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## The Neglected Need for and the Effects of Sustainability in Accounting Curriculum

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## Abstract

In 2013, the American Institute of Certified Public Accountants (AICPA) issued a paper that encouraged accountants to use their expertise and skills to “help an organization link sustainability activity to strategies using accounting measures, tools, theories, and techniques” AICPA (Oct. 2013 page 6). Later that same year, the Association to Advance Collegiate Schools of Business (AACSB) added “diversity, sustainable development, environmental sustainability, and other emerging corporate and social responsibility issues” to its accreditation standards for accounting programs AACSB (2013). All along sustainability, accounting continued to grow in importance, as evidenced by the percentage of S&P 500 companies that issue sustainability reports, having grown from 20% in 2011 to 92% in 2020, according to Hart (2018) and the Governance and Accountability Institute, Inc. (2021). Thus, accounting programs have been called upon to, and have real-world evidence of the need to, add education in sustainability accounting and reporting to their curriculums. Yet, the research conducted for this article shows that less than 11% of AACSB accredited Accountancy programs are offering even a single course that includes the words ‘Sustainability’; ‘Environmental’; Corporate Responsibility, or ‘Social Responsibility’ in its title at either the undergraduate or graduate levels, as of the spring of 2022. This 11% was an improvement from the 2% noted by Pippin et al. (2016); however, it is still a very low level.

This article goes on to describe, through an analysis of students’ responses to a pre- and post-course survey, how the inclusion of a sustainability accounting and reporting course in a university’s accounting curriculum fostered changes in the students’ appreciation for the different dimensions of responsibilities and opportunities they will encounter as future accounting professionals and society’s future business leaders. This article encourages other higher education institutions (HEI) to add such courses to their accounting curriculum both by showing the benefits experienced by the students and by providing information for such a course’s structure, content, and grading.

**Keywords:** higher education institutions, accounting curriculum, sustainability, corporate responsibility; environmental, social & governance (ESG)

## Introduction

Just in this past decade, in 2013, the American Institute of Certified Public Accountants (AICPA) issued a paper that encouraged accountants to use their expertise and skills to “help an organization link sustainability activities to strategies using accounting measures, tools, theories, and techniques” AICPA (Oct. 2013 page 6). Later that same year, the Association to Advance Collegiate Schools of Business (AACSB) added “diversity, sustainable development, environmental sustainability, and other emerging corporate and social responsibility issues” to its accreditation standards for accounting programs. AACSB (2013) Of course, these two organizations did not just happen to arrive at these similar calls from out of nowhere. They both were responding to decades of suggested additions of sustainability in business education and practice (Mathews, 1997; Gray & Collison, 2002; Amernic & Craig, 2004; Collison et al., 2007) to incorporate environmental and social dimensions into traditional financial reporting, management accounting, and auditing courses. By doing so, it has been hoped that it would open the study of accounting to a deeper consideration of its direct and indirect impacts on society.

By adding an accounting for sustainability course, we are also responding to calls to introduce businesses’ responsibility for sustainability into our curriculums, as called for by others. Some of those calls were inspired by the global credit crisis of 2007 – 2009, and still others by the increasing concerns over the threats posed by climate change. The hope is that students will come to better appreciate the limitations of business transactions in general and specifically in traditional accounting.

Still, current accounting curricula are criticized for not being useful in developing these appreciations, in large part because they are still based on the paramount importance of the investor’s needs. This reinforces the notion that it is only the shareholder’s needs that must be met, leaving externalities as a side note. Also, accounting is often presented as a collection of accounting techniques, i.e., depreciation methods or inventory cost-flow assumptions. Each of these techniques translates business situations into a business language that has no place in it for considering impacts on others (McPhail, 2001). Accounting is, in this regard, only seen as related to the financial management of a business.

Some have pointed to these limitations as promoting a value system for students that fails to consider the needs of other stakeholders. Consistent with Gray et al. (1994), accounting for sustainability is proposed to enhance a student's ability to think critically about the limitations of a view based only on the financial management of a firm. This not only allows for the students' greater intellectual development but also prepares them to concern themselves with the interests of different stakeholders in their organization.

Providing students with this sort of instruction requires a commitment on the part of their instructor(s) to broaden their exposure beyond simply what is already done in commercial organizations to what possibly could be done in the future. By doing so, they can prepare these future professionals to not only accept what is done but also to ask what alternatives could be done to serve both their firms and society better.

Gray and Collison (2002 page 813) observe that: "Accounting education encourages insufficient intellectual and/or ethical development together with a lack of critical intellectual independence: Teaching to be really educational should, therefore, aim to provide such stimuli for the student that they go forward seeking an understanding of the principles of their subject rather than sitting back smug in the knowledge that they "swotted" the correct material for their examination."

As stated by McPhail (2001), these objectives will allow us to rehumanize accounting by: (a) changing student's view of their profession, themselves, and the potential impacts of their choices as accountants; (b) developing a broad vision of their profession through exposure to injustices and inequalities that exist within our economic system, and (c) the development of ethical and moral awareness of the others impacted by an organization, beyond its investors, each time decisions are made.

To summarize, the hope is that adding a course(s) on sustainability accounting will provide students with the intellectual development necessary for critical thinking and questioning their roles as accountants in society and the natural environment.

The purpose of this article is to learn to what extent highly accredited accounting programs in the USA are currently, during the academic year 2021 – 2022, offering sustainability-related courses; and to examine whether students' views on an accountant's role in sustainable development via involvement in their business

organization, is modified by their having taken a sustainability-related accounting course.

