

# Social Impact Assessment and Need Assessment applied in eLearning projects

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**Abstract**— *An important challenge faced by the use of Information and Communication Technologies (ICT) applications in various domains/ industries, in particular for e-Learning applications, results from the extent to which these technologies and applications integrate the users' needs. The fast pace of technological development requires in the same time inputs with regards how these technologies land in the world of the users, how different technological changes impact the social environment, which is both the creator and the beneficiary of such technologies. Designing effective applications requires the contribution of social science research tools. Questions with regards to: functionalities, skills, attitudes, behavior, usage, content, features of communication with target group could be properly addressed by employing research tools such as need assessment and social impact assessment. This paper argues in the favor of the use of social research to support and improve management processes for e-Learning applications and presents the benefits of using such tools.*

**Keywords**—social impact, assessment, e-Learning, need assessment,

## I. INTRODUCTION

The fast pace of technological changes in the field of e-Learning and the growing presence of learning accompanied by ICT technologies requires to make use of data with regards to social context and social actors that are the beneficiaries (and creators) of e-Learning. Questions with regards to skills, abilities, needs, behavior, knowledge, social impacts are due to permanently (re)shape e-Learning projects and applications.

Academic and professional literature make reference to need assessment and impact assessment, two valuable types of analysis that provide data and tools for data-based decision making and support for strategic management planning processes.

This paper explores how e-Learning projects (as well as other development projects) could benefit of using data and tools provided by need assessment and impact assessment.

While these types of assessment are two distinct tools, there are several general statements that apply to both of them: 1. In terms of benefits they: contribute to data-based decision making, contribute to better use of resources, better approach to risks prevention; 2. Categories, sizes and types of organizations/projects making use of such tools include a wide range of entities including public and private organizations, complex and small size organizations; 3. Inputs provide for various activities and functions of a project or organization such as: communication, human resources, client service, financial planning, corporate social responsibility, etc.

The following sections of the paper introduce clarifications with regards to e-Learning, need assessment, social impact assessment and the linkage between them.

## II. E-LEARNING CONCEPT

(E-learning concepts, trends, applications, 2014) first form of e-Learning was distances courses for students from 1840, supported by Professor Isaac Pitman. In 1924 the first testing machine has been introduced, followed in 1954 by first teaching machine by Burrhus Frederic Skinner. In late 20th Century computer and internet enhanced interest and needs for e-learning.

(Sangrà, Vlachopoulos, & Cabrera, 2012) Nowadays, interest for information and communication technologies in educational domain, and not limited to educational domain, increased more and more, generating complex projects dedicated for e-Learning platforms. Technology evolution support: education from distance using interactive online courses, online evaluations, interactive courses, etc.

(Koohang & Harman, 2005) "e-learning is the delivery of education (all activities relevant to instructing, teaching, and learning) through various electronic media." E-learning is a mix between web-based technologies; continued advances in digital storage; processing and media; software development process continuous improved.

(Koohang, Floyd, Terry, & Robert, 2010) Social media tools such as wikis, blogs, podcasting; video sharing, image sharing, voice conferencing, and video conferencing are tools that support small parts from learning process.

(Gutierrez, 2014) e-Learning became an industry that continues to change and require you to adapt and to meet changing times. Beside technology eLearning projects must assimilate the latest "rules" for eLearning:

- "No Student is An Island, Learning is Social"-people are willing to communicate, to interact, to cooperate.

- “Learner – Centred Courses are no longer an option but a must”. E-Learning platforms will enable users to create their own training experience, creating their own typology of course adapted to the most appropriate way to learn.
- “Active Learning Techniques Becoming the New Norm”. Students are becoming more and more involved in learning process, they can create new learning content.
- “Bite-Sized Content is The Right Size”. Short sentences, captivating photos, info graphics, and quotes are all ideal ways to convey a message quickly. “People can now learn on their spare time and learn only what they’re interested in. “
- “Moving from Linear to Non-Linear Courses”-
- People attention span online is only 8 seconds, people must be able to point to or click on a link without even finishing a paragraph.
- “Image – Centric Content is Taking Over”. Graphic interfaces made up of photos, illustrations, charts, maps, diagrams, and videos will replace text-based courses.

### III. E-LEARNING RESEARCH

Need assessment in terms of e-learning is the examination of actual needs for training within different organizations focusing on performance areas that could be improved e-learning projects. (Mohammad Azimi & Rahmani, 2013)

E-learning projects address to both public sector and private sector. E-learning is used in schools, high schools, for sales training, safety trainings, IT trainings, product trainings, and healthcare training; all types of training address private and public sector.

