

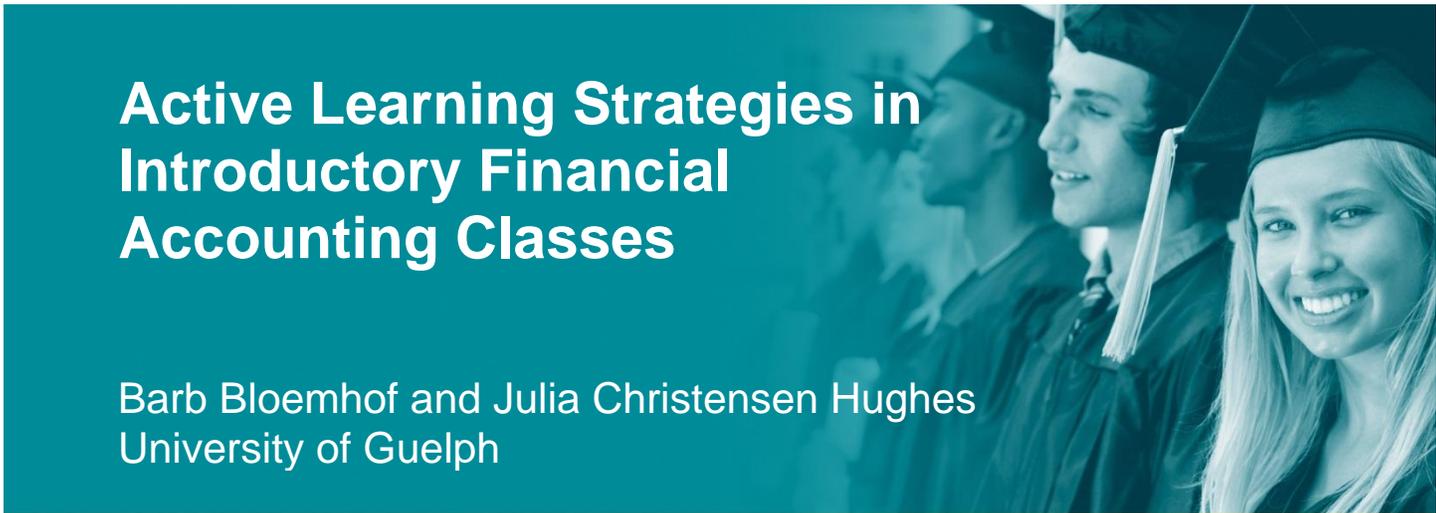


Higher Education
Quality Council
of Ontario

An agency of the Government of Ontario

Active Learning Strategies in Introductory Financial Accounting Classes

Barb Bloemhof and Julia Christensen Hughes
University of Guelph



Published by

The Higher Education Quality Council of Ontario

1 Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893

Fax: (416) 212-3899

Web: www.heqco.ca

E-mail: info@heqco.ca

Cite this publication in the following format:

Bloemhof, B., & Christensen Hughes, J. (2013). *Active Learning Strategies in Introductory Financial Accounting Classes*. Toronto: Higher Education Quality Council of Ontario.



The opinions expressed in this research document are those of the authors and do not necessarily represent the views or official policies of the Higher Education Quality Council of Ontario or other agencies or organizations that may have provided support, financial or otherwise, for this project. © Queen's Printer for Ontario, 2013

Executive Summary

The study presented in this report provides a systematic look at how students experienced and approached their learning in Introductory Financial Accounting at four Ontario postsecondary institutions. Most introductory courses serve a number of important purposes: they provide students with an introduction and a common background to a subject area; they recruit students into a discipline; they foster new skills and attitudes; they bring the opportunity to successfully transition to a new learning environment; and so on. Typically some of the largest courses taught on campus and full of novice learners, introductory courses are arguably also some of the most challenging for instructors and students alike. Anecdotal evidence suggests that on many campuses, Introductory Financial Accounting is no different in this respect. Despite its importance as a gateway to virtually all business or commerce programs, instructors report that student preparation and interest can be inconsistent and that many students find the course unduly challenging.

The primary goal of the study was to work within an action research methodology (Paisey & Paisey, 2005) to understand and enhance student engagement and effective approaches to learning. Dedicated and committed introductory accounting instructors shared their concerns, insights and experience with a collaborating non-accounting researcher in order to consider how financial accounting can be taught more effectively. The four instructors were teachers at a large, primarily doctoral university (“Relevance University”); a medium-sized comprehensive university (“Traditional University”); a university-college partnership-based institution (“Integrative University”); and a degree-granting college (“Collegial University”).¹ Each of the four institutions shared a number of similarities, including common subject matter objectives and formal recognition by accounting professional organizations, but each also represented different business or commerce program contexts and characteristics, including class size and format. In particular, Relevance and Traditional delivered their introductory courses in one term, while Integrative and Collegial had two terms available for approximately the same subject matter objectives.

A key message throughout the study was the importance of practice to learning financial accounting. Approaches that were found to encourage students to practice problems continually (whether in-class, in tutorials or on their own time) varied by context, but were those that were ultimately associated with higher levels of engagement and a meaning and/or achieving learning orientation.

The primary research questions were:

- 1) How are students experiencing the course?
- 2) To what extent are students availing themselves of opportunities to engage with the material afforded by the course environment?
- 3) To what extent are students creating personal meaning and understanding in Introductory Financial Accounting, as distinct from primarily memorizing the material?

The instructors committed to assessing the existing level of engagement achieved by their students and their approaches to learning by employing the *Classroom Survey of Student Engagement* (CLASSE, © 2012 Indiana University; Ouimet & Smallwood, 2005; Smallwood & Ouimet, 2009) and the Canadian adaptation of the *Lancaster Approaches to Studying Questionnaire* (ASQ) (Entwistle, 1981, pp. 57-60; see also Knapper, n.d., and Woods, 2011, pp. 283-287). In addition, the instructors were willing to contemplate evidence-based changes in their practice, following the work of Simmons (2004, p. 47). Changes introduced during the study included the introduction of seminars and smaller class sizes; the incorporation of news items and the application of course concepts to real-world problems in lecture; and weekly end-of-class responses (“exit passes”) to questions requiring the application of higher-order thinking skills.

¹ These pseudonyms were chosen to support the anonymity of the participating sites as well as to indicate the general teaching and learning context observed by the researchers.

