BENEFITS OF PERFORMANCE INDICATORS IN E-EDUCATION

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Abstract: Performance indicators (P.I.) are measurements, usually quantitative in form but also qualitative, which support the assessment of an activity (educational, industrial, commercial etc.). E-learning activities can and should have a set of clearly established and relevant performance indicators to help assess the educational process since these activities depend so much on the satisfaction of the students. It is very important to pay attention to the data/indicators we set and analyze because sometimes being busy is not the same as producing results.

Keywords: e-education, performance indicators, quality, quantity, satisfaction.

I. CHAPTER I

Nowadays the fast changing environment, the new demands, the networked environment of our Internet-connected world have led to different requirements and opportunities for teaching and learning. Education is the basis on which every society should build its future, well educated people means people capable to face and overcome any sort of challenges. Traditionally, education implies the transfer of knowledge between two parties usually done in a classroom environment through one-to-many interaction. Along the time several theories regarding education have been developed, e.g. behaviorist theory of education, functional theory of education etc., and implemented with different results. The technological boom from the recent decades, especially in the IT domain, has made possible new ways of education and knowledge sharing, amongst which e-education has a very important place. E-learning is the new future of distance learning. E-learning gives the students the opportunity to acquire new information within a flexible time schedule and at the same time it helps them save time and money. The development of e-learning does not mean that teachers will spend their entire time in front of a computer and that soon there will be no libraries, classrooms etc.; the Internet and e-education will co-exist with traditional education and they will be used for things that could not be obtained any other way. The flexibility and availability of the Internet must be there to serve the e-teachers and e-learners.

The Advanced Distributed Learning initiative was launched in November 1997 by the United States Department of Defense "to ensure access to high-quality education and training materials that can be tailored to individual needs, developed and delivered cost-effectively, available anytime and anywhere” [1], in just a few words: anytime, anywhere content delivery. It was meant for militaries who could not be gathered and brought to a certain location at a specific moment but who needed to be trained and kept up to date. As technology evolved and the IT networks expanded, e-learning and e-training became used by civilian organizations, too. IT and internet technology created online education possibilities for those who are willing to try, especially those who cannot participate in classroom education and who want to study at their own pace. Besides the advantage of making their own learning program, time related advantage, there are also money related advantages. A research conducted by the American Department of Defense, more precisely by the Institute for Defense Analyses (IDA) revealed that the usage of learning technologies produced a 30 percent increase in student achievement, reduced the training time by about 30 percent and also the costs decreased by
about 30 percent [2]. So, if we are looking for a performant, cost effective and time effective learning system e-education could be the answer. Still, in order to be sure that what is being measured is true performance, the concept of performance should be clarified and there should be set some performance indicators (PI). The P.I. should always be in accordance with the mission, vision and objectives of the organization providing the educational programs. It is very important not to see them as coercive or punishment instruments but as indicators of what needs to be improved, changed or maintained in order to develop an efficient training program; they are the ones which show the extent to which the educational programs attain their performance goals. PIs should not measure only the amount of work accomplished per unit (efficiency), they should also measure the extent to which the goals have been accomplished (effectiveness) and the degree of usefulness, affordability, comprehensibility from the user’s point of view (satisfaction).

II. CHAPTER II

According to the business dictionary performance means an “accomplishment of a given task measured against preset standards of accuracy, completeness, cost, and speed”. What should be noticed when reading the definition is the idea of measurement against some standards which hints to the conclusion that the completion of a task does not equal performance.

Performance can be looked at from several different points of view, for example the providers can look at performance from the cost reduction point of view (salaries, utilities etc.), perspective which could also be shared by those who want to attend courses (tuition, travelling costs etc.). There is also the time saving advantage which can have an economic component, too. So, if we focus on the economic aspect of this type of learning e-training is very attractive. But when we evaluate e-education we should look for more than economic results, we should see performance as a combination of behaviors (the means) and its consequences (the end). There should be made a clear difference between quantitative results and qualitative results since quantity does not always equal quality. The reduction in cost and time spent in classes, plus the schedule flexibility can turn e-education into a success, at least according to a less profound analysis, because of the high number of learners enrolled in the program. Nevertheless, the number of people attending the course is not a clear sign of high quality education so, when establishing performance indicators, we should not consider the number of attendees a valid and reliable indicator. In this case number is relevant only if associated with the analysis of the way the information acquired during the training process will be used to improve the work/life of the learners when the course is completed.

Performance indicators (P.I.) are measurements, usually quantitative in form but also qualitative, which support the assessment of an activity and provide a measure of the activity’s performance against which changes in performance can be compared. The American organization CHEA, (Council for Higher Education Accreditation) defines performance indicators as representations of the outputs or outcomes from an education organization, its programs, or processes [3]. These indicators are a set of tangible measures designed to provide public accountability and could include admission data, the number of graduates, research records, employment of graduates, cost per student, staff workloads, class size, laboratory and other equipment, equity, libraries, information technology, and other learning resources. It is important to notice that some of these indicators do not measure the quality of the qualifications offered but rather the number of participants, the successful completion of the educational programs, the number of courses attended and the students’ progression to a higher level of education. Since e-learners usually take more time to complete their education because they combine studying with other commitments the completion of courses is not always a relevant P.I. when assessing e-learning. There are also many students who enrol in this kind of program to obtain just-in-time skills needed for their profession and they will not pursue further studies, situation which makes progression to a higher level of study not a relevant indicator for the performance of the program.
2.1 Four levels evaluation model

After analyzing the above mentioned issues there can be drown the following conclusion: the education performance indicators need to be more than quantitative indicators they should also reflect the quality and usefulness of the program along with the level of satisfaction of the participants; people (trainers) should not only be busy, they should also provide useful information and the educational programs should be meaningful for those enrolled in them.