The design, planning, and content of the course under investigation were prepared by considering guidance in the literature (Owen et al., 1994; Gordon, 1998; Mangion, 2006; Coulson & Thomson, 2006). Thus, through activities focused on contact with the reality of the business world and in specific seminars, students were challenged to think about sustainability, business responsibility, and the role of accounting. Surveys, at both the beginning and at the end of the course, were used to identify any differences in students' responses to examine whether and how student opinions changed.

The rest of the article is organized into four sections. The second section reviews the literature on some previous efforts to integrate teaching sustainability accounting and reporting in the HEI curriculum. The third section presents evidence of sustainability-related accounting course offerings from a review of USA-based AACSB-accredited accounting programs' websites. This third section also describes the methodology, including a description of the students and the course, the contents of the surveys, and the techniques used to analyze their responses. The fourth section provides the results of the pre and post-course surveys. Then this article's fifth section provides conclusions, confesses the methodology's limitations, and suggests potential future research.

### **Previous Literature Concerning Sustainability Accounting and Reporting Education**

Bebbington (1997) reported that few were providing sustainability accounting courses and that those that did exist were more due to individual than institutional initiatives.

Gordon (1998) described the use of a module on sustainability accounting in an accounting theory course. There the students were given selected reading assignments for subsequent discussion in class. This was done, in part, to see whether the students' perceptions had changed. The author concluded that this way of teaching was an opportunity for instructors to contribute to engagement with values changes.

In Australia, Mangion (2006) found that sustainability accounting is gaining acceptance in undergraduate curricula. Her conclusions affirmed that the principal reason for teaching sustainability accounting is to enhance students' awareness of the social and environmental obligations relevant to corporate decision-making. She also listed options that have been proposed for the inclusion of education in sustainability for 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 a specialized curricular route in sustainability accounting (noting that was unusual); and (d) include sustainability accounting in a general study module on accounting theory.

Coulson and Thomson (2006) involve an independent sustainability accounting course using dialogic pedagogy. These authors present the course content in detail, and their stated intention is to show the benefits of the dialogic approach with the instructor as a facilitator. This article's author used a similar approach, inspired to a degree by their study.

Collison et al. (2007) shared the results of interviews with numerous members of different European accounting associations (now part of the International Federation of Accountants). Many of those interviewed stated that social and environmental concerns are important for the profession and that too many accountants and auditors continue to underestimate their significance.

Hazelton and Haigh (2010) surface: the predominantly vocational orientation of student cohorts; the traditionally technical focus of the professional bodies; and competing educational reform agendas (such as technological skills) as barriers to sustainability "penetrating an already overcrowded curricula."

Gray (2013) contends that a fundamental difficulty for instructors bringing these sustainability ideas into their classrooms is that unless sustainability is 'keeping you awake at night', you do not understand it, and yet students "are not to be frightened into immobility." He goes on to support this contention and offers an example of one undergraduate course that was explicitly designed to make students uncomfortable. He shares a quote from Kelly and Alam (2009, page 32), who themselves quoted approvingly from the New Zealand Parliamentary Commission for the Environment:

“Ultimately, education for sustainability requires people to critically think about and reflect on their own values and the values embedded in the institutions that surround them.”

His overarching point is that “new views and new insights will be most easily examined when there is serious intellectual discomfort.” (p. 320).

Haskin and Burke (2016) provide readers with a suggested outline for including sustainability reporting in a financial accounting course. Their outline makes significant use of materials developed by the Sustainability Accounting Standards Board (SASB). They also present the argument that modern capital allocation decision-making suggests that sustainability reporting needs to be incorporated into the financial accounting curriculum.

Pippen et al. (2016) found that only 2%, 17 of 900 US colleges and universities, had sustainability courses within their accounting curriculum.

Hart (2018) mentions a Leeds School of Business, the University of Colorado Boulder course titled “Integrated Reporting for Social Responsibility Strategies,” that regularly has a waitlist. She quotes the instructor as saying, “We saw this as an emerging issue, and thought it would be a good elective for students wanting to get away from the intense, quantitative courses,” and “The students like it because they think it’s part of the future.”

Creel and Paz (2018) provide examples, from their own years of experience, of where and how to incorporate sustainability concepts across a number of traditional accounting courses, e.g., managerial accounting, intermediate financial accounting, and auditing. Their article provides support for the growing importance of sustainability concepts for society, businesses, and the accounting profession. As they express in their conclusion, “By teaching them the importance of sustainability, we not only teach them accounting but show them how to be responsible citizens and thrive in a more sustainable future economy.” page 83. Much like Haskin and Burke 2016 and Porco and Hedley 2019, their paper is designed to assist and encourage other accounting faculty to integrate sustainability into the accounting curriculum.

Porco and Hedley (2019) provide a practical listing of seven ways sustainability reporting could be introduced into the existing accounting curriculum. This is clearly an effort to encourage other faculty to do so.

Combs and Mattix's (2021) paper states that the literature has been conflicting as to whether sustainability is being addressed or not in higher education's business curriculum. However, their references are from 2012, farther back than the starkly clear Pippin et al. (2016) findings.

As Pippin et al. (2021) state, "Despite the calls from the business community and the AACSB, relatively few educators have taken actions to integrate sustainability into the business and accounting curricula. They go on to mention Porco & Hedley (2019) and a YouTube video by B. Porco (2018) of Fordham University as an exception to this neglect of the topic.

