

Education for sustainability – a prerequisite for post-crisis economic competitiveness with possible inference for Romania

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Abstract. *The need to integrate sustainability among the skills of specialists in economics and its accreditation for the university curricula was recognized in academic literature for over twenty years. Using the literature review and documentation, the present paper identifies the key factors in the assessment of the current state of the scientific research and the practice of European universities. The prime responsibility is for economic universities to adjust curricula to meet these demands. In this sense, the paper constructs a debate on the organisation and the projection of a strategy in developing the economic education towards sustainability in higher economic education in Romania.*

Keywords: education; sustainability; economic competitiveness; accounting profession; university.

JEL Codes: I25, M21, M40.

REL Code: 4C.

Introduction

Ethical, social, and environmental incidents are more and more serious and publicly exposed, requiring costly repairs to damaged corporate reputations. The change is, therefore, driven by international and not just national, circumstances. Exchange indices such as the FTSE4Good and Dow Jones Sustainability Indices are influencing investors, as are the *Principles for Responsible Investment* issued by the United Nations Environment Programme (UNEP) Finance Initiative (ICA, 2008, p. 7).

In this respect, concerns were expressed at a number of different policy levels and by industry groups about the ability of the education system to enrich students with vocational competencies needed for a fast-changing world. “World economies need to be able to turn to systems of regulation and security that require businesses to be more open and accountable for their actions, and to provide timely and comprehensive disclosure of matters of relevance to a wider range of stakeholders on a broader range of issues” (Martin, Steele, 2010, p. 11).

Scientific research in this area has not had a significant impact on economic reality, because of the lack of dialogue on integrating sustainability, which led to differences between the views of stakeholders from industry and those from higher education. This reality has led us to question the possibility that institutional barriers or gaps in communication may have limited the consideration for a change towards sustainability.

International partnerships, non-profit organisations and governmental agencies, as the Global Reporting Initiative (GRI), World Business Council for Sustainable Development (WBCSD), United Nations Commission for Sustainable Development (UNCSD) or Organisation for Economic Cooperation and Development (OECD), helped to increase awareness of sustainable development of the world economy by addressing issues such as: triple bottom line reporting, ecological footprint, social and environmental auditing, sustainable balanced scorecard, sustainability assessment models and so on.

In an unpredictable and extremely competitive global market, where companies put a great pressure on and the role of the accountants expanded beyond narrow regulatory knowledge to include vision, adaptability and ability to address sustainability issues.

The overarching research proposition for this study referred to the *reliability of integrating sustainability into the accounting education that could have an impact on post-crisis economic competitiveness.*

Based on literature review the study outlines the idea that although there is significant interest in the concept of sustainability for economic education, particularly for the accounting domain, as demonstrated by the wide range of topics dealt with in a number of high quality journals, the dispersion is

extremely high, the subjects are not treated consistently and the research impact is not reflected in practice. The paper presents then a documentary based research on the deepening the subjects included in the curricula of master's programs in a number of European universities central or collateral dealing with aspects of sustainability. In the last part of the article a study is depicted in order to present a picture of the possible involvement of Romanian students, graduated of economic studies, regarding the aspects of sustainability (environment, society and corporate responsibility), impacting the future evolution of the Romanian economy.

A great deal is potentially at stake, as the importance of accountants within the business sector, and the importance of the business sector for the development of a sustainable economy, have both been noted by academics, profession and businesses. This paper could be considered as a step in a larger research effort to integrate sustainability into the accounting education. The article is useful for the accounting profession, for business and industry organisations, universities and governments which are interested in responding to the present need of embedding sustainability in accounting education and training.

The results of this research regarding the integration of sustainability in education support the conclusion that much remains to be done for the improvement on the perception of sustainability skills so that courses aimed at developing such skills to be perceived as providing a competitive advantage both for students and universities and not as an option rather trendy, and not necessarily required.

