

CONSTRUCTING NEW ACCOUNTANTS: THE ROLE OF SUSTAINABILITY EDUCATION

CONSTRUYENDO NUEVOS CONTABLES: EL PAPEL DE LA EDUCACIÓN PARA LA SOSTENIBILIDAD

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ABSTRACT

This paper responds to recurrent calls from academic and political spheres on the need for change in the education of future executives. It concludes that the inclusion in the accounting syllabus of the accounting for sustainability course, which is designed to be taught through learning based on intellectual development and dialogical education, will stimulate change in the values held by future managers leading to the re-humanization of accounting and its role as a useful tool for society. The course will also allow teachers to contribute to the Social Accounting project through their direct engagement in the changing values of future generations of accountants.

KEYWORDS: education, social and environmental accounting

RESUMEN

El presente estudio responde a la llamada constante realizada desde el ámbito académico y político sobre la necesidad de introducir cambios en la educación de los futuros directivos. Como conclusión se presenta que la introducción dentro del plan de estudios de la asignatura Contabilidad para la sostenibilidad diseñada para ser impartida con una metodología de aprendizaje basada en el desarrollo intelectual y una educación dialogada, permite el cambio de valores de los futuros directivos hacia una re-humanización de la contabilidad y su papel como herramienta útil para la sociedad. A su vez permite al docente contribuir al proyecto de la Contabilidad Social gracias a su implicación directa en el cambio de valores de las futuras generaciones de contables.

PALABRAS CLAVE: educación, contabilidad social y medioambiental.

1 INTRODUCTION

There have been recurrent calls from within the Social Accounting project for sustainability education (Bebbington, 1997; Mathews, 1997; Gray & Collison, 2002; Amernic & Craig, 2004; Thomson & Bebbington, 2005; Collison et al., 2007) as a means of integrating social and environmental accounting subsets into mainstream financial reporting, management accounting and auditing courses. This approach could help to subject accounting to critical scrutiny in terms of its direct and indirect consequences for society as a whole and could successfully subvert managerialism, even within an apparently managerialist curriculum (Mathews, 2001; Boyce, 2004; Thomson & Bebbington, 2004; Owen, 2008).

The inclusion of an accounting for sustainability course not only responds to calls in the field of Social Accounting research. Various forums have encouraged changes in syllabi that introduce aspects related to business responsibility and sustainability. In Spain, a report from the *Subcomisión de Trabajo y Asuntos Sociales* [Sub-committee on Work and Social Affairs] recommends specialist modules in pre-graduate and post-graduate courses to stimulate and to promote social responsibility in firms (recommendation number 53). The Conference of Spanish University Rectors made a similar recommendation to include specialist study paths in this discipline (CRUE, 2005).

A course on accounting for sustainability can help to develop aptitudes in students that prepare them to understand the limitations that are part of business dealings in general and traditional accounting in particular (Gray et al., 1994; Bebbington, 1997; Stevenson, 2002; Boyce, 2004).

Nevertheless, current syllabi have been criticized as being useless for developing such aptitudes, given that current accounting syllabi are in general assembled on the basis of two general assumptions, shareholder primacy and the way accounting is presented. Shareholder primacy refers to the need to satisfy (one's own) economic interests as the driver of economic growth and, in consequence, social wellbeing. In the field of business, this assumption legitimizes, firstly the primacy of the shareholder as the leading participant whose needs have to be met, and secondly, externalities as a means of achieving (economic and financial) success, considering the environment as a mere source of resources (see Gray et al., 1996 for a criticism of all these questions).

The other assumption lies in the way accounting is presented. At present, accounting courses encourage the acquisition and control of accounting techniques. This technique translates a business reality into the language of business, and there is no room in this translation for empathy towards the different participants in the organization (McPhail, 2001). In this regard, accounting is only approached from the perspective of the economic and financial management of the firm.

These assumptions develop a set of implicit values in students that according to Bebbington and Thomson (2001) make up a "hidden curriculum". These values represent the root of the

problem given that the assumptions students acquire on what is good or bad and what is possible or impossible, although not explicitly taught, are implicit in the treatment of key subjects in the syllabus. The problem is that as a consequence of its implicit nature, the hidden curriculum is never criticized nor is any doubt cast on whether it is reasonable (Bebbington & Thomson, 2001).

In line with Gray et al. (1994), if we propose as an objective the possibility of thinking about and questioning the hidden curriculum, accounting for sustainability is a solid alternative. This subject matter relates accounting studies with facts that are considered of concern or of interest for the different stakeholders in the organization, thereby capturing many of the characteristics associated with learning based on intellectual development.

This kind of learning requires a commitment to social change on the part of the teacher in order to establish an intellectual involvement with students (Boyce, 2004), given that if university teachers limit themselves to teaching what is done in businesses, university studies will appear to be, at the very least, unnecessary, given that there are accounting professionals who have not been formally trained for that purpose. However, as well as training in professional skills, the study of accountancy at university can help future professionals to develop the ability to inquire into the possibilities that accounting offers to contribute to the interests of the firm and the public in general. Thus, for accounting education to be socially relevant, its momentum should be drawn from areas that may be considered tangential to currents of traditional accounting.