An e-learning project is mandatory to begin after a need assessment is made to establish long term and short term needs for e-learning, information about technology needed or preferred and other needs from e-learning field. E-learning need assessment may also point the lack of infrastructure to support an e-learning project. (Mohammad Azimi & Rahmani, 2013).

(Allen & Seaman, 2010) The following highlights were noted in their report:

- 5.6 million students had one online course during the 2009 term;
- “The twenty-one percent growth rate for online enrolments far exceeds the less than two percent growth of the overall higher education student population”
- Thirty percent students are taking at least one course online
- We can say the evolution of the e-learning evolution is based on embracement of e-learning concept from organizational level to national level. (Arshavskiy, 2014) There are reasons why some e-learning project fails:
- Lack of alignment to the organization's needs
- Poor communication with stakeholders
- Improper implementation
- Lack of organizational support
- Insufficient post-implementation support
- Incorrect choice of design and roll-out technology
- (Allen & Seaman, 2010) report the impact of e-learning at organizational level:
- One-half of institutions report that the economic downturn has increased demand for face to face courses
- Three quarters of institutions report that the economic downturn has increased demand for online courses and programs
- The economic impact on institutional budgets has been mixed ; forty-seven percent have seen their budget decrease, but twenty seven percent have experienced an increase

### IV. SOCIAL IMPACT ASSESSMENT

Impact assessment is due to measure and analyze the changes generated by a certain intervention into a system. Depending on the nature of that respective intervention, the system we are making reference to can be: a project, a program, an organization, a community, etc. The nature of the project, its objectives, the domain of activity will determine specific aspects that will be targeted by the impact assessment. Depending on the focus of the analyses various types of impact assessment have gain ground for the past forty years such as: economic, environmental, social, policy, gender, technical, institutional, etc. These different types of impact assessment are part of a sustainable development paradigm that challenges towards an increased awareness with regards to various impacts generated by development interventions.

This paradigm is being supported by a growing set of regulations and recommendations formulated by policy makers, funding organisms (multilateral development banks, structural instruments, etc.), professional associations, representatives of civil society, other stakeholders, etc.

Impact assessment brings the focus towards the efficacy and effectiveness generated by a program or project in relation to the target group and other stakeholders. Impact assessment provides data and tools that have important contribution for evidence-based decision making, development and management of programs/projects.

One relevant distinction within this context separates monitoring from evaluation (Gertleret, 2011). In the process of monitoring, compliance is aimed between design objectives, activities and the way these are being shaped by the implementation of the project. This will imply systematic comparative analysis between inputs and outputs based on various quantitative and qualitative parameters. On the other hand, the approach in impact assessment or evaluation is based on a causal model concerned with measuring the changes generated by that respective intervention on the analyzed system and its broader context. When the focus of the analyses is on the generated social impacts, measurements will be made with regards to outcomes that affect different social actors and context (target group, community, individuals, institutions, etc.).

Another relevant distinction identifies prospective and retrospective impact evaluation (Gertler, 2011) or ex-ante and ex-post. Prospective impact assessment starts from the phase of designing the project and continues through the implementation of the project. Retrospective impact assessment is placed at the end of the project. Prospective impact assessment provides better, more complete inputs with regards to the state of the target group before the intervention starts and comes along with the opportunity to alter the intervention in order to generate positive impacts and diminish negative impacts. Measuring social impacts implies a comparative model that allows the evaluation of change brought by a project for a target group, community, for individuals, institutions, other social actors. The comparison examines the initial state and the state after the intervention for the relevant social actors that are affected by the intervention. The challenge in measuring social impacts lays in the capability to operationalizing the nature and size of change into relevant indicators. The indicators would have to allow access to comparative measurements with regards to social context in different moments in time in relation to the intervention: before, during, after. The relevant literature identifies relevant indicators used to measure social change and social impacts. In the same time, each project should design its own set of relevant indicators as there is no predefined kit to measure social change brought upon by a certain intervention, depending on the project focus and domain of activity and depending on the social context impacted by it.

The comparative measurement of social indicators implies a process of data gathering and data analysis. The same concerns are also shared by need assessment approach. Several clarifications in this regard are made within the next section dedicated to need assessment.

#### V. NEED ASSESSMENT

Need assessment is systematically analyzing relevant aspects characterizing the target group addressed by a project, aspects such as: knowledge, attitudes, behavior, skills, interests, abilities, etc. As a result, a distance or “gap” is identified, the “gap” between the desired state and the current state of that respective category of public.

Along with impact assessment tools, need assessment also supplies data and tools for data based decision making, strategic decision, management, resource prioritization, planning processes used to develop projects (including e-learning projects).

This approach contributes to the effectiveness and efficiency in resource use, choosing feasible solution for development, aligned with identified needs and growth opportunities.