Research methodology

The study focuses on fundamental research. It leads to new insights into the essence of economic and accounting education, its stakeholders and the concept of sustainability projected at microeconomic level. The complex actions between these elements must emerge in starting points, innovations, new developments and solutions to old educational approaches.

This qualitative research investigates why and how education promoters' behaviour can change in responding to societal pressures of ensuring a sustainable development. Then, an archival research is performed to outline the history and the present of education for sustainability by analyzing the studies published in accounting education journals during the time (from 1990 to nowadays). The research refers also to the deepening of the subjects included in the curricula of master's programs in a number of European universities, central or collateral dealing with aspects of sustainability.

Another step in the research process has been taken then, by developing a pilot questionnaire for shaping curricular content of master programs to include possible knowledge on sustainability. This questionnaire-based pilot was used in order to test a series of research propositions in order to design possible debate on the opinions and choices of master students in Romanian economic education.

1. The history of addressing education for sustainability within accounting research

The need for integrating sustainability into professional qualifications and university degree accreditation has been recognised in high ranked academic literature for at least twenty years. Accounting researchers supported those ideas by developing studies addressing multiple aspects of sustainability in accounting education. Gordon's (1998) reports on how social responsibility/sustainable development accounting and reporting (SR/SD) were included as a module in an accounting theory course. Basing his comments on a questionnaires research, he suggests that the readings and discussion did sensitize students to the SR/SD topic. Hill et al. (1998) suggest that students perceive themselves to be very motivated and persistent, possessing confidence, committed to life-long learning, and sensitive to social responsibility. Fleischman and Schuele (2006) provide collateral reading assignment for a principles or intermediate accounting courses, and explore the current state and future issues of environmental accounting and reporting. Accounting professors and students' views on environmental accounting and reporting are included. Results indicate that the reading assignment and related class discussion increase the accounting students' self-reported awareness of and concern for the importance of environmental/sustainable action. Apostolou et al. (2010) conduct an accounting education literature review for the 2006-2009 period, addressing indirectly the aspect of sustainability and corporate social responsibility. The conclusion of this study, supported also by Merino (2006), is that the discourse of accounting now permeates higher education and deserves the attention of accounting educators who could critically examine the use of accounting measures to assess public goods.

As researchers (Martin, Steele, 2010) from Australian Research Institute in Education for Sustainability (ARIES) observed, there has been little change towards embedding sustainability in accounting curricula in the majority of business schools, for the last ten years. Consequently, they questioned institutional barriers or gaps in communication were inhibiting implementation of change towards sustainability.

The achievement in this regard refers to literature review, based on archival study that analyzes the inclusion of sustainability concept in accounting education. The study is designed on seven journals that mainly address to the accounting education: *Accounting Education: An International Journal*, *Australian Journal of Accounting Education*, *Global Perspectives on Accounting Education*, *Issues in Accounting Education*, *Journal of Accounting Education*, *Journal of Education for Business* and *The Accounting Educators' Journal*. The content analysis of the articles published in these journals allows us to tell the history of debating sustainability for accounting education. Related subjects are tracked, discussed and debated in regard to three directions of this research: accounting profession, business and academia. The summary of results (Table 1) shows the publications' low interest for the change and development of accounting curriculum by reference to various aspects of sustainability.

Accounting Education: An International Journal published the most representative researches addressing different approaches of sustainability and the option of their incorporation into accounting courses curriculum. Debates on this subject referred to case studies (Coulson, Thomson, 2006), to national accounting qualifications (Lange de, Watty, 2011, Hussain, 2011, Stevenson, 2002), and to conceptual problem solving (Hazelton, Haigh, 2010, Mathews, 2001, Boyce et al., 2012).

