

Issues in Accounting Education
Vol. 13, No. 1
February 1998

Enhancing Students' Knowledge of Social Responsibility Accounting

Irene M. Gordon

ABSTRACT: In 1986, the Committee on the Future Structure, Content and Scope of Accounting Education cited the need to sensitize students to broad issues, such as social responsibility. This study reports on how social responsibility/sustainable development accounting and reporting (SR/SD) were included as a module in an accounting theory course. Pre- and post-study questionnaires were used to ascertain whether students' thinking on the topic underwent changes, and whether learning occurred. A comparison of student group mean responses found significant differences for 12 of 20 statements on the post- vs. pre-study questionnaires. This evidence suggests that the readings and discussion did sensitize students to the SR/SD topic. For accounting educators this finding indicates that the effort to teach SR/SD provides one possible way of meeting the calls to broaden the accounting curriculum.

THIS paper describes teaching social responsibility and sustainable development reporting (SR/SD) as a module in an accounting theory course. The purpose is to evaluate whether student perceptions about SR/SD can be enhanced by including social responsibility topics in an accounting theory course. In this setting SR/SD accounting and reporting includes the provision of information to users concerned with an enterprise's use of resources, any resulting economic externalities and its social contributions that affect the present and future generations. An enterprise's social role brings responsibilities for those accounting and reporting on its activities. The study of SR/SD enables faculty to "sensitize" students to social responsibility accounting. It also provides students with an opportunity to consider different forms of accounting and reporting than those usually studied.

Inclusion of the SR/SD topic is partially in response to calls for a more challenging and complete accounting education that have echoed through most of the past decade (e.g., Bedford Committee 1986; AECC 1990). These appeals mean a broadening of the educational base of accounting beyond the technical skills

The author wishes to thank Roger Guerin for his research assistance and the Faculty of Business Administration and the B.C. Institute of Chartered Accountants for research support supplied by the Accounting Development Fund. Comments by Lawrence A. Boland, Lois D. Etherington, Maureen Fizzell and Alexander Gelardi on an earlier draft of the paper are gratefully acknowledged. Additional comments and suggestions of three anonymous referees are also recognized. The data are available on written request to the author.

Irene M. Gordon is an Associate Professor at Simon Fraser University.

emphasized in many textbooks and traditional accounting curricula. In particular, the Committee on the Future Structure, Content and Scope of Accounting Education (the Bedford Committee) (1986, 183) cites fostering a "sensitivity to social responsibilities" as an important role of accounting educators. However, neither the Bedford Committee nor the Accounting Education Change Committee (AECC) (1990) specifically outline how accounting educators might help to instill this sensitivity in accounting students.

A traditional method followed to "sensitize" students is to assign selected readings and allocate class time to a subject. These actions alone cannot address whether students have become sensitized to a topic. One technique used to assess students' learning is to employ pre- and post-study assessment measures. The purpose of using pre- and post- assessment measures is "to determine whether and how students' opinions have changed in response to class discussions and assignments" (Angelo and Cross 1993, 259). Using a pre- and post-study assessment technique gives the instructor a benchmark of what students know and what their opinions are before they study the topic. It prevents the instructor from incorrectly assuming that the students have no previous exposure to, or beliefs concerning, a topic such as SR/SD. The pre- and post-study design also provides better evidence, than a post-study questionnaire alone, of whether the assigned readings and discussion influenced students' thinking on a topic.

The paper is organized in four sections. The first section addresses why students should study SR/SD. The second section outlines the assigned readings, the class format and the content of pre- and post-study questionnaires. In the third section the questionnaires' results provide evidence of how the mod-

ule affected students' responses. These results help to answer two questions: Did the course readings and discussion have an effect on the students' mean responses to statements concerning SR/SD? Do the mean responses suggest more or less sensitivity to SR/SD issues in the post- vs. the pre-test study? The final section contains the conclusion and limitations. This study provides evidence suggesting that the readings and class discussion did affect students' responses on the post-study questionnaire and their sensitivity to SR/SD.

WHY SHOULD STUDENTS STUDY SR/SD?

To answer the question "Why should students study SR/SD?" an accounting educator needs an understanding of three points. The first is to have a clear idea of what SR/SD includes. The second is understanding the function of SR/SD accounting and reporting and how it compares to traditionally taught accounting. Finally, and most importantly for this study, the third is an understanding of why accounting students need to be taught about SR/SD issues.

In this study, SR/SD is an inclusive term. It begins with the idea that an enterprise has a social role, or contract, to fulfill in providing goods and services to the marketplace. In a SR/SD context this role expands to include an enterprise's responsibility for the resources it uses, regardless of whether those resources are priced in the marketplace. Also, the enterprise is held responsible for its societal contribution to present and future generations. These added responsibilities mean that an enterprise will need to account and report for these wider obligations to society in different ways than presently required (Gray et al. 1987).

While a relationship exists between SR/SD and accounting ethics, SR/SD has its own distinct focus. Accounting ethics

refers to the *behavior* of the "accountants and those responsible for the presentation of accounting reports" (Mathews 1995, 663). Mathews (1995, 668) states that SR/SD "describes the extension of accounting reports to include information about product, employee interests, community activities, and environmental impact." Some specific responsibilities suggested for inclusion in social reports are an enterprise's contributions to such activities as employment, job-skills training, employee and consumer health issues, community activities, pollution control, and sustainability of natural resources (Gray et al. 1987; IISD 1992; Mathews 1993). The type of accounting and reporting required to present this information is not often found in textbooks nor otherwise integrated into accounting courses.