In this regard, Gray and Collison (2002) propose that in order to train new generations of accountants, the syllabus should address ways of improving public interest and the consideration of environmental sustainability as objectives of the accounting profession. To achieve this, education has to be based on the intellectual development of students and not on the mere acquisition of professional skills.

A learning based on students' intellectual development is useful to make accounting students aware that they will take decisions in the future that will affect the rights of various stakeholders and the possibilities that are open to them under the current business structure and traditional financial accounting. Students are therefore expected to put forward the scale of values that they have implicitly acquired during the syllabus, thereby enabling them to question those values (Gray et al., 1994). Bringing the hidden curriculum out into the open implies "humanizing" accounting studies, in such a way that students can develop empathy towards different stakeholders other than the shareholder (McPhail, 2001).

According to McPhail (2001), the objectives set out earlier promote the re-humanization of accounting thanks to: (a) the alteration of student perceptions about their profession, about themselves and the impact of their actions as accountants; (b) the development of a broad vision of the profession through the discussion of injustices and inequalities that underlie the structure of the economic system, and; (c) the development of ethical and moral

awareness in the minds of the students towards the stakeholders of the organization that will be affected at the time of taking organizational decisions.

If students' perceptions are changed they will become aware of the need to re-humanise accounting, and as future managers, they will be able to avoid institutional capture that current managers are imposing on the meaning of sustainable development and its implication for business as concluded in previous studies (O'Dwyer, 2003).

In summary, the inclusion of courses on sustainability accounting could potentially enable students to benefit from all the characteristics of education based on intellectual development: criticism and questioning of the accountant's role and business in a social and environmental setting.

The aim of the present study is explore if it is possible to modify student perceptions on sustainable development and involving business in achieving as much, by including a course on sustainability accounting in the syllabus for future business graduates.

The design, planning and content of the course under investigation was prepared in accordance with guidelines established in the previous literature (Owen et al., 1994; Gordon, 1998; Stevenson, 2002; Mangion, 2006, Coulson & Thomson, 2006). Thus, through master classes, activities focus on contact with the reality of the business world and in specific seminars, students have been challenged to think about sustainability, business responsibility and the role of accounting. Questionnaires at the beginning and at the end of the course were used to understand the evolution of student discourse with the aim of being able to explore whether student opinion changed and if so, in what way.

The rest of the article is organized into four sections. In the second section, a literature review is presented as well as previous experiences in the implementation of the teaching of accounting for sustainability. In the third section, the method is described, including the description of the students and the course, the composition of the questionnaires and the techniques used to analyze the gathered information. In the fourth section, the results of the questionnaires and the evidence from the case are presented before the last section winds up with the conclusions.

2 PREVIOUS EXPERIENCES ON SUSTAINABILITY ACCOUNTING EDUCATION

Gray and Collison (2002) affirm that no organization or any functional activity within one can afford to ignore sustainability related aspects, be it for economic or moral reasons. This affirmation is reflected in the opinions of the accounting profession. Collison et al. (2007) interviewed members of the different European accounting associations (represented in the European Federation of Accountants) and these interviewees state that social and

environmental aspects are important for the profession and that many accountants and auditors underestimate their importance. They also suggested that there is a need to emphasize education in these aspects.

Nevertheless, Bebbington (1997) echoing the study by Humphrey et al. (1996) affirms that at present few teachers are giving sustainability accounting courses, which are more a result of individual than institutional initiatives.

In the United Kingdom Owen et al. (1994) and Stevenson (2002) present a study on the inclusion of sustainability accounting courses in universities. By means of questionnaires they explore also the reasons that motivate lecturers to teach sustainability accounting. The presented conclusions can mainly be summed up in these two points: (a) although the incidence of sustainability education is growing, albeit slightly, there is little evidence to suggest that it reflects the incidence of the practice of sustainability accounting; and (b) the teaching of sustainability accounting is facilitated by the fact that students can obtain knowledge about that they see as issues very relevant to their day-to-day lives and the existence of staff in the department who are active sustainability accounting researchers.

In Australia, Mangion (2006) replicates the study of Owen et al. (1994) and Stevenson (2002) and finds that sustainability accounting is gaining acceptance in undergraduate curricula. Her conclusions are similar to the previous studies, affirming that the principal reason for teaching sustainability accounting is to enhance students' awareness of the social and environmental obligations of corporate behaviour. She also corroborates that the greatest facilitator of sustainability education are sustainability accounting researchers among the staff.

Mangion (2006) also lists the options that have been proposed over time to approach education in sustainability accounting: (a) include sustainability accounting in traditional accounting-finance courses; (b) offer sustainability accounting as an independent study module (normally in the final study modules of the syllabus); (c) create an specialized curricular route in sustainability accounting (this is unusual); and (d) include sustainability accounting in a general study module on accounting theory.

According to the conclusions of previous studies on facilitators of sustainability education, it is possible adapt another possible facilitator presented by Gray and Collison (2002) for accounting education in general, that is, when students perceive that the teaching they receive is aligned with current accounting practices, they are reluctant to question the underlying ethical and business assumptions. So the fact to a researcher in sustainability accounting teaches the course should minimize that risk.

In addition to studies on sustainability education in general, the studies by Gordon (1998) and Coulson and Thomson (2006) examine the implementation of sustainability accounting.

