

Design Of A Competency-Based Assessment Model In The Field Of Accounting

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ABSTRACT


This paper presents the phases involved in the design of a methodology to contribute both to the acquisition of competencies and to their assessment in the field of Financial Accounting, within the European Higher Education Area (EHEA) framework, which we call MANAGEMENT of COMPETENCE in the areas of Accounting (MANCOMA).

Having selected and defined the competencies to be acquired by students in our subject, we break them down into sub-competencies, and the latter in turn into indicators, allowing us to design activities to be offered to students for the development of competencies and their subsequent assessment.

Our work therefore centred on the design of a model for the "Financial Accounting III" subject belonging to the Accounting module of the syllabus for a Degree in Business Administration and Management.

Keywords: Financial Accounting; Educational Methodologies; Competence; Higher Education

1. INTRODUCTION

he new *Degree in Business Administration and Management* (GADE) rolled out at Extremadura University and adapted to the EHEA framework has discarded the traditional learning model based on accumulating knowledge to make way for a model based on acquiring competencies.

This has led to a need to make changes in our methodological offering and assessment process so as to promote the development of competencies, both subject-specific and generic across the degree, requiring us to use competency-based teaching methods and procedures allowing assessment of competencies, given that, as Villardón and Yaniz (2004) point out, learning and assessment are two closely linked concepts, for the form of assessment affects the knowledge acquisition process.

It is to be noted “*that student learning across the higher education curriculum is complex, multifaceted and may need to be assessed in a wide variety of ways*” (Murphy, 2006:44), as opposed to traditional assessment systems geared solely to giving a single numeric value to the level of knowledge acquired by a student, wholly inadequate in measuring the acquisition of competencies.

Accordingly it is necessary to provide a model based on the acquisition of competencies, as set out by Sampson and Fytros (2008), with a descriptive tool allowing competencies to be identified, or the *multidimensional competency model* of Sitthisak et al. (2008), allowing a student’s knowledge to be represented in a multidimensional vector space.

With this aim, in this paper we seek to set out the phases involved in the design of a competency-based teaching and assessment model in the field of financial accounting within the framework of the European Higher Education Area (EHEA), characterized by combining a competency-based teaching system with an assessment system consistent with the outcome that students should demonstrate at the end of the educational process.

The aim of our methodological proposal is to provide a model that contributes both to the learning and development of student competencies and to their assessment, progressing from assessment understood as a tool for control, monitoring and grading to assessment understood as a learning tool (Ardoino and Berger, 1989), as one of the requirements for the learning and development of occupational competencies at the University is that assessment be conceived in its educational dimension (González, 2006).

This model should be valid, reliable, flexible and impartial – attributes regarded by McDonald et al. (1995) as the basic principles, allowing us to assess the three components of the competency integrally, i.e. assessing the student’s ability to mobilize these resources effectively, keeping in mind that a competency involves the acquisition of knowledge, abilities/skills and attitudes/values, along with the strategic mobilization of these elements as available resources as required in responding to a particular situation, in accordance with the definitions given of the term competency by authors such as Perrenoun (1999), Lasnier (2001), Le Boterf (2000), Voorhees (2001) o Roe (2002).

Likewise, in designing activities for assessing learning we took account of minimum quality criteria which, according to Liesbeth et al. (2007), are as follows: Authenticity, Cognitive complexity, Comparability, Costs and efficiency, Directness, Educational consequences, Fairness, Meaningfulness, Reproducibility of decisions, and Transparency.

2. DESIGN OF THE FINANCIAL ACCOUNTING III COURSE BASED ON COMPETENCES

The proposed teaching methodology was set out for the subject *Financial Accounting III* belonging to the *Accounting* module of the syllabus for a *Degree in Business Administration and Management*.

