The article considers the e-learning system in terms of its application and the challenges it faces in the traditional university education environment. Unlike existing forms of computer-based training, the main feature of the proposed system of e-learning is that it should be directed at individual and continuous learning in a rapidly changing field of information technology. The needs for proposed e-learning system, requirements, stages and possible feedbacks of implementation of that system are described.

**Keywords:** e-learning system, information technology, university education environment.

**Introduction.** This era is characterized by marked transformations in education environment resulting from progress of information science and technology. It is clear that university education should not only follow these visible changes, but also outperform them, predict future technological and associated social changes, including labor market. This type of forecasts requires processing the large flow of information, and the use of the results of this forecasting in education process means the continuous diversification of subjects of theoretical and practical knowledge. It is obvious that in the case of operational selection of lecture and seminar material, with contemporary volumes of lecture flows and crowded seminar rooms, the traditional solution to the problem will rest both the lack of teachers at different levels and the technical capabilities of the University.

Thus, modern education is faced with the problem of quality of training students in rapidly evolving computer sciences and the problem cannot be solved within the framework of traditional approaches. It is clear that solutions to this problem led to the development of e-learning, allowing to implement customized forms of training, to more extensive use of the cognitive potential of the learner, to take into account his psychological characteristics and previous skills. It is clear, also e-learning may be the main tool in the of continuity education system. The main objective of this research is to identify challenges, requirements, objectivities, impact and stages of implementation of the individual continuous e-learning education in university environment.
1. **E-learning system implementation.** As it is stated in [1], e-learning system can be activated through several mechanisms: determination of policies and visions and development of the strategic plan; identification of technical resources supporting for faculty member and students; development of analyzing and assessment methods of education results and reliability of educational programs.

The challenges facing e-learning can be represented as general challenges created by application of information technology in the educational process.

a) The most followers of the continuous change in techniques, finds that the power and the speed of the computer, which was yesterday the best technology and the most common, has become limited performance or useless, compared to great acceleration and frightening sometimes. Exploring the effect of Internet on the Arab world at the beginning of this century, the author of [2] rightly emphasized that the real impact of the information revolution must be in front of us, not behind us.

b) The information and communication revolution led to a comprehensive and accurate review of the foundations of the education and learning process, the objective is no longer to collect knowledge and information for a limited period of time, but the most important to benefit of them to continue, in order to support the demands of integrated human development and continuing education, in addition to employing to achieving the requirements of the labor market.

c) The teacher’s challenges to contribute to the development of appropriate educational programs and exchange them with teachers from other countries or universities, by change the teacher’s role radically from being a source of knowledge to a complementary of the educational process.

![Fig. 1. The difference between traditional and e-learning](image-url)
d) The student’s challenges for the necessity to search of knowledge, learning became individually, where student came out of being merely a recipient of information, but search for it.

e) Traditional university education challenges: as observed in [3], many lecturers are still satisfied in using traditional lecturing methods. Cultivating the use of e-learning requires suitable realization of its difference with traditional learning [3]. The difference between e-learning with traditional learning was descriptively (Fig. 1) and empirically investigated and proved that e-learning give satisfactory results in contrast to traditional education.

2. E-learning technology requirements. Has become a major necessity imposed on educational systems to make a qualitative shift in the goals that seek to achieve, to be focused on providing learners with a set of skills that required by life in the information era, including the skills of individual-learning, informatics skills, skills involved in dealing with technological innovations and self-management skills, rather than focusing on providing them with information [4].

There are a set of requirements imposed us by current era, which makes e-learning - as the latest technological innovation - an irreplaceable strategic choice, these requirements include: the need for continuing education; the need for flexible education; the need to communicate and open to others.

The current directive to make education unconnected to place and time, lifelong learning, and learning based on current need, individual-learning and effective learning.

The various methods and strategies used in the learning process, traditional and electronic methods can be used together in the education system, but are used differently in each of the different learning systems. One of the crucial factors for students’ success in e-learning process is self-motivation [5].

3. E-learning objectives and their impact in the university education environment. Figure 2 demonstrated some general advantages of e-learning in the university environment. Goals of e-learning can be clarified as follows:

   a) Improving the quality of programs, courses and resources by designing

![Advantages of E-learning in the university environment](image_url)

Fig. 2. Advantages of e-learning in the university environment
Electronic programs, courses based on accepted international standards, in fine detail, explain how the performance of educational tasks, the model can be design once in the form of learning objects, and use it many times in others programs.

b) Improving the quality of education and learning outcomes: Traditional education still applies behavioral theories, which stand at the limit of providing knowledge by the teachers.

c) E-learning is primarily based on structural and social cognitive theories, it applies the principles of effective learning, which helps improve the quality of education and increase learning by 60% from traditional education [6].

d) Achieving equality of educational opportunities for all: E-learning is far from prejudice and racism, it is a fair education that is not biased towards a class of people, according to their race, color or religion, and provides the same opportunities for all learners to participate in the learning process.

e) The learner is free of restrictions that imposed by the traditional education system: Traditional education imposes many limitations on learners, including regular attendance, adherence to a specific schedule, specific dates, and work on projects according to a specific schedule. E-learning has no limitations, because it is flexible, and is one of the most important catalysts for continuing education.

g) Achieving learning fun: e-learning is really fun, where the learners are sitting in front of the computer screens, without feeling the time, because it includes many offers and exciting, includes text, sound, images, graphics and video. For that, the learners become more motivated and more satisfied and pleased [5].