Underlying traditional accounting is neoclassical micro-economics. Students' experiences with this economic view range from reading daily newspapers (or listening to news broadcasts) to studying micro-economics in their educational programs. It lies at the very heart of accounting course content, ranging from introductory to advanced. Continual emphasis on the income statement and the calculation of net income (or profit) represents one key example of this economics influence where the focus is on the short run (Johnson and Kaplan 1987) and generally only on what can be priced, ignoring other aspects of performance.¹

SR/SD accounting and reporting incorporates the identification of performance measures for socially important variables that traditional accounting often overlooks. For example, SR/SD might include in an enterprise's accounts and reports the social benefits of providing services to a community or the social costs of negative externalities such as pollution. This type of accounting and

reporting communicates information to society so that the total performance of an enterprise may be evaluated using both quantitative and qualitative information. Only recently have accounting bodies begun to look at how SR/SD disclosures, specifically environmental information, might be provided (EITF 1990; CICA 1993a, 1993b, 1994a, 1994b).²

Educating accounting students on the SR/SD topic means introducing ideas that may run contrary to their previous educational and life experiences. As Mathews (1995, 665) points out "where students have been taught that the only way that value may be determined is through an exchange in the marketplace, they will not be sympathetic towards arguments recognising the worth of the environment." Teaching the SR/SD topic means encouraging students to critically question the traditional accrual-based historical cost accounting they previously learned. By providing readings and a forum for discussion, accounting educators supply an opportunity for students to consider the future directions of accounting and auditing. Where students have failed to consider these directions and the resulting responsibilities, they may then be insufficiently equipped to face a future where various social groups call for accounting and auditing in this broader domain. Having

¹ A counterargument to income measurement having a short-run focus is that the traditional accounting model incorporates the long-run concept of capital maintenance, although imperfectly.

² Nonfinancial performance measure disclosures have been suggested by the Governmental Accounting Standards Board (GASB) in its Concepts Statement No. 2 (1994). The GASB has not required disclosure of service efforts and accomplishment measures at this time nor does it specify particular measures to be used. However, there are suggestions that this type of disclosure "may ultimately be reported to the public" in the future (Parry et al. 1994, 42).

accounting students examine the SR/SD topic can sensitize them to perspectives that they may have inadequately contemplated. The next section outlines the inclusion of SR/SD in a course.

ACCOUNTING THEORY COURSE FORMAT, MODULE CONTENT AND THE QUESTIONNAIRES

During 1993 and 1994, a one-week SR/SD module was included in five sections of an accounting theory course. Students in each section of this course met once per week for 13 weeks, with each week's class consisting of a three-hour seminar where students discussed preassigned readings. The same instructor taught these five sections of accounting theory and the students enrolled in them provide the data used in this study.

The accounting majors in this undergraduate business program must complete the accounting theory course. Due to prerequisites, most take this course late in their program of studies, usually within one or two terms of graduation. The exceptions are students in a cooperative accounting education program who additionally may have one or more work terms to complete.

Course Format

Each three-hour seminar class during the 13-week semester was devoted to a different topic. Table 1 lists the 13 topics covered. The topics include such diverse areas as accounting history/background, positive accounting theory, measurement models and the political standard-setting environment. Coverage of the SR/SD module in the fifth week meant the exclusion of other specialized topics found in theory texts. Business combinations, consolidated statements, pensions and foreign currency translation are examples of the excluded topics.³

Formation of six student groups took place at the first class meeting with each group assigned responsibility for leading two of the remaining 12 seminars. A key component of the class was that groups had to present the assigned material in a way that generated class discussion. To prevent groups from simply lecturing, rather than engaging in an interactive seminar, restrictions were placed on how many minutes (five to ten) could be spent outlining the main points of an article. Additional requirements

³ These topics are covered in the advanced financial accounting course in this program's curriculum.

TABLE 1
Topic Coverage in the 13-Week Accounting Theory Course

Seminar Number	Topics
1.	History, Background and Objectives of Accounting
2.	Scientific View of Accounting and Agency Theory
3.	Positive Accounting Theory
4.	Positive Accounting Theory Continued and Critics of Positive Accounting Theory
5.	Social Responsibility/Sustainable Development
6.	Conceptual Framework
7.	Accounting Points of View
8.	Assets, Liabilities and Owners' Equity
9.	Historical Cost/Conventional Accounting Model
10.	Income Measurement
11.	Revenue Recognition and Expense Matching
12.	Alternative Measurement Models (Current Cost and Exit Price Models)
13.	Standard Setting in a Political Environment

included the preparation and use of discussion questions by the groups. Of students' total final grade, 25 percent depended on how well their group performed in the assigned seminars.

The remainder of the class was expected to participate but "participation marks" were not assigned. Instead students learned quickly that they must help each other since one week's presenters were the next week's class participants.

Within the seminar requirements, each group exercised considerable latitude in choosing how to present the material and get class participation. Examples of different presentation formats

used to generate class discussion include questions designed to foster debates; games used to identify terms and concepts; cases written to cover the issues from several perspectives; and general discussion questions. Creative and original group presentations received higher marks than less creative and less original presentations.

