



# DevalSimWeb

Development of professional skills through participatory evaluation and simulation using web tools

ALFA III (2011)-10

Executive report of the joint integrated report about the results of the study on student dropout and labor insertion of university graduates and selection of transverse competences to evaluation in Bolivia, Colombia, Costa Rica and Ecuador

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The project aims to improve the quality of Latin American higher education through the development of the evaluative competence in professors and students, with the purpose that students complete their studies successfully and integrate into working life. In its initial phase, applied research is conducted on the topics of: student dropout, labour insertion, transverse competences to evaluation from the perspective of students and professors and work competences from companies' perspective. The project is complemented with another phase in which a training program is designed and implemented for students and professors.

The participating European universities are: the University of Cadiz, general coordinator of the project and Durham University. The Latin American partner universities are: University of Antioquia, University of Costa Rica, Pontifical Catholic University of Ecuador, Ibarra Campus, and the Salesian University of Bolivia. The Latin American partner universities are: University of Antioquia, University of Costa Rica, Pontifical Catholic University of Ecuador Ibarra Campus and the Salesian University of Bolivia.

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## Presentation

This document integrates the joint reports of the studies on student dropout and labour insertion of university graduates, as well as the selection of transverse competences to evaluation in the different partner countries of the project (Bolivia, Colombia, Costa Rica and Ecuador). It seeks to show the results of each of these reports in an integrated manner, demonstrating the particularities of the university contexts of each region, in order to establish some continuity and rupture lines in the conceptualization and practice, which will be useful to understand the results obtained with the implementation of the different instruments applied.

The report presents several topics of interest to higher education. One of them is student dropout or desertion, which specifically refers to their causes and strategies that the universities could implement to prevent it. Another topic relates to labor insertion, focusing aspects such as work, the employment relationship and the actions and strategies that each university promotes in this regard. In addition, it outlines a framework that shows the perspectives posed by the Latin American universities that are part of the project of professional skills and intends to know the relevance, utility, development and level of performance granted by the universities and Latin American companies to the initial competences.

The report also highlights the efforts of universities to extend coverage in higher education without sacrificing the quality of the programs, and exhibits institutional policies that promote actions to allow students, at any of the levels, successfully conclude their studies; aspects that could favor labor insertion.

The competences have been present in the academic discourse that circulates through the universities under different nominations, and its relevance, usefulness and levels of development and performance are part of the strategies and training proposals of the surveyed universities. In addition, it emphasizes the synchrony between the expectations and considerations that universities and companies have on competences, an important aspect for the objectives of the DevalSimWeb project.

## Objective

To present, jointly and analytically notions about student dropout, labour insertion and training by competences, as a contribution to promote the quality of Latin American higher education in the countries partners of the project.

## Specific Objectives

- To determine the state of art of university student dropout and labour insertion in the countries partners of the project.
- To explicit the intervention strategies that help to reduce the rate of student dropout and improve labour insertion, to raise the degree of employability of graduates of Latin American universities, in relation to the conception and development of programs that articulate the competences.
- To learn about the relevance, utility, development and level of performance that the Latin American universities surveyed granted to the selected competences.

## Sample by survey respondents and total

### Sample of student dropout

The selection of the sample in each university was established according to the method of sampling for finite populations. Different calculations were done considering the levels of trust and error.

| University                                       | Cohort 2009-2010 | Sample | Surveys conducted |
|--|------------------|--------|-------------------|
| <b>University of Antioquia</b>                   | 747              | 594    | 126               |
| <b>University of Costa Rica</b>                  | 1561             | 110    | 110               |
| <b>Pontifical Catholic University of Ecuador</b> | 74               | 66     | 59                |
| <b>Salesian University of Bolivia</b>            | 741              | 232    | 126               |
| <b>TOTAL</b>                                     | 2129             | 1002   | 421               |

**Table 1. Student Dropout. Cohorts, samples and surveys applied in the participating universities of the study.** Source: Specific reports by each university. DevalSimWeb, 2012.

## Sample of labour insertion

Table 2 shows the populations and surveys applied in the study.

| University   | Population graduates 2009-2010 | Sample | Surveys conducted |
|--|--------------------------------|--------|-------------------|
| <b>Universidad de Antioquia</b>                    | 821                            | 582    | 65                |
| <b>Universidad de Costa Rica</b>                   | 512                            | 116    | 116               |
| <b>Pontifical Universidad Católica del Ecuador</b> | 284                            | 193    | 143               |
| <b>Universidad Salesiana de Bolivia</b>            | 426                            | 131    | 111               |
| <b>TOTAL</b>                                       | 2043                           | 1022   | 435               |

**Tabla 2. Labour insertion. Population, simple and surveys applied in the participating universities of the study.**

Source: Specific reports by each university. DevalSimWeb, 2012.

## Sample of Competences

As part of the methodology, it was determined that the participating universities had to select a university of different legal nature, to study how to implement the work with competences, by the professors. This requirement was met in 75% of the participating universities, University of Antioquia (UdeA), Pontifical Catholic University of Ecuador, Ibarra Campus (PUCE-SI), the Salesian University of Bolivia (USB) and due to institutional reasons the University of Costa Rica (UCR) did not work with another university of a different legal nature.

| Country    | Colombia           |     | Bolivia            |     | Ecuador            |    | Costa Rica         |     | Number of surveyed Professors |
|------------|--------------------|-----|--------------------|-----|--------------------|----|--------------------|-----|-------------------------------|
| University | Survey respondents |     | Survey respondents |     | Survey respondents |    | Survey respondents |     |                               |
|            | UdeA               | 297 | USB                | 160 | PUCESI             | 36 | UCR                | 99  |                               |
|            | Medellín           | 110 | UMSA               | 23  | UPEC               | 74 |                    |     |                               |
|            |                    |     |                    |     | UTN                |    |                    |     |                               |
|            |                    |     |                    |     | UTC                |    |                    |     |                               |
|            |                    |     |                    |     | UTEQ               |    |                    |     |                               |
|            | 407                |     | 183                |     | 110                |    | 99                 | 799 |                               |

**Table 3. Total of respondent professors by university**

Source: partner universities UdeA, PUCE-SI, UCR, USB (2012)

The study at this level was applied to thirty-six (36) companies (nine (9) from each university). Table 4 shows the characteristics of the companies.

| Country      | Companies |    |    |         |         |       |       |        |       |    |
|--------------|-----------|----|----|---------|---------|-------|-------|--------|-------|----|
|              | Sector    |    |    | Capital |         |       | Size  |        |       | T  |
|              | P         | S  | T  | Public  | Private | Mixed | Small | Medium | Large |    |
| Bolivia      | 0         | 3  | 6  | 1       | 8       | 0     | 6     | 1      | 2     | 9  |
| Colombia     | 3         | 3  | 3  | 1       | 6       | 2     | 3     | 3      | 3     | 9  |
| Costa Rica   | 3         | 3  | 3  | 1       | 6       | 0     | 4     | 1      | 4     | 9  |
| Ecuador      | 1         | 4  | 4  | 1       | 6       | 1     | 3     | 3      | 3     | 9  |
| <b>Total</b> | 7         | 13 | 16 | 4       | 26      | 3     | 16    | 8      | 12    | 36 |

**Table 4. Characteristics of the surveyed companies.**  
Source: Partner universities, UdeA, PUCE-SI, UCR, USB (2012)

## Description of the methodology and analysis used

The analysis of the joint data from the universities was performed using its exhaustive treatment. In the case of labor insertion/dropout, the data were processed again, through different procedures from those applied in the base joint report.

With regard to the joint report of results on selection of competences, it takes into consideration the cluster made by the University of Antioquia. For the data from surveys to professors and companies, two types of grouping were used: k-means and Fuzzy (LAMDA), with the premise of finding approximately three groups. Besides, the analysis was done with two major divisions: professors (universities) and companies. For both groups the considered data were analyzed in two ways: by country and using the mean value. As independent values for the grouping, the following criteria were used: relevance, usefulness, development, and acting.

In the two studies that are the basis for this executive report, procedures of inquiry were followed, thus: in the first case, student dropout and labour insertion, it was studied two cohorts for 2009 and 2011. In the case of the study on competences, teachers and staff of human resources of enterprises were contacted through different means: direct heads, e-mail, personal contact and through the application of an instrument.