When asked to comment for this article on the need for sustainability concerns in our accounting curriculum, Jeffrey Hales, the previous Chair of Value Reporting Foundation's SASB Standards Board from 2018 to 2022 and recently appointed member of the International Sustainability Standards Board (ISSB), wrote back, on October 7, 2022, with the following:

*In my view, the shifting landscape of sustainability represents the biggest growth opportunity for the accounting profession that we've seen since at least Sarbanes-Oxley. As sustainability issues have become more integrated into corporate strategy, we are seeing businesses create new sustainability roles and functions, elevate the responsibilities of existing sustainability roles, and work to extend an improved understanding of sustainability to employees throughout their organizations.*

*A similar shift needs to happen in the way we teach accounting. We need new courses to meet the growing interest of students who want to develop sustainability expertise. But, even more, we need to improve our existing courses. At the end of the day, sustainability issues are business issues. They permeate business activities and should be an integral part of how we teach any functional area of accounting, whether managerial, financial, audit/assurance, or tax.*



## **Methodology**

### ***Investigation Description***

The research done herein is twofold. First, to learn to what extent highly accredited universities have begun to offer sustainability-related courses in their accounting programs. Secondly, to provide evidence of the positive results for students that such courses can provide once offered. This second element employs pre- and post-course surveys similar to a study conducted at a Spanish University, Chulian (2011), to learn if those positive results would translate similarly to today's American college students.

To learn if the inclusion of sustainability courses in the accounting curriculums is as small as the 2% found by Pippin et al. (2016), this author undertook a fresh review during the spring semester of 2022. Here the focus was narrowed to the 179 highly accredited, AACSB dual-accredited accounting programs in the USA. See <https://www.aacsb.edu>.

Here the course catalogs of all these highly accredited colleges and universities in the United States that have undergraduate or graduate accounting degree programs were searched for a stand-alone course in sustainability at either the undergraduate or graduate levels. This search allowed for similar terms often used interchangeably with sustainability, such as: Corporate Responsibility; Environmental, Social & Governance (ESG); Social Responsibility. Of these 179 colleges and universities, only 19, or 10.6%, had at least one course devoted to sustainability. One university, this author's employer, had three courses at both the undergraduate and graduate levels, corresponding to three primary accounting disciplines of: reporting, auditing, and managerial accounting.

While 10.6% is a big improvement over 2%, it still feels insufficient given the earlier mentioned calls from both the AICPA and AACSB, not to mention how topical Social and Environmental concerns have become and threaten to remain. Assured from this evidence that there remains much room for growth in the number of colleges and universities' accounting programs offering sustainability-related courses, this article's focus then shifts to how such courses impact students.

### *The Degree Program*

The case presented in this article is like Chulian (2011) in that a separate course is offered in sustainability accounting and reporting. It is an elective course offered by my University's Department of Accountancy, which principally enrolls students in our Bachelor of Science (BS) in an Accounting Degree linked to a Master in Accounting joint-degree program. It has also been included by the College of Business's Department of Management as part of a minor in sustainability that their department offers.

The curriculum for this Master's and BS joint-degree program is organized across five academic years, covering ten semesters. In their first three years, students earn credits across the university's core sixty hours of liberal arts subjects and the College of Business's core thirty hours of introductory courses and select intermediate-level courses. It is during their fourth or fifth year that students would most likely find room in this curriculum for this cross-listed (undergraduate and graduate) elective course titled Sustainability Accounting and Reporting.

The opportunity to offer this course had its roots in a paper issued by the AICPA in 2013 that encouraged accountants to use their expertise and skills to "help an organization link sustainability activities to strategies using accounting measures, tools, theories, and techniques," that was followed later that same year, by the AACSB's adding "diversity, sustainable development, environmental sustainability, and other emerging corporate and social responsibility issues" to its accreditation standards for accounting programs. Our university was also already a signatory on the United Nations Principles of Responsible Management Education (UN PRME). All three factors helped provide a supportive environment for this author to propose and gain approval for such a course.

It helped that the Sustainability Accounting Standards Board (SASB), which was founded in 2011 to develop sustainability reporting standards, instituted the "Fundamentals of Sustainability Accounting (FSA) Credential" in 2016. It compelled applicants to study the history and evolution of how the US and the world have arrived at the current state of sustainability reporting, also known as Environmental, Social & Governance (ESG) reporting, and the methods to identify, manage and analyze material sustainability information. This article's author earned this credential in 2017, along with the Global Reporting Initiative's (GRI)'s

Certificate of Achievement in use of their Sustainability Reporting Framework (SRF). These additional credentials helped provide both relevant knowledge and instructional materials for the course proposal.

### *The Course's Structure*

The 42 teaching hours for this Sustainability Accounting & Reporting (SAR) course were spent during one weekly 3-hour class during each of the semester's fourteen weeks. Eleven of these classes included discussions of:

- that day's advanced required readings, provided at least a week in advance
- two to three current event articles, typically from the Wall Street Journal
- a twenty-minute film clip viewed during that class session from a topically relevant film, i.e., "Enron: The Smartest Guys in the Room," "Before the Flood," and "The Big Short."

On top of the discussions mentioned above, the instructor provides a lecture element. This lecture element is typically used to emphasize, explain and solicit additional questions regarding aspects of the advanced required readings, seen as the most valuable and/or challenging by the instructor.

The other three class sessions are used for assessment activities such as exams and/or student presentations.

The eleven-chapter structure of the Brockett and Rezaee (2012) book served as a valuable guide for pacing content across the eleven classes mentioned. SASB's exam preparation materials for their FSA Credential mentioned earlier are also part of the weekly advanced required readings, thanks to SASB's willingness to share them with requesting faculty and their students, free of charge.