The most important result in the study data is the high values of student approaches to learning in these courses, measured by the Lancaster instrument. All four sites reported approaches to learning that were substantially higher than normative findings. The highest overall index scores were observed for Collegial University, with the final version of course offerings at Traditional and Relevance being a close second and third. Students at Integrative University reported the highest overall rates in the study for a reproducing orientation, while the CLASSE© survey indicated that they were also availing themselves of fewer of the learning opportunities that the instructor viewed as valuable to success.

In the absence of normative findings or any reasonable structure for significance of the CLASSE© results, we could nonetheless compare the results of the five engagement benchmarks the study team created for Introductory Financial Accounting across the four sites. Collegial University had the highest overall engagement scores in four of the five benchmarks by the end of the study, although the lowest student effort benchmark. At this site, students experienced Introductory Accounting in relatively small classes (35 to 45 students), with an enthusiastic and dedicated instructor who created a supportive learning environment around mini-lectures, a considerable amount of time for in-class problem-solving and discussion. Students were also welcome to stay after class in order to complete their homework in a supervised setting where help was readily available. Graded on-line quizzes ensured that students kept up with the work and came to class prepared. There was apparently no reason for students to struggle with financial accounting in this class.

The site that showed the largest increase in engagement on average was Traditional University, where class size was reduced considerably and coordination between sections was enhanced over the study period. Initially, this course had been taught in one 90-minute lecture block with some 300 students (repeated twice to serve the roughly 600-student course enrolment) and one 90-minute seminar offered as twelve 50-student sections. Several iterations later, it was taught in two 90-minute sections of 80 students. The triangulation inherent in the study approach permits some confidence in the observation that students in this course shifted from a predominantly reproducing orientation toward an achieving approach over the course of the study.

Quadrant analysis of the CLASSE© survey responses (which compares instructor perceptions of importance and self-reported student engagement behaviours in various learning opportunities) indicated that Collegial and Relevance universities showed the highest degree of congruence between the instructor and student responses. In contrast, at Traditional University, students reported participating in activities that did not appear to be highly valued by the instructor. We wondered if this suggested that students were willing to put a lot of effort into the course but were unsure about how to direct that effort. Conversely, at Integrative University, the instructor perceived many more behaviours as being important than the number in which the students reported engaging. These students reported some of the highest levels of classroom attendance but did not appear to take full advantage of other learning opportunities that were available to them. To us, this suggested that students may have had some tendency to narrowly equate learning with attending class.

Together with the limited focus group data available, and instructor and collaborating researcher insights into the respective course environments and programs, these surveys support the conclusion that each site employed some valuable pedagogic strategies that fostered student engagement and effective learning approaches. Selection bias put some constraints on quantification of the relative size of changes in the engagement benchmarks, but a rich array of data is available to advance the broader scholarship of learning in Introductory Financial Accounting. With that in mind, some conclusions can be made about “best practices” in learning for a first tertiary course or course sequence in a dynamic and rapidly changing profession.

Consistent demonstration followed by application and repeated practice was found to be associated with higher levels of student engagement and a tendency toward a meaning and/or achieving orientation. At Traditional University, we learned that salient and equitable grading encouraged students to practice accounting problems, and parsimonious grading based more on effort (the number of problems attempted) than quality of outcome could frustrate the learning process to some extent. At Relevance University, practice was coupled with an effective use of class time, ensured by clear rules for the conduct

of class meetings. Grade incentives in the form of nominal bonus marks for attending seminar in which problems were practiced, were reported by the students in the focus groups as being particularly useful for encouraging their participation. They recommended the same approach be used for the completion of homework assignments.

The instructor at Integrative University largely used a lecture-based approach in class and his students had normalized a particularly high reproducing orientation. According to the CLASSE© survey evidence, students in the course did not report taking advantage of what seems to be quite helpful learning support, despite a class size conducive to significant instructor engagement within regularly-scheduled class time and availability outside of class.

Classes at Collegial University were structured to put student capability and confidence on equal footing with practice and support, to foster engagement with accounting both inside and outside of class. For this instructor, an apprenticeship-type model of instruction coupled with his willingness to be consistently available (by phone or email) meant that students almost could not help but succeed. This learning environment also had considerably higher non-exam-based assessments relative to the other three sites (providing a tangible incentive to complete the assignments), which goes some way to explaining higher engagement and Approaches to Studying Index scores. Despite having the largest decline of an admittedly small engagement benchmark score over the course of the study, the course was rated as more interesting and the material less difficult by these students than the interest and difficulty reported by students at the other three sites.

The student experience at Collegial University provided a touchstone in the study, because the instructor opted not to introduce an intervention when he saw the encouraging engagement results in the first survey. The instructor at Traditional also did not undertake a particular teaching intervention but instead adapted his course, as class sizes were changed by the administration, to address inconsistencies in attendance that were perceived to be related to the size of the classes and the credibility of the seminar experience. Traditional University saw student engagement improve somewhat, with a notable reduction in reproducing orientation in favour of an achieving orientation to learning.

At Relevance, the instructor used current events and topical accounting examples as a vehicle to model and communicate the complexity of judgment used in the discipline. A significant proportion of focus group participants credited this teaching technique with influencing their decision to persist in the discipline. Such favourable experiences in class and tutorials apparently contributed to high achieving scores and highly congruent uptake of the engagement activities identified by the instructor with success in learning the material.

Written responses to thought-provoking questions were used at the conclusion of class at Integrative University to promote student engagement with the material, with the additional effect of expanding the communication from student to instructor (about what students had grasped from the class and where they were still struggling). These ungraded “exit passes” were readily completed by the students, suggesting that other activities judged as engaging by the instructor could be similarly introduced. In all these interventions, however, the actual changes in engagement and learning approach were modest, an unsurprising finding if assessments remain more or less traditionally organized around multiple choice and short answer questions. With a minimum of 70% and up to 85% of the final grade depending on these forms of assessment at our four sites, it seems that a promising avenue for further study exists in expanding the repertoire of assessments.

Finally, in presenting these results, it is clear that the challenges inherent in educational research involving different cohorts at different points in time, along with the statistical limitations of the instruments employed, necessitate a nuanced analytical approach to address the shortcomings of selection bias in research with human subjects involving either of the survey instruments used in the current study. The CLASSE© survey privileges particular types of learning, some of which were irrelevant to the participating classroom environments, and others of which were challenging to provide in the larger classrooms typical of the first accounting course. We feel that the time is right for the CLASSE© to undergo a substantial review to better understand how to treat possible redundancies among its various items, as well as a

rigorous investigation of how particular items are being interpreted and how to more clearly express or promote the intended meaning when using this instrument. Alternate methods to aggregate the vast information in the question items into benchmarks for particular contexts are also needed, along with the generation of normative findings for the purposes of comparison and meta-analysis.