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TOTAL Middle East | 254,436,381 | 3,284,800 | 164,037,259 | 64.5 % | 100.0 % | 116,482,542 |

Fig. 3. Internet Usage in the Middle East 2018 [7]
h) Reducing the burden on teachers and the workload of the educational institution: e-learning reducing a lot of burdens and educational and educational tasks, which burden teachers in traditional education.

i) Reduce costs and reduce long-term expenses: Although, the first view suggests that e-learning needs high costs, this may be true for capital costs, in the short term, but it does not require high running costs, so it is based on reducing costs of long-term expenditure, by 50-70%, e-learning saves time, and time means money.

j) In addition, implementation of e-learning in environment of prestigious university obviously opens opportunities for distance learning. As example the number of Internet users in the Middle East has increased significantly as shown in the Fig. 3.

4. Stages of educational design of the e-learning system at the university.

The area of instructional design in its broadest sense is "planning and implementing learning environments and systems to improve performance, the study proposes a general model of the systems approach in the design of education [8], known as the five stages often symbolized by the Latin alphabet (ADDIE), which refers to Analysis, Design, Development, Implementation and Evaluation [9]. The following is an explanation of the components and stages of the practical framework of the e-learning system in the university environment, which can be distributed at all stages of higher education as follows.

Analysis. The planning process begins after the formation of the Strategic Planning Committee, called the needs assessment phase, which is a very important stage because its outputs represent the basis for decisions in the next stage.

Design. The design phase represents the road map for the subsequent phases. At this stage, the outputs of the analysis stage (needs, visions and messages) are translated into a strategic plan, work plan, and a design document for the technical and educational components of the e-learning system.

Development. The technical and educational specifications of the e-learning system are transformed into a thoughtful educational system.

Implementation. In this stage will be used the system in its actual environment.

Evaluation. During this stage there are two kinds of evaluation, so that the system is tested in principle after each stage of production and called (Formative Evaluation) is a loop of revision and modification at each stage, the second evaluation (Summative Evaluation) it is after the completion of the settings in its final form.

5. The requirements of activating the e-learning system (ELS). The activation of the ELS requires the provision of a set of components or elements that are integrated with each other for the success of this system.
**ELS inputs.** The provision of computers in the university institutions, the creation of a web site for the educational institution, design and construction of electronic courses in accordance with the principles and standards of educational design with activating feedback, qualification of specialists in the design of programs and electronic courses, training of faculty members, the identification of educational objectives in a good way.

**ELS processes.** Electronic registration of the study, follow-up students to the electronic lessons in a synchronous way when they are in class or not synchronous at home, by using of different teaching techniques such as e-mail, interactive video and chat rooms.

**ELS outputs.** Ensure that the specific educational objectives are achieved through appropriate evaluation tools and means, enhance students outcomes and address their weaknesses, develop electronic courses, develop the website of the educational institution in light of the results and intensive courses for faculty members of some of them when needed.

**6. Strategies an assessment e-learning system by the lecturers** can be summarized as follows [10]: a) explain to students why the task is important and interesting to them. It may be useful to link the task to practices that the students may use in their professional life; b) define the learning objective of the task; c) give advice in relation to the time required to complete the activity; d) provide preliminary exercises that the student can practice, thereby building their confidence and boosting their motivation.

**Conclusion.** In this work we have touched on various issues related to the implementation of e-learning in a traditional university education and have found that the concept of e-learning is still changing. The concept varies with the presentation of e-learning in terms of technology, to the point of view of who will be trained in this system and who and how will evaluate the results of training. In other words, the introduction of e-learning should be preceded by a thorough examination of such learning environments. Knowing the parameters of this environment, teachers will be able to develop more effective training programs, to find ways to diagnose student’s activity and develop their self-motivation, to assess the results of the study. This can help the management to achieve the most effective deployment of e-learning system and also helps them to improve their strategic decision making about technology in the future. They can decide on the best approach that fit their students before implementing any new technology.

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СИСТЕМА ЭЛЕКТРОННОГО ОБУЧЕНИЯ КАК МЕХАНИЗМ ПОВЫШЕНИЯ КАЧЕСТВА УНИВЕРСИТЕСКОГО ОБРАЗОВАНИЯ В ОБЛАСТИ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ

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В статье рассматриваются системы электронного обучения с точки зрения их применимости в традиционном образовании и сопутствующих проблем внедрения в университетскую среду. В отличие от существующих форм обучающих компьютерных систем, главной задачей предлагаемой системы электронного обучения является развитие непрерывного индивидуального обучения в быстро меняющейся области информационных технологий. Описана необходимость, требования, этапы внедрения и преимущества от внедрения такой системы обучения.

Ключевые слова: система электронного обучения, информационные технологии, среда обучения университета.