Topics covered are consistent with prior literature on sustainability accounting courses, the eleven-chapter structure of the Brockett and Rezaee (2012) book, and the FSA Credential's Level 1 Exam's study guide. From these sources, the following Sustainability Accounting & Reporting (SAR) subjects are covered, as listed below in Table 1.

**Table 1**

List of SAR Subjects

| <b>Week Number</b> | <b>Brockett &amp; Rezaee</b> | <b>FSA Credential</b>                                  | <b>Current Articles &amp; Films</b>                               |
|--------------------|------------------------------|--|---|
| 1                  | Current State of SAR         | Roots in Securities Acts of the 1930s                  | Determined by current events and students' past exposure to films |
| 2                  | Brief History of SAR         | Historical Basis                                       | “   |
| 3                  | Assurance of SAR             | Materiality & Disclosure                               | “   |
| 4                  | Overview of SAR Dimensions   | AICPA and CFA Interests                                | “   |
| 5                  | First Mid-Term               |  |   |
| 6                  | Economic Dimension           | Importance of Standards and an Industry Specific Focus | “   |
| 7                  | Governance Dimension         | SASB Standards   | “   |
| 8                  | Social Dimension             | Emerging Themes  | “   |
| 9                  | Ethical Dimension            | Use by Reporting Corporations                          | “   |
| 10                 | Second Mid-Term              |  |   |

| <b>Week Number</b> | <b>Brockett &amp; Rezaee</b>                 | <b>FSA Credential</b>                  | <b>Current Articles &amp; Films</b> |
|--------------------|--|--|-------------------------------------|
| 11                 | Environmental Dimension                      | Integration into Management & Strategy | “                                   |
| 12                 | New Initiatives/<br>Emerging Issues          | Existing Disclosure Justifications     | “                                   |
| 13                 | The Future of SAR                            | Use by Investors                       | “                                   |
| 14                 | Final Exam and or Term Project Presentations |  |                                     |

These subjects are covered with multiple purposes in mind:

- To help the students to develop both declarative and functional knowledge (Lodhia, 2010)
- To allow students to appreciate the limitations of traditional financial accounting, once organizational impacts on society and its natural environment are considered (Chulian, 2011)
- The importance of humanizing our ethical business codes to account for those limitations (Chulian, 2011)

### ***The Course Content and Grading***

In an article focused on how to encourage accounting students to reflect on and rehumanize their value systems, McPhail (2001), eight teaching methods are discussed: 1. Interdisciplinarity; 2. Group learning; 3. Real life case studies; 4. Role play; 5. Film; 6. Literature; 7. Personal value journals; and 8. Timing.

The course described in this article considered each of these eight methods, as follows. The first six were used in each of the eleven non-assessment classes listed in Table 1, using the dialogic teaching approach advocated by Coulson & Thomson

(2006) and referenced by Chulian (2011). The only sense in which number seven, a personal values journal, was employed was via the post-course questionnaire's numerous open-ended questions. As for number eight, timing, that was determined outside of any course content decisions, in that it is a matter of when, in the student's multi-year curriculum, they attend such a course. The first six, though, were very useful. So, each is described in more detail below.

Interdisciplinary was incorporated by our discussions consistently considering implications for numerous business disciplines, i.e., Management to guide strategy, Marketing to appreciate impacts on a "brand," Finance to incorporate cost-of-capital impacts, Human Resources to guide employees as stakeholders, considerations, Information Systems to facilitate efficiency and control over reported data, Legal to guide the consistency and completeness of the ESG disclosures, and Accounting for its numerous relevant areas of expertise in the publishing and auditing of reports used by capital market participants.

Group learning, Colby and Kohlberg (1987, p. 2), for example, explain how a group learning approach "depends on the teacher's ability to draw out ideas from the student's perspective through dialogue rather than by imposing their own framework upon the students." This SAR subject readily allows the teacher to take this approach with almost every piece of material presented, with the rare exception of some rules prescribed by the AICPA for how to provide attestation services. Other than those limited rules-bound items, films, newspaper articles, SASB Guidance, white papers, and more were all discussed together in a non-hierarchical way after first giving each student a chance to absorb and reflect on the item at hand.

Real life case studies were made available to the students from time spent with actual S&P 500 firms' and international corporations' issued ESG, aka Corporate Social Responsibility or Sustainability, Reports. The films and current news articles also brought "real life" experiences into the class, as did some of SASB's FSA materials.

A role play was best facilitated by splitting the students into two groups and having them prepare to present opposite sides of an argument over a subject of a current article or an aspect of a film. Then giving these teams an opportunity to present and then provide a rebuttal to the opposing team's arguments.

Films, McPhail (2001) states that “The use of film is gaining increasing recognition as a valid educational tool, citing several instances including a Berger and Pratt (1998) study that used two films by David Mamet - *Glengarry Glen Ross* and *House of Games* to confront students with some disturbing issues. Those authors reported that film could be a very effective way of exploring the feelings and emotions of individuals caught within ethical dilemmas. For the course described here, the films shown were: “*Enron the Smartest Guys in the Room*,” “*The Big Short*,” and “*An Inconvenient Truth*.” Each of them was shown in roughly 25-minute increments, one per each of the 11 non-assessment class sessions. Many will recognize those first two titles as focused on ethics and governance issues, with plenty of interdisciplinary considerations for class discussion. The last title is focused on the issue of climate change with both environmental and social implications as fuel for open discussion.

