qualitative data in relation to the areas where eLearning may be useful and applicable; capabilities and specifications of an eLearning package itself; and what people are expecting from joining in an eLearning course.

From the point of view of the respondents an eLearning course should have the following characteristics: incorporates animations, audio and video; include simulations; clear and easy to navigate; simple to use; Internet connected; free from bugs and cheap.

Regarding the last question, suggestions received are about: offering courses to the teaching staff as well as the students; the program should give more attention to the practical modules and introducing it as soon as possible.

Results confirmed that the majority of the respondents are in favor of using eLearning in delivering course materials; they are highly motivated to participate; and they will support the program. So, in the sections to follow provide suggestion and recommendations on how to: develop implement and design an eLearning approach.

## **V. Developing Elearning Approach:**

The conclusions of different studies approved that a multimedia cyber course supplied fully in an interactive studying environment assists students to perform at least as well as a control group under traditional teaching conditions, even better in most cases [4]. And according to the adviser at the chartered institute of personnel and development; the latest assessments indicate that competitive organizations will soon be delivering up to a fifth of their learning through the Internet, intranets or the Web. Clearly there is no debate about whether eLearning is the future or not.

Before developing its approach to eLearning an organization has to consider certain issues, which could be formulated as a set of options. The choices among these options will underpin the development process of the approach.

The first decision to be made by the organization is regarding the role to be played by eLearning to achieve the learning and development requirements. Will they rely completely on eLearning or will develop ways of mixing it with traditional classroom approaches?

Then, are they capable of designing and implementing it themselves? Or they are going to outsource the eLearning materials? And if yes, which of the following options is appropriate: buying ready programs, customizing externally developed materials, develop materials from scratch or developing materials in-house? While off-the-shelf programs is insufficient but would be a good start, developing materials in-house thought to be the way forward however expensive.

Another issue is the provision of support to learners, which can take a number of forms: an advanced on-line help function, direct or indirect contact between learners and instructor(s), peer-to-peer support, one-to-one interactions (mentoring).

eLearning can provide trainers with a range of opportunities to develop their role and skills. However, some trainers will see eLearning changing, but not abolishing, their role and skills and hence threatening.

## **VI. Implementing Elearning**

People have major learning styles and knowing how people learn is essential to all learning experiences; it helps encouraging the individual development activity and facilitates the choice of the appropriate learning activity. Effective learning requires: motivated learners, clear performance standards, directions, appropriate methods and techniques, feedback, encouragement, satisfaction, recognition and time [5]. Experts suggested that to implement eLearning successfully the following five steps should be carried out [2]:

1. Analysis: is the first stage where the concentration is on identification of learning needs, learning objectives, specification and requirements,

- selection and understanding the learners and deciding on the delivery methods.
2. Design: deals with the creation of the customized application depending on information gathered in the last stage, by selecting materials, media, style of interactivity that suit learners, and user interface.
  3. Development: is the process of interchanging the design into a real application, this involves digitizing learning materials, producing any audio/video, coding of software in the selected programming language and testing.
  4. Implementation: putting the program forward and selecting the skilled tutors to run and support the learning activity.
  5. Evaluation: is a vital stage for the assessment and continuous improvement of the program. This covers measuring the performance of the program against the defined objectives, in terms of the rate at which learners accept the program offered, efficiency, effectiveness, and return on investment.

## **VII. Designing Elearning Courses**

Designing courses to be delivered over the Web needs at first well planning and in advance. Different tools and methods like multimedia and interactive approach could be used to create a web based learning environment, which may include: the updated course material, links to other resources, advice and recommendation, supervising feature, means

of communication, self-assessment facility and possibly formal assessment mechanism [6].

However, changing classroom-based course material to online course is possible, this necessitate several steps to make the conversion process easy. Here are the steps needed [7]:

1. **Decision Making:** Making decisions about the design of an online course is the first step; this involves answering the following questions: Which part should be online? How to deliver the contents? Who will attend the course? And, how students will access the material?
2. **Presentation design:** The next important issue is determining the way the course should be delivered to students, which is affected by their level of understanding of the material and their learning habits and styles. To maximize the students' learning, the presentation of materials may be organized in different ways based on the stage of the course the student is currently at.
3. **Page design:** Web page can have a variety of layouts, one of the most popular forms contain the next features: a global navigation bar that enclose the important links usually located in a left hand side of the page and emphasized by a color; the header of the page states clearly its contents without too much details; and another navigation tool at the bottom of the page that has links to: a contact address or a feedback form, an "about" link tells when the site was created, last update and where it is located; and the body of the course content is arranged in the middle of the page. While such a basic layout format is recommended others layouts may be designed, but ensure that the

previously mentioned elements are present in the web page. It is even strongly advised to stick to one layout throughout the site to allow students spend their time reading through the material rather than wasting it learning how to use the site.

4. Contents design: To improve the overall look as well as assisting and improving the learning process, several elements could be added to the online courses like: title page; tables; graphics; logos and backgrounds. Deciding in advance about how certain contents will be presented and keep that format all over the site save students time, keeps them away from confusion and helps them to get the most out of the course.

A final note regarding people's reading habits that should be taken into account when designing online courses. It is according to a number of empirical studies, which suggested that people are scanning information on their computer screens instead of reading it. They also showed that when people read from the screen their reading speed slowed down by 20% to 30%. Besides the speed reduction; the accuracy may be reduced for cognitively demanding tasks. Finally, result showed no evidence of fears of increased visual fatigue and reduced levels of comprehension caused by reading from screens [8].

### **VIII. Conclusions:**

Exploring the possibility of introducing an eLearning program, at the Faculty of Engineering and Technology of Sebha University, was the aim of this paper. The teaching staff was targeted by this study. People

were surveyed to examine their opinions towards eLearning regarding the following issues:

- The usefulness of eLearning techniques and to what extent?
- Their readiness to contribute in the program.
- The culture suitability, and.
- Which type of eLearning they prefer?

The literature encourages the choice of designing a web-based eLearning course. Since it is easy to design and implement; the hardware requirement is almost there; availability of supporting staff; more convenient and can support self-paced, supportive and supervised eLearning styles.

The results showed that the majority of the respondents are in favor of introducing the program; they are ready to participate; and will support. However, some were less motivated.

The culture looks appropriate and the people are passionate, therefore we may conclude that running a web-based course will be successful.

An induction courses are recommended for students and staff to help and support those anticipated to participate and encourage others who undecided yet.

Lack of information about eLearning or possibly lack of confidence discourages few people from contribution, more investigation is needed to identify the reasons then find the suitable solutions to those problems.

And another survey is required to assess attitudes of students regarding the same issues and to investigate their learning habits and styles in order to design a suitable program.

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