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E-TEACHING & E-LEARNING, A MODEL OF E-COURSE DESIGN TROUGH A SYSTEMATIC APPROACH AND OUTCOMES-BASED PLANNING

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***Abstract**: Most of the organizations involved in higher education have rapidly developed the use of the information and communication technology (ICT). The impact was extremely significant and the humanity has accepted on their day-to-day vocabulary a new letter, the "E" letter. This letter is the key proving the fact that the higher education moved forward also due to the use of the great opportunities provided by Internet and ICT. In this article the author is addressing briefly some key aspects of the teacher's new roles within E-learning environment approached by various researchers in their published paper work. Also, the author is presenting a brief overview of the instructional design models and most important aspects of the outcomes-based planning as well as is proposing a model of an E-course designed through a systematic approach and outcomes-based planning, applicable to higher education E-learning courses.*

***Keywords:** E-teaching, E-learning, E-course, instructional design models, systematic approach, outcomes-based planning*

I. INTRODUCTION

Today, many of us have access twenty-four hours a day, seven days a week to all kinds of services, goods, newspapers etc., all of these covering most of our day-to-day needs. Doesn't matter how is called, "on-line", "in real-time" etc., at the end everything is possible due to technology progress and can be "compressed" in a single letter which is the "E" letter covering as simply as possible a very complex word, "electronic".

In 1997, the Speaker of the U.S.A. House at the time, during his speech to the Republican National Committee said "*We could do so much to make education available twenty-four hours a day, seven days a week, that people literally have a whole different attitude toward learning.*" [9]. To design an E-course is not an easy task as such course should fit inside the already existing E-teaching and E-learning standards and also, should respond to students' expectations. Within latest developments and new trends in the educational process improvement, teachers and students have new roles. Enlarging this "picture" and bringing inside the latest "E" concepts and theories is necessary to implement new approaches of the educational process itself as well as of each sub-process component of the main system.

II. E-TEACHING & E-LEARNING – Teacher's Roles within E-learning Environments

The development of the ICT together with the World Wide Web (WWW) progresses has revolutionized the entire human society on earth. More and more countries mobilize their resources

and put in place the necessary efforts to understand, develop, implement and use the huge potential provided by "E" letter. E-teacher, E-student, E-education etc. are not just words rearrangement but, under today reality perspective these are jobs, roles, future. Teachers always exist, in the past, today and they will exist in the future. Without a teacher who has specific skills (i.e., to plan, to organize, to administrate, to direct etc.) there will be no education.

Within developments already highlighted above the teachers moved to a new definition of their role being now called E-teachers. As researchers stated [2], they are the new generation of teachers working in a WWW environment, and using the ICTs in both, regular and virtual classrooms environments. E-teachers are those building new working and collaboration concepts for the learning communities and they are those who will interact with the new information, materials and ideas [2]. A very important aspect is represented by the major advantages involved by using E-teachers, and from these advantages, the author considers sufficient to mention the fact that an E-teacher can work with various type of student's characters in different schools (more than one school during the semester period). Inside the E-learning environment the E-teachers cover a range of roles such as: mentor, coach, and facilitator [4, 8, 11, 13]. Murphy et al. [8] explained further what is required from an E-teacher when performing the mentioned roles as follows [4, 8]:

- *Mentoring* is a one-to-one relationship between an expert and a novice in which the expert guides the novice by behavioral and cognitive modeling, academic and career counseling, emotional and scholarly support, advice, professional networking, and assessment [4, 8];
- *Coaching* is observing learners' performance and providing encouragement, diagnosis, directions, feedback, motivational prompts, monitoring and regulating learner performance, provoking reflection, and perturbing learners' models [4, 8];
- *Facilitating* is providing technical, pedagogical, managerial, and social activities that maintain sustained and authentic communication between and among instructors and student [4, 8].

Regardless the way how an E-teacher is called, mentor, coach, facilitator, from the E-course design viewpoint, these roles are translated in the same duties/responsibilities/tasks such as: to design the E-course content, to provide assistance to other E-course content authors, to review and validate the E-course content drafted by other authors, to author the E-course content etc. For the present article the author will use E-teacher as a general term covering any of the roles above referenced.