Literature, McPhail (2001) draws our attention to Downie (1991), where on page 96, Downie asserts that learning from literature has three important functions: 1) “it develops our sympathies and makes us feel something of what it is like to be in the situation, it develops empathetic sympathy,” 2) “literature can help with coming to terms with emotions and conflicts”; and 3) “literature gives rise to moral questions. Leading to the claim that the utilitarian cost-benefit approach to problems seems plausible as presented in an academic textbook, but literature can force us to look beyond the false finality of a calculus and challenge us to refashion our attitudes”. For time management purposes, considering that students were already required to read an average of 35 pages before each class session, the sense in which “literature” was employed by this course is via the use of films to portray content first developed as literature.

Each student’s course grade was determined based on the following five elements, each of them having a 20% weight, Participation, Term-project, Mid-term 1, Mid-term 2, and a Final Exam. Participation is based on instructor-documented involvement in our regular discussions noted above. The Term-project involved a critical comparative analysis of the ESG reports issued by both an American and a publicly listed European firm from the same industry, as chosen by each student and approved by the instructor. Each of the three exams was focused on questions drawn from the reading materials required before coming to a class session, as outlined earlier in Table 1 under the Brockett & Rezaee and FSA Credential

columns. These exams were not cumulative in nature, and the instructor did provide numerous example questions for students to use in preparation for each exam.

### *The Pre-course and Post-course Questionnaires*

To document evidence of this course's possible impacts on each student's views, responding to a questionnaire was required at the very start of the course and again at its completion. Students had to complete each of these individually and were assured that their responses would have no impact on their course grades. Students did realize that their responses were not anonymous, allowing the instructor to see changes in their views. Knowing they were identified may have caused a bias in their responses; however, the assurance that their grades would not be impacted in any way was meant to encourage them to simply answer with integrity.

The questionnaire used at the end of the course included two groups of questions. The first group included six questions that were the same as questions in the questionnaire used at the start of the course. The second group was an additional fifteen questions. Most of these fifteen questions, twelve, were there to allow this study to check whether replies to these questions were consistent with any change in views observed from the six matched questions in group one. The remaining three questions in this second group were, as in Chulian (2011), there to test assertions from previous studies. As mentioned above, this study was conceived and executed as an investigation into whether the positive results obtained in a study conducted at a Spanish University Chulian (2011) would translate similarly to today's American college students. For that reason, the questions in Table 2 below are largely the same as that earlier study, with just three questions altered slightly for clarity and one altered because this American course did not use a "class slogan."



**Table 2**

Questions included in the Pre-Course and Post-Course Questionnaires

| Question  | Id Number<br>Pre-Course<br>Questionnaire | Id Number<br>Post-Course<br>Questionnaire | Purpose of the Question |                                |                              |
|---|--|---|-------------------------|--------------------------------|------------------------------|
|   |  |   | Test<br>Consistency     | Test<br>Previous<br>Literature | Focus<br>of<br>this<br>Study |
| Define the term<br>'Accounting'   | 1  | -   | X                       |                                |                              |
| List five keywords to<br>characterize<br>accounting   | 2  | 1   |                         |                                | X                            |
| List five keywords to<br>characterize an<br>accountant  | 3  | -   | X                       |                                |                              |
| What is the foremost<br>aim of a for-profit<br>organization?                                      | 4  | 2   |                         |                                | X                            |
| What are a firm's<br>results comprised of?  | 5  | 3   |                         |                                | X                            |
| As a prospective<br>manager, list five<br>strategic guidelines<br>to achieve a<br>successful firm | 6  | 4   |                         |                                | X                            |
| What do you think<br>about 'Environmental<br>Accounting'?   | 7  | 12  |                         |                                | X                            |
| Did you know the<br>term 'Environmental<br>Accounting' before?                                    | 8  | -   | X                       |                                |                              |

| Question  | Id Number<br>Pre-Course<br>Questionnaire | Id Number<br>Post-Course<br>Questionnaire | Purpose of the Question |                                |                              |
|---|--|---|-------------------------|--------------------------------|------------------------------|
|   |  |   | Test<br>Consistency     | Test<br>Previous<br>Literature | Focus<br>of<br>this<br>Study |
| Why did you select this course?   | 9  | -   | X                       |                                |                              |
| What are your expectations of this course?                                    | 10                                       | -   | X                       |                                |                              |
| Define the term 'Sustainable Development'                                     | 11                                       | -   | X                       |                                |                              |
| Do you identify any problem in the current way of doing business?             | 12                                       | 5   |                         |                                | X                            |
| Do you think there is an alternative to the current way of doing business?    | -  | 6   | X                       |                                |                              |
| How can firms contribute to sustainable development?                          | -  | 7   | X                       |                                |                              |
| Do you think that environmental accounting is relevant?                       | -  | 8   | X                       |                                | X                            |
| Has your perception about the way of doing business changed after the course? | -  | 9   |                         |                                | X                            |

| Question   | Id Number<br>Pre-Course<br>Questionnaire | Id Number<br>Post-Course<br>Questionnaire | Purpose of the Question |                                |                              |
|--|--|---|-------------------------|--------------------------------|------------------------------|
|  |  |   | Test<br>Consistency     | Test<br>Previous<br>Literature | Focus<br>of<br>this<br>Study |
| Has your ethical code been changed after the course?   | -  | 10  |                         |                                | X                            |
| Would you have a suitable view of how to manage a firm if you had not done the course?                                 | -  | 11  |                         | X                              | X                            |
| What do you understand by the slogan “Change the world starting with yourself”?  | -  | 13  |                         |                                | X                            |
| Do you think that the knowledge learned in the course is useful for your career?                                       | -  | 14  |                         | X                              |                              |
| Do you think that you will be able to apply the knowledge learned in the course?                                       | -  | 15  |                         | X                              |                              |
| Do you consider that the course is consistent with its syllabus?   | -  | 16  |                         |                                |                              |
| If you have answered affirmatively to questions 9 and/or 10, what was the item(s) in the course that began the change? | -  | 17  | X                       |                                |                              |