Table 1

**Addressing sustainability concepts in accounting education journals:
history and content**

Journal	Number of articles	Before 2000	2000-2009	2010-present	Subject
Accounting Education: An International Journal	16	1	9	6	Academic education: ethical impact Business: case study
Australian Journal of Accounting Education	No electronic archive for this journal				
Global Perspectives on Accounting Education	1	-	1	-	Education for business: general aspects of ethics in corporate governance
Issues in Accounting Education	25	5	18	2	Academic education: ethical impact
Journal of Accounting Education	4	-	2	2	Academic education: methods and content Profession: ethics Business: case study
Journal of Education for Business	5	-	4	1	Academic education Profession and Business: case study
The Accounting Educators' Journal	1	-	1	-	Academic education: general aspects of corporate ethics

Journal of Accounting Education published four articles (two in 2006 and two in 2010) that promoted directly or indirectly the sustainability aspects to be included in accounting curricula. Academic, Business and professionals aspects of accounting education are addressed, with little implication on future results. Thus, Wynder (2010) contributes with a case study on the performance evaluation, including environmental performance, using the Balanced Scorecard, Burns (2006) discusses about the design of a graduate accounting course comprising ethics and professional behaviours in accounting, while Fleischman and Schuele (2006) refer to methods for teaching environmental accounting.

Although it published the most articles on the subject of sustainability and accounting education, the journal *Issues in Accounting Education* contains the least relevant studies for our research. Gordon (1998) is the only one who directly addressed introducing the concepts of corporate responsibility in students' accounting education, while Patten and Williams (1990) and Sefcik et al. (1997) dedicated their researches to environmental accounting education. Other articles referred indirectly to the concepts of sustainability and social responsibility, by reference to business ethics, profession and higher education, exclusively.

Global Perspectives on Accounting Education and *The Accounting Educators' Journal* are the least representatives for approaching sustainability concept in accounting education and mainly address business cases. *Journal of Education for Business* includes five articles on sustainability accounting and education curricula detailing business cases and practice (Nicholson, DeMoss, 2009, Tschopp, 2004) and incorporation in high education courses (Persons, 2012).

Based on the approaches presented in this section we conclude that although there is major interest in addressing the concept of sustainability into accounting education, demonstrated by the wide range of topics treated in a number of high quality magazines, their dispersion is extremely high, the subjects aren't consistently considered and the research impact is not reflected in the practice of accounting education.

2. Archival research on environment/sustainability oriented disciplines promoted by european universities

The literature review examining the businesses, profession and academic drivers for sustainability suggested that a range of factors work strongly in favour of integrating sustainability in accounting education. These include: governmental policies promoting sustainable industry, industries' drivers for corporate social responsibility, support for change from professional accounting associations with accreditation exams including sustainability items regarding

accounting policies and concepts, and academic awareness of sustainability issues within economic-oriented universities. A limited inclusion of sustainability in accounting education may be explained by the lack of knowledge about how to direct established content toward sustainability outcomes, the impacts of student demand for established forms of accountancy accreditation, the absence of accreditation criteria that would enable specialised skills associated with sustainability to be given priority in higher education courses (Martin, Steele, 2010).

We focused this part of the research on deepening the documentation for the disciplines dealing with central or collateral issues of sustainability included in the curricula of universities master's programs. To meet the research objectives at this level we performed an archival study of disciplines oriented towards environment and sustainability in a number of European universities listed in top 100 published by ASPEN Institute (2012).

The top 100 universities included in this classification are sorted by relevant courses, exposure that students have in relation to the impact on business and research activity at faculty level. Courses relevance criterion has a weight of 20% and refers to the number of courses containing elements of curricula related to social, environmental or ethical aspects. Exposure of courses in relation to the students' availability has a share of 25% and is measured according to a formula that gives more weight to longer courses, to courses dedicated to sustainability issues and those with a high frequency. Relevance to business matters at the rate of 30% and reflects the number of courses addressing the impact on oriented profit organizations by including discussions on how the companies can be a force for social and environmental improvement. Finally, the research component is assigned a weight of 25% and includes the number of articles that address social, environmental or ethical factors and are published in high ranked journals, weighted by the impact factor as the qualitative item. The fact that this ranking includes only universities that have developed curricula by integrating sustainability issues ensures relevance and substance for the data and for the outlined conclusions.