Some of the most important theoretical and practical contributions in the field are made by Roger Kaufman, also known as the father of need assessment. The author introduces the concept of Mega Planning, a process that links sustainable development with strategic management planning. Mega Planning implies taking into consideration the broader context of a project, social context, stakeholders, institutional context, etc.

Kaufman proposes a point of view in which needs are perceived as gaps between desired and existing results. The author distinguishes between different levels of the result, the identified levels being: Mega, Macro, Micro. As these gaps are being identified, need assessment contributes to planning resources in order to achieve the desired results in conditions of cost – benefit effectiveness.

(Kaufman, Oakley-Brown, Watkins, Leigh, 2003; Kaufman, 2006).

Roger Kaufman describes need assessment as a process in four stages (Kaufman, Oakley-Brown, Watkins, Leigh, 2003):

- Data gathering on identified gaps;
- Data analysis and interpretation and determining the implications of ignoring the identified gaps;
- Select the gaps with higher priority;
- Link the strategy to address the needs with the results with the higher impact

The first stage takes into consideration primary data (obtained through direct data gathering), secondary data (resulted from previous research) or both. As data gathering is costly, the decision to use primary data is carefully weighed in most projects. Every data-gathering undergoing is accompanied by a well-defined methodology that describes the mix data collection tools that could combine quantitative and qualitative approaches, such as:

- Surveys;
- Focus groups;
- Interviews (structured interviews, unstructured interviews, semi-structured interviews);
- Observation;
- Experimental methods;

Data analysis depends on the nature of the data and on the objectives or question that respective set of data is aimed to address. Data analysis could be descriptive when aiming to presents the investigated reality (variables, frequencies, mode, median, etc.). There is also a level of data analysis exploring correlation between the investigated reality and another known phenomenon, provided that data exists with regard to this other phenomenon and the two sets of data are comparable.

For the last two steps in need assessment, selecting a gap and link that gap with results, making use of strategic planning models is required. These models make use of analyzed data to support decision making and the whole management process, including planning, organizing, monitoring.

Need assessment becomes a mandatory tool in the case of e-learning projects. The interdisciplinary nature of these projects and the rapidly changing employed technologies creates this requirement in the favor of using need assessment. Actually, the theoretical distinction presented by Roger Kaufman with regards to need assessment have been development in the context of e-learning initiatives.

E-learning projects starts from the baseline presumption that there is a gap in terms of current skills, knowledge, abilities of the target group and the desired performance envisioned for the same target group. Depending on the focus of the project other aspects could be object for need assessment such as: target group behavior, andragogy and pedagogy aspects (the methodology of didactic activities, distinct approaches for adult and children), technologies and infrastructure, communication means and channels, instructional analysis, etc.

## VI. CONCLUSIONS

The needs of an e-learning platform is known since 1840, when the constraint regarding geography limitations encouraged a new form for learning.

In 21st century e-learning projects faced a significant grows due the era of technology and internet and will become widely spread all over the world due the benefits covered like:

- No limitation regarding time and geography
- Reduced costs for training company and for clients
- e-learning courses are more interactive and fun (E-learning concepts, trends, applications, 2014)
- technology and internet is the latest trend for all the companies (E-learning concepts, trends, applications, 2014)

There is no doubt that e-learning influence more and more social relationships, from e-mail, blogs, wiki, etc. (Intel Corporation, 2014) revealed some positive effects resulted from e-Learning:

- students are more engaged and able to develop 21st century skills
- teachers have a more positive attitude toward their work and are able to provide more personalized learning
- communities benefit from bridging the digital divide
- economic progress cans result from direct job creation using e-learning platforms

Nowadays, the increased presence of e-learning projects and technologies generates concerns with regards to the capacity of such projects to integrate users' needs and to manage generated social impacts of such developments.

Two valuable tools with important contributions to data-based decision making and providing support for strategic management processes are need assessment and impact assessment. For the past over forty years, professional literature in this field has been constantly growing. Regulation framework and recommendation issued by policy makers and funding organisms enforces as well the use of such tools within development projects.

This paper argues in the favor of using need assessment and impact assessment in development initiatives including e-Learning projects.

While each of these evaluation processes has its own methodologies, set of concepts and tools, both of them share a common list of benefits including:

- Allows a better use of resources, and as a result reduced costs, through a process of fine – tuning of: users/social actors needs', anticipated social impacts of that respective intervention.
- Supports data-based decision making that increases effectiveness and efficacy of strategic and management planning process.
- Ex-ante integration of such tools reduces risks and costs by increasing the ergonomics of the projects in the social context, reducing negative impacts and boosting positive impacts of such projects, developed in correlation with users' needs.
- Allows the integration of e-learning projects (and other categories of projects) within a sustainable framework of development.
- Increased response to users' needs and stakeholders' needs, allowing a multidisciplinary overview of the developed project that integrates all relevant factors: technology, environment, social context, etc.