The 21st century society is looking to create, develop and use a better educate work force. Nevertheless, a better educated work force involves more than access to computers and means first of all a better teaching and implicitly better support materials which translated to E-education means E-courses developed around students' needs, for building students skills and knowledge and fully complying with the society requirements and challenges. Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw et al [14] suggest that "*Appropriate and excellent course design and development may prove to be paramount to the success of students in online courses. The relationship between various learner characteristics and course design is closely aligned. It has been shown that the more transparent the interface the more likely it is that the student will be successful in online environments*", page 117 [14]. Other researchers highlighted that the most important aspects of E-learning are the students expectations, the support provided to them and the way how the students will face the challenges arise [1, 15]. However, the author's conclusion is that communication and interaction at both, teacher-student level and student-student level are two very important key factors in the development of a successful E-course.

III. INSTRUCTIONAL SYSTEM DESIGN MODELS AND OUTCOMES-BASED PLANNING EDUCATION

3.1. Instructional System Design Models

Merrill, Drake, Lacy, Pratt et al. have defined the *Instructional Design (ID)* as a practice used to create "*instructional experiences which make the acquisition of knowledge and skill more efficient,*

effective, and appealing" [6]. The foundation of the instructional design has been built since the early '40s when due to World War II, U.S.A. Army was obliged to train very fast a large number of recruits in order be able performing various complex tasks [19]. Since those difficult times the instructional design has been improved, changed, modelled, modernised and many researchers brought their contributions. Today, E-learning is another beneficiary of the development recorded by the instructional experience. Instructional system design (ISD) models have been created and many of them have been implemented with success.

In principle, ISD is considered a process which can be modelled. Probably, the most popular ISD model among the specialists is the ADDIE one [18]. The ADDIE acronym, as can be seen in the figure 1, is coming from the five phases of this model: analysis, design, development, implementation and evaluation. Many of the researchers who contributed to IDS models development have used in a this five phases model to develop their ISD models [10].

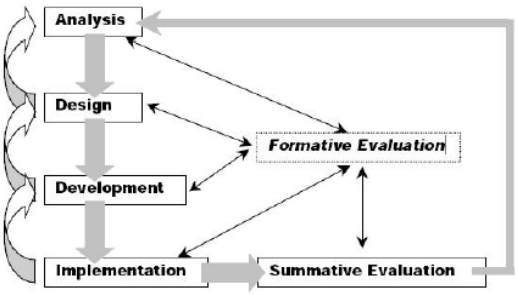

Figure 1. ADDIE instructional design model flowchart, as presented by Tsapatsoulis [17]

An analyze of the ADDIE model five phases will show several tasks to be carried out, and without resuming only to these the following major tasks being considered by the author the most important:

- *Analyze*: establish the learning objectives, identify students' characteristics, review the topics to be learnt, establish the curriculum for the course;
- *Design*: select the optimum instructional approach, choose the ISD model to be used, develop learning objectives, plan teaching & learning, identify any type of resources needed;
- *Develop*: prepare the course materials (presentations, paper work, video/audio materials etc.);
- *Implement*: distribute the materials developed to students and support team;
- *Evaluate*: perform a summative evaluation and revise the process based on the feedback received from students and support team.

To date no one has assumed the role of ADDIE model creator [7]. However, researchers, over the time, have modified the ADDIE model looking to optimise the instructional design process itself and get the best results possible.

Figure 2 presents an ADDIE model modified, by Piskurich [10], and showing a massive an wide spread interaction between all five phases, this model being considered by the author of this article probably the most comprehensive ADDIE modified model from all analyzed during the literature review.

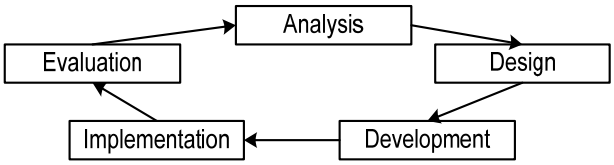

Figure 2. ADDIE cyclic model adopted from Piskurich, 2003 [10]

Such massive interaction between all phases has led the author of this article to the idea that during the design phase itself should be involve not only the E-teachers, and specialists from instructional team and support team but should be involved the students since the day after they were declared admitted.