## Results and conclusions

### Student dropout and labour insertion

The interrelation of data obtained in previous studies allows us to present the following information concerning the situation of student dropout and employability.

The largest portion of participants who drop out of higher education is located in the age up to 24 years.

As for the causes of student dropout, we find four highlighted categories:

- Personal: commitments arising from its social role (marital status), difficulty for adapting to the university environment, transfer of residence to another city, unfavorable family environment for the academic commitment, domestic calamity situations, unintended pregnancies, chronic diseases or another health problems.
- Institutional: cease of activities that prevent the academic normality, time inconsistency, not get enrolled from the beginning in the favorite career, shortage of university wellness programs, enforcement difficulties.
- Academic: lack of vocational and professional guidance on the chosen career, low concordance between academic processes of previous levels and the university, poor academic performance, lack of interest in the career, the academic quality of the career is not satisfactory, quality of methodological strategies for teachers in the program, lack of study habits and methods and high number of courses per semester.
- Socio-economic: low economic resources, work commitments, entering the labour market, loss of employment by a person who depends economically, financial commitments with people in charge and macroeconomic environment in the country.

Among prevention strategies, it is presented a broad overview that highlights the following supports:

- Financial: scholarships, funding tuition and academic encouragement.
- Academics: remedial courses, leveling courses aimed at the reinforcement of knowledge, skills and competences.
- Psychological: vocational guidance courses, programs of identification and follow-up of students who presents in risky behaviors: substance abuse, unintended pregnancies, violence and programmes for strengthening of capacities and students' resources in their process of human formation.
- University Management: programmes of educational mobility, diversification of educational opportunities and expansion of access facilities.

## Competences

Table 5 shows the competences selected with cluster and the mean values of each one, for both groups: universities and companies. The five competences were selected according to participation of the universities.

| Competence selected by grouping (cluster) | Mean value of each competence |
|---|-------------------------------|
| Sense of ethics                           | 88.01                         |
| Problem solving                           | 87.84                         |
| Analytical and critical judgment          | 87.37                         |
| Teamwork                                  | 87.01                         |
| decision making                           | 86.23                         |

**Table 5. Selected competences, by university.**



Table 6 shows two competences selected based on the results of companies.

| Competence selected by grouping (cluster) | Mean value of each competence |
|---|-------------------------------|
| Sense of ethics                           | 89.35                         |
| Teamwork                                  | 89.35                         |

**Tabla 6. Selected competences, by companies.**

### Articulation of topics and perspectives

The integration of these two reports offers us the possibility to find joint axis between the three themes presented in both studies: competences, student dropout and labour insertion.

- The institutional actions to decrease the dropout pass over many paths to ensure retention and promote the completion of studies. It is desirable that some of these strategies involve the development of academic and professional competences in students, with the intention of promoting better conditions for labour insertion.
- The recognition of causes that allude to the student dropout are academic and socio-economic situations, as well as the lack of vocational guidance and the lack of interest in the career, factors that could be offset with the explicit and formal inclusion of competences selected by the universities and companies, in the process of training. Similarly, the recognition of competences demanded by the companies: Sense of ethics and teamwork, in addition to those selected by the university professors: analytical and critical judgment, decision making and problem solving, opens up a wide range of options that can be developed through evaluation training courses for learning, aimed at students as professors.
- Taking advantage of the similarity in the assessment of competences, both by universities and companies, as well as the limited deviation between the data corresponding to each variable, for decision making and to construct more articulated academic and employment processes.

- On one hand, the university trains citizens with discipline or scientist knowledge, makes them able to read the world and propose alternatives, to enter in the labour market and deploy their training in a cognitive, procedural and of work level. On the other hand, companies since its productive and social function, seek the involvement of professionals with high social responsibility, ability to participate in the production system and the pursuit of collective wealth, that is to say, to participate in the transformation of a more fair and pluralistic society that understand the production of knowledge and the development of innovation as fundamental elements for the permanence of humanity.
- Accordingly, the urgent need to take into account competences selected by professors and directors of human resources of the chosen companies, to develop training actions, of intervention and monitoring of academic stakeholders in the university, which will undoubtedly allow to define actions for preventing student dropout in academic matters related to self-regulation.

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