| Question  | Id Number<br>Pre-Course<br>Questionnaire | Id Number<br>Post-Course<br>Questionnaire | Purpose of the Question |                                |                              |
|---|--|---|-------------------------|--------------------------------|------------------------------|
|   |  |   | Test<br>Consistency     | Test<br>Previous<br>Literature | Focus<br>of<br>this<br>Study |
| What topic/task/activity did you like the most?                                       | -  | 18  |                         |                                | X                            |
| What topic/task/activity provided you with the most useful knowledge for your career? | -  | 19  | X                       |                                |                              |
| Has the course met your expectations?   | -  | 20  | X                       |                                |                              |
| What suggestions can you offer for next year?   | -  | 21  | X                       |                                |                              |

### *Discourse Analysis and The Participants*

The answers to the two questionnaires were analyzed with the discourse analysis method developed by Fairclough (1992). The narrative nature of the answers permits the use of that methodology. The term discourse here can be thought of as another term for a 'system of knowledge.'

Twenty students registered for and completed the course, but only eighteen students (seven female and eleven male) completed both the pre- and post-course questionnaires. These students make up the study sample. All these students took courses consistent with the fifth year of a joint B.S./M.S. in Accounting degree program. None of these students were repeating the course. This modest class size made use of the discourse analysis methodology feasible and lent itself to the use of a dialogical instruction approach.

## **Pre-Course and Post-Course Questionnaires Comparative Analysis**

These results are presented in two groups. The first of these is for the questions that students were asked in both the pre-course and post-course questionnaires. The second group relates to the additional questions included either to confirm consistency in each student's responses or to check against expectations for prior literature.

### ***Questions Asked in Both the Pre-Course and Post-Course Questionnaires***

The first of these questions was, "List five keywords to characterize accounting." The terms students provided most often in the pre-course questionnaire were, not surprisingly, traditional accounting terms, 'Financial'; 'Audit'; 'Tax'; 'Reporting'; 'Analyze.' In the post-course questionnaire, these new words dominated, 'Transparency'; 'Accountability'; 'Responsibility'; 'Sustainability.' These new words suggest that the students were taking more personal ownership over the contribution accounting can make, when viewed in a larger context, than the simple organizational boundaries that most courses in the accounting curriculum use.

The second of these questions was, "What is the foremost aim of a for-profit organization?" The terms students provided most often in the pre-course questionnaire were: 'Profits,' and 'Shareholders.' In the post-course questionnaire, these new words were included: 'Sustaining Performance,' 'Stakeholders,' 'Social Responsibility,' without displacing, 'Profits,' and 'Shareholders.' These new words again suggest that the students view business organizations in a larger context. A context that allows for other humans to matter, not only the owner/shareholder.

The third question was, "What are a firm's results comprised of? Only two of the eighteen students mentioned anything other than traditional financial metrics, 'Profits,' and 'Cash Flows' in the pre-course questionnaire. In the post-course questionnaire, thirteen of the eighteen students included terms other than traditional financial metrics. These new terms included: 'Stakeholders,' 'Sustainability Metrics,' and 'Triple bottom line.' Here again, these changes in the students' discourse suggest an expanded view of the context in which business organizations operate.

The fourth question, "As a prospective manager, list five strategic guidelines to achieve a successful firm" Here only three of the eighteen students mentioned

anything other than traditional business course terms, 'SWOT Analysis'; 'Communication'; 'Strategic'; 'Innovation'; 'Quality Hiring' in the pre-course questionnaire. In the post-course questionnaire, eleven of the eighteen students now included terms beyond traditional business course terms. So, even though the earlier mentioned terms remained, these new terms are often included, 'Stakeholders,' 'Environment,' and 'Sustainability.'

The fifth question, "What do you think about 'Environmental Accounting'?" is one of these six pre- and post-course questions, where the students could be said to have anticipated where this course was headed. It could easily be argued that there was some self-selection bias to their responses, in that these students had chosen to take an elective course titled Sustainability Accounting and Reporting. Their pre-course questionnaire responses included the terms 'Environmental Impact,' 'Climate change,' 'Carbon footprint,' and 'Plastics.' In their post-course questionnaire responses, the new terms that appeared were: 'Important,' and 'Growth.' The course's impact appeared to be one of reinforcing the term 'Environmental Accounting's' significance to society and as a growth area for the accounting profession. This represented the most noteworthy difference in results versus those in the Chulian (2011) study referenced. This past decade has provided ever-increasing news concerning the issues of climate change, access to clean water, and equity & inclusion issues, which may explain some of this difference.

The sixth question, "Do you identify any problem in the current way of doing business?" Responses were somewhat like the fifth question, where students appeared to anticipate that an elective titled Sustainability Accounting and Reporting exists because the environment is being treated unsustainably. At the time of the pre-course questionnaire, only 3 students did not identify any problems. The number only dropped to 2 in the post-course questionnaire. Still, there was a more significant change in the terms used. Prominent terms used in the pre-course questionnaire were: 'Environment,' 'Employee Abuse,' and 'Tax Avoidance.' In the post-course questionnaire, the new prominent phrases were: 'Stakeholder Neglect,' 'Non-Sustainable,' 'Short Sighted,' and 'Societal Impacts.' The course, therefore, appears to have expanded their thinking and vocabulary, aka discourse, to include more and broader impacts on fellow humans.