The Scholarship of Teaching and Learning is a relatively new field and as such is in need of the development of trustworthy instruments and clear guidance on their appropriate usage. Connected to all of this is the need for more work on the appropriate use in educational contexts of various statistical treatments that depend on large samples in order to confidently construct and assess the treatment effects. To this end, rather than demographic variables to control for sample difference, we suggest that using other variables plausibly related to subject participation choice (such as attendance, interest in the course and approaches to learning) might be more appropriate and robust.

In conclusion, there is clearly a great deal of foundational learning to be accomplished in an introductory course and many ways to achieve it. The accounting profession encompasses a wide breadth of knowledge and seeks to foster from the start a necessary commitment to lifelong learning. Each instructor in our study appears to have made strong use of the resources available to them. Equally clearly, there are choices to be made about how to structure classes and assessments in order to make that environment most conducive to the objectives envisioned for the profession. Pedagogical and assessment approaches that encourage students to engage with the material in a meaningful way by repeatedly practicing problems requiring judgment and analysis as well as technical proficiency are beneficial to student learning and success. The cases described in the following pages must be interpreted with care, owing to sampling challenges, but nonetheless provide insights for how active learning might be fostered to maintain or improve student engagement and meaning orientations to learning within other introductory financial accounting contexts.

Acknowledgements

This research has been funded by the Higher Education Quality Council of Ontario. The study team gratefully acknowledges seed funds from CMA Ontario (Certified Management Accountants Ontario, <http://cma-ontario.org/>). Thanks are also due to the many individuals in the participating departments and registrar's offices who provided data and logistical support. Thank you to Erika Podlovics for creating the pseudonymous graphics for each institution. All errors and omissions in this report are the responsibility of the authors alone.

Table of Contents

Executive Summary	3
Introduction.....	10
The Introductory Course Context.....	11
The Introductory Financial Accounting Course.....	12
Methods.....	14
Survey Instruments	17
Limitations and Qualifications	21
Choosing the Postsecondary Learning Environments in the Study.....	22
Environmental Observations.....	24
Traditional University 	24
Relevance University 	26
Integrative University 	27
Collegial University 	28
Focus Groups.....	30
Traditional University 	31
Relevance University 	33
Integrative University 	36
Collegial University 	37
Survey Results	39
CLASSE© Responses: Benchmark Analysis	40
CLASSE© Responses: Quadrant Analysis.....	46
Engagement in Introductory Financial Accounting at Traditional University.....	47
Engagement in Introductory Financial Accounting at Relevance University	50
Engagement in Introductory Financial Accounting at Integrative University.....	53
Engagement in Introductory Financial Accounting at Collegial University.....	55
Approaches to Studying	58
Discussion of Results: A Study of Similarities, Differences and Insights.....	61
Conclusions.....	65
References.....	68

A separate appendix is available in English only from www.heqco.ca.

List of Figures

Figure 1: The Action Research Cycle in a Teaching Context 15

List of Tables

Table 1: Summary of Instructor-chosen Interventions 16

Table 2: Response Rates for Components of the Survey, by Institution 19

Table 3: Introductory Financial Accounting Courses in the Study 23

Table 4: Learning Environment at Traditional University 25

Table 5: Learning Environment at Relevance University 27

Table 6: Learning Environment at Integrative University 28

Table 7: Learning Environment at Collegial University 30

Table 8: CLASSE© Question Introductory Financial Accounting Benchmark Categories (questions omitted from benchmarks indicated by ~~strike through~~) 41

Table 9: Introductory Financial Accounting Student Engagement Benchmarks (Δ = across matched cohorts) 44

Table 10: Estimated Average CLASSE© Responses (Unmatched Responses)..... 45

Table 11: Traditional University CLASSE© Quadrant Analysis (mean response) 50

Table 12: Relevance University CLASSE© Quadrant Analysis (mean response) 52

Table 13: Integrative University CLASSE© Quadrant Analysis (mean response) 55

Table 14: Collegial University CLASSE© Quadrant Analysis (mean response)..... 57

Table 15: Approaches to Studying Index Means (and standard errors) 59

Introduction

The purpose of this study was to explore teaching and learning practices in introductory financial accounting courses at four Ontario postsecondary institutions. We were particularly interested in identifying approaches that would help foster “student engagement” (Kinzie, 2010) and effective approaches to learning. Our understanding of “effective” for the purposes of this study draws on conceptions of “deep”, “transformative” and “meaning” approaches to learning.² It was our hope that the findings generated from this study would provide insights for further enhancing these courses, as well as for introductory accounting courses in general.

The primary research questions included:

- 1) How are students experiencing the course?
- 2) To what extent are students availing themselves of opportunities to engage with the material afforded by the course environment?
- 3) To what extent are students creating personal meaning and understanding in Introductory Financial Accounting, as distinct from primarily memorizing the material?

We were also interested in understanding:

- 4) How can the instructor foster active learning to maintain or improve engagement?
- 5) As changes are being made to the learning context, how are student engagement and approaches to studying (meaning/reproducing orientations to learning) evolving in response?
- 6) How effective are the teaching and learning practices being studied in supporting engagement and learning for understanding?

A largely qualitative, action research methodology was employed to generate answers to these questions using the cases of four distinct learning contexts. “Relevance University” was a large, primarily doctoral university, “Traditional University” was a medium-sized comprehensive university, “Integrative University” was a university-college partnership-based institution, and “Collegial University” was a degree-granting college.³

Action research begins with an explicit problem to be solved (Paisey & Paisey, 2005). In this case, the problem was how to teach Introductory Financial Accounting more effectively in a variety of educational contexts. The collaborating instructors were enthusiastic about assessing the level of engagement achieved by their students and their approaches to learning. Further, they were willing to contemplate evidence-based changes to their practice, supported by a (non-accountant) collaborating researcher and contributing author, following the approach of Simmons (2004, p. 47). Changes introduced by the instructors included the introduction of seminars and smaller class sizes; the incorporation of news items, and the application of course concepts to real-world problems; and weekly end-of-class responses to questions requiring higher-order thinking skills.

Two well-known instruments were used to identify the level of student engagement and the approaches to learning being used by students both prior to and following the interventions. The instruments were the *Classroom Survey of Student Engagement* (CLASSE, © 2012 Indiana University) and the Canadian adaption of the *Lancaster Approaches to Studying Questionnaire* (Entwistle, 1981, pp. 57-60; see also Knapper, n.d., and Woods, 2011, pp. 283-287).