For this research, data issued by the Aspen Institute were used, and the information, elements and features have been selected to meet the research objectives.

Thus, out of a number of 100 universities included in the Beyond Grey Pinstripes Global 100 ranking for the year 2011-2012, only research universities in the European Union were selected, reaching a total of 16 universities. The European university ranking based on ASPEN methodology comprises the following countries: Denmark, Finland, France, Germany, UK, Norway, Netherlands and Spain. Representativeness is the largest UK with five universities, followed by Spain, with three universities and France and Germany, with two universities (Table 2).

Table 2

**European university ranking based on ASPEN methodology,
for the year 2011/2012 –UE countries**

Position in Top 100	University	Country	Ranking in relation to			
			Course	Impact on students	Impact on business	Research activity
3	IE University	Spain	9	1	7	46
19	Erasmus University (RSM)	Netherlands	34	68	37	2
40	INSEAD	France	44	123	23	12
29	ESMT	Germany	51	17	14	71
41	University of Jyväskylä, School of Business and Economics	Finland	51	33	46	50
45	Nottingham University Business School	United Kingdom	63	39	60	23
79	Norwegian University of Life Sciences (UMB)	Norway	83	70	46	119
43	Copenhagen Business School	Denmark	92	52	52	9

Regarding the importance of courses, universities in Spain have the most relevant master courses addressing business oriented aspects of sustainability (social, environmental, ethical), two of the three universities being ranked in the top 10 for this criterion. The universities in the Netherlands and France follow, situated in top 50. The next table shows how the courses are available in relation to identified departments.

Table 3

**Departments in which universities have integrated sustainability elements
in the disciplines of master/MBA**

Crt. No.	University department	Number of universities	Number of disciplines	Average no of disciplines
1.	Management	15	76	5.1
2.	Strategy	13	57	4.4
3.	Corporate social responsibility/Business ethics	11	45	4.1
4.	Marketing	14	56	4.0
5.	Finance	14	42	3.0
6.	Human resources management	10	26	2.6
7.	Economics	15	37	2.5
8.	Accounting	11	25	2.3
9.	Organisational behaviour	10	18	1.8
10.	Business law	6	10	1.7
11.	Governance and business	6	7	1.2
12.	Management of public and non-profit organizations	2	2	1.0

Courses are related to a specific department depending on their overall content. Thus, an accounting course that includes some aspects of environmental impact is considered accounting course. Most universities are organized in comprehensive departments such as Economics, Management,

Marketing, Finance, and Accounting, while specialized departments such as Management of public and non-profit organizations, Environmental management and Quantitative methods are rarely included in university organizational structure.

Table 4

**Distribution universities and departments of accounting courses
that include sustainability issues - extracted EU countries**

Position in Top 100	University	Country	Accounting courses including sustainability aspects	Affiliated department
3	IE University	Spain	Balance Scorecard Management Accounting Financial Accounting Financial Reporting And Analysis: An International Perspective Management Control Systems	Accounting
19	Erasmus University, Rotterdam School of Management (RSM)	Nederland	Insurance services	Accounting
29	European School of Management and Technology (ESMT)	Germany	Management Accounting	Accounting
40	INSEAD	France	Applied corporate reporting Business Law and Government Regulations	Accounting
41	University of Jyväskylä, School of Business and Economics	Finland	Accounting Theory and Research Advanced Audit Financial Accounting Financial Statements Analysis And Evaluation of Financial Investments Introduction to Accounting Professional Ethics in Management and Accounting Social and Environmental Accounting	Accounting
43	Copenhagen Business School	Denmark	Financial Accounting Management Accounting	Accounting
45	Nottingham University, Business School	United Kingdom	Accounting and Finance Analysis of Financial Statements	Accounting
79	Norwegian University of Life Sciences (UMB)	Norway	Accounting and environmental management Resource and environmental economics	Economics Environmental Management

In the following, the discussion on the objectives and the content of accounting courses organized by the 16 universities are addressed, providing sustainability oriented skills. Table 4 shows that two universities (from UK and

Germany) have no accounting department, and don't offer educational program accounting disciplines that include sustainability issues. Instead, a number of 11 universities have an accounting department and include in their educational offer at least one subject related to sustainability accounting. Other universities, although not having accounting department, does however provide disciplines referring to accounting-based concepts but primarily intended to strategy and corporate management. A diversity of accounting disciplines is presented, such as financial accounting, managerial accounting and reporting or business strategy.