## *Questions Asked Only in the Post-Course Questionnaire*

### *Questions Asked for Consistency*

Consistency here is being considered on two levels. The first of those is whether the students' responses with the changes noted across the six matched pre- and post-questions discussed above. The second level is concerned with the goals of the course itself. For that first level, no conflicts were noted, i.e., The greater use of terms like Sustainability and Stakeholders, noted earlier, is consistent with students' positive responses to the post-course questionnaire's questions 6, 7 & 8. Their responses, in the majority of cases, were also consistent with the course's goal of facilitating lasting growth in their appreciation for the different dimensions of responsibilities and opportunities they will encounter as future business graduates.

Two example responses from each of those three questions: 6, 7 & 8, are provided below:

#### 6. Do you think there is an alternative to the current way of doing business?

*Absolutely. It was taught in the course that the way corporations worked evolved over time from maximizing profit to taking care of shareholder's wealth to taking care of shareholder's wealth while carrying out social responsibility. With this evolution of how firms work, I truly believe that there is always an alternative way to the current way of doing business.*

*I think that the alternative is to have even more monitoring of activities along with standards and regulations that require businesses to look at performance as a holistic measure revolving around both financial and nonfinancial data. The transparency of businesses needs to become more apparent, and there have to be regulations that will limit the level of business transactions that will negatively impact the socio-economic state of our planet.*

#### 7. How can firms contribute to sustainable development?

*I look at the Big Four and their work in the World Economic Forum (WEF) with Bank of America for this answer. That is the perfect example of how firms can contribute to sustainable development. By using your brand and*

*reputable presence in your industry to take on initiatives that will inspire other firms to do the same. I also think about how Elon Musk said that Tesla alone cannot make 100 gigafactories and that other companies need to invest in it too to make it possible. I think that example is perfect as well. A firm needs to set the foundation and take the initiative, which inspires others to do so.*

*Firms need to hold themselves more accountable in relation to the environment and the community around them. By focusing on performance other than financial, businesses can invest in sustainable research, which will, in turn, create innovative ideas and products that can positively influence our economy and provide customers with the products and services that help everyone (consumer, business, environment, government). I also think that businesses should promote the use of sustainable accounting and reporting, to allow the comparability of nonfinancial information within an organization, giving investors the ability to properly analyze and value the effects of each company.*

8. Do you think that environmental accounting is relevant?

*I think environmental accounting is relevant and will only increase in relevance as the years go on. With the current climate, increased interest by stakeholders and investors, and steps taken by the Big Four in the WEF, I believe there will be a positive emergence and growth in environmental accounting moving forward.*

*Environmental accounting is relevant to society today more than ever. While there needs to be more standardized reporting measures and goals, the basic idea behind it is extremely important. By finding the appropriate ways to measure a company's effect on the environment, assurance related to each company's proper procedures of running the business will be relevant and comparable to all other companies. I honestly believe that when stakeholders are able to visualize and measure the value of a company's environmental effects, it will greatly impact the view on investing and the view of what makes a company valuable.*



The title of this study mentions the effectiveness of sustainability education on future accountants. Some key questions that get at the effect, if any, on future accounts are:

9. Has your perception about the way of doing business changed after the course?
10. Has your ethical code been changed after the course?

On a simplistic level, these are Yes or No questions. Scoring their responses on that basis obtains the following results:

| Question # | No | No, with Caveats | Yes | Yes, with Caveats |
|------------|----|------------------|-----|-------------------|
| 9          | 1  | 1                | 16  | 0                 |
| 10         | 4  | 6                | 8   | 0                 |

Therefore:

- an overwhelming majority felt the course had changed their perception about the way of doing business.
- granted that a “no, with caveats” is a form of a yes, then a majority again felt their ethical code had changed.

Below are three indicative quotes for each of these questions:

9. Has your perception about the way of doing business changed after the course?

*My perception definitely changed. I really hope that I will hold the lessons I learned in this class and apply them to my view on business and how business should be treated. Business is much more than the revenue cycle, expenditure cycle, inventory cycle, etc. Business affects the lives of everyone, and when major companies move, the economy follows. This is why I believe companies should be held accountable for their nonfinancial performance because standards are already enforced for financial data. Business needs to recognize the importance of what true value actually is, and not just the dollar amounts of assets and liabilities.*

*Absolutely - I was always interested in making traditional business more sustainable, and now I understand the importance of accounting for it. Accounting is a standard process for the financial performance of a firm and should be viewed similarly to measure sustainability.*

*I always felt that there was more to “doing business” than just making money. Companies that deplete resources from the environment without adequately replacing such resources are having a negative impact on society. I don’t feel that enough is being done by world governments to protect resources, including human resources, from businesses that only look at the “bottom line.” This course has opened my eyes to this impact in a much greater way.*

10. Has your ethical code been changed after the course?

*I don’t think my ethics have changed. I just think my eyes have been opened to issues that I wasn’t aware of prior to this class*

*My ethical code has changed in a way of reporting sustainability and being more cautious on how to report it and look at how companies contribute and what they call sustainability.*

*I don’t think my ethical code has changed because I felt I had a good set of standards for myself that abide by the ideas and beliefs we have discussed throughout this course. If anything, I think I might just have a greater understanding of how to create change within the accounting profession related to proper management of people and the ability to recognize that decisions I make will affect others, not just myself.*

### ***Questions Asked Related to Previous Studies***

To check for support of some conclusions from previous studies, the final questionnaire included these three questions:

11. Would you have a suitable view of how to manage a firm if you had not done the course?

14. Do you think that the knowledge learned in the course is useful for your career?

15. Do you think that you will be able to apply the knowledge learned in the course?

Again, on a simplistic level, these are Yes or No questions. Scoring their responses on that basis obtains the following results:

| Question # | No | No, with Caveats | Yes | Yes, with Caveats |
|------------|----|------------------|-----|-------------------|
| 11         | 16 | 1                | 0   | 1                 |
| 14         | 0  | 0                | 17  | 1                 |
| 15         | 0  | 2                | 15  | 1                 |

Therefore:

- an overwhelming majority felt the course was important to their gaining a “suitable view of how to manage a firm”
- an overwhelming majority felt the knowledge learned in the course was useful for their career.
- an overwhelming majority felt they would be able to apply the knowledge learned in the course.

Below are three indicative quotes for each of these questions:

11. Would you have a suitable view of how to manage a firm if you had not done the course?

*I don't think so. I think this course helped expand my knowledge on this topic. I came into this course thinking it would just cover topics of environmental sustainability, but I am glad I was wrong. I learned about how a successful firm is managed by directors and executives, setting an emphasis on Corporate Social Responsibility (CSR), leadership, governance, and creating that tone at the top.*

*I feel that I would have as good an understanding of how to effectively manage a firm as someone else in my age group. I've had the appropriate education and feel that I know what the most important aspects of a firm are. I think that the course may have taught me that there is another crucial*

*aspect of managing a firm that I would never have grouped into the same category as such other items. The idea of sustainability has definitely widened my range of thinking and has given me a broader understanding of the consequences of business.*

*I do not think so. The focus on sustainability has grown so much in recent years, and there will be a day when we have standards and unified rules. Understanding sustainability metrics and accounting are necessary to successfully run a business.*

14. Do you think that the knowledge learned in the course is useful for your career?

*Yes. As I work at the NYC Department of Environmental Protection, it is interesting to learn how companies are managing sustainability.*

*Absolutely. One of the industries that the firm I will be working at is the CleanTech industry. Thanks to this course I have a profound interest in that industry and will certainly try to find a way to work in that industry.*

*I will definitely use the information I learned in this class in my career. I will definitely have a more questioning mind regarding the nonfinancial performance of any clients I work with. Being that I am going to start at Deloitte, I hope soon after I begin, there will be an insurgence of sustainability accounting within the company and within the reporting standards. Also, just from a personal standpoint, I think it is important to understand the issues that affect us and become more knowledgeable in areas we may not have had previous knowledge about. Learning about sustainability issues and also the issues that relate to creating a new standard board is eye-opening to see since the processes behind what we see in the real world are not always as easy as it seems.*

15. Do you think that you will be able to apply the knowledge learned in the course?

*Yes, I am sure that in the course of my career, sustainable issues will present themselves. This course has provided a foundation for dealing with those issues.*

*100%. Sustainability is not just about taking care of the environment, ecosystem, and the world (although I do plan to do that). Sustainability talks*

*about the importance of social capital, human capital, how to be a leader, how to be ethical, how to make the right decision, forming meaningful relationships with your community, and more. That knowledge is what I think I can apply to in my everyday life and career moving forward.*

*There is no doubt in my mind that I will be able to apply the knowledge learned in this course in the future. I see sustainability becoming a staple in the finance world, so heavy focus will be placed on it by the accounting world. And unless I win the lottery soon, I'll be pursuing a career in accounting.*

### **Conclusion and Limitations**

This article has described the content and sequence of that content for a sustainability accounting and reporting course. It has also provided evidence of the limited number of such courses being offered by dual, AACSB-accredited accounting programs at either the undergraduate or graduate levels. In contrast with the limited number of such courses currently provided, we see evidence of the arguably positive effects that such a course had for its students through the use of pre-course and post-course questionnaires with those students.

Most students expressed a broader appreciation for the role of accounting and the business organizations it supports. The course appears to have enhanced their willingness to consider new ways of doing business and to question some beliefs gained during earlier accounting courses in the curriculum. Therefore, these results were supportive of the idea that students will benefit from the study of a subject, like sustainability accounting, that forces a broader view beyond the financial management of a firm. This also allows the instructor to be directly involved in the values developed by future accounting graduates.

The fact that this study involved just one instructor, for a single semester, at a single American university is clearly a limitation. Still, this limitation is mitigated by the fact that its results are very consistent with those obtained in an earlier study at a Spanish university, Chulian (2011). Another potential limitation is that the search, of course, catalogs conducted may have failed to identify additional colleges and universities whose accounting programs had incorporated sustainability into courses when they did so without making it apparent in a course or courses' name. This author and others, though, have noted how students have been very attracted

to courses with titles that include the search terms used, i.e., sustainability, corporate responsibility, social responsibility, and environmental. Therefore, the hope here is that most schools would have been aware of the benefits of using one or more of these terms in the naming of a course covering such material.

The author hopes that more college-level accounting programs will seize the opportunity to provide similarly beneficial courses in their undergraduate and graduate curriculums. Future research to examine the cost-benefit of such courses could include a longitudinal study that compares career outcomes for students who have and have not attended such courses. As an alternative to longitudinal studies, a survey methodology could be employed to collect information on career outcomes and attendance or not, of a sustainability accounting and reporting course.

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