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CASE STUDY

ALOA: a model for Aligning Learning Outcomes and Assessment

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Introduction

The ALOA conceptual model, Aligning Learning Outcomes with Assessment responds to current challenges in education like the recognition of prior learning, mobility of students and staff, and accreditation processes. ALOA intends to contribute to a more flexible educational system.

The ALOA conceptual model was developed with the intention of matching specific e-assessment methods to specific Learning Outcomes (LOs). It should be possible for a teacher to define the intended LOs of a course and from the statements to have an indication of the e-assessment methods that should be used. The case study will describe the components of the conceptual model and will describe possible scenarios for implementation in higher education.

The ALOA conceptual model

The ALOA model was developed from the concept of alignment defended by different authors: Anderson et al, 2001; Biggs and Tang, 2007; Bloom, 1956; Boud and Falchikov, 2006. In the term alignment, what is defended is that the LOs of a course or unit should be used to define the teaching and learning activities (TLAs), and assessment tasks (ATs). To ensure the validity of assessment in relation to what is intended from the course, it is necessary that the outcomes measured by the assessment tasks are the same as the ones expressed in the LOs statements. This is the main principle that supports the ALOA model. From the general concept of alignment it was necessary to define a way to verify the correspondence between the assessment tasks and the LOs defined for a specific course or unit. It was decided to use Bloom's Taxonomy (Bloom, 1956) as a tool for describing and classifying the LOs. Further research led to the work of Anderson et al (Anderson, et al., 2001), a revised version of Bloom's Taxonomy which developed a taxonomy table to promote the alignment between LOs, TLAs and ATs. The ALOA conceptual model adapted that table and gave it new functions to describe and classify both the statement of LOs and the assessment tasks. By using the same tool for both concepts it is possible to verify the correspondence between them.

The first component of the ALOA conceptual model is the Learning Outcomes. For the purpose of this research it was decided to address LOs in the field of engineering education and the LOs of ABET (ABET, 2008) and EURACE (ENAAEE, 2008) were analysed and described using the revised taxonomy.

The second component of the ALOA model is the assessment methods. It was necessary to identify and select the assessment methods that would integrate the model. The work of Brown et al (Brown, Bull, and Pendlebury, 1997) was of great help for producing a working list of general assessment methods. For the purpose of this research and specifically for the development of the model, six general categories of assessment methods were identified, each with subcategories. Each category was then matched to specific e-assessment practices.

Alignment is the relationship between the two concepts, LOs and assessment methods. In terms of the ALOA model, a course is aligned or consistent if the description and classification of the LOs and the assessment tasks match. Both classifications are based on the same system, Bloom's revised taxonomy. If the classification is the same, then the course or unit is aligned.

This is rather a simplified view of the concept of alignment; in fact, in the ALOA model, the concept is explored in detail, exposing its true complexity.

Application scenarios in HE

This research project defined 4 potential scenarios of implementation of ALOA in higher education: 2 scenarios are related to the internal consistency of courses, the other 2 are related to external processes like accreditation and recognition of competences. The primary application of the ALOA model is related to the internal consistency of courses. The model can be applied by a teacher to verify that the course LOs and the assessment methods are consistent with each other i.e. that the assessment tasks are closely related with what the students should be learning (validity). Another application is to help a teacher decide on which assessment tasks should be implemented in a new course. After defining the intended LOs of a course, the teacher may apply the model to get examples of assessment practices that can be used.

However, as the ALOA model promotes a detailed analysis of the LOs, it is possible to apply it in other contexts. For instance, it may be used to verify that the LOs of the course area aligned with the programme outcomes. It can also be used to verify which courses in a programme provide evidence in accreditation processes. Another potential application of the ALOA model is to validate competences in mobility or RPL processes. The model may be used to define adequate assessment tasks to validate specific competences or to compare LOs of courses attended abroad with the programme outcomes.

Testing and issues arising

The ALOA model was applied to 4 case studies to test the implementation process: 4 courses of the school of engineering were analysed using the tools of the model. The analysis focused on the statements of LOs and assessment tasks and both components were described in detail using the tools of the ALOA model. This means that every LO statement and every assessment task was described in terms of the knowledge and cognitive processes that were being addressed. The results from the description phase were treated and analysed from different perspectives. The intention was to simulate the analysis process that should take place in the scenarios described above.

It is important to highlight that the teachers or course designers of the course should carry out these processes since only they can understand the true meaning of the learning outcomes statements. In this research project the intention was to test the implementation procedure to improve the model.

The main finding of the testing phase was that the implementation procedures are complex and time demanding. However, by implementing the process, teachers must reflect on their work, on their courses and on the learning that they are promoting. This promotion of reflective practice is an interesting aspect of the application of ALOA.

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