While literature in the field provide guideline principles and tools, both for need assessment and for social impact assessment, the challenge with each project is operationalizing the proper indicators and tools for these analysis. A tailor-made approach is due to be used in selecting the relevant indicators for social impact assessment or identifying relevant needs due to be explored within the processes of need assessment.

#### ACKNOWLEDGMENT

Research has been conducted with financial support from “Sectorial Operational Programme Human Resources Development 2007-2013”, contract number POSDRU/159/1.5/S/132395 and 132397.

#### REFERENCES

- [1] Allen, E., Seaman, J., *Class Differences*. USA: Babson Survey Research Group, 2010
- [2] Arshavskiy, M., *Managing e-Learning Projects*. Retrieved from *eLearning Industry*: <http://elearningindustry.com/managing-e-learning-projects>, 2014
- [3] Dani, A. Anis, *From Mitigating Impacts to Improving Outcomes, Exploratory essay*, Conference on New Direction in Impact Assessment for Development: Methods and Practice, 2003
- [4] (2014) E-learning concepts, trends, applications. Retrieved from elearning 101: [http://www.talentlms.com/elearning/history\\_of\\_elearning](http://www.talentlms.com/elearning/history_of_elearning), New Castle: Epignosis LLC
- [5] Essam, S., Al-Ammary, J. *The impact of motivation and social interaction on the e-learning*, Arab Open University, Kingdom of Bahrain. Creative Education, pp. 21-28, 2013
- [6] Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; Vermeersch, Christel M. J.. 2011. Impact Evaluation in Practice. World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/2550> License: CC BY 3.0 IGO. Page 7, 13
- [7] Gertler, Paul J.; Martinez, Sebastian; Premand, Patrick; Rawlings, Laura B.; Vermeersch, Christel M. J.. 2011. Impact Evaluation in Practice. World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/2550> License: CC BY 3.0 IGO
- [8] (2014) Gutierrez, K., Retrieved from SHIFT's eLearning Blog : <http://info.shiftelearning.com/blog/bid/352582/10-Types-of-Learners-You-Can-Run-Into-When-Imparting-Online-Training>
- [9] (2014) Intel Corporation. *The Positive Impact of eLearning-2012 UPDATE*. Retrieved from UNESCO: [http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/The%20Positive%20Impact%20of%20eLearning%202012UPDATE\\_2%206%20121%20\(2\).pdf](http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/The%20Positive%20Impact%20of%20eLearning%202012UPDATE_2%206%20121%20(2).pdf),
- [10] Interorganizational Committee on Principles and Guidelines for Social Impact Assessment. *Principles and guidelines for social impact assessment in the USA*. Impact Assessment & Project Appraisal 21(3), pp 233-270, 2003
- [11] Kaufman, Roger; Oakley-Brown, Hugh; Watkins, Ryan; Leigh, Doug, *Strategic Planning for Success Aligning People, Performance, and Payoffs*, Jossey-Bass/Pfeiffer. San Francisco, CA. Pages 113-116, 2003
- [12] Kaufman, Roger, *Change, Choices, and Consequences Defining and Delivering Successful Professional Practice Series*, HDR Press Inc. Amherst, MA, Page 94, 2006
- [13] Koohang, A., Harman, K., *Open Source: A Metaphor for E-Learning* . Informing Science Journal, 76-86, 2005
- [14] Koohang, A., Floyd, K., Terry, S., Robert, S., *The Hype of using social networking as a tool for learning in E-LEARNING*. Issues in Information Systems, 31-36, 2010
- [15] Koohang, A., Riley, L., Smith, T., *E-Learning and Constructivism: From Theory to Application*, Interdisciplinary Journal of E-Learning and Learning Objects, 91-109, 2009
- [16] Mohammad Azimi, H., Rahmani, R., *Importance of Need Assessment for Implementation of e-learning in Colleges of Education*. International Journal of Information and Computation Technology , 377-382, 2013
- [17] Sangrà, A., Vlachopoulos, D., Cabrera, N., *Building an Inclusive Definition of E-Learning: An Approach to the Conceptual Framework*. IRRODL, pp. 145-159, 2012
- [18] Cleveland-Innes: *Building an Inclusive Definition of E-Learning*:. Retrieved from IRR ODL: <http://www.irrodl.org/index.php/irrodl/article/view/1161/2146>, 2014
- [19] Vanclay, Frank, *Conceptualizing social impacts*, Environmental Impact Assessment Review 22(3):183-211, 2002
- [20] Vanclay, Frank, *SIA Principles*, Impact Assessment and Project Appraisal, volum 21, number 1, March 2003, pages 5 – 11, 2003