² For further elaboration on these concepts, see the introductory chapter of the HEQCO-sponsored book “Taking Stock” [Christensen Hughes & Mighty, 2010a]; Lucas & Meyer (2005); Marton (1975); Marton & Säljö (1976); Ramsden & Entwistle (1981).

³ These pseudonyms were chosen to support the anonymity of the participating sites as well as to indicate the general teaching and learning context observed by the researchers.

The Introductory Course Context

Introductory courses are arguably some of the most important and challenging courses taught in postsecondary institutions. Typically offered in first or second year, they serve a number of purposes, ranging from providing an equalizing, rudimentary introduction to a topic, in recognition that not all entering students will have had comparable learning experiences during high school, to providing students with the opportunity to successfully transition to a new learning environment, acquire new skills and attitudes, and get broad exposure to a variety of disciplines and subjects. In cases where the course is core to the students' major or program, it can also be intended to help master threshold concepts, serving as a "portal" to more senior level courses (Meyer, 2010). Such courses can also serve to foster commitment to a particular course of study or profession, or conversely persuade a student that he or she is in the wrong program.

In addition to the challenges inherent in attempting to accomplish such a wide variety of important objectives, introductory courses are typically some of the largest on campus, with enrolments upwards of 800 students at some institutions (classroom space allowing), significantly constraining the pedagogical and assessment choices of the instructor. Upward pressure on class sizes is likely to continue for the foreseeable future and, due to funding pressures, student/instructor ratios are expected to continue to climb (HEQCO, 2012).

Introductory courses are often positioned as a gateway to further study; many students would not be enrolled if they did not have to be. Some students may feel that they already learned the material in high school. For others, the course material may be considerably outside their comfort zone but within their reach. Students may therefore lack intrinsic interest in the subject.

First- and second-year students are also likely to struggle in courses where instructors expect them to step away from rote memorization and use higher-order thinking skills. As novice learners (Perry, 1970), many early-year students hold the view that knowledge is an accumulation of facts and that it is the role of true experts – the instructors – to disseminate their knowledge through lecture and test for student retention through exams. When instructors pander to such expectations, students have been found to become even more novice-like in their approaches than when they first started university (Wieman, 2007; see also Watkins & Hattie, 1985).

Given these various issues, coupled with increased concern about student success, retention and engagement,⁴ university administrators are increasingly seeking answers to the "first-year problem." Some proposed solutions have included the proliferation of small first-year elective seminars, which focus on theme-based interdisciplinary enquiry-based learning experiences, supported learning groups (student-tutored "help" sessions that accompany large, introductory courses with poor success rates), and hybrid courses that substitute discussion-based face-to-face classes and on-line content resources (podcast lectures, orally-annotated PowerPoint slides, reading material, on-line quizzes, and so on) for live lectures. In this way, total "contact hours" remain essentially the same but the student receives a smaller, more engaging classroom experience coupled with on-line support. At some institutions, administrators are also challenging the well-entrenched practice of keeping introductory classes large in order to provide small-class learning experiences in senior years. Instead, recognition is growing that strategically directed resources allowing for "high-impact" learning experiences (Kinzie, 2010) in the first and second year can support the acquisition of essential learning skills that benefit students across all years of their programs (Summerlee & Murray, 2010).

There is some guidance in the literature, presented in the next section, about how best to allocate scarce teaching resources and support enhanced student success in courses enrolling up to a thousand students, many for whom the course is "required" and outside their area of interest. Financial accounting shares this demand pattern with other fields of study such as economics, finance, psychology, mathematics and others. We wondered if there were ways to address the challenges inherent in such

⁴ For comprehensive discussions see Wiggers & Arnold (2011) and Zhao (2011).

circumstances while supporting instructors' reflection on their practice and reducing the number of students who appear to struggle with the course or who perceive the level of numeracy required as particularly challenging. Insights into how teaching challenges are being addressed at our participating institutions might help deans and chairs allocate resources to early-year courses more wisely.

An exciting first experience in a discipline should propel learners forward with durable learning to build on over the years of their degree and into their career, whether they carry on with that subject or concentrate their studies elsewhere. Rather than being something students have to "get through," a first course employing active learning strategies appropriate to the discipline and the local learning context should be able to engage, empower and motivate students. Fostering learning in this way will arguably improve transfer and retention while cultivating a self-reinforcing learning culture of curiosity, accuracy, diligence and life-long learning. It was in part for these reasons that the current research project was undertaken.

The Introductory Financial Accounting Course

Introductory Financial Accounting is typically among the first required courses in a business degree, an increasingly popular option among senior high school students. This interest reflects the growth of professional employment opportunities in Canada, particularly in business and finance. According to the Association of Universities and Colleges of Canada (AUCC, 2011, p. 33),

Over the last 20 years management occupations have been among the fastest-growing occupations in Canada... business and finance professions grew by more than 95 percent.... Combined, there were 1.67 million more professional and management jobs in 2010 than in 1990 and 1.33 million were filled by university graduates.

While serving as the gateway to a specialization in accounting, Introductory Accounting is also required by other business-related majors and programs. As one of the foundational disciplines in management, an introduction to accounting principles is essential. In business programs where student movement between majors is relatively straight-forward, or where students delay choosing a major until their introductory courses have been successfully completed, introductory courses can also be viewed as an important recruitment device into the major and the profession.

Introductory Accounting may also be taken by students in non-business programs (potentially as part of a business minor or certificate), who have elected to get some exposure to core business concepts as a complement to their other studies. Given the focus on innovation and entrepreneurship for students in all disciplines today, it is likely that such enrolments will increase significantly in the future.

For those in the major or who wish to pursue professional accreditation as an accountant, the course can serve as an important opportunity to confirm the students' suitability and commitment to their chosen path and to begin to cultivate the values, norms and attitudes that will support them as professionals over the course of their careers (Wilkerson, 2011, p. x).

In terms of course-specific objectives, Introductory Financial Accounting is largely intended to familiarize students with business events or transactions and with how those events should be recorded and summarized. Perhaps even more importantly, students may be introduced to foundational threshold concepts (Lucas & Mladenovic, 2007) upon which future accounting courses build. Concepts such as subjectivity, and the realization that cost, value, profit and cash have different meanings in different contexts, are essential for advancing understanding and proficiency in the discipline. Contrary to the assumptions of many entering novice students, accounting is not a set of rules and procedures to commit to memory and apply mechanically; rather, it is a framework for analyzing evolving business information and making informed decisions in increasingly complex settings.