3.2. Systematic Instructional System Design Models

Systematic approach is defined by the Business Dictionary Online as "*a methodical approach repeatable and learnable through a step by step procedure"* [20]. Nothing more true in such definition as easily can consider the five phases and associated tasks nothing else then a step by step procedure, repeatable (continuous improvement) looking to be successful and also helping all parties involved to learn and progress. The space available for this article doesn't allow the author to have an extended overview of these models or to present a comparison of some of them. However, just to highlight some of the most popular models the author of the present article is mentioning the following models: Gagne & Brigs Model [5], Dick & Carey Model [3], Morrison, Ross, and Kemp Model [21], Seels and Glasgow Model [21]. Over the time since these models were developed by their authors have suffered improvements coming exactly from their authors and also, were used like fundament for new models created by other researchers. These ISD models, which can be considered classic models have been used also in E-learning and E-courses were developed based on them.

3.2.1. Outcomes-Based Education

Towers has defined the Outcomes-Based Education (OBE) as the "*Education that is outcome-based is a learner-centered, results-oriented system founded on the belief that all individuals can learn*" [16]. Several researchers, i.e., Towers and Spady & Marshall have defined four principles which should be the OBE fundament. In the below table, the author presents the principles introduced by Towers and Spady & Marshall:

Four principles of OBE introduced by Towers [16] and Spady & Marshall [12]	
Towers principles:	**Spady & Marshall**
Clearly define the learning objectives	Clarity of focus
Student's progress is based on demonstrated achievement	Design down
Multiple instructional & evaluation strategies have to meet the student's needs.	High expectations
Students can reach the maximum potential only if they receive assistance and have enough time	Expanded opportunities

The author of this article concludes that the above principles are more or less learner centred and this is a risk for the OBE success. A better approach should follow the desired outcomes (outcomes centred).

IV. A MODEL OF E-COURSE DESIGN THROUGH SYSTEMATIC APPROACH AND OUTCOMES-BASED PLANNING

The author has used like base for developing the model presented in figure 3 the classic ISD model developed by Dick & Carey [3], and has selected some parts of this model which were improved and re-assembled in the proposed model shown below. At both levels, micro & macro, for all sub-processes and for the entire process the author has considered the ADDIE cyclic model from figure 2 as procedural, repeatable and learnable steps.

This ISD model working principles are simple and based on the all involved parties contribution. The E-teacher generates the start-up of the entire process (see, figure 3, black modules/arrows/lines) with the identification and selection of his instructional and support team members, followed by the designing and distribution of the feedback forms (questionnaires,

checklists) and establish the feedback submittal program. After this phases completion the E-teacher starts to involve the IT & ST and the students in the "*draft*" phase of the process analysis-design-development-implementation-evaluation (see, figure 3, black modules/arrows/lines).