Gordon (1998) includes a module on sustainability accounting in an accounting theory course. The students were given a list of selected seminar readings, which were subsequently discussed in class to find out whether students' perceptions had changed. The author concludes also that this way of teaching is an opportunity for the teachers to contribute to engagement with the social change.

Coulson and Thomson's (2006) study involves an independent sustainability accounting course using dialogic pedagogy (Freire, 1996). The authors present the course content in detail and their study is intended to show the benefits of the dialogic approach with the teacher as facilitator.

If the teacher functions as a facilitator in order to train the new generation of accountants and the teaching of sustainability accounting is supported by the teacher's personal experience and results as a researcher, the teacher would be able to force the development of the student's scale of values and thus make a positive contribution towards countering institutional capture of the meaning of sustainable development and its consequences for businesses (O'Dwyer, 2003).

Sustainability education is, therefore, one contribution of teacher-researchers to the Social Accounting project, thanks to their personal engagement that is evident from their direct involvement in changes to the values of future generations of accountants (Gray, 2006; Owen, 2008).

Based on these studies the course presented in this paper attempts to combine both the importance of the pedagogic methodology (based on dialogic approach like Coulson and Thomson's study) and possible change in students' perceptions of the role of sustainability accounting (like Mangion's study).

3 | **METHOD**

3.1. Case description

3.1.1. The degree

The case presented in this study falls into the second possibility listed by Mangion (2006) that is offering sustainability accounting as an independent study module. It is an optional course offered at the Faculty of Business Management, which principally targets students wishing to follow the specialist study path of Accounting and Auditing within their *Licenciatura en Administración y Dirección de Empresas* [degree in Business Management and Administration].

The syllabus for the degree in Business Management and Administration is structured into five academic years, over a period of ten semesters. In the first three years, students receive a basic education in business management, which includes modules on accounting. A total of three study modules deal with accounting: two are concerned with financial accounting (a total of 210 hours) and one with management accounting (90 hours). In the last two years, students are able to follow specialization study paths. The study path in Accounting and Auditing is composed of one mandatory study course on Analysis of Financial Statements (90 hours) and a total of eight 45-hour teaching courses each semester distributed over the two academic years. It is here that the study module “Environmental Accounting” is included.

The possibility of offering this study module is due to the commitment of the Faculty of Business Management at the Universidad Pablo de Olavide (Seville) to integrate sustainability accounting education into the syllabus for future business studies graduates. This commitment is apparent in the support of the Faculty for responsible business management education (Principles for Responsible Management Education - PRiME)¹. Added impulse is given by the fact that the Centro de Investigación en Contabilidad Social y Medioambiental (Centre for social and accounting research - CICSMA)² is based at the Universidad Pablo de Olavide. It also confirms in this case the correlation found in earlier studies between the existence of researchers working on the Social Accounting project and the availability of sustainability accounting modules (Owen et al., 1994; Stevenson, 2002; Mangion, 2006).

3.1.2. Course Structure

The 45 teaching hours for the “Environmental Accounting” course are divided into two weekly ninety minute sessions throughout the fifteen weeks that make up the semester. Seven master class sessions, ten assignments and three activities that focus on business practice are given throughout the course. This structure represents a deviation from the norm (e.g. not adopting the lecture/tutorial model, unusual class activities and use of alternative sources of information) and successfully integrates an action element into the course, which complies with institutional rules without compromising any notion of academic rigour or standards (Coulson & Thomson, 2006).

As Gordon (1998) has noted, there are no specific textbooks that approach these kinds of assignments, and so the structure, contents and teaching methods are planned in accordance with the requirements set out in the literature and earlier experience, as described in the following paragraphs.

(1) http://www.upo.es/fce/contenido?pag=/portal/fce/responsabilidad/resp_social&menuid=&vE==

(2) <http://www.upo.es/cicsma>

With respect to the subject matter, an effort has been made to cover the topics that the literature suggests should appear in all sustainability accounting courses. Mangion (2006) sums these up in the following twelve points: environmental accounting – external reporting; environmental accounting – management systems; social accounting; theoretical frameworks in social and environmental accounting; sustainable development; social auditing; social financial reporting; non-financial reporting; ethical reporting; Human Rights accounting; history of social and environmental accounting; international comparative reporting on social and environmental accounting.

Thus, the topics are composed of the following seven lessons. The first topic introduces the basic concepts of sustainability accounting. The second topic examines the approaches to sustainability accounting. Topic 3 shows the main environmental management practices and topic 4 addresses social and environmental management systems (EMAS – ISO14000 – SA8000). Topic 5 examines environmental information in annual accounts (and in particular the resolution of the Instituto de Contabilidad y Auditoría de Cuentas (Spanish Institute of Accounting and Auditing) and topic 6 presents alternative ways of disclosing social and environmental information (Full Cost Accounting and Global Reporting Initiative). Finally topic 7 explains ethical investment funds.

The aim is that the development of these topics will allow students to perceive (a) the limitations of traditional financial accounting when organizational limits are broadened to include relations with the social and the natural environment; and (b) the need to humanize the ethical business code to tackle with these limitations trying to promote a value change. For this reason the slogan “Environmental Accounting: Change the world, starting with yourself” appears on all hand outs for students (Graph 1).

3.1.3. Course Pedagogy and Assessment

McPhail (2001) lists eight teaching methods: interdisciplinary focus; group learning; real life case studies; role play; films; literature; personal experiences and timing in order to re-humanize accounting and motivate change in students' values.

In the course presented here, these methods have been used in ten activities (see Table 1). Even though the optional nature of this course implies high attendance from students enrolled on the module, a system to monitor attendance using new technologies was proposed, as students have to undergo slow assimilation of the ideas and concepts that are covered in each lesson/task contributing to a dialogic pedagogy approach (Freire, 1996; Coulson

& Thomson, 2006). Only in this way will the teacher manage to involve students fully in the debates that are proposed at any one point in time and be certain they have the necessary resources to tackle the issue. So, each task is set with a fixed deadline and the next one may only be accessed after the earlier one has been completed and handed back in good time.

TABLE 1.- LIST OF TASKS

Name		Working method	Short description	Lessons previously taught in class
Task 1	Initial Questionnaire	Individual	Answer open-ended questions on accounting, accountants and their role in a professional setting	NONE
Task 2	Commentary on a film	Group	Relate concepts and ideas discussed during Topic1 with the plot of the film	TOPIC 1
Task 3	Commentary on a film	Group	Relate concepts and ideas discussed during Topic1 with the plot of the film	TOPIC 2
Task 4	3R Programme	Group	Look for concrete examples of Reduction - Reutilization – Recycling carried out by Spanish firms	TOPIC 3
Task 5	Environmental Policy	Group	Look for Environmental Policy in a real firm. Analyze the content and discuss the possibility of putting it into practice	TOPIC 3
Task 6	Hotel Audit	Group	Identify the inputs – outputs of a hotel firm based on its website information. Analyze possibilities of minimizing impacts.	TOPIC 3
Task 7	EMAS and ISO 14001	Group	Review the Environmental Policy in task 5 and test its compliance with EMAS requirements. Familiarization with ISO legal documentation	TOPIC 4
Task 8	Compliance of Environmental Information with the ICAC resolution	Individual	Test Spanish Firms' compliance with the ICAC resolution. Critical analysis of the reasons presented by firms.	TOPIC 5
Task 9	Ethical investment funds	Individual	Identify FTSE's requirements for firms in the index. Analyze an ethical investment fund offered by a banking entity. Make value judgments on the suitability of the fund.	TOPIC 7
Task 10	Final questionnaire	Individual	Answer open-ended questions on accounting, accountants and their role in a professional setting	ALL

Of the ten tasks, the first and last consist of open-answer questionnaires used to gather evidence on possible changes in the arguments presented by students and they are described in the next section.

Tasks 2 and 3 centre on commentaries of films watched during the sessions. The use of films as educational tools is increasingly acknowledged (McPhail, 2001) given that (a) they help to assimilate what are in principle abstract concepts, and (b) they help students to explore the feelings and emotions experienced by individuals when they find themselves in ethical dilemmas which, in most cases, are inherent in organizational decisions.

The film covered in Task 2 is “Mr. Magorium’s Wonder Emporium” (Helm, 2007). It is intended to show (a) the difficulty that affects the valuation of a firm and the constraints of traditional financial accounting that prevent it from introducing aspects that are not strictly economic-monetary; (b) the need to broaden organizational limits to cover the relation between the organization and the environment; (c) the need to change the role attributed to accountants; (d) the central role of the accountant as an agent of change in the organization, (e) the need to change personal perceptions to address the above points.

With respect to the film used in Task 3, “On deadly ground” (Seagal, 1994) was chosen given that the film offers many contrasted situations that promote debate. In this case, it is a case of showing (a) the management of relations with other stakeholders of the organization as well as shareholders; (b) the antagonism that exists between the different needs of the different stakeholders; (c) the consequences that may occur in the context of organizational decision-making; (d) the different approaches that may be proposed when managing relations with stakeholders and the satisfaction of their needs; (e) examples of the different theories put forward to understand sustainability accounting; (f) ethics in business and; (g) the need to change personal perceptions to address the above points.

As well as the ten listed tasks, a critical analysis was proposed of real sustainability reports from two firms as a practical application of the concepts acquired in Topic 6. These activities were proposed as a way of bringing students into contact with business reality, and took up four classroom sessions. As made clear in the preceding section, one of the failure factors of this type of assignment is that the student sees that there is a gap between what is debated in class and professional practice (Gray & Collison, 2002). These seminars are intended to reduce that gap, hence the greater dedication to these activities. During the seminar each work group has twenty minutes to present the evidence that they obtain from their analysis to the rest of the class, finally finishing with a criticism of the way in which the firm presents sustainability information. At the end of the presentation, the professor opens a classroom discussion on quality, quantity, utility and transparency of the information under analysis, with a view to directing the discussion towards such aspects as (a) the coherence between corporate values and actions; (b) sustainability of the firm, the system or the professional setting; (c) theoretical approach in which to situate the practice under analysis and (d) alternative solutions that may appear improbable *a priori*, but which could arise.

The seminars, therefore, allow for dialogical pedagogy (Freire, 1996, Coulson & Thomson, 2006) which should be the foundation for learning modules that are intended to promote change in students' values and encourage them to question the hidden curriculum. Thus, both the teacher and pupil explore, discover and grow in awareness together, creating interactive acquisition of knowledge given that the student's voice is credible through interaction with the teacher. In this way, classroom activity connects the study to something specific (sustainability accounting) in the real world that is explored thanks to their involvement in the activity.

Additionally, a guided commentary of the information supplied by the firm Altadis in its 2006 Annual Report to satisfy stakeholder information needs was proposed, with the aim of complementing the opinions expressed in the questionnaires. Two issues lay behind the choice of this firm: (a) the visibility of the tobacco industry when tackling aspects that affect the environment (health, deforestation, advertising ethics, loss of working life, cost/benefits for public administrations, for example) and, (b) the serious shortcomings of the information that fails to follow any recommendations made by international initiatives when publishing sustainability information. The commentary is made for the first time in the second session of the course, just before starting the other activities and lessons, and is commented on once again when the final survey is given, after all the activities, seminars and lessons that make up the course have been completed.

The course is based on continuous assessment, so seventy percent of the mark is obtained by active participation in the debates and seminars and correct submission of the tasks. The remaining thirty percent is obtained by a final theoretical exam. The tasks destined for questionnaires and guided commentary of Altadis are out of this assessment system in order to guarantee consistent answers.

3.2. The questionnaires

In order to gather evidence on possible changes in student discourse a questionnaire was included in tasks 1 and 10 (Gordon, 1998) (see Table 1). Students had to answer the questionnaires individually. Questionnaires did not remain anonymous in order to identify any change in discourse. This fact could cause a bias in the answers, given that students could feel that they were being evaluated. For this reason, students were told that they would obtain the maximum score assigned to the task simply for answering the questionnaire.

The final questionnaire (included in task 10) comprised questions structured in two blocks. The first block includes the questions in the initial questionnaire. The second one includes two kinds of questions: (a) those aiming to test the conclusions of previous studies; and (b) those aiming to test the consistency of replies to enable interpretation of any change in discourse (see Table 2).

TABLE 2.- QUESTIONS INCLUDED IN THE INITIAL AND FINAL QUESTIONNAIRES

Question	Id number Initial Task	Id number Final Task	Aim of the Question		
			Test Consistency	Test previous literature	Key Question
Define the term 'Accounting'	1	-	Ø	-	-
List five keywords to characterize accounting	2	1	-	-	Ø
List five keywords to characterize an accountant	3	-	Ø	-	-
What is the foremost aim of a for-profit organization?	4	2	-	-	Ø
What does a firm's result comprise?	5	3	-	-	Ø
As a prospective manager, list five strategic guidelines to achieve a successful firm	6	4	-	-	Ø
What do you think about 'Environmental Accounting'?	7	12	-	-	Ø
Did you know the term 'Environmental Accounting' before?	8	-	Ø	-	-
Why do you select this course?	9	-	Ø	-	-
What are your expectations of this course?	10	-	Ø	-	-
Define the term 'Sustainable Development'	11	-	Ø	-	-
Do you identify any problem in the current way of doing business?	12	5	-	-	Ø
Do you think there is an alternative to the current way of doing business?	-	6	Ø	-	-
How can firms contribute to sustainable development?	-	7	Ø	-	-
Do you think that environmental accounting is relevant?	-	8	-	-	Ø
Has your perception about the way of doing business been changed after the course?	-	9	-	-	Ø
Has your ethical code been changed after the course?	-	10	-	-	Ø
Would you have a suitable view of how to manage a firm if you had not done the course?	-	11	-	-	Ø
What do you understand by the course slogan "Change the world starting with yourself"?	-	13	-	-	Ø
Do you think that the knowledge learnt in the course is useful for your career?	-	14	-	Ø	-
Do you think that you will be able to apply the knowledge learnt in the course?	-	15	-	Ø	-
Do you consider that the course is well situated among the syllabi?	-	16	-	Ø	-
If you have answered affirmatively to questions 9 and/or 10, what was the task from that you begin the change?	-	17	Ø	-	-
What topic/task/activity did you like the most?	-	18	-	-	Ø
What topic/task/activity provided you with the most useful knowledge for your career?	-	19	Ø	-	-
Has the course met your expectations?	-	20	Ø	-	-
What suggestions can you offer for next year?	-	21	Ø	-	-

3.3. Discourse analysis

The answers to the questionnaires, and the guided commentary of the information supplied by the firm Altadis in its 2006 Annual Report, were analyzed with the discourse analysis method developed by Fairclough (1992). The narrative nature of the answers permits the use of this methodology.

Fairclough (1992) developed a methodology to analyze discourse by integrating several analytic techniques. According to this author, discourse analysis takes place on three levels: (1) language; (2) production, distribution and interpretation of the text (including analysis of formal characteristics of the text) and, (3) a context that provides the study with the social characteristics of the discourse.

Two first levels match interpretative analysis and deconstruction techniques respectively (Burr, 2003; Grant et al., 2004). By means of an iterative process the themes, metaphors, modes of expression and argument structures can be identified, and in particular disagreement, variations and changes over time (Wetherell & Potter, 1992), thereby distinguishing the bases for students' discourse.

The last level is related with intertextuality (connection of the text with the contextual discourse). This approach assumes that discourses determine and are determined by the context surrounding organizations. So, micro and macro analysis levels must be taken into account simultaneously (Livesey, 2002; Livesey & Karens, 2002; Grant et al., 2004; Milne et al., 2006). In this study, academic and motivational student backgrounds have been used as context variables. In order to gather this information the initial questionnaire included some questions to corroborate the economic bias acquired during the course and to find out whether any students are personally motivated towards sustainability issues (see id number questions 8-11 from the initial questionnaire in Table 2).

3.4. The students

Twenty eight students registered for the course, but only twenty students (thirteen female students and seven male students) attended regularly. These students make up the study sample. All these students took courses corresponding to the fourth year of the degree in Business Management and Administration (*Licenciatura en Administración y Dirección de Empresas*). No students were repeating this course.

To carry out the seminars and some tasks, the students had to form three-member groups. Finally, six three-member groups and one two-member group were set up. Sample number makes the use of a discourse analysis methodology feasible and enables the use of dialogical pedagogy (Freire, 1996; Coulson & Thomson, 2006).

The following section compares the results from the questionnaires and the commentary on the actual information provided by Altadis.

4| PRESENTATION AND DISCUSSION OF THE RESULTS

4.1. Changes in discourse in the Altadis case study

Table 3 shows a comparative summary of student responses to the commentary on the Altadis 2006 Annual Report both before and after they had completed the lessons and the other activities.

TABLE 3.- SUMMARY OF REPLIES ON THE ALTADIS CASE

	BEFORE	AFTERWARDS
Information needed for...	Shareholders	Consumers and local community
Provide more information on...	Effects on health	Processes, environmental policy. Effects on health and on the environment. Performance evaluation.
Information appropriate as managers	Yes	Yes
Information appropriate for users	No. Very scarce	No. The information is biased towards positive aspects
Is the information reliable?	No. It is too positive	No. It does not follow any standard for dissemination nor does it show internal reliability. It does not present the consequences of its activities.
Is it comparable?	Yes	No

Although the replies do not amount to a change of opinion in the majority of cases, changes in discourse are found above all in the arguments they make. Thus, with respect to the question of the need for information supplied by Altadis on social and environmental aspects, students perceive the importance that this information can have for shareholders, given that a positive image of the firm will increase both its value and its reputation. Nevertheless, after the course, the users of this information change drastically as they affirm that:

“Given that this type of information should reflect managerial concern (or lack of concern) over the influence and impact that their firm has on the environment and on the stakeholders, especially consumers and the local community, it is needed by all stakeholders in the organization.”

The fact of having other stakeholders of the firm in mind as well as the shareholder explains the type of additional information that students require from the information supplied by Altadis. So, whereas at the start of the course the only information that they considered missing referred to the “health effects”, in the second commentary on the case, the list was enlarged to other more technical aspects such as: processes; environmental policy; environmental effects and performance evaluation.

With respect to whether the information supplied by Altadis on social and environmental aspects is convenient from a managerial standpoint, the response both before and after the course was affirmative, however, the arguments given in support of that affirmation are not always the same. In fact, whereas students valued disclosure of this information very positively in the first commentary because of its connection with an increase in reputation and value for the shareholder, in the second commentary they considered that the utmost should be done in the search for information transparency, maintaining that:

*“Management will want to show that the firm is being as **transparent** as possible, in order to give a faithful picture of the situation in which it is found, and to achieve as much it should show both positive and negative aspects. However, in the information under analysis we have not found clear evidence of negative actions” (emphasis added)*

Student behaviour was identical when they gave their opinions on the appropriateness of the information as part of the local community. Responses were negative at both the start and end of the course, but at the beginning of the course the negative response was based on the scant importance of this type of information for the local community and the limited amount supplied by the firm. In the analysis at the end of the course, lack of importance disappeared as an argument and the negative assessment was explained by the poor credibility of the information supplied by Altadis. This latter argument links up with the following question regarding the reliability of the information. If, during the first commentary, the students mistrusted the information because they considered it too positive, in the second commentary their negative response was based not only on intuition but on factual confirmation:

“We do not trust this information, as it is not acknowledged, it does not follow any procedure such as EMAS or GRI G3 framework thus the information shown does not accurately reflect the reality on the ground. Moreover, it concentrates on presenting qualitative assessments that lack objectivity; the results made available neither allow for comparability nor allow their evolution to be monitored in the future.”

As already put forward in this last argument, if there has been a change in opinion it is in reference to the quality of comparability. Although all the students unanimously considered the information comparable at the start of the course, they argued the contrary at the end,

suggesting that the information supplied by Altadis was excessively narrative, biased and hardly extensive.

Although it appears that in principle a change in student perceptions is possible on a sustainability accounting course, not all students reflected this change in opinion. Three students expounded very similar opinions before and after the course. In fact, in the case of Altadis, they used two basic ideas to prepare their responses: (a) transparency of information is negative for the image of the business, and; (b) only economic-financial information is relevant to businesses.

Nevertheless, despite these three students, whose discourses remained unchanged, this first source of evidence paints a hopeful picture. However, the fact of reaching general conclusions on changes in values, the role of the accountant and accounting in organizations that respond to the challenge of achieving sustainability solely based on the opinions voiced by students on information presented by any one particular firm on social and environmental aspects appears, at best, fraught with risk. Thus, the responses provided by the questionnaires are now presented which will allow us to analyze aspects that are more directly related with the objective of this study.

4.2. Discursive changes presented in the questionnaires

The results are presented in two blocks: one referring to the questions that students answered as the initial and final tasks, and the other referring to questions that were included to confirm the consistency of replies, as well as to test whether some of the conclusions presented in the literature have been confirmed by this present study.

Students were first asked to list five words related to 'Accounting'. The terms that appeared most frequently in the initial questionnaire were 'Reliability'; 'Objectivity'; 'True and Fair View'; 'Income-Expense-Assets-Debt'. However, these words were replaced by 'Responsibility'; 'Transparency' and 'Stakeholders' in the second one. The use of these new words suggests that students may have re-humanized their concept of accounting and share the idea of enlarging the organizational limits traditionally presented in the other courses in the syllabus.

Thus students put the principle of profit maximization as the foremost aim of a for-profit organization (response provided in the first questionnaire) into perspective by adding the sentence 'but taking account of possible repercussions on the environment'. The nuance in the responses between the first and the second questionnaires once again points to the presence of other stakeholders and the interrelation of an organization with its environment in the students' discourse. In fact, when asked about the composition of a firm's results, at the end of the module they affirmed that *the global result is made up of a triple result*

(economic – social – environmental) whereas at the start of the module it was made up of *the difference between annual incomes and expenses*.

The importance students attribute to social and environmental aspects in the management of firms is evident in the following two issues: firstly, the strategic guidelines that successful firms should follow, and, secondly, the description of problems in current ways of doing business. With respect to the former, the strategic guidelines expressed by students at the start of the course centred exclusively on purely economic aspects such as expansion, cost reduction and diversification. However, at the end of the course, these guidelines changed into a combination of leadership in social, environmental and economic fields. With respect to the second, both at the start and at the end of the course, students identified problems with the current way of doing business, nevertheless, as in the case of strategic guidelines, the discourse centred on economic aspects at the start of the course, such as lack of diversification and economies of scale and the costliness of reducing pollution. This latter problem reveals that students initially saw pollution as something natural and antagonistic to the success of an organization. However, when they responded to the questionnaire for a second time at the end of the course, the problems brought a change in values to the fore, as students noted that the way business is done at present involves the destruction of natural resources and a lack of ethics in the treatment of human resources and society.

The last question in this first block refers to the definition of the term ‘Environmental Accounting’. Using the brainstorming technique, students defined the term at the start of the module as:

*“the part of accounting in charge of **monitoring** the impact that the activities of an organization have on the environment so that the firm is able to benefit from **subsidies** and avoid **penalties**” (emphasis added)*

This definition suggests the students’ implicit values. Even though they had to give this definition intuitively, it is not obvious that they imagine viable alternatives to the current way of doing business as they give a stridently economic definition. Nevertheless, at the end of the course, using the same technique, they provided the following definition:

*“A useful **information system** so that firms can show the **economic, social and environmental** impact that they have on their surroundings” (emphasis added)*

This definition on the other hand, is centred more on the idea of transparency of the information and integration of the pillars upholding sustainability, which as in the replies to the earlier questions, appear to be rooted in personal values with regard to how a firm should be managed.

The replies to the questions in the second block that were only included in the questionnaire at the end of the course are presented below. When they had finished the course, the students were encouraged to give their opinion on the relevance of sustainability accounting. In general, the discourse agrees with what was presented in the earlier block; sustainability accounting would help firms to communicate their fair image. However, they are doubtful about its relevance:

“Personally, I think that [sustainability accounting] is relevant, but the problem is that at present executives and managers responsible for its implementation think that it is not relevant and that it will only involve greater costs. Proof of this is the desire to hide negative data with respect to the environment and society, when what they should do, instead of hiding it, is not to carry out actions that might be harmful to them”

From this reflection, a sense of the change in the values held by students may be felt, thereby fulfilling the proposed objective of changing future generations. In order to confirm this, students were asked about changes in their personal ethical code and their way of managing a firm that might ensue from having followed the course. One student argued as follows:

“After following this course I am more aware of all the points that should be taken into account in a firm. Over these years of studying, they focus our attention on achieving profitability and economic aspects but they do not teach us ethics based on other aspects that are just as important, such as people. However, in this course they do look at elements other than profitability, and therefore yes, you could say that it has changed my ethical code and vision of management of the firm”

It appears, therefore, to be confirmed that the change of values is, at least apparently, possible. Despite this, we sought a source of additional evidence to uphold the consistency of these responses by encouraging students to explain what they understand by course slogan “Change the world starting with yourself”:

“For me, it certainly means that people at present in charge of managing all the accounting information and taking their decisions did not have the chance to learn how to do it well in their day. Nevertheless, if we have that opportunity, and we enter the employment market, we will have to try to change the bad practice of firms these days”

This consistent discourse appears to confirm that the students have clarified their own ethical positions and developed a deeper understanding of the degree to which accounting is involved in the process of social change (Bebington, 1997).

With the aim of confirming the main conclusions of previous studies, the final questionnaire included questions about the gap that students perceive between what they study and what

they will have to do in the future as professionals and the inapplicability of what they are taught. Thus, the students were asked whether they believed that they would have had a suitable view of how to manage a firm if they had not followed the course and whether they considered that they could apply the knowledge learnt in their career (id number 11, 14 and 15 from the final questionnaire in Table 2). The following responses show that students' perceptions are highly favourable as they consider they would benefit from the properties attributed to sustainability accounting:

"If I had not followed this course, I would have a purely economic vision of the firm. I would not know how to recognize the importance of social and economic aspects. [...] I think that I will be able to apply this knowledge, if I have my own firm (which would be the quickest way) and if I were employed by a company."

Finally, two last questions were included in this block: one to monitor the internal consistency of the responses, and another to gather evidence of the intellectual development that the module seeks to develop. The first question asked students to indicate the activity through which they had gained the greatest knowledge. Seventeen students (85%) selected the seminars (critical analysis of real sustainability reports from two firms) as the best activity, arguing that they brought them closer to reality, that they saw the practical application of the theoretical knowledge and it allowed them to express their opinions, defend them and refute them, without feeling at any point that they were considered worse than those proposed by the teacher. This percentage of support and the arguments noted down suggest that : (a) as commented in the earlier sections, a dialogic pedagogy (Freire, 1996; Coulson & Thomson, 2006) helps to deliver the benefits attributed to sustainability accounting and (b) the seminars have helped to reduce students' perceptions that the theoretical concepts are not applicable in their professional life and has allowed students to experience the previously described theoretical limitations for themselves, which means that the hidden curriculum emerges and may therefore be questioned (Gray & Collison, 2002). The remaining 15% (three students) chose Task 4 (Programme 3R – see Table 1). They were the same students identified in the Altadis case whose opinions remained unchanged. They showed the same behaviour in the case of the questionnaires, where the clearly economic discourse they maintained correlates with the choice of a task that presents situations of economic synergy for the organization when approaching the challenge of sustainability. Even though the discourse of these students did not change, they passed the course with a similar mark to the other students proving that the responses are not biased by the assessment. These students felt that the course was not very real, had too many activities and effort should go into raising the awareness of managers.

However, the large number of tasks is seen as something very positive for the other students. They believe that the method was key to the almost unconscious assimilation of concepts that had led them to think, reflect and formulate questions that they would never have

imagined before. The use of these verbs makes it clear that the module managed to contribute to the students' intellectual development:

"It has made us think and reflect, as well as discuss ideas and that is real learning"

5 CONCLUSIONS

The present study has described the way in which a sustainability accounting course was structured and has analyzed the benefits it has for students.

By using questionnaires and a case commentary at the start of the course as well as at the end, it was possible to monitor the changes in the students' discourse. In this way, it was possible to confirm whether their perceptions of sustainable development and the role of business in achieving it varied as a consequence of the lessons and activities that formed part of the course.

The students started the course with a markedly economic view of accounting and its role in the management of the organization, as well as the relationship between firms and the environment. This scheme of values and beliefs was expected and the objective of the course was to bring it out into the open so as to be able to question it.

The course was structured taking into account the strength of the factors that according to the literature lead to success. A learning-based methodology based on intellectual development and dialogic education was therefore proposed with the aim of changing the values of future executives towards the re-humanization of accounting and its role as a useful tool for society.

The majority of students showed changes in their discourse with regard to the objective of accounting, a broader view of the management of an organization and the proposal of alternative scenarios to the way of doing business. The students attributed this change not only to wider knowledge, but to the challenge involved in thinking over and questioning some of the beliefs that they may have taken for granted based on other courses in the syllabus.

Thus, the results explained in the present study confirm that students can take advantage of the benefits offered by the study of what are *a priori* tangential subjects, such as accounting for sustainability. In turn, thanks to the teaching of these types of courses, the teacher can contribute to the Social Accounting project through direct engagement to change the values of future generations of accountants.

In the case of the sustainability accounting course, if the students reconsider the current way of doing business that they have implicitly acquired during the syllabus, they would be ready to not erode social and environmental issues when economic downturns appear, given that sustainability issues will stop being subordinate to profit maximization. The course laid the foundations to provide the labour market with specialists that meet the need for sustainability management in the public sector, charities and NGOs.

A limitation of this study is that the results are for one university and a single instructor. A second limitation is that, in order to compare student responses on pre and post questionnaires, matched individual responses were employed. This fact could influence students' responses because they cannot remain anonymous. Durability of opinions over time remains for future studies.

Although the present study is linked to other studies such as those by Gordon (1998) and Coulson & Thomson (2006) which affirm that a change in values is possible, it appears necessary to change the philosophy of the courses that constitute the overall syllabus, if deep-seated change is sought in future generations (Owen, 2008). The literature lends support to this argument when it states that although the inclusion of sustainability accounting courses can have positive results, it is a partial and only somewhat systematic solution. The hidden curriculum can only be truly changed by restructuring the syllabus rather than just modifying the pedagogy or using new learning systems (Owen et al., 1994; McPhail, 2001; Collison et al., 2007).

The fact that a structural change is underway in university education in Spain in order to adapt to the European Higher Education Area gives rise to a scenario worthy of further investigation to establish whether progress is being made towards the restructuring of syllabi or at least, towards the systematic inclusion of courses with a similar structure to the one described in the present study.

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