A durable message in the accounting education literature is the urgent need to broadly enhance accounting education to include facility with complexity and to instill a culture of life-long learning into future accountants (Albrecht & Sack, 2001; AAA/AICPA, 2012; Frederickson & Pratt, 1995; Gibbins,

2002; Kavanaugh & Drennan, 2008; Saunders & Christopher, 2003; Killian & Brandon, 2009). It was largely on this basis that a Canadian review of the challenges in accounting education called for “nothing less than a remaking of business schools” (Gibbins, 2002, p. 58).

One of the challenges inherent in any effort to reform accounting education is the fact that rote memorization remains a key skill for accounting certification examinations. According to Rosen (2006), this obsolete approach has led to a serious crisis in Canadian accounting practice, and he argued that accounting instructors should more frequently use Canadian-specific examples to teach broad analytical skills more authentically. Cherry and Reckers (1983) report an underrepresentation of theory in the introductory courses of thirty years ago, an emphasis on technical mechanics rather than the logic of why certain business information is recorded in the way it is, at least in the American context. Learning experiences that ask students to think beyond the mechanics of the accounting handbook are necessary preparation for working in a complex, evolving discipline.

Another challenge pertains to steadily increasing class size (Saunders & Christopher, 2003). Two of the categories of factors found by Adler et al. (2000, p. 113) to impede the propagation of innovative teaching methods is “inadequate educator support mechanisms and nonreflective teacher practices”, leaving the large-lecture format as a convenient way to organize the course. But traditional didactic lecturing is not generally correlated with effective learning (Christensen Hughes & Mighty, 2010a, p. 4). The lecture can make knowledge seem formed and static, completely the opposite of the understanding needed by the next generation of accounting professionals to manage a rapidly changing profession. Certainly, students need comprehension of and proficiency with significant concepts (Lucas & Mladenovic, 2007), and important research on cognitive load theory (Mostyn, 2012) should help make learning foundational knowledge in accounting more efficient. However, the values, attitudes and capacity to begin to learn to respond intelligently to change cannot generally be taught using a lecture method. The lecture style almost certainly limits the teaching and learning activities, as well as the assessments, that can be offered in introductory accounting (Hill, 1998).

A number of studies have found that large classes have no significant effect on grade outcomes in higher education settings in general (Baldwin, 1993; Glass & Smith, 1978; Raimondo et al., 1990; Kennedy & Siegfried, 1997). With respect to Introductory Accounting in particular, however, it has been found that while students and instructors do not particularly enjoy large accounting class environments, performance measured by grades is not *incrementally* worse; classes can apparently be made arbitrarily large with negligible consequences for student performance (Hill, 1998).

What may be missing in this conversation is an understanding of the methodological problem of conditioning class size research on didactic lectures with multiple choice examinations. What happens in a course is also important: small classes are more likely to host the teaching practices that count, although of course this assumes awareness of alternatives to transmission-based practices (Hattie, 2005, p. 417). Specifically who is teaching the course therefore matters to improving learning, both in terms of willingness to reflect on their practice (as recommended by Ramsden, 1992) and the latitude to act on that reflection. When, as Duchac and Amoruso (2012, p. 10) found in their survey of American Introductory Accounting courses, the individual most likely to teach this course is a sessional (or part-time) instructor, it seems logical that the risky activity of innovative teaching could be further inhibited by heightened logistical and job security challenges. Regardless of tenure, a class that is too large to be enjoyable to teach will be perceived negatively by the instructor (Hill, 1998, p. 63). Although we saw no studies that looked at how these perceptions could affect practice, it seems unlikely that they enhance innovation. Yet an inspiring instructor can change a student’s perception of the course and is a strong predictor of a student’s decision to major in accounting (Geiger & Ogilby, 2000; Maudlin et al., 2000).

Finally, knowing what students themselves bring to the class is an important consideration (Naser & Peel, 1998). Biggs (2003) similarly suggested that student differences can explain why an instructor can teach two sections of the same course and have completely different experiences. A relatively durable factor in a student’s learning outcome is his or her motivation and interest in the subject (Prosser & Trigwell, 1999; Lucas, 2002; Entwistle, 2010).

In summary, Introductory Financial Accounting courses can be both important and challenging. They serve a variety of purposes and audiences, including novice learners with varying interests and abilities. With the courses often organized into large sections, instructors are challenged to create engaging learning environments that support deep learning. Within Introductory Financial Accounting courses in particular, some of these challenges are amplified, given increased interest in business education, the requirements of professional accreditation and the complexity of course material. The current study is designed to identify approaches that might help foster student engagement and effective approaches to learning in such a context.

Methods

Five Introductory Financial Accounting instructors teaching what was determined by an experienced accounting instructor to be similar content⁵ in distinct institutional and program contexts were invited to participate in the study. All five originally agreed, but one dropped out due to a change in teaching assignment. Each of the four investigations was treated as a stand-alone study, with its own research protocol that was cleared by the respective institution's research ethics board with regard to the appropriate treatment of human subjects.

The sites were explored using an action research process similar to Paisey and Paisey's (2005) approach illustrated in Figure 1. Action research is a multi-step process that allows an instructor to ask relevant questions about his or her instructional practice and use diverse data to answer them. It is congruent with the commitment to continuous improvement that is required by one of the leading accrediting bodies for business schools (the Association to Advance Collegiate Schools of Business, AACSB International, 2012, pp. 5-6).

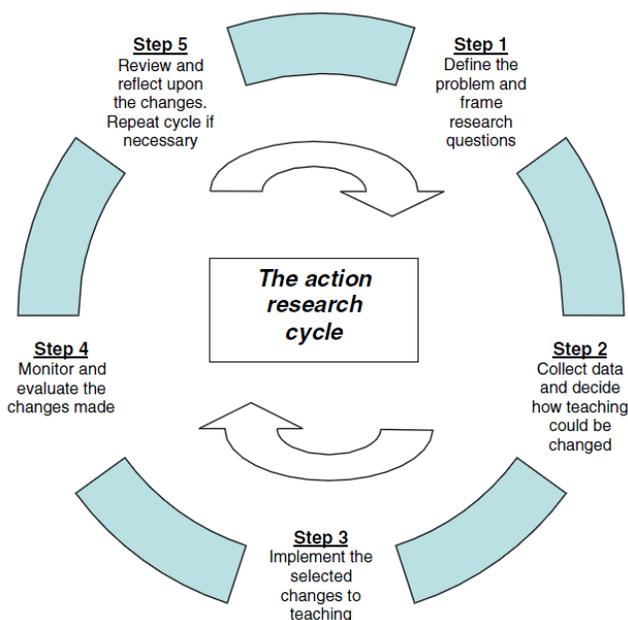
In the variant of collaborative action research used here (McNiff, 1994; see also Kemmis & McTaggart, 1988), a collaborating researcher joins the participants in their reflective search for ways to improve an aspect of their practice: the introductory financial accounting student experience. She met with each of the instructors individually a number of times over the study period at a meeting place of their choosing (usually at their institution) and provided support to all aspects of data collection and logistics. Through these pairwise conversations, a set of research questions were devised that captured the priorities of the participating instructors:

- 1) How are students experiencing the course?
- 2) To what extent are students availing themselves of opportunities to engage with the material afforded by the course environment?
- 3) To what extent are students creating personal meaning and understanding in Introductory Financial Accounting, as distinct from primarily memorizing the material?

Each instructor's particular interest in these questions was heard, fed back to the instructor and refined to reflect his own instructional expertise, curiosity and learning context.

The type and means of collecting information about the course experience in response to these questions were also collaboratively determined to include survey, focus group and observational data. The team designed a survey instrument that combined the Classroom Survey of Student Engagement (CLASSE, © Indiana University; see University of Alabama, 2008; and Indiana University at Bloomington, 2009) with the Lancaster Approaches to Studying Questionnaire (following the version in Woods, 2011, Appendix B, adapted from Entwistle, 1981, pp. 57-61). These instruments are elaborated in greater detail in the section that follows. Individually, these instruments are dominant tools in educational research; used together, they provide a powerful way to leverage the insights into student engagement in a manner not previously seen in the literature.

⁵ By means of a content analysis of the syllabi of the courses under study here.

Figure 1: The Action Research Cycle in a Teaching Context

Source: Paisey & Paisey, 2005, p. 2.

The combined surveys were most often administered to each instructor's class in paper form (as distinct from web-based)⁶ by the collaborating researcher at the end of the term. As well as being the survey administration modality recommended by experts at Indiana University, this provided the opportunity to observe the instructor's rapport with his students first-hand, just as students were thinking about the final examination and pulling the content together at the end of the course. Significantly, this was a time when the students were as familiar as possible with the course and the instructor; as a result, the researcher's observations also constitute data for the study. Also, at about this time, the instructors completed the faculty version of the CLASSE[®] survey (which captured the instructors' perceptions of the importance of each of the activities described in the student survey) independently of the collaborating researcher. The collaborating researcher would then tabulate the data and privately present each instructor with his own unique CLASSE[®] results as they appear in the Appendix of this report, in survey look-alike format (University of Alabama, 2008). The Lancaster results were not systematically tabulated and shared at this time, having been judged ambiguous enough not to provide practical information useful in the subsequent stage of reflection and strategy-building.

Focus groups facilitated by the collaborating researcher were advertised and run after the initial offering of each course in order to solicit direct input from students on their perceptions of the learning experience. Students were advised of the one-hour focus groups and their importance for the study both in class (at the time the survey was administered) and through email; pizza was offered as an incentive to try to encourage participation. Although scheduled flexibly around noon and late afternoon, focus group participation was limited. However, every institution had at least one session. We say more about response rates and advise caution about interpretation of this data in the results section below. Questions focused on how students prepared for class, what they found most and least helpful, their perceptions of the effectiveness of the learning activities, the anticipated and realized workload, etc. The facilitator used an open-ended approach and pursued further questions when initial student responses made it appropriate.

⁶ In one instance, Traditional University's winter 2009 survey, students were asked to transfer their responses to scan sheets for ease of digitization. However, this resulted in a significant increase in unusable responses that the team attributed to copying errors owing to survey fatigue. At Relevance University, both instances of the survey were administered using the quiz function in the course management software with a minor bonus mark of less than half a percentage point (enough to make rounding error in the final grade determination influential at the margin), with strong response rates.

Between course offerings, the researcher and the instructor met to debrief the CLASSE© survey results and the focus group information, which the collaborating researcher shared orally. The number and frequency of conversations and meetings varied depending on the particular instructor's strategy for the next course offering, which the collaborating researcher tried to evoke by asking which results were anticipated and which were surprising, and what factors in the learning environment (including characteristics of the student population) could be influencing the results. With personal reflection to enhance responses to these probing questions, each instructor painted a portrait of his classroom and shared some thoughts about what was working well and what challenges remained in the learning environment. The researcher provided the instructors with case studies of scholarly teaching from the literature that she judged to be useful to the individual instructor's priorities, to help them make informed decisions about what interventions to use. **Table 1** summarizes the chosen interventions.

Table 1: Summary of Instructor-chosen Interventions

Institution	Intervention
 Traditional University	Change in class size from 300 (with 50-person seminar sessions) to 120 (without seminars), and then to 80 (without seminars); some changes to assessments
 Relevance University	Interactive questioning around real-world examples of accounting concepts during lecture
 Integrative University	Exit passes: short, written responses to integrative questions about the day's material, on duplicate paper
 Collegial University	No intervention

It is important to note that, as in Simmons (2004), researcher support was entirely instructor-driven. There were three ground rules for this study, essential to our chairs and deans as much as to our research ethics board applications: individual course objectives were not to be altered by the interventions; the instructors could not be coerced into participating or into implementing particular types of interventions; and the interventions must be expected *a priori* to enhance the learning experience of the students. Although a sympathetic sounding board and expert at accessing the accounting education literature, the collaborating researcher's main roles revolved around the instructor's research priorities within the confines of the overall study and helping them measure effects of the interventions they wished to consider for the next offering.

The researcher also collected corroborating evidence to ensure that the intended interventions had in fact taken place. For Traditional University, this involved asking for final enrolment data and course syllabi. At Relevance University, a student monitor chose five classes at random to audit and recorded the intervention activity in the classroom, with the instructor's consent but without his knowledge as to when she would be visiting. At Integrative University, the instructor retained the original, and students took home the copies, of the students' end-of-class question responses written on carbonless (NCR) duplicate paper as "exit passes" in each class. The collaborating instructor at Collegial University was satisfied with the CLASSE© engagement results from his established existing instructional approach. He therefore declined to contrive a formal instructional intervention that might not be as effective for learning as the active learning strategies and approaches that he was currently using.