Module Content

Several surveys of the SR/SD literature provided many articles and books that could be used for class readings (Gordon 1996; Gray 1992; and Owen 1992). Table 2 provides the selected seminar readings used in this course

TABLE 2
Social Responsibility Accounting/Sustainable Development Readings

Bloom and Heymann, "The Concept of 'Social Accountability' in Accounting Literature," *The Journal of Accounting Literature*, Vol. 5 (1986) pp. 167–182.

This article addresses the concept of social accountability as it developed historically. It begins by examining the concept in the early 1900s business and economics literature (e.g., Taylor, Chase and Veblen) and traces it to the mid-1980s.

Goodfellow and Willis, "What's the Name of the Game?" *CAMagazine* (March 1991) pp. 42–50.

Goodfellow and Willis outline the types of environmental audits that may be undertaken and the reasons for such audits. They examine the levels of accountability and the elements of accountability to include in an organization's code of environmental conduct. Finally, they discuss the potential role of professional accountants and auditors in environmental audits.

Neu, "Let's Get Critical," *CAMagazine* (November 1991) pp. 45–48.

Neu takes a critical perspective of present day financial accounting and reporting. Citing articles and examples, he questions the "market-directed focus on the interests of investors and creditors" and expands that focus to include "the broader community of individuals affected by accounting" (47).

Ramanathan, "Toward a Theory of Corporate Social Accounting," *The Accounting Review*, (July 1976), pp. 516–528, reprinted in Bloom and Elgers (1987) pp. 640–654.

Ramanathan's paper is an early attempt to outline what might be included in a theory of corporate social accounting. He outlines the micro and macro issues that theory must address and what measurement issues need to be met to operationalize such a theory.

Either:

SMAC (1992) *Accounting for the Environment*. (Hamilton, ON: The Society of Management Accountants of Canada). Used in the 1993 classes.

Or

CICA (1993 and 1994) "Reporting on Environmental Performance, A Discussion Paper" (Toronto, ON: Canadian Institute of Chartered Accountants, 1993) and "Reporting on Environmental Performance, Summary of Comments on the July 1993 Discussion Paper" (Toronto, ON: Canadian Institute of Chartered Accountants, 1994). Used in the 1994 classes.

As an important component of social accounting and an area where a corporation may be seen as "responsible" for sustainable development, these publications outline the issues surrounding accounting and reporting on the environment. The roles of managers, accountants and auditors are examined from the accounting profession's perspective.

module together with a brief summary of each. The chosen readings and the related five objectives are:

- 1) to increase student awareness of the components and definitions of SR/SD and potential measurements (Ramanathan 1976; SMAC 1992; CICA 1993a, 1994a);
- 2) to create a better understanding by students of the historical context of the topic (Bloom and Heymann 1986; Ramanathan 1976);
- 3) to provide students an opportunity to appraise how SR/SD concerns and reporting may differ by geographic location (Neu 1991);
- 4) to allow students the opportunity to assess the economic problem of externalities and the trade-offs made between economic choices (Ramanathan 1976; Neu 1991); and
- 5) to foster students' consideration of the potential role of accountants and auditors in dealing with SR/SD issues (Goodfellow and Willis 1991; SMAC 1992 or CICA 1993a, 1994a).

The five objectives relate directly to why students should study SR/SD. Before students can be asked to identify performance measures for socially important variables, they need to understand the components and definitions of SR/SD. Further the assigned readings expose students to different suggested SR/SD variables and possible outcome measures. The discussion invariably gravitates to how these measures may, or may not, achieve their intended purposes.

Before this particular theory course, and despite the best efforts of some textbook authors and instructors, many of the students failed to comprehend that ongoing debates surround the ideas underlying accounting. Understanding the historical context of SR/SD, the second objective, allows students the opportu-

nity to consider the traditional historical cost model more critically.

Related to understanding that historical debates exist, students also need to comprehend that SR/SD concerns and reporting may vary by geographic location. The reading related to the third objective provides a means of introducing this idea. Typically, students discuss how one country may profit at another country's expense through exploiting resources or by polluting across national borders.

The fourth objective relates to the perceived short-run focus of traditional accounting measures, such as net income. Annual net income measures ignore externalities unless they are priced in the market. Class discussions center on environmental subjects, such as over-fishing and fossil fuel emissions. These discussions involve the trade-offs made by companies between increased profits in the short run and the desirability of protecting a broader group of stakeholders, including the general public and future generations, in the long run.

Introducing students to the ideas covered by the first four objectives leads them to consider the future role of accountants and auditors in the handling of SR/SD issues. Class discussion results in debates of whether accountants are the best individuals to make such measurements; what types of other experts might be needed to design outcome measurements; and finally, how useful unaudited SR/SD information might be to the stakeholders.⁴

The final examinations for the five classes, which amounted to 50 percent

⁴ Since the "general public" may be the most important stakeholder, the usefulness issue takes on an added dimension. "Usefulness" in this context includes an awareness that this stakeholder group may be relatively unsophisticated in its knowledge of accounting and financial reporting.

of the students' semester grades, each contained a SR/SD essay question. The points assigned to the questions varied from 15 to 25 (depending on the class and semester) out of a total possible 100. All students in each class answered the same question and potentially could have received the same maximum mark. The questions required students to describe the SR/SD concepts and to analyze the possible application of these to financial accounting.