3. Proposal for adapting to economic academic content of Romania disciplines to address issues of sustainability - pilot study

This paragraph studies and presents a picture of the intentions of Romanian students, graduated economic universities that had been involved in sustainability aspects (environment, society and corporate responsibility), having an impact on the future evolution of country's economy. Based on the literature review, on practical studies of various researchers and organizations/associations, on our previous studies, another step has been taken in the research by developing a questionnaire for designing the curricular content of master programs to include knowledge about sustainability. Thus, we aimed to using a pilot-questionnaire to test a number of research propositions, in order to advance the debate on potential opinions and choices expressed by master students.

Qualitative study based on the questionnaire forms the scientific research that aims to debate proposals to deepen the knowledge of future accounting professionals through integration into university curricula of sustainable development issues. A pilot questionnaire was addressed to graduate students, as future practitioners. The reason of completion for this research lies in the increasing interest in diversity which international corporations manifest in terms of sustainability reporting issues. Based on the research objective, as to test economic higher education students on the possibility of introducing sustainability issues in the master curriculum, using general or specialized courses, the study sample have been formed. It included students of professional master program organised by the Faculty of Accounting and Management Information Systems from the Academy of Economic Studies in Bucharest.

To determine representativeness we asked a number of general questions on program curricula, age and current occupation. Because at this level of research extrapolations based on their responses weren't intended, the respondents' anonymity will ensure a high reliability for answers.

3.1. Questionnaire design and identification of research propositions

Designing the questionnaire and enunciating the questions are fulfilled by in connection to the objective of the paper and aims to impact the inclusion of adapted and modernized courses that address concepts, practices for measuring, reporting and auditing the sustainable development information to ensure a complete overview of economic entities, and the role they play in the context of sustainable development.

This exploratory study aims to linking information on social and environmental impact of conventional financial reporting of companies, subject on adapting and extending skills and abilities of future specialists to meet the sustainable development of society, in relation to a number of general and specialized issues.

Based on a total of 12 questions, having both single and multiple answers, the results were used to debate and to formulate benchmarks for identified students needs, expressed either by report their personal experience, or to their own initiatives induced by employing companies. The aim is to formulate coherent proposals for integration in the curricula of sustainability issues.

As a research technique, the questionnaire was constructed using GoogleDocs portal, which enables quick and user-friendly interface for the respondent. Responses are automatically recorded in a database and individually identified by temporal elements and their analysis allowed open debate for all those concerned, whether they belong to academic educational environment, or to the business.

3.2. Summary of responses to the questionnaire and discussion

The respondents to the online questionnaire, titled *Educational prospects of sustainable development in economic sciences* are specialized master students of the Faculty of Accounting and Management Information Systems, but graduated of various faculties of the Academy of Economic Studies (Accounting and Management Information Systems, Public Administration, Commerce, Finance, Insurance, Banking and Stock Exchange, and Economics). They are aged between 22 and 34 years, and most of them declared an economist or accountant occupation.

To answer the first research question, *Does the current university curriculum provides premises for training specialists with skills to meet the demands of sustainable development?*, four questions were asked about studies on sustainability issues during the bachelor or master programs, with focus both on general and on specific elements required by an effective management of business activities. The pilot study results show that most master respondents

included in the studied population hadn't studied sustainability, neither macroeconomic issues related to sustainable development nor specific issues on CSR policy of corporate reporting, social and/or environmental costs or audit.