In summary, following the gathering of data from the four initial offerings of the course, the instructors were encouraged to reflect on their individual results and identify possible interventions that might enhance learning in ways appropriate to their individual research questions and learning environment. They also had the option to decline to make modifications to the course. Where interventions were chosen, they were implemented and confirmed to have taken place in the next academic cycle. A second combined survey was administered at the end of the second course offering, providing post-treatment data on student engagement and orientation to learning. These results were then once again made available to the instructors for further review and reflection, in support of potential additional modifications to the course.

With qualitative research design, it is essential to provide a rich summary of the context being investigated. In this way, readers are able to make their own judgments (depending upon perceived similarity of context) as to the possible generalizability of the results to their own situation. In support of this outcome, the collaborating researcher wrote short background papers for each instructor's class encapsulating the learning context as she observed it. The background paper for Integrative University reflected the salient details of both courses in the sequence. Each of these was fed back to the instructors for comments, additions and correction of perceptual differences. These background papers formed the basis for the course context discussion presented in the results below.

Transcripts of the focus groups were provided to the principle investigator for the coding of themes. Unlike the collaborating researcher who facilitated the focus groups and fed back key comments to the instructors, the principle investigator had no knowledge of the preliminary findings at this time. She identified themes from within and across the institutions that characterized the Introductory Financial Accounting experience of those students who participated. This detailed analysis was then provided to the collaborating researcher to review, augment with additional themes, or shorten, for each of the learning contexts under study. These data clearly have limitations, as the sample was limited and self-selected, but they nonetheless provide additional insights and context for the individual instructional environments.

Supplementing the survey and focus group data and the instructor's own observations and reflections was a variety of archival data that varied by site. In some conversations, the instructor shared the results of course evaluations, emails from students or comments made in passing. The collaborating researcher also consulted with chairs and gathered information from the university calendar about program requirements and the accounting accreditation process to augment the syllabi. The results section of this report presents the context for Introductory Financial Accounting across the four institutional settings using diverse forms of data, as recommended by Paisey and Paisey (2005). The quasi-qualitative (ordered) data from the combined survey instruments are discussed in more detail before moving on to the discussion of results.

Survey Instruments

Cohort analysis using survey data is an appropriate approach for discovery about pre- and post-intervention versions of Introductory Financial Accounting courses (Chen et al., 2009). Two well-known quasi-qualitative survey instruments are available for generating insights about student engagement and approaches to learning. The first is a member of Indiana University's family of student engagement surveys, tailored to the specific learning environment of a single classroom. The Classroom Survey of Student Engagement (CLASSE, © 2012 Indiana University) is made up of 38 standard ordered qualitative response question items dealing with engagement activities, cognitive skills, educational practices and classroom environment, rated along a four-point Likert scale; many of the questions are slightly modified versions of items from the National Survey of Student Engagement (NSSE, © 2012 Indiana University). Two novel things about the CLASSE© is that the instructor designs up to eight more question items within the survey and the instructor completes a parallel survey, which asks how important each activity described in the corresponding student survey is to success in the course. These provide a class-specific context for the student responses. A license was granted by the Trustees of Indiana University for each use of the CLASSE© in this study.

One aspect that is not emphasized in some of the literature pertaining to this instrument is that no individual can be observed taking both versions of the same course, so the statistical approach chosen must correct for a missing data problem (Cameron & Trivedi, 2005). Cohorts of students in consecutive offerings of the course are used as comparators of the “with” and “without intervention” states, which relies for validity on an assumption that students in these time-dependent courses differ only randomly in ways that do not affect the underlying engagement outcomes. In our case, surveying cohorts is made more challenging by the informed consent process. Any observed treatment effect could be caused by characteristics influencing the decision to participate in the study – these characteristics can annihilate randomization in the sample taken from each class cohort (Maddala, 1983). This is a form of selectivity bias (Heckman, 1979).

Statistical techniques like propensity score matching can be useful in education contexts where random assignment to treatments is not generally available (Khandker et al., 2010; Becker & Green, 2010). We used a propensity score matching subroutine written for STATA by Leuven and Sianesi (2003). Propensity score matching uses observed characteristics that are unaffected by any systematic feature of the classroom intervention (conditionally independent; see Cameron & Trivedi, 2005) to create an artificial counterfactual out of the responses of individuals with those similar characteristics who were in the comparator course offering without the treatment – but the devil is in the details. Khandker et al. (2010) caution that the choice of instruments matters; one reason there is little guidance in the literature for how to choose the instruments is because they will tend to depend on the data and context of the particular application.

The preferred conditioning variables for this purpose are observed exogenous or pre-determined variables that are plausibly related to the decision to participate in the survey. Typically, demographic variables like age, grade point average, course grade, and so on, are used, but to our minds these are instruments of convenience: they are part of a student’s institutional record and may bear only limited relation to the decision to fill in this particular survey in this particular course. On the other hand, conditioning instruments constructed from the responses to the Lancaster Approaches to Studying Questionnaire, appended to the CLASSE© and described below, reflect the attitudes about learning inherent in the respondent. Although found to be responsive to the environmental characteristics of the classroom (Marton et al., 1993; Kember & Gow, 1989), these responses would be predetermined by the end of the course when the combined CLASSE©/Lancaster survey was administered.

Another problem with demographics as instruments of convenience is that student demographic records held by the registrar are private and cannot be accessed by the researcher without additional consent beyond the informed consent to participate in the survey. The proportion of the sample that provides the additional consent required for research ethics compliance is less than or equal to the number responding to the CLASSE© survey – sometimes considerably less than (Conway, 2010). Technically, this is another source of sample self-selection (Maddala, 1983). The effectiveness of the selectivity bias correction is commensurately diminished with fewer observations in the comparator group.

The detailed breakout of overall and conditional survey response rates in **Table 2** shows that there were dramatic variations in survey response rates across institutions and even across cohorts. Part of the explanation is attendance. We included a final question at the end of the CLASSE© part of our combined survey requesting a second consent for demographic variables that we obtained from the registrar, and although our survey respondents did not always grant the additional consent, many did. At Relevance University, apparently salient nominal bonus marks⁷ may explain the high response rates as a proportion of total enrolment. The paper surveys administered at all other sites depended on attendance for participation.

⁷ A student who filled out the on-line survey was granted a grade bonus of three-tenths of one percent, enough to affect grade rounding.