The steps followed in its design and compilations were as detailed in the following figure:

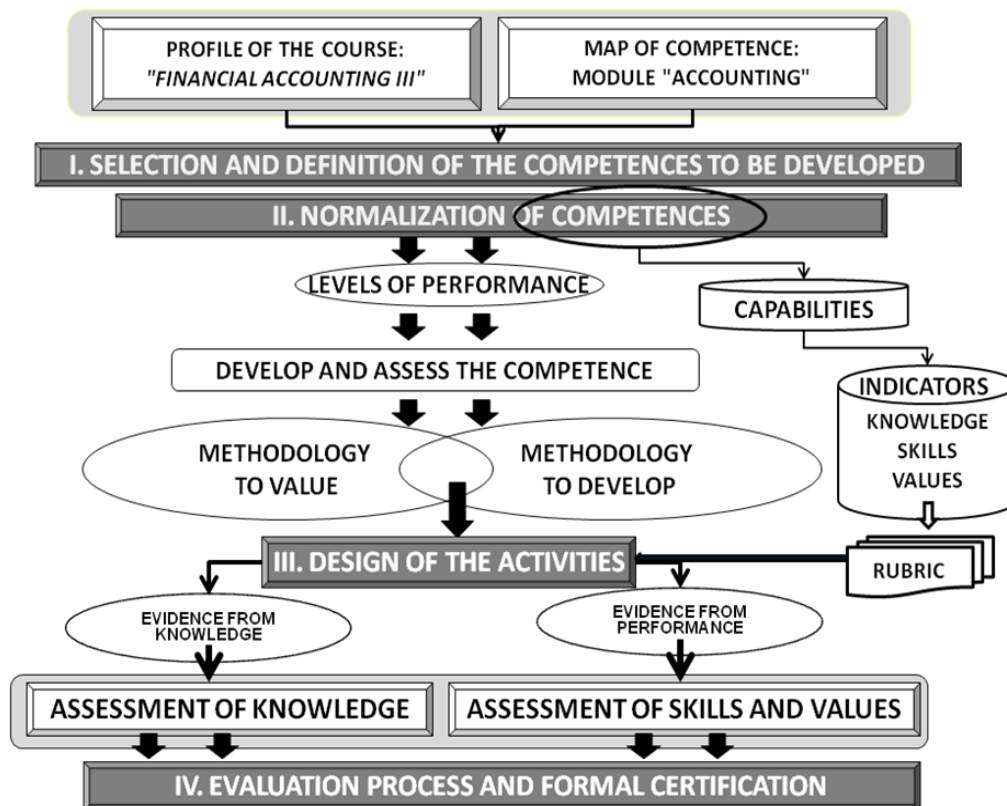


Figure 1: Design of the *Financial Accounting III* course based on competences.

2.1. Selection and definition of the competences to be developed

The first step in the design of our module was to set as an objective the achievement of certain specific competencies linked to the preparation, presentation and understanding of accounting statements, along with a series of generic competencies, with a basic level of achievement in most cases.

The competencies were selected in line with the *competency map* for the *Accounting* module, produced in agreement with the module's other lecturers and with the "*Financial Accounting III*" subject profile in accordance with the syllabus for a Degree in Business Administration and Management.

Finally we should note that the subject content, organized in seven themes, was wholly subordinated to the two specific disciplinary competencies (DEC29: "*Know the process of communication of external information in the business*", and DEC35: "*Knowing the process of closing the accounting cycle and preparing the information necessary for the preparation of financial statements, paying particular attention to mandatory required by law*").

2.2. Standardization of competencies

The next step in the design of our module was to standardize competencies and to draw up an *assessment sheet*, to which end we broke down each selected competency into sub-competencies (capabilities), and these in turn into indicators (skills, knowledge and values), setting the corresponding weightings.

Following this breakdown we drew up a *competency rubric*, very useful for assessing performance centred on qualitative aspects, identifying observable indicators and the various levels to be achieved, which allow us to assess the level reached by the student in the acquisition of each competency.

The template included key indicators (aspects to be assessed) for each competency and their corresponding descriptors (indicator performance levels), distinguishing between the following performance levels:

- Excellent (Point value: 10): 90-100% performance for each indicator
- Good / Proficient (Point value: 7,5): 75-89% performance for each indicator
- Fair/ Adequate (Point value: 5): 50-74% performance for each item
- Poor /Limited (Point value: 2,5): 25-49% performance for each item
- None / Insufficient (Point value: 0): 24% or lower performance for each item

2.3. Design of activities

Once the competencies had been standardized in the stage of designing the didactic strategy, the teaching methods or techniques to be used in the model were decided upon, with a view to their implementation in teaching activity.

In this pedagogical context we have combined a series of strategies and instruments allowing us to document evidence of both knowledge and performance by means of face-to-face and online activities, blending new technologies into our teaching/learning process with the creation of a virtual subject on the *Moodle* platform, allowing us to combine distance and face-to-face learning methods.

Our aim in using the *Moodle e-learning* platform was to equip ourselves with a tool allowing us to provide controlled, teacher-directed learning, to encourage student participation, and to instruct and assess students not only in competencies specific to our discipline but also in generic competencies, building their expertise with new information technologies (ICTs) and giving them autonomy.

In order to achieve this, both the materials and the activities for teaching and assessing competencies were included in an organized fashion the *Moodle platform* (Ciudad, 2010).

In the module we use two tools: an *overall activity table* and an *activity sheet*. With the former we list all the activities devised, with the following information for each line: activity reference and description, competencies, sub-competencies and indicators to be developed and assessed, and timeframe. With the latter we describe the activities one by one, specifying the competencies associated with each activity, and within these, the indicators to be worked on; the task is defined and the time in which it is to be carried out and assessed is indicated, along with the basic resources to be used, the assessment criteria to be used (expected learning outcome in each activity) and the type of instrument to be used in gathering evidence, which will depend chiefly on the nature of the learning outcome sought.

Moreover, in order for us to be able to score the indicators assigned to each activity, it will be necessary to draw up an *activity rubric*, to which end information will be exported from the *competency rubric* according to the indicators assigned.

2.4. Process of assessing and finally certifying the competencies acquired

The assessment process that we propose, derived from the teaching method applied, is continuous assessment over the course along with assessment through official exams, with a weighted average for all the activities performed by the student being applied according to the percentage assigned to each competency on the final grade.

In order to be able to obtain the final grade required for inclusion in records we designed a student *assessment report*. All the information from the rubric on the level achieved in the acquisition of competencies by each student is exported to a *record sheet*, on which calculations are made according to the weightings assigned to competencies. These calculations are subsequently added and presented in the *assessment report* including the total grade obtained by the student in the subject and the levels achieved in each competency, which report is supplied both to students and to the lecturers involved in the next learning stages.

3. CONCLUSIONS

The competency-based teaching and assessment model envisaged in the Financial Accounting III subject in the *Degree in Business Administration and Management* is intended, on one hand, to provide a methodological tool to support the teaching/learning process (assessment as learning), and on the other to document evidence of the process and outcome of competency acquisition by students (assessment of learning), and finally to be *useful for learning*, providing us with information that we may supply to those in charge of the next stage of the teaching/learning process.

The model, based on active student participation and consisting of a combination of various strategies and instruments allowing us to document evidence of performance by means of face-to-face and online activities, also allows us to provide students with information on what they need to do in order to acquire the necessary competencies, making use of charts which moreover facilitate performance assessment focussed on qualitative aspects.

A limitation is the very high number of students per group, which circumstance means there are fewer possibilities for interaction, monitoring, individual supervision or feedback between lecturers and students, and between students themselves, so if the object is to achieve continuous improvement in teaching quality it would be recommendable to reduce the number of students per group.

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REFERENCES

1. Ardoino, J. & Berger, G. (1989): "*D'une évaluation en miettes à une évaluation en actes*". Paris: ANDSHA-Matrice.
2. Ciudad Gomez, A. (2010): "Teaching Innovation And Use Of The ICT In The Teaching-Learning Process Within The New Framework Of The EHEA, By Means Of Moodle Platform". *American Journal of Business Education (AJBE)*, Vol. 3, No 13, 13-20. Available in: <http://journals.cluteonline.com/index.php/AJBE/article/view/972/956> [accessed January 2012].
3. Ciudad Gomez, A. (2011): "Design of the Accounting Course Focusing On the Development of Competences ". *Journal of International Education Research (JIER)*, Vol 7, No 5, 15-22. Available in: <http://journals.cluteonline.com/index.php/JIER/article/view/6112/6190> [accessed January 2012].
4. González, V. (2006): "La formación de competencias profesionales en la universidad. Reflexiones y experiencias desde una perspectiva educativa". XXI. *Revista de educación*, Nº 8, 175-188. Available in: http://www.sld.cu/galerias/pdf/sitios/magisterio/huelvacompet_1.pdf [accessed 1 June 2011].
5. Gulikers, J. T. M., Bastiaens, T. J., & Kirschner, P. A. (2004): "A five dimensional framework for authentic assessment". *Educational Technology Research and Design*, 52, 67–87.
6. Jones, G. & Abraham, A. (2007): "Educational implications of the changing role of accountants Perceptions of practitioners, academics and students", In The Quantitative analysis of teaching and learning in business, economics and commerce, Forum proceedings, The University of Melbourne, 9 February 2007, 89-105. Available in: <http://ro.uow.edu.au/commpapers/296> [accessed 10 January 2010].
7. Lasnier, F. (2001): "*Un modèle intégré pour l'apprentissage d'une compétence*". Pédagogie collégiale. Available in: http://www.cdc.qc.ca/actes_aqpc/2001/Lasnier_7B42.pdf [accessed 19 December 2011].
8. Le Boterf, G. (2000): "*Ingeniería de las competencias*". Barcelona: Gestión 2000/EPISE.
9. Liesbeth, K. J.; Baartman, T; Kirschner, P. A. & Cees, P.M. (2007): "Teacher's opinion on quality for Competency Assessment Programs". *Teaching and Teacher Education*, 23, 857-867
10. Lobo, A.; Escobar, B. & Arquero, J. L. (2009): "Using empirical based case studies to improve motivation, non-technical skills and content learning: a longitudinal study of an EHEA experience". *Innovar. Revista de Ciencias Administrativas y Sociales*, vol. 19, pp. 43-52. Available in: <http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=81819025004> [accessed 1 December 2011].
11. McDonald, R; Boud, D; Francis, J. & Gonczy, A. (1995): "*Nuevas perspectivas sobre la evaluación*". UNESCO, Paris. Boletín Cintefor, 149, 2000, 41-72. Available in: http://www.oei.es/etp/nuevas_perspectivas_evaluacion.pdf [accessed 1 may 2012].
12. Murphy, R. (2006): "Evaluating new priorities for assessment in higher education". En Bryan, C. & Clegg, K. (Eds.): *Innovative Assessment in Higher Education*. New York: Routledge. Pp. 37-47.
13. Pellegrino, J., Chudowsky, N. & Glaser, R. (eds.). (2001): "Knowing What Students Know: The Science and Design of Educational Assessment". Report of the National Research Council, Center for Education, Division on Behavioral and Social Sciences and Education. Washington, D. C.: National Academy Press. Available in: <http://www.nap.edu/catalog/10019.html> [accessed 1 mayo 2011].
14. Perrenoud, C. (1999): "Construir competencias desde la escuela". Santiago de Chile: Dolmen.
15. Roe, R. A. (2002): "What makes a competent psychologist?". *European Psychologist*, Vol. 7, No. 3, pp. 192-202. Available in: <http://arno.unimaas.nl/show.cgi?fid=14682> [accessed 19 December 2011].
16. Sampson, D. & Fytros, D. (2008): "Competence Models in Technology-Enhanced Competence-Based Learning". pp. 155-177. In Adelsberger, H. H. et al. (Eds.) "*Handbook of Information Technologies for Education and Training*", Heidelberg: Springer. Available in: <http://dspace.learningnetworks.org/bitstream/1820/1196/1/Sampson-Fytros-CompetenceBasedLearning.pdf> [accessed 12 December 2011].

17. Senik, R. & Broad, M. (2008): "Perceived Factors Influencing Information Technology (IT) Skills Development in Undergraduate Accounting Programmed" in *Int. Journal of Economics and Management*, 2(2), pp. 307-322 Available in: <http://www.econ.upm.edu.my/ijem/vol2no2/bab06.pdf> [accessed 10 January 2010].
18. Sitthisak, O.; Gilbert, L. & Davis, H. (2009): "*Transforming a competency model to parameterised questions in assessment*". Learning Societies Lab, School of Electronics and Computer Science, University of Southampton, Highfield, Southampton, United Kingdom. Available in: <http://core.kmi.open.ac.uk/display/35593> [accessed 1 mayo 2012].
19. Villardón, L. & Yániz, C. (2004): "*El aprendizaje cooperativo y el nuevo concepto de evaluación*". Available in: <http://giac.upc.es/JAC10/04/JAC04-LV.htm> [accessed 1 march 2012].
20. Voorhees, R. A. (2001): "Competency-Based Learning Models: A Necessary Future". In. Voorhees, R. A. (Ed.): "Measuring what matters: competency-based learning models in higher education". *New Directions for Institutional Research*, n°. 110, PP. 5-12. San Francisco, Jossey-Bass. Available in: http://132.204.3.67/documents/pdf/mesure/reference/11.Competency-Based_Learning_Models.pdf [accessed 12 December 2011].