The Pre- and Post-Study Questionnaires

Students completed the SR/SD questionnaire at the beginning of the semester knowing that the results would be used later in the course. The questionnaires included 20 statements where students indicated their agreement or disagreement using a five-point Likert scale.⁵

Students were assured that their answers had no bearing on grades. The university's ethics committee, that reviewed and approved the questionnaire, required that no identifying marks appear on the questionnaires. The assurance of anonymity had an associated cost, the inability to match individual responses for the two questionnaires. This prevented the assessment of learning by individual students and led to the analysis of only group mean responses.

The pre-study questionnaire and the post-study questionnaire are identical, with the addition that the latter asks students to indicate whether they previously had completed the pre-study questionnaire. Administration of the post-study questionnaire occurred at the conclusion of the SR/SD seminar presentation and discussion. Review of each class's pre- and post-study means and significant differences occurred two weeks later. This review provided students with an opportunity to see and

discuss where their views as a class had changed.

The 20 statements⁶ broadly incorporate the five seminar objectives associated with the assigned readings. The first objective includes two aspects, definitional components and measurement issues. Statements 1, 2, 4 and 17 determine the students' familiarity with the SR/SD components. For students with minimal exposure to the topic, the expectation was that the readings and classroom discussion would increase their understanding of these components. Statements 8, 9, 10 and 14 provide the opportunity to examine measurement aspects of SR/SD. Because measurement issues are of major concern to accountants and auditors, these statements gauge students' understanding of how difficult it might be to make SR/SD measurements.

The historical context and students' knowledge and perceptions for this are measured using statements 12 and 19. Statements 16 and 18 measure students' background knowledge and views on the geographical differences that might exist for SR/SD concerns.

A common micro-economic viewpoint, taught in two prerequisite economics courses, is that the market will solve problems through the interaction of demand and supply forces. Statements 5, 6 and 15 measure student knowledge about market operations. The purpose of statement 20 is to specifically examine the issue of externalities (e.g., pollution). Statement 3 also measures student understanding of the trade-offs involved when making economic choices.

⁵ The "do not understand" responses were added after a pre-test a year earlier found some students left statements blank. The "do not understand" category responses were not incorporated into the calculated means.

⁶ Table 4 provides the questionnaire statements together with the percentage of responses.

Statements 7, 11 and 13 examine accountants' and auditors' potential roles in handling SR/SD issues. These statements gauge whether the assigned seminar readings and class discussions change the students' views.

The final question (21) requests demographic information about the students. This information includes the number of hours they have completed of the 120 needed to finish their degree program, their grade point average and their future aspirations.

The next section outlines the results from the pre- and post-study module questionnaires.

RESULTS AND DISCUSSION

Summary demographic statistics for the respondents appear in table 3. Comparing the pre- vs. post-study statistical means using t-statistics, no significant differences were found for any of the demographic variables.

Using the pre-study data, the average questionnaire respondent had completed 104 of 120 credit hours for an undergraduate degree, had a B grade point average, and wanted to pursue a career as an accountant. Fifty-eight percent of respondents were male. An average student had completed approximately six accounting courses and four economics courses consistent with the program's requirements. While interested in the SR/SD topic (84 percent), the average respondent had not completed either an ethics or an international business course.⁷

Examining the pre-study questionnaire percentages in table 4, which

⁷ At the sample university, there are only two business courses (Business Ethics and International Business) that in their entirety may sensitize students to perspectives different from neoclassical economics. There are no courses exclusively devoted to subjects such as the Social Responsibility of Business or the Legal Environment of Business.

TABLE 3
Demographic Statistics for the Pre- and Post-Study Questionnaires^a

	Pre-Study Questionnaire		Post-Study Questionnaire	
Number of females	51	(41.8%)	44	(41.1%)
Number of males	71	(58.2%)	63	(58.9%)
Total completing questionnaires	122		107 ^b	
Average number of course hours completed in a 120-hour program	103.86		105.11	
Cumulative Grade Point Average (CGPA) on a 4-point scale	3.1291		3.1308	
Average number of economic courses taken	4.1		4.2	
Average number of accounting courses taken	6.4		6.8	
Average number of international courses taken	0.3		0.2	
Average number of ethics courses taken	0.4		0.4	
Percentage of respondents interested in SR/SD topic	84.4%		89.7%	
Career interests:				
Accountant	90	(73.8%)	82	(76.6%)
Other	20	(16.4%)	15	(14.0%)
Do not know	12	(9.8%)	10	(9.4%)

^a Using t-tests there were no significant difference between the pre- and post-study SR/SD questionnaire responses.

^b Of the original 122, 113 (92.6%) were still enrolled but six students were absent.

TABLE 4
Percentages by Category of Answer and Statement Number
for Pre- and Post-Study SR/SD Questionnaires^a

	Category of Response					
	Strongly Disagree		↔		Strongly Agree	Do Not Understand
	1	2	3	4	5	?
1. The environment is an important social issue and concern.	0.0	2.5	12.3	38.5	46.7	0.0
	0.9	0.9	5.6	34.6	58.0	0.0
2. Employment is an important social issue and concern.	0.0	1.6	7.4	45.1	45.1	0.8
	0.0	0.0	7.5	45.8	46.7	0.0
3. During a recession employment should outrank the environment as a social issue and concern.	4.9	30.3	31.1	23.0	10.7	0.0
	6.5	35.5	29.9	23.3	4.8	0.0
4. Social responsibility accounting and sustainable development are concerned only with environmental issues.	18.0	41.0	15.6	4.9	0.8	19.7
	40.2	43.0	5.6	6.5	2.8	1.9
5. If all market participants maximized their personal utility and acted in their own self-interests, then this would lead to the optimal allocation of resources.	25.4	31.2	13.9	22.1	6.6	0.8
	38.3	38.3	11.2	10.3	1.9	0.0
6. The optimal resource allocation which results from the maximization of utility ensures that environmental issues are included in profit calculations.	22.9	32.0	14.8	18.9	4.9	6.5
	36.5	29.9	12.1	13.1	6.5	1.9
7. There is a role for accounting and accountants in environmental and other social welfare concerns.	0.0	4.1	9.8	47.6	38.5	0.0
	0.0	4.7	13.1	45.8	36.4	0.0
8. The social costs of a firm's actions are relatively easy to measure.	50.8	42.6	4.9	1.7	0.0	0.0
	72.0	24.3	2.8	0.9	0.0	0.0
9. The social benefits of a firm's actions are relatively easy to measure.	35.2	50.0	9.9	4.9	0.0	0.0
	57.0	36.5	2.8	3.7	0.0	0.0
10. The ease of measuring costs and benefits should determine if such measurements should be made.	11.5	31.1	30.3	17.2	2.5	7.4
	18.7	37.4	21.5	15.9	2.8	3.7
11. To be of use, information on a firm's contributions to society should be audited.	6.6	22.1	32.8	30.3	8.2	0.0
	0.9	7.5	14.1	48.6	28.0	0.9
12. Sustainable development accounting is concerned only with the past.	18.0	32.0	13.9	2.5	0.8	32.8
	65.4	23.4	4.7	1.9	0.9	3.7
13. Reports on employee composition, training and education are public relations statements made by the firm.	4.9	21.3	33.6	31.2	4.9	4.1
	1.9	17.7	32.7	34.6	8.4	4.7
14. Social net income is a number which includes a company's net profit plus other costs and benefits.	7.4	16.4	18.0	22.1	7.4	28.7
	4.7	10.3	11.2	42.0	29.9	1.9

(Continued on next page)

TABLE 4 (Continued)

	Category of Response					
	Strongly Disagree		↔		Strongly Agree	Do Not Understand
	1	2	3	4	5	?
15. Profit maximization by all firms will lead to the best use of resources throughout the world.	31.1 <i>50.5</i>	42.6 <i>34.6</i>	7.4 <i>8.4</i>	15.6 <i>6.5</i>	2.5 <i>0.0</i>	0.8 <i>0.0</i>
16. Developing countries are more concerned about the environment than are developed countries.	59.0 <i>40.2</i>	28.7 <i>38.3</i>	8.2 <i>13.1</i>	2.5 <i>6.5</i>	1.6 <i>1.9</i>	0.0 <i>0.0</i>
17. Health care, education and pension issues are not part of social accounting.	34.4 <i>49.6</i>	49.2 <i>38.3</i>	6.6 <i>3.7</i>	4.1 <i>4.7</i>	0.8 <i>3.7</i>	4.9 <i>0.0</i>
18. North American companies are the world's leaders in providing social accounting information and reports.	8.2 <i>55.1</i>	26.3 <i>23.4</i>	39.4 <i>14.9</i>	13.9 <i>4.7</i>	1.6 <i>1.9</i>	10.6 <i>0.0</i>
19. Sustainable development and social accounting are issues which have become important only in the past five years.	5.7 <i>26.2</i>	19.7 <i>33.6</i>	29.5 <i>19.6</i>	27.0 <i>12.2</i>	6.6 <i>4.7</i>	11.5 <i>3.7</i>
20. The negative or positive effects of externalities will be included in the prices of goods and services available in the market.	6.6 <i>19.6</i>	11.5 <i>23.4</i>	20.4 <i>20.6</i>	40.2 <i>22.4</i>	9.8 <i>10.3</i>	11.5 <i>3.7</i>

^aThe post-study percentages are in italics.

provides all the SR/SD statements used, most students thought they understood the statements and held opinions on them. Of a possible 2,440 responses (20 statements × 122 respondents), 7.0 percent (or 171) were in the "do not understand" category. Three statements, 4, 12 and 14, account for 58 percent (99 of the 171) of these responses.

In the post-study questionnaire percentages, fewer respondents gave "do not understand" answers (table 4).⁸ In total there were only 1.3 percent (or 28) "do not understand" responses out of a possible total of 2,140 (20 statements × 107 respondents). Generally, students who were uninformed on the issues (or possibly confused) before reading and discussing the assigned SR/SD material, became informed by the second questionnaire's administration.

Pairwise comparisons of the means by class section and questionnaire were

examined. Across the five sections only eight comparisons out of a possible 200 (20 questions × 10 comparisons) are significantly different at the .05 level on the pre-study questionnaire and only 12 out of 200 for the post-study questionnaire. On examination, these differences are not attributable to any specific section. Also, there is only one instance where two sections' means are significantly different for the same statement on both the pre- and post-study questionnaires. Given that the total significant differences found between all the section means represent only five percent of those possible, it is reasonable to

⁸ Except for statement 13, all the "do not understand" percentages decreased from the pre- to post-study questionnaire. The increase in the "do not understand" percentage from 4.1 percent to 4.7 percent for statement 13 is attributable to the decrease in sample size from 122 to 107. The absolute number of "do not understand" responses is constant at five.

conclude that these are due to random chance.⁹

To examine whether students saw different relationships than those associated with the five seminar objectives, a cluster analysis, a classificatory method that groups data by similarity of responses, was applied to the post-study questionnaire statement responses. The particular method employed is a hierarchical complete linkage method available from the SPSS software package. Based on measures between furthest neighbors, this method employs squared Euclidean distances in assigning the data to clusters. The analysis indicated that seven clusters best classify the underlying data. This result was checked for consistency using the Ward method.¹⁰

Based on an examination of the content of the clustered statements, the clusters were labeled as representing: (1) social concerns and accounting's role, (2) trade-offs, (3) market characteristics,

(4) social costs/benefits, (5) usefulness of social information, (6) history, and (7) economic externalities. Table 5 lists the statement numbers by the associated seminar objectives and by cluster.

Comparing the statements attributed to the seminar objectives with the clustered statements provides several interesting observations. The most notable change is the elimination of the geographical differences objective. Statements 16 and 18 associated with

⁹ Post-study questionnaire mean responses by statement were calculated for the combined 1993 class sections versus the combined 1994 class sections and compared using t-statistics. No significant differences were found despite a change in the assigned readings (see table 2).

¹⁰ In the Ward method, five of the clusters remained unchanged. Statements 4, 12 and 18 moved together from cluster three and joined statement 19 in cluster six. This movement between clusters is due to the Ward method being less tolerant of singletons. Since the Ward method normally produces different results from the complete linkage methods, the conclusion is that the clusters undergo little change.

TABLE 5
Statements Classified by Seminar Objectives and Cluster Analysis

Seminar Objectives			Cluster Analysis Classification		
Objective Number	Sub-Topics	Statement Numbers	Cluster Number	Statement Numbers	Cluster Labels
1	SR/SD Definitions	1, 2, 4, 17	1	1, 2, 7	Social Concerns and Accounting's Role
4	Trade-offs	3	2	3, 10	Trade-offs
4	Economic Market	5, 6, 15	3	4, 5, 6, 12, 15, 18	Market Characteristics
1	SR/SD Measurement Issues	8, 9, 10, 14	4	8, 9, 16, 17	Social Costs/Benefits
5	Accountants' and Auditors' Role	7, 11, 13	5	11, 13, 14	Usefulness of Social Information
2	History	12, 19	6	19	History
4	Economic Externalities	20	7	20	Economic Externalities
3	Geographical Differences	16, 18			

this objective join the social costs/benefits and the market characteristics clusters. Using the students' responses, statement 7, thought to relate to the role of accountants and auditors, aligns with the SR/SD definitions component. Statement 10 joins statement 3 that was thought to relate to market trade-offs. The students apparently linked the need for trade-offs in making SR/SD measurements with the need for trade-offs in the market. Students' responses also suggest different relationships for statements 4, 12, and 15. These statements cluster with market characteristics despite a diversity of content. For example, statement 4 describes a component of SR/SD, while statement 12, focuses on history.

The statements organized by objective and the statements classified by stu-

dent responses into clusters (table 5) coincide in slightly over half of the instances. Differences in classification may be due to a variety of factors such as students confronting a first-time learning experience. In such settings, students may learn by making links between their prior knowledge and the new information facing them. Partial support for this explanation comes from examining how students responded to the statements that clustered differently from the objectives' classification. Except for one case, these statements either had many students who initially responded "do not understand" or had significant differences between the pre- and post-study mean responses (see table 6).

Table 6 gives group mean responses on the pre- and post-questionnaires. The t-statistics, by statement, indicate

TABLE 6
Mean Responses to the Statements for Each Questionnaire

Statement Number	Pre-Study SR/SD Questionnaire				Post-Study SR/SD Questionnaire				Level of Significant Differences
	Mean	Std. Dev.	Use. Resp. ^a	% DNU ^b	Mean	Std. Dev.	Use. Resp. ^a	% DNU ^b	
1	4.2951	0.7787	122	0	4.4766	0.7313	107	0	
2	4.3554	0.6889	121	0.8	4.3925	0.6258	107	0	
3	3.0410	1.0787	122	0	2.8411	1.0108	107	0	
4	2.1224	0.8647	98	19.7	1.8667	.9910	105	1.9	.06
5	2.5289	1.2720	121	0.8	1.9907	1.0415	107	0	.001
6	2.4737	1.2136	114	6.5	2.2190	1.2632	105	1.9	
7	4.1967	0.7888	122	0	4.1402	0.8178	107	0	
8	1.5738	0.6670	122	0	1.3271	0.5791	107	0	.02
9	1.8843	0.7927	122	0	1.5327	0.7310	107	0	.05
10	2.6549	1.0068	113	7.4	2.4466	1.0731	103	3.7	
11	3.1148	1.0539	122	0	3.9623	0.9042	106	0.9	.001
12	2.0488	0.8593	82	32.8	1.4369	0.7627	103	3.7	.001
13	3.1026	0.9772	117	4.1	3.3137	0.9438	102	4.7	
14	3.0805	1.1735	87	28.7	3.8381	1.1191	105	1.9	.001
15	2.1488	1.1080	121	0.8	1.7103	0.8796	107	0	.001
16	1.5902	0.8696	122	0	1.9159	0.9821	107	0	.02
17	1.8190	0.8086	116	4.9	1.7477	1.0009	107	0	
18	2.7156	0.9036	109	10.6	1.7477	1.0009	107	0	.001
19	3.1019	1.0407	108	11.5	2.3301	1.1495	103	3.7	.001
20	3.3981	1.0853	108	11.5	2.7961	1.3013	103	3.7	.001

^a Use. Resp. is the abbreviation for "Useful Responses."

^b DNU is the abbreviation for "Do Not Understand."

significant differences between the pre- and post-study mean responses at levels ranging from .001 to .06. The pre- and post-study answers for 12 of the 20 statements have significant differences.

One purpose of the pre-study questionnaire was to assess students' knowledge and opinions so that post-study learning could be examined. Prior expectations were that students would agree with statements 1, 2, 5, 6, 7, 11, 12, 13, 15 and 20. Agreement was expected for these statements based on the content of required courses in the curriculum. Neutral mean results were expected for statements 3, 4, 8, 9, 10, 14, 16, 17, 18 and 19. Because students may or may not have been exposed to the ideas and concepts covered in these statements, there was no reason to expect either agreement or disagreement.

Using the pre-study mean responses (table 6), there are several statements where students indicated more knowledge or where their opinions differed from expectations. Students disagreed with statements 4, 5, 6, 8, 9, 10, 12, 15, 16 and 17. The mean responses for statements eight, nine and ten show that students had more knowledge about the SR/SD measurement issues than anticipated. Students' mean responses to statements 4, 12 and 16 suggest a greater awareness of the components of SR/SD than expected. Disagreement with statements 5, 6 and 15 provides evidence that the students did not accept uncritically the standard micro-economics view of the world. Finally, the mean response to statement 17 indicates that most students held opinions about environmental performance by geographical location.

The mean results for two other statements also differed from expectations. Agreement was anticipated for statements 11 and 13 but the mean responses

are neutral. Using the pre-study questionnaire percentages from table 4, approximately one-third of the students did not hold strong views on, or perhaps had not considered, these issues.

The answer to the question of whether the course readings and class discussion affected students seems evident. Fewer students responded that they did not understand (e.g., see table 6, statements 4, 12, and 14) in the post- vs. the pre-study questionnaire, showing that more understood the statements. The 12 significantly different pre- and post-study means suggest further evidence of learning (see table 6). These differences indicate that the seminar and readings influenced students' thinking and sensitivity to the SR/SD issues, providing evidence that students reconsidered or reevaluated their opinions on the issues in light of new information.

By disagreeing more with statements 4, 8 and 9, students indicated that they saw SR/SD as a broader area than they had initially (statement 4). Also students became aware that measurement of social costs and benefits was more difficult than they first imagined (statements 8 and 9). By agreeing more strongly with statement 14, students showed that they had a better grasp of the inclusive nature of "social net income." Taken together, these results provide evidence that the first objective of increasing student awareness "of the components and definitions of SR/SD and potential measures" was met.

The second objective of creating a better understanding of SR/SD's historical context relates to statements 12 and 19. Comparison of the pre- and post-study responses indicates that students disagreed more strongly with the statement that SR/SD focuses on the past (statement 12), and that SR/SD had only

become a matter of concern in the past five years (statement 19). These student responses exhibit a better understanding of the historical context of SR/SD.

Students began by disagreeing strongly that developing countries were more concerned about the environment than developed countries. They reconsidered this issue, however, when discussing sustainable development and the actions taken by developed countries (statement 16). Additionally, they re-examined their views of whether North America was a leader in the SR/SD reporting field (statement 18). Thus, students reevaluated their prior views about SR/SD concerns and reporting on the basis of geographic location.

Statements 5, 15 and 20 show some reassessment of the externalities problem and the trade-offs made between economic choices (the fourth objective). After the seminar, students disagreed more with the ideas that the economic market would necessarily produce the best allocation of scarce resources or would include externalities in the market prices of goods and services.

Consideration of the role of accountants and auditors (the fifth objective) relates to statement 11. Students agreed more strongly with the idea that, to be useful, a firm's social contributions should be audited after studying the SR/SD topic.

The responses to certain statements hold few surprises. For example, agreement with statements 1, 2 and 7 was expected and found.

The reaction to other statements is more surprising and indicative both of students' prior knowledge and sensitization to the topic. Statements such as 5, 6, 15 and 20 portray aspects of the idealized micro-economics world. The background of these accounting students and their exposure to the business media, that often provides simplistic answers

to complex questions, leads them to argue in class discussions for market-based solutions to social problems. However, examination of the pre- and post-study means (table 6) and percentages (table 4) highlights two pieces of information. First, from the pre-study numbers, students do not blindly accept that the market can solve all problems. Second, after reading about and discussing the SR/SD issues, the students as a group became more convinced that market models may fail to supply the promised, idealized results.

CONCLUSION AND LIMITATIONS OF THE STUDY

This study reports on the inclusion of a SR/SD module within an accounting theory course. Pre- and post-questionnaire results for 20 statements provide measures used to address whether the course readings and discussion had an effect on students' mean responses to statements concerning SR/SD, and whether the mean responses suggest more or less sensitivity to SR/SD issues in the post- vs. the pre-test study.

After studying the assigned articles and participating in the seminar discussions, students' mean responses for 12 of 20 statements were significantly different on pre- and post-study questionnaires. Additionally, fewer students used the "do not understand" response category on the post-study than on the pre-study questionnaire. These results indicate that the readings and class discussion had an effect on students' mean responses. As well, change in responses provides evidence that students thought about the SR/SD topic, suggesting more sensitivity to the issues. For accounting educators, the evidence suggests that time spent on the SR/SD topic is one means of broadening the accounting curriculum and meeting the calls of the Bedford Committee and the AECC.

A limitation of this study is that the results are for one university and a single instructor. While SR/SD could be defined differently, and others may select alternate readings, the study's findings indicate benefits for students as a result of the inclusion of a SR/SD module in an accounting theory course. A second limitation is that, because matching of individual responses on the pre- and post-study questionnaires was precluded by the requirement of anonymity, conclusions about learning by specific individuals could not be made. Interesting and useful learning insights might result from a future study that examines stu-

dent characteristics associated with those most likely (or least likely) to be sensitized to SR/SD issues by employing matched individual responses. Making comparisons of student responses on SR/SD pre- and post-study questionnaires for different instructors, schools, readings and by individual respondents remain for future studies. One final limitation of this study is that only one week was devoted to SR/SD. If more time had been allotted to the SR/SD topic, then the students' responses might have changed more significantly. This time allocation issue and its impact are left for future examination.

REFERENCES

- Accounting Education Change Commission (AECC). 1990. Objectives of education for accountants: Position statement number one. *Issues in Accounting Education* (Fall): 307–312.
- American Accounting Association, Committee on the Future Structure, Content and Scope of Accounting Education (the Bedford Committee). 1986. Future accounting education: Preparing for the expanding profession. *Issues in Accounting Education* (Spring): 168–195.
- Angelo, T. A., and K. P. Cross. 1993. *Classroom Assessment Techniques*. 2nd edition. San Francisco, CA: Jossey-Boss Publishers.
- Bloom, R., and H. Heymann. 1986. The concept of "social accountability" in accounting literature. *The Journal of Accounting Literature* 5: 167–182.
- Canadian Institute of Chartered Accountants (CICA). 1993a. *Reporting on Environmental Performance, A Discussion Paper*. Toronto, ON, Canada: Canadian Institute of Chartered Accountants.
- . 1993b. *Environmental Costs and Liabilities: Accounting and Financial Reporting Issues*. Toronto, ON, Canada: Canadian Institute of Chartered Accountants.
- . 1994a. *Reporting on Environmental Performance, Summary of Comments on the July 1993 Discussion Paper*. Toronto, ON, Canada: Canadian Institute of Chartered Accountants.
- . 1994b. *Reporting on environmental performance*. Toronto, ON, Canada: Canadian Institute of Chartered Accountants.
- Emerging Issues Task Force. 1990. *Capitalization of Costs to Treat Environmental Contamination*. EITF Abstracts No. 90-9, Stamford, CT: FASB.
- Governmental Accounting Standards Board (GASB). 1994. *Service Efforts and Accomplishment Reporting*. Concepts Statement No. 2. Norwalk, CT: Governmental Accounting Standards Board.
- Goodfellow, J., and A. Willis. 1991. What's the name of the game? *CAMagazine* (March): 42–50.
- Gordon, I. M. 1996. Towards an appreciation of social responsibility accounting. *Accounting Educators' Journal* (Spring): 135–160.
- Gray, R. 1992. Accounting and environmentalism: An exploration of the challenge of gently accounting for accountability, transparency and sustainability. *Accounting, Organizations and Society* 17: 399–425.

- , D. Owen, and K. Maunders. 1987. *Corporate Social Reporting: Accounting and Accountability*. Englewood Cliffs, NJ: Prentice Hall International.
- International Institute for Sustainable Development (IISD). 1992. *Business Strategy for Sustainable Development*. Winnipeg, MN: International Institute for Sustainable Development.
- Johnson, H. T., and R. S. Kaplan. 1987. *Relevance Lost: The Rise and Fall of Management Accounting*. Boston, MA: Harvard Business School Press.
- Mathews, M. R. 1993. *Socially Responsible Accounting*. New York, NY: Chapman & Hall.
- . 1995. Social and environmental accounting: A practical demonstration of ethical concern? *Journal of Business Ethics* (August): 663–671.
- Neu, D. 1991. Let's get critical. *CAmagazine* (November): 45–48.
- Owen, D. 1992. The Implications of Current Trends in Green Awareness for the Accounting Function: An Introductory Analysis. In *Green Reporting, Accountancy and the Challenge of the Nineties* edited by D. Owen. London, England: Chapman & Hill: 3–27.
- Parry, R. W. Jr., F. Sharp, W. A. Wallace, and J. Vreeland. 1994. The role of service efforts and accomplishments reporting in total quality management: Implications for accountants. *Accounting Horizons* (June): 25–43.
- Ramanathan, K. V. 1976. Toward a theory of corporate social accounting. *The Accounting Review* (July): 516–528.
- Society of Management Accountants of Canada (SMAC). 1992. *Accounting for the Environment*. Hamilton, ON, Canada: The Society of Management Accountants of Canada.