Table 2: Response Rates for Components of the Survey, by Institution

- (a) CLASSE© Response Rate: Useable CLASSE© responses (percent of total enrolment)
 (b) Conditional ASQ Response Rate: Responses with complete Approaches to Studying Questionnaire (as a percent of useable CLASSE© survey responses)

Institution	Initial Survey		Follow-up Survey	
 Traditional University	Winter 2009 (a) 161/533 (30%) (b) 145/161 (90%)		Fall 2009 (a) 148/352 (42%) (b) 139/148 (94%)	Winter 2010 (a) 72/160 (45%) (b) 65/72 (90%)
 Relevance University	Fall 2009 (a) 576/636 (91%) (b) 576/576 (100%)		Fall 2010 (a) 303/417 (73%) (b) 303/303 (100%)	
 Integrative University	Fall 2009 (a) 57/117 (49%) (b) 51/57 (89%)	Winter 2010 (a) 48/164 (29%) (b) 42/48 (88%)	Fall 2010 (a) 60/108 (56%) (b) 58/60 (97%)	Winter 2011 (a) 70/151 (46%) (b) 67/70 (96%)
 Collegial University		Winter 2011 (a) 73/97 (75%) (b) 68/73 (93%)		Winter 2012 (a) 73/102 (72%) (b) 72/73 (94%)

- (c) Conditional Demographics Response Rate: Responses consenting to demographic variables obtained from registrar (as a percent of useable CLASSE© survey responses)
 (d) Conditional Demographics Plus ASQ Response Rate: Responses with complete Approaches to Studying Questionnaire (as a percent of useable CLASSE© survey responses that also consented to demographics)

Institution	Initial Survey		Follow-up Survey	
 Traditional University	Winter 2009 (c) 122/161 (76%) (d) 110/122 (90%)		Fall 2009 (c) 118/148 (80%) (d) 115/118 (97%)	Winter 2010 (c) 70/72 (97%) (d) 63/70 (90%)
 Relevance University	Fall 2009 (c) 378/576 (66%) (d) 378/378 (100%)		Fall 2010 (c) 196/303 (65%) (d) 196/196 (100%)	
 Integrative University	Fall 2009 (c) 32/57 (56%) (d) 29/32 (91%)	Winter 2010 (c) 31/48 (65%) (d) 28/31 (90%)	Fall 2010 (c) 39/60 (65%) (d) 38/39 (97%)	Winter 2011 (c) 40/70 (57%) (d) 39/40 (98%)
 Collegial University		Winter 2011 (c) 51/73 (70%) (d) 50/51 (98%)		Winter 2012 (c) 64/73 (88%) (d) 63/64 (98%)

To create a “no treatment” comparator group, we chose instruments from the combined survey (Khandker et al., 2010) and used regression methods as a check on the plausibility of the resultant estimates of effect size (Angrist & Pischke, 2009). It is well to remember, however, that the samples were not chosen randomly and that there are essentially two stages where selection bias could be operating: at the choice of course level and at the survey response level. Practically, some randomness may simply need to be assumed (Maddala, 1983). In the current study, we assumed that there were only small non-random features in the decision of which academic year to enrol in each class, particularly given that the comparator group was formed from students taking the immediately previous offering of the course, and so the statistical non-randomness associated with different cohorts could be ignored as we corrected for selectivity bias due to survey non-participation. Our cohorts were matched using the CLASSE© question about interest in the course and three indexes constructed from the Lancaster Approaches to Studying Questionnaire. We now turn to a discussion of the second instrument in the combined survey.

The Lancaster Approaches to Studying Questionnaire was developed originally at the University of Lancaster in England in the late 1970s and early 1980s, and our version is adapted for Canadian

language usage by Knapper (n.d.).⁸ Developed from phenomenographic research that explored the interplay between learning environments (created by instructors) and the approaches to learning preferred by students (Entwistle, 1991), the Approaches to Studying Questionnaire's eighteen items are equally allocated to three scales: intention to pursue meaning, understand the material for its own sake (deep approach to learning); intention to do whatever it takes to achieve the credit (strategic approach to learning); and intention to memorize enough of the course to pass or to avoid failure by reproducing what is asked for on the examination (surface approach to learning). An overall measure is often constructed by summing item responses from the meaning scale and strategic scale and subtracting the six reproducing scale item responses, to form what is sometimes called the approaches to studying index (Woods, 2011, p. 283). This index recognizes that all students use each approach (reproducing, strategic and meaning) to varying degrees, depending upon both individual factors and the learning environment. For our purposes, the three component scales are appropriate variables for identifying comparators in the earlier cohort to use, with interest in the course, to isolate an average treatment effect.

Later revisions to the underlying factor analysis by Watkins, and Harper and Kember suggested that the strategic scale is more appropriately likened to a strategy than a preference (Kember & Gow, 1989, p. 267). As a result, some portrayals of the concept, as in the HEQCO-sponsored book *Taking Stock: Research on Teaching and Learning in Higher Education* (Christensen Hughes & Mighty, 2010a), have focused more narrowly on just the “deep” and “surface” distinctions. Even these terms, however, can cause confusion (Entwistle, 1991). For example, Bloemhof (2012) cited authors in the economics literature who use the terms to describe characteristics of course content rather than the learning preferences demonstrated by students. Specifically within the accounting domain, Lucas and Meyer (2005) name “transformative learning” (deep) and “accumulative learning” (surface) processes used by accounting students. We have elected to replace the words “deep” and “surface” with “meaning” and “reproducing” respectively in order to emphasize that they are preferences only indirectly influenced by the level of challenge of the material. This nomenclature coincides with that used by Ramsden and Entwistle (1981) in the Lancaster Approaches to Studying Questionnaire.

The Lancaster research is consistent with another instrument developed independently using a constructivist approach, which characterizes learning as encompassing motive (intrinsic interest; fear of failure; achievement) and strategy (maximize meaning; learn by rote; use space and time effectively) along the meaning, surface and strategic dimensions (Biggs et al., 2001). A robust finding from this work is that the learning environment can influence a student's learning approach (Kember & Gow, 1989). For example, students who are predisposed towards learning for meaning will nonetheless tend to employ a reproducing learning approach for courses assessed using multiple choice and short answer tests, or when faced with an overwhelming amount of material to learn. Students who are focused on a reproducing strategy as a means to achieving a credit may find that more transformative assessments that demand understanding, together with a more curiosity-encouraging environment, could induce them to take a meaning approach to learning. It seems likely that enough consistent exposure to transformative learning can even change a learner's predisposition to surface learning (Marton et al., 1993; Kember & Gow, 1997). This was the primary conclusion of Christensen Hughes and Mighty (2010b, