ALIGNING OBJECTIVES, TEACHING AND ASSESMENT – CREATING A COURSE DESIGN

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In this research paper we described the existing relation between the controllable components of the current learning context (CLC) which leads us to Biggs's aligned system of instruction. We tried to shape the CLC components in order to increase the CLC effectiveness. We succeed to do this through the curriculum we build, which was created based on Bloom's taxonomy and critical thinking approach of teaching. The importance of the research consists in offering our perspective on the alignment process between objectives, teaching and assessment through the course design we created.

Key words: curriculum, teaching, assessment, Bloom's taxonomy, critical thinking

JEL Classification: I21

1. Introduction

We started our research with 3Ps model: Presage, Process and Product developed by Briggs in 1995. This model presents the factors that affect the learning outcome of a learner: prior education experiences along with current learning context influence SAL which determines the learning outcome. The 3Ps model offers educators ways to stimulate higher level learning[412].
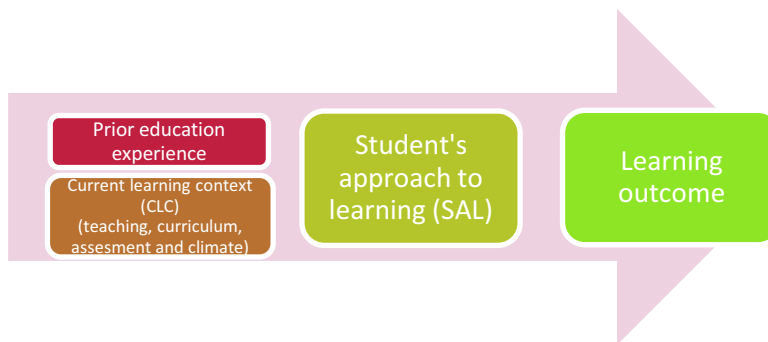

Fig. 1. 3Ps' Biggs's model

Observing the CLS components, we noticed that they can be divided in two major parts: controllable and uncontrollable by instructors. Teaching, curriculum and assessment are controllable elements by instructor but climate cannot be controllable in all cases, depending on which type of climate is: classroom or institutional. Besides the uncontrollable elements, the controllable ones influence student's approach to learning and the learning outcome.

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[412] Duff A. and McKinstry S., *Student's Approaches to Learning*, Issues in Accounting Education, Vol. 22, No. 2, May 2007, p.186.

In this paper we focused our attention on controllable elements of the CLC and tried to shape them in order to increase the CLC effectiveness. This implies to align the controllable elements of CLC based on the course objectives. Our objective relies on the idea that instructors have to teach what really matter for students and evaluate the knowledge gained using the same matrix as they used in teaching. Scientific literature underlines that during teaching, a great majority of teachers focus their awareness on what they are doing, not on what they are teaching, or on what their students are learning[413].

The importance of the research consists in offering our perspective on the alignment process between objectives, teaching and assessment through the course design we created.

2. Defining the concepts and building the model

We defined the concepts used within this paper: teaching, curriculum, assessment and learning in order to have a clear understanding of their meaning. Many definitions were attributed to these terms, so we presented here only those we considered relevant. Then we grouped the terms in order to accent the interaction between them.

Teaching is defined as the interaction of a student and a teacher over a subject[414]. As it is stated, this definition indicates the existence of a transmission process between two parties.

Since information is transmitted to the student, he/she will receive it through *learning*. So we reached the learning term, which is defined as the process of gaining competencies and knowledge, growth in attainment[415]. As we can see, teaching relies upon learning because without learning teaching is useless.

Another definition for teaching was given by Engel cited by Gardner and Jewler[416], according to which teaching consists of building a bridge from the subject taught to the student learning it. In our opinion, this definition is not proper for teaching since building a bridge (or a course) needs not only the construction process, which can be defined partially by teaching, but also "raw materials", represented by knowledge, as defined further. Even so, we consider that Engel's metaphoric idea of building a bridge is a brilliant one and we used it further.

Using Engel approach, the question is: what does instructor transfer? The core of the transmissions is **knowledge** transposed in textbooks, articles, case studies, videos, and many others. When the transfer process is finished, a question rise: was it efficient? The efficiency is measured by **assessment**, an evaluation process which helps instructors to identify how much knowledge were transferred and measures the completion stage of learning.

Another controllable element of the current learning context is **curriculum**. Curriculum is a term of considerable debated as to meaning. During time, several approaches of curriculum theory and practice were considered: curriculum as a body of knowledge to be transmitted, as a product, as process and as praxis[417]. Within Biggs' model, curriculum was perceived as a body of knowledge-content or by subjects.

We combined the CLC components and built the model below. The bridge construction (or course design) started with his left foot, where knowledge from all sources was gathered by instructor. The

[413] Biggs J., *What the student does: teaching for enhanced learning*, Higher Education Research, & Development. Vol. 18, No. 1, 1999, p.63.

[414] Davis, J.R. *Better Teaching, More Learning*, Series on Higher Education, 1997, available at http://www.ntlf.com/html/lib/btml_xrpt.htm.

[415] Smith, M. K., *Curriculum theory and practice' the encyclopedia of informal education*, 2000, available at www.infed.org/biblio/b-curric.htm.

[416] Gardner J.N., Jewler A.J., *The essential college experience*, 6th Edition, Thompson, 2006

[417] Smith, M. K., *Curriculum theory and practice' the encyclopedia of informal education*, 2000, available at www.infed.org/biblio/b-curric.htm.

amount of knowledge and the type of it is normally based on the course objectives, defined in the projection phase of the course, by instructor.

When course starts, teaching starts: the knowledge is transferred from instructors to student through sequential processes. In our model, the arches represent the process of teaching and classroom activities. The information transmitted is absorbed by learning process, graphically represented by the small parabola near the right foot bridge. The parabola captures the information and transforms it into knowledge at learner level. After all these processes are done and the bridge construction is ready, the bridge has to be tested for endurance, which is done through the assessments.
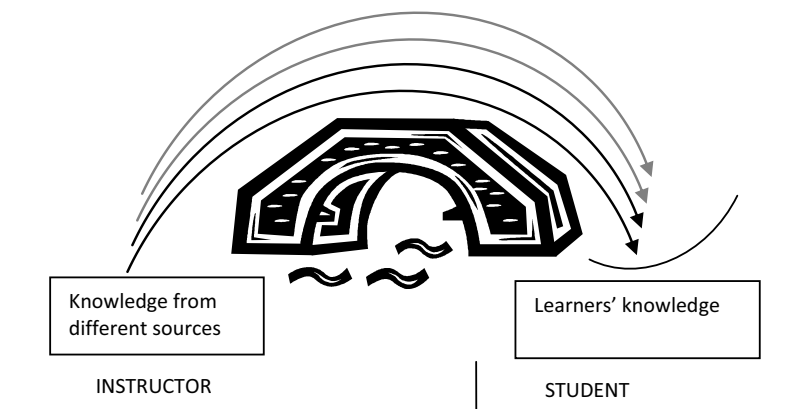

Fig. 2. CLC components combined

As we can see from the model, we defined the objectives of the course and based on them we teach and assess students.

We build this model based on a step-by-step approach and on CLC elements. It represents a system whose scope is to provide learning outcomes based on course objectives. In fact, this model represents the graphical approach of the **Biggs' aligned system of instruction**, defined as a fully–criterion referenced system, where the objectives define what we should teaching; how we should be teaching it; and how we could know how well students have learned it.[418]

3. Applying the model in practice

In order to apply the Biggs's model into practice, we gathered all the controllable elements of the CLC into the curriculum. Our approach regarding the curriculum is totally different from Biggs's approach, who considered, in his 3Ps' model, the curriculum as a syllabus. We followed the product approach of the curriculum, defined as a plan where objectives are met then applied and outcomes are measured. In order to emphasize the importance of the rationality and the need of simplification in elaborating a curriculum, Tyler developed four famous questions which are still relevant today[419]:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained?[420]

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[418] Biggs J., *What the student does: teaching for enhanced learning*, Higher Education Research, & Development. Vol. 18, No. 1, 1999, p. 64.

[419] Kizlik B., *Information about Curriculum, Curriculum Development, Issues and Planning*, 2009, available at http://www.adprima.com/curricutility.htm.

[420] Tyler, R. W., *Basic Principles of Curriculum and Instruction*, Chicago: University of Chicago Press, 1949.

Relying on the model presented and using the above questions in order to structure our work, we tried to design the Managerial accounting curriculum. Managerial accounting is a mandatory discipline for accounting undergraduates in the Faculty of Economics and Business Administration, undertook in the second year of study.

We structured the Managerial accounting Curriculum into six major parts: course description, course objectives, recommended readings, how to learn efficiently, how to communicate and evaluation system. The curriculum was written in a simple way and addressed directly to students.

The curriculum starts with a **general course description**, whose scope is to help students to become familiar with the main areas that are to be examined. The first part of the general course description is followed by a "proving" part where we did emphasize why discipline is important; to strengthen our message, we took real life examples.

The **course objectives** followed the course description, state the main goal of the course: to acquaint students with the fundamentals tools of Managerial accounting. *General course objectives* are presented further. At the end of this course students will:

- understand the core issues of Managerial accounting;
- be able to use properly the most important tools and to apply important management and accounting methods combined;
- be able to analyze methods in order to find the most suitable one for the given situation;
- be able to evaluate different situations based on facts or suppositions, and
- to build, formulate and write an opinion about the analyzed case.

General course objectives rely on two pillars: developing critical thinking and Bloom's taxonomy. Critical thinking, social responsibility, reflective judgment, and evidence based reasoning…are the most enduring goals of a first-rate liberal education[421]. And Schneider continues by saying that in 2003 many college graduates are falling short in reaching these goals. According to Minnich[422] if people think this mean that they are more likely to question than to assert, inclined to listen to many sides, capable of making sensitive distinctions that hold differences in play rather than dividing in order to exclude, and desirous of persuading others rather than reducing them to silence by refuting them. Critical thinking involves eight skills: 1). ask questions, 2). define the problem, 3). examine the evidence, 4). analyze assumption, 5). avoid emotional reasoning, 6). don't oversimplify, 7). consider other interpretations and 8). tolerate uncertainty.[423]

Technical speaking, developing the critical thinking involves skills which are not possible to be achieved without understanding the context and further identifying the potential solutions and choosing the most appropriate solution. For solving these technical aspects, we designed the entire curriculum based on Bloom's taxonomy. The new approach of Bloom's taxonomy structures it on the following levels[424]:

Level 1 - Remembering: can the student recall or remember the information?
Level 2 - Understanding: can the student explain ideas or concepts?
Level 3 - Applying: can the student use the information in a new way?
Level 4 - Analyzing: can the student distinguish between the different parts?
Level 5 - Evaluating: can the student justify a stand or decision?
Level 6 - Creating: can the student create new product or point of view?

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[421] Clayton, M., *Rethinking thinking*, The Christian Science Monitor, 2003, available at http://www.csmonitor.com/2003/1014/p18s01-lehl.html

[422] Minnich E., *Teaching Thinking: moral and political considerations*, Change, sept/oct 2003, p.20, available at http://www.elizabethminnich.com/change-think.pdf

[423] Lipps J.H., *Judging authority*, NeuroQuantology 2004, Issue 2, p. 116-121

[424] Overbaugh R.C., Schultz, L., *Bloom's taxonomy*, available at http://www.odu.edu/educ/roverbau/Bloom/blooms_taxonomy.htm

Moreover, a significant importance should be pay to the order of these levels since each level have to be mastered before going to the next one and the difficulty of the levels are increasing from the first to the last level.

Based on the pillars mentioned before, we developed **specific course objectives** for each main topic of the discipline.

Recommended readings consist in a text book and Harvard Business School case studies. The curriculum offers detailed information regarding how to buy them and different forms of book available for sale: hardcopy, electronic version, or rights to access the book for a limited period of time. Besides these, students can access more resources like PowerPoint Presentations, Narrated Slides and Standard and Enhanced Quizzes from the book publisher's website for free.

The diversity of learning materials offered to students is motivated by the willingness to offer students appropriate types of materials which fit their learning style: visual, auditory or kinesthetic.

Course content part details the topics and chapters covered each week. Moreover, it specifies the chapters needed to be read, exercises, problems and HBS case study assigned for each week. Exercises, problems and case studies that are to be graded were specified separately in the curriculum, in order to eliminate any possible confusion.

Course set-up implies the way classes, tutorials, individual and group out-of-school activities of students are organized. Course is based on individual work and asks over for reading the chapter assigned, solving exercises and problems and case study analysis. Each week, a tutorial and a class are held. In tutorials, teaching assistant discuss with students exercises and problems assigned for the week and if needed, sensitive theoretical parts of the chapter assigned. Subsequent to tutorials are classes, where case studies are analyzed using Socratic method. Tutorials and classes are not compulsory for students to attend. Moreover, textbooks are not lectured.

How to learn efficiently is a part of the syllabus that we considered mandatory to present since our teaching approach is not very common in our faculty. Teaching case studies and effective lecturing are teaching methods our students are not familiar with. Moreover, since learning is a process that takes time, improving efficiency is needed in order to maximize student's learning outcome. That is why our suggestions regarding your learning process were referring to: how to read the textbook in order to understand the topic and how to analyze a case study.

The last part of the curriculum is dedicated to the **evaluation system.** The final grade comprises three parts:
- student's active participation in tutorials (30% of the final grade),
- student's active participation in classes (10% of the final grade),
- final exam (60% of the final grade).

Since our aim is to align the CLC controllable components, we had to connect the students' evaluation forms with the teaching method and the course objectives. At the end of this course our expectations are that students to be able to understand and apply specific management and accounting methods, analyze them, evaluate, create and be capable to convey these information in oral and writing communication. For doing this, we designed the final assessment based on Bloom taxonomy in order to evaluate the knowledge on each level of the taxonomy. For doing this, we identified the major parts of the discipline and for each of them we chose five questions in order to test students' knowledge starting with the first level and finishing with the fifth one.

Therefore, final evaluation comprises 15 questions / problems plus a case study analysis, whose main role was to test critical thinking.

4. Conclusions
Starting with Biggs's model, we built a model of CLC controllable components and we described the way these components interact. Our model represents in fact the curriculum, viewed from the product perspective. Based on this, we developed the Managerial Accounting Curriculum and we described the way we did it. We designed the curriculum in such way that allows us to maximize the CLC

component. In alignment process of the CLC components we used two methods: problem-based learning and case studies analysis, which are considered successful methods in getting the alignment.

The curriculum we had designed represents a helpful tool for clarifying what we have to teach, how we teach and what we assess. It is a simple but organized plan of our activity with students and it helps both us and students to show, respectively, to know exactly our expected professional engagements.

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