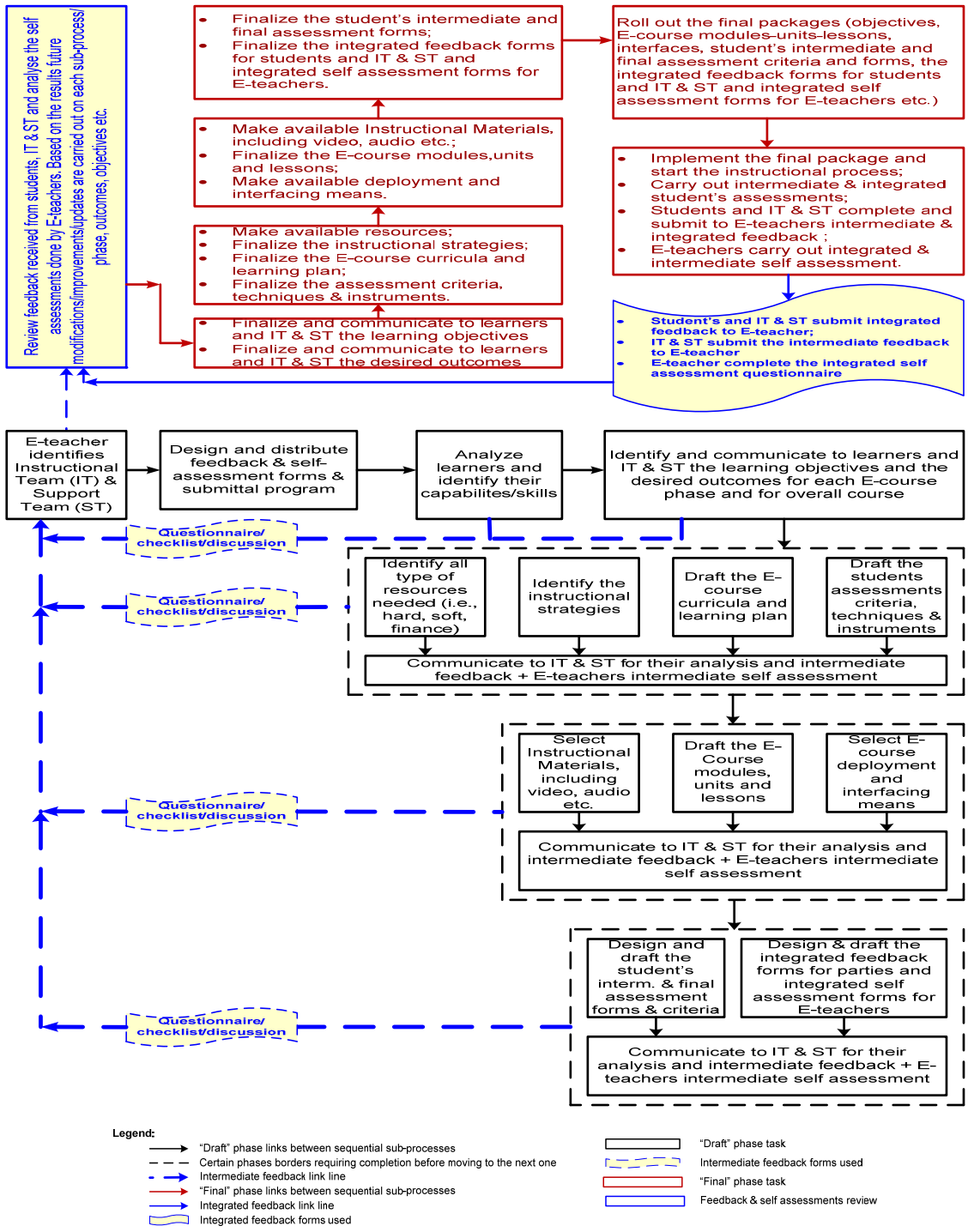

Figure 3. An ISD Model with applicability to E-courses

Once the "*draft*" phase completed the students, IT & ST submit their *intermediate feedback* (see, figure 3, blue dash arrows/lines/fields) to the E-teacher who compile all the information (including own self assessments), share the results and move to the next phase which is "*finalization*" phase (see, figure 3, brown color arrows/lines/fields). Once the E-course is finalized and all phases

according to ADDIE model (see figure 2) are completed the students, IT & ST submit their *integrated feedback* (see, figure 3, blue color normal arrows/lines/field).

V. CONCLUSIONS

According to researchers [2] understanding the impact of E-teaching and E-learning is the key factor for moving toward the educational process itself. The author of this article believes that each of all five phases from ADDIE model phases used as pillars for the proposed model have to be geared by the expected outcomes which means that the E-teacher has to articulate clearly with the full support from his team and students as well, which are the desired outcomes to be achieved. Intermediate and integrated feedback has a very important role in designing the E-course in a manner that together with the right techniques, technologies and materials will lead to the desired outcomes achievement.

Future work of the author comprises in moving the model proposed from theoretical area to the practical one. The time to think to E-learning effectiveness has arrived as well as is the right time to look optimizing the E-teachers work so the students could benefit at maximum from such opportunity.

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