

# TIME TO ASSESS LEARNING OUTCOMES IN E-LEARNING

Sarolta Zárda, László Komáromi

## 1. ABSTRACT

Learning Outcomes (LOs) are most often defined as statements of what a learner is expected to know, understand, or be able to do at the end of a learning process. LOs are based for the Bologna process, but they also represent foundations for comparability of qualifications and qualification frameworks, student centred education, curriculum development, ECTS, recognition of previously acquired knowledge, quality assurance in education, diploma supplements etc. Student learning is largely driven by assessment. E-assessment is critical to achievement of intended LOs in e-learning.

The TALOE (Time to Assess Learning Outcomes in E-learning) project approaches the e-assessment concept by using technology for assessing students' learning. The main goal of TALOE is to develop a *web-based platform* to help teachers and trainers decide which e-assessment strategies to use in their online courses. This tool is aimed to raise teachers' awareness about the variety of e-assessment strategies in order to improve the quality of the learning process. The main idea is that teachers will describe the LOs of their course or module and the TALOE platform will analyse them and provide a suitable e-assessment strategy that is consistent with the intended learning.

## 2. INTRODUCTION

Higher Education, Continuing Education and Vocational Training have been adapting to the demand for new skills of the labour market. Educational Institutions try to responding to the needs of an increasing number of students. The global economy created opportunity and need for the mobility of students and workers, demanding efficient recognition of qualifications and increasing competitiveness in this field. The labour market demands more workers qualified and updated and this trend is mirrored in educational policies in Europe. All this generates pressure towards a quality-based approach for all education providers.

One visible effect of this transformation is the shift from a content-based approach in Education to an approach centred on the student, a change from teaching objectives to Learning outcomes of the students. Learning outcomes are statements of what a learner is expected to know, understand and/or be able to demonstrate after completion of learning.

This approach is underpinning the development and implementation of most European Education policies like the Bologna Process and the Copenhagen process. Higher Educational Institutions and Continuous Educational Institutions are redefining programmes in terms of LOs, harmonizing them with national, international and sector level frameworks of qualifications that are also based on LOs. Several projects and initiatives are working towards the definition LOs, specific and transversal that can be used as a common reference. Tuning and AHELO are examples of these initiatives. [1]

LOs are also becoming fundamental for structuring the standards and guidelines of quality assessment of Higher Educational and Continuous Educational Institutions in Europe and worldwide. In this context, the assessment of LOs becomes a crucial process for the Educational System. It should be a major concern of educational institutions to ensure that assessment of student learning is being guided by what they should be learning, i.e. assessment should be consistent with the intended learning outcomes (iLOs).

Any assessment strategy needs to be efficient in terms of staff time, cost-effective for the organizations concerned and should ensure that learners find the tasks they are set manageable, relevant and developmental. We cannot simply expect our students or ourselves to just keep working harder and harder; where possible we must make best use of the available technologies to make assessment more efficient. [2]

Another major revolution in our society has been the introduction of Information and Communication Technologies. The use of ICT applied to Education, e-learning, has been increasing and its use creates new opportunities for teaching, learning and assessment and has huge potential as an answer to some of the current challenges of Education. The change to the digital media has impact on the availability, reusability, accessibility and cost of learning resources, complemented by the communication and networking potential of the Internet that takes Education to a Global level. The application of ICT to education and in particular to assessment is a subject of great discussion. Some of the issues related with the use of e-learning in assessment are related with validity and reliability of the process.

### 3. RATIONALE AND BACKGROUND

The TALOE project is based on an existing model for the Alignment of LOs and Assessment, the ALOA model. Alignment means the level of correspondence between objectives, instruction and assessment. [3] It uses the revised version of Bloom's Taxonomy to establish the link between the LOs and general assessment methods. The ALOA model also proposes different scenarios of application that allow the model to be used to verify the consistency of the courses or to propose new assessment strategies that are linked with the LOs statements of the course or module. The TALOE project will use the same methodology but it will adapt it to the specific context of e-learning and e-assessment.

This project intends to develop a practical tool to promote the consistency between e-learning courses or modules and e-assessment. This tool may be used by teachers and trainers of online courses to help them decide on which are the e-assessment practices adequate to their courses. But it may be used by other decision makers to validate learning experiences from other contexts, in recognition and accreditation processes.

The project will use the results of available research in the field, like the ALOA model. It will also use outcomes from VIRQUAL, in particular the template for describing LOs. This tool will be adapted to suit the needs of TALOE but it is an important contribution to the project since it was developed, tested and it is available. VIRQUAL has also made an attempt to link the LOs of the EQF with e-assessment methods. Although the challenge was not completely solved it will be a starting point for TALOE.

The project is based on the results of one previous EU project. VIRQUAL is a network that dealt with issues related with Virtual Mobility and the European Qualification Framework (<http://virqual.up.pt>) VIRQUAL wanted to contribute to the facilitation of mobility of students and workers by providing a set of tools. One of the initiatives of VIRQUAL focused on LOs and assessment tools and its importance in mobility scenarios. The project developed a template to describe LOs and an initial attempt to deal with the link between e-assessment and LOs. The TALOE will use these outcomes as an initial approach to the problem of consistency in online courses. It will build on them to reach an online tool that can be used by the teachers, trainers and other stakeholders.

There are some EU projects for harmonisation of the European Qualifications Framework and the Hungarian Qualifications Systems (e.g. TÁMOP-4.1.3 and TÁMOP-3.1.8) in Hungary. [5]

### 4. INVESTIGATION OF THE FIELD AND INNOVATIVE CHARACTER

LOs have been widely adopted in Education with different roles. The early adoption in Europe is associated with vocational training. LOs were used to describe the competences of the individual after the training, with the goal of improving the dialogue with potential employers. The adoption of LOs in Higher Education in Europe is associated with European policies with impact in national policies and in HEI. These define different roles or applications for the LOs:

- A descriptor of the qualifications acquired for improving mobility and employability of individuals
- A descriptor in processes of recognition of prior learning for improving access to education institutions and validation of competences
- A criteria for quality assurance systems and accreditation processes of Higher Educational Institutions
- A structuring role in educational systems, used as descriptor used in qualification frameworks at international, national and sector levels
- A structuring role at the institutional level, used as a multi-level descriptor in programmes inside the institutions
- A communication tool between teachers and learners, as a descriptor of the goals of a course or unit

All the roles described are important and useful for the purpose and relevance of the TALOE project.

Concerning e-assessment, it is considered that is a critical part of e-learning the same way assessment is critical to traditional learning. The general concept of e-assessment used as a starting point for this project means using technology for assessing students learning. The handbook of e-assessment identifies 23 different e-assessment item types. This work was used during project VIRQUAL and it is a good starting point for TALOE.

In terms of linking LOs and assessment, it is believed that this should be explicit. Several authors defend that students tend to determine what they learn by looking at the assessment tasks. If there isn't consistency between the and the assessment, that students will learn the wrong things.

These are the three fundamental concepts of TALOE. Even though the general idea isn't new the approach used by TALOE is. TALOE will develop a practical web-based tool to help teachers and trainers decide which are the best e-assessment tasks for their course or module. This practical automated tool to implement the general idea of alignment or consistency is new. It is also innovative the focus on online learning and particular on e-assessment. TALOE will use recent research to build the tool. The main goal of the ALOA conceptual model is to provide a framework to facilitate decisions regarding the type of assessment methods that can be used to assess specific LOs. ALOA uses active verbs for describing the LOs and to link them with the assessment tasks. However the ALOA model lacks an approach to deal with the specificities of e-assessment. And this is again an innovative aspect of the TALOE project. [4]

## 5. WEB BASED PLATFORM FOR E-ASSESSMENT

The TALOE project intends to develop a product, a web-based platform for e-assessment. The tool will be designed as an interactive website that provides a service to teachers and trainers of different learning contexts. The web based platform intends to be a tool or service that assists faculty/teachers/trainers in the definition of an e-assessment strategy for their courses or modules. The user will provide the LOs of the course or module and describe them using the tools of the platform. These descriptions will be analysed automatically by the web-based platform. As a result of the analysis, the

user will obtain a strategy of e-assessment practices that may be used to assess the specific LOs of the course or model. The whole process, including the analysis procedure is based on the ALOA model described above in this document and in the literature.

To be able to develop the practical tool, the consortium – participation with Dennis Gabor College – will have to achieve the following goals:

- Research and select innovative e-assessment practices that take advantage of the use of technology
- Develop a web-based tool that is easy to use by the stakeholders
- To test the implementation of the tool with real case studies
- To distribute and disseminate the TALOE tool among the communities of stakeholders

It is intended that the TALOE tool will be freely available to different stakeholders. These include Higher and Continuing Education institutions as well as vocational training organizations. It is also available for stakeholders associated with processes of recognition and accreditation.

### *The Web tool:*

- A database to structure the standard information of the model
- The list and description of the assessment methods
- The Bloom matrixes of each assessment method (standard)
- The list and description of the e-assessment practices
- The same database should allow to collect and organize the information from the alignment processes
  - iLOs of the courses, programmes or other levels
  - Bloom matrixes of the iLOs
  - Real assessment methods used at course level
  - Contextual information about the iLOs including information about the course, programme or other levels
  - Relations between different types of data: iLOs, courses, assessments, etc.
- The structure of the database should be scalable, allowing to include additional standard methods of assessment or standards Learning Outcomes from other types of QFs

- A web interface to facilitate the use of the database by different types of stakeholders that would guide the whole process including
  - Forms corresponding to the described templates that would easily allow input information for the alignment processes
  - Several options that would facilitate to configure the type of the analysis that was intended. As an example, the interface would allow choosing to focus in one iLO or in a combined analysis of all the iLOs of the course
  - Several options configure the type of answer that is intended. The user could select options like number of students or formative assessment and the output of analysis would provide a strategy that would better serve the need of the user.

The platform will include the following components:

- a tool for the user to type in the LOs of the course or module
- a guided process for the description of the Learning Outcomes according to the ALOA model
- a repository of a e-assessment practices
- an algorithm for the analysis of the LOs and e-assessment
- a reporting tool for providing the users with an e-assessment strategy for their course or module

This deliverable is an interactive website to be used by faculty, teachers or trainers. The goal of the website is to provide a consulting service to help the introduction of e-assessment in courses or modules. The platform will be translated in French and German to increase the number of potential beneficiaries of the tool (<http://taloe.up.pt>).

## 6. SUMMARY

The main goal of the project will be to provide a practical tool that, based on the learning outcomes of an online course, will suggest an adequate e-assessment strategy. This web-based tool will help the teachers organize and select the appropriate assessment methods. The main output of the current project proposal is a web-based tool to be used by teachers of all types of education to promote the consistency between the Learning Outcomes of the courses or modules and the assessment tasks. The tool will address specifically the field of e-assessment.

## 7. REFERENCES

- [1] Tremblay, K. et al. *Assessment of Higher Educational Learning Outcomes*. OECD Feasibility Study Report. 2012
- [2] Brown, S. et al. *Assessment Matters in Higher Education*. Buckingham Open University Press. 1999
- [3] Anderson, Walvoord. *Effective Grading: A Tool for Learning and Assessment*. San Francisco: Jossey-Bass, 1998.
- [4] Soeiro, A. et al.: E-Assessment Practices. EDEN Conference, Zagreb. 2014.
- [5] <http://oktatas.hu/felsooktatas/projektek/tamop413szolqfej>