A good starting point is Donald Kirkpatrick’s evaluation model. This model comprises four levels which have to be analyzed when evaluating training and, for each level there should be identified at least one performance indicator:

a. Reaction – this level reflects how the learners react to the learning process, to the course which is provided;

b. Learning – the level shows the extent to which the learners gain knowledge and skills, a measurement of what they have learnt;

c. Transfer/Behavior/Performance – the third level shows the capability to perform the learned skills while on the job, a measure of the changes that occur in their behavior when they return to the job;

d. Results – the last level includes such items as monetary, efficiency, moral, etc., the business outcomes that occur because the graduates perform their jobs differently after having taken the course [4].

When evaluating the first level and when choosing the P.I. there should be taken into consideration several issues: how the attendees feel about the program, the satisfaction they take from it, if the information presented is relevant and useful for their jobs. This level reflects the satisfaction the students get from the course and not how much they learn. The indicator set now (the attractiveness of the program or the satisfaction of the attendees) is very important since satisfaction or dissatisfaction with the program will make the participants talk highly/poorly about it and they will recommend it or not to others. Low cost is not always enough to make a course attractive for large audiences. If the program does not bring the satisfaction envisaged the program design or delivery should be revised. This level and the P.I. used to evaluate it do not say anything about the skills which will be acquired during the program of the information delivered, it can illustrate only the interest or the motivation the participants can obtain from the course. Motivation is also very important because people learn better when they have a positive attitude towards the learning environment. An alternate indicator could be one measuring the trainers’ satisfaction with the program. In order to have a good training process (which leads to the inducement of participants’ satisfaction) those who provide it should also be satisfied. It is crucial to set the right P.I. when trying to obtain an objective assessment for a program; learning about its weak points, its flaws will only help to make it better.

The second level comprises the information, principles, techniques and skills presented, understood and acquired by the participants. When learning is measured, the aim is to see how much of what had been delivered was acquired and also how much of the previous attitudes, knowledge of the attendees changed. Tests given at the beginning and at the end of a program are good indicators of the progress made by the trainees. We should check for the knowledge which was acquired, the attitude which changed and the skills developed or improved. After giving the tests the data assembled should be analyzed in order to see the progress made which will be the indicator for this level.

The third level is the level which measures the impact the knowledge acquired will have/has upon the level of performance at work. Unfortunately, there is nobody who can predict how well the trainee will use the information gained or the skills formed in order to improve job performance. The evaluation of this level can be done by testing the students and putting them in perfect replicas of their work environment in order to see how they use the knowledge acquired. Still, the results obtained at the tests are not completely relevant unless they are corroborated with follow-up reports from the companies/ organizations they work for. It is important to see that the learner can perform and produce the needed results in the work environment but, most of the times, this is not easily done because it is quite difficult to keep track of all the students. When the program is created at the request of a certain company the situation improves and the assessment of the course efficiency can be made using work efficiency reports from the company. Although it takes a greater effort to collect this data than it does to collect data during training (and unfortunately in most situation there is little data to collect) it is
important to the training department and organization. This data offers information about the transfer of learning from the classroom to the work environment and also about the problems encountered when trying to implement the new techniques learned in the program.

At the last level the evaluation measures to which degree the program was successful or not. The results of the program can be translated in numbers which show progress. The impact of the program will be expressed in monetary terms, in increased efficiency, moral, better teamwork etc. The P.I. used for this level shows the returns for investing in the learning process so, the higher the increase in efficiency, sales etc. the better the program was. This final measurement can also be expressed using a balanced scorecard which assesses the impact of the learning program from four points of view [7]:

- **Financial**: It is a measurement showing a financial increase for the company (or the participant);
- **Customer**: The measurement shows an increase in customer attraction, retention etc.;
- **Internal**: The measurement reflects the achievement of excellence by improving production processes;
- **Innovation and Learning**: The measurement should tell that the information acquired will help create a climate open to organizational change, innovation, and the growth of individuals.

### III. CONCLUSIONS

Results are not always signs of performance, they can sometimes be categorized as outputs and other times as outcomes. The number of graduates, the number of courses attended or the number of papers produced during an educational program are just outputs and, outputs are not measures of an educational program’s effectiveness. What should be aimed for and taken into consideration are the outcomes. An outcome is something that happens to a student, an improvement, at the end of the program and as a result of attending it. Measurements should reflect the changes for the better that occur as a result of attending a course. ADL can make this thing happen; ADL can provide effective and affordable education as long as the objectives set are well thought, are connected with the society and its requirements. The main idea of this process is to bring information and education to the learner rather than vice versa and it should make the process efficient and effective at the same time.

### References