From detailed analysis of the responses received it was noticed that the majority of students that indicated a general but also specialised approach on sustainable development issues graduated economic/business faculties, but other than Accounting and Management Information Systems. They studied these issues in various courses, but primarily aimed at management or economics rather than accounting disciplines (Table 5).

To answer the second research question: *Does the master students manifest openness to the sustainability problems?*, two questions were addressed, concerning extra-curricular specialization chosen by the student and volunteer work related to green economy.

Table 5
General and specific addressing sustainability in the curricula (%)

Sustainability aspects	Curriculum approach				Not approach in curriculum
	Bachelor	Master	Accounting faculty	Other faculties	
1. Macroeconomic sustainable development	27	14	27	46	64
2. Corporate social responsibility policy	14	14	9	46	73
3. Recognising corporate social and environmental costs	14	18	9	55	68
4. Recognising corporate social and environmental information	5	14	-	36	82
5. Auditing corporate social and environmental information	9	5	18	9	86

The extremely high percentage (over 90%) of students who were not involved in a sustainability action is worrying and leads us, once again, to support the fact that the modernization of curricula should support an education oriented towards sustainability.

Answers to the control question related to the need for sustainability knowledge in different contexts (at work/for employment interviews/other professional situations) shows an opening, although incipient (27% were placed in a position to use the knowledge of sustainability), to a growing awareness.

The third question of the research is: *Is there willingness of choice from the graduate students for professional enrichment culture courses (Masters or postgraduate training) to integrate sustainability issues?* It aims to outline possible future trends on modernization the curriculum of economic and business master programs by integrating sustainability aspects.

Table 6

Availability for professional enrichment culture

(%)

Sustainability aspects	Benefits for the carrier	Studied through master programs	Studied through specialized post-graduate programs
1. Macroeconomic sustainable development	50	50	45
2. Corporate social responsibility policy	50	55	50
3. Recognising corporate social and environmental costs	64	64	50
4. Recognising corporate social and environmental information	64	59	50
5. Auditing corporate social and environmental information	55	64	41

Responses show openness and readiness for graduate students to choose the form of education that will empower them to concepts and content knowledge of sustainable development and their application to the companies (prospective or current employers). Thus, over 50% of respondents believe that economic culture enriched with features to meet the requirements of sustainable development would benefit their careers, and believe they can get this knowledge either through master programs or through specialized post-graduate programs.

4. Discussions: the sustainability mirage for university's research and curricula

Now, what should we do with all this information and depiction about accounting profession, academics and businesses' involvement in addressing sustainability? Promoting sustainability oriented curricula for accounting disciplines in universities and for professional accreditation is it just a fashion, or a justified necessity?

Significant problems in regard to accounting education for sustainability have been identified, but the attention of the profession has been drawn to a general shortage of accountants (Bedford et al., 1986, Birrell, 2006). The needs and drivers in regard to accounting skills (Ullmann, 1976) and a long history of attempts to introduce more material on sustainability issues into accounting curricula (Bebbington, 1997) have been recognised since 1970. The work of the universities involved in the Accounting for the Future Report provides a useful bibliography of the recent literature on the topic (Hancock, 2009). Results suggest that accounting academics saw no major impediments to introduce sustainability issues, and recognise that this concept had grown in importance but was not seen as crucial.

Recent studies (Sibbel, 2009, Hazelton, Haigh, 2008) suggest more should be done to explain the significance of sustainability education to accounting students both by offering opportunities to understand the relevance of sustainability concept to the professional practice and business strategy and by recognising their importance and role in empowering employers with knowledge and skills to address problems which threaten future wellbeing. To meet these challenges universities must promote strategies to develop self-efficacy and advocacy skills in students and redesign the curriculum to lead to a greater awareness of social and moral responsibilities.

The debates in this section refer to particularizing the idea advanced by Pitman and Broomhall (2009, p. 454) which declare that: “University mission statements and learning theory texts have particularly highlighted the social and community, as well as economic, benefits of the lifelong learning they enable”. Accounting faculties, through their master and doctoral programs, have the ability of managing sustainability pressures by adapting the institutionalised professional norms. It must be the key business strategy for high education representatives in an increasingly competitive market. Also, the national education system for accountancy has the potential to influence how sustainable development is put into practice in other parts of the world. The appeal of accountancy as part of the global education economy also influences the needs and priorities of educators in the profession. The scarcity of the subject within academic research is closely linked to the little information available to provide (except US, Australia and UK) an appropriate ranking of accounting schools in a national scale, in terms of their ability to deliver education for sustainability.

The accounting literature and profession’s concerns suggest that not only are efforts at incorporating sustainability relevant skills declining rapidly, but also that there is a shortage of requisite skills, awareness and future demand for those skills. Rama (1998) connects lifelong learning, reinforcement of technical knowledge, communication and interpersonal skills, ethical and moral development, and social responsibility and community involvement to the utilization of service-learning in accounting curriculum. The extensive study of Albrecht and Sack (2000, p. 35) mentions that “accounting education was perceived as being too narrow and backward-looking and too costly for the benefits received”. A solution is expressed by Blazey et al. (2008, p. 2) which support the “need for a curriculum change whereby the development of generic skills is given a higher profile within traditionally business based learning”. Thomas and Benn’s research results (2009) identified the importance of embedding sustainability as an explicit learning objective throughout the core and elective courses, and suggested that accreditation may be a key.

Following the same idea, Aspen Institute (2009) conducted a study about the extent to which sustainability skills and content are currently included in

accounting courses in higher education institutions. As depicted from their results, accounting schools research and educational programs sought to address multiple drivers to incorporate issues about and for sustainability throughout curriculum and teaching practice, and develop the specific skills of master and doctorate graduates to assist businesses to improve their competitive advantage.

The university approach showed that the disciplines of economics and accounting had a significant reluctance to educate about and for sustainability. This is not about the lack of necessity (as proved by currently social responsible oriented companies) but it is about financing. It is a reality that any university revenue, for more than 60%, consists in governmental grants and students' fee. Linking it with professional constraints (there is not yet a standard for sustainability accounting) the priorities of business schools can't freely respond to industry needs without projection of an efficient communication. Periodic consulting and dialogic communication between academics, businesses and professionals enhance the university's ability to transfer knowledge and the researcher's ability to research, all in benefit of the community.

Conclusions

In our opinion, researchers have an important role in promoting the concept of sustainability in the economic/accounting curriculum, as the main drivers of change in accounting education at university level. The means of expressing for the researchers are the academic and professional journals that promote new ideas and give the purpose and utility of research. This argues that the barriers and gaps in implementation of change in accounting to meet the global trend of sustainable development may be explained through the reticent endorsement of this subject in accounting education journals.

Improving communication between the accounting researchers, the professional associations and regulators, the universities and business in regard to the development of specialized skills addressing sustainability for accountants is the most significant contribution of this study. All those actors have a role in providing economic and, especially, accounting students with a support for vocational experience and professional judgment. The universities and the professional associations need to work more closely with business sector to provide students opportunities to explore interdisciplinary concepts and policies incorporating sustainability requirements as they are relevant to their future practical skills.

Sustainability requires an ongoing process of learning (UNESCO, 2004) which supports adaptive governance and leadership for sustainability thinking in organisations. An action learning methodology will respond to key challenges for universities if address: envisioning alternative futures,

participation and partnership, critically reflective thinking, systemic practice and iterative learning through social interactions. Based on such learning methodology, accounting schools are able to provide a basis for continual learning and adaptive management to respond more effectively to emerging issues of sustainability. Supported by professional accreditation, universities contribute more effectively to the development of sustainable corporations by transferring knowledge in feedback loops, by using faster signals, evidence, reflection and learning that allows change businesses to revise their plans and activities in line with the impacts.

The research serves to highlight that all participants to the sustainable development must be brought together to provide a valuable platform for dialogue, sharing and stimulating sustainability practice in order to ensure premises for developing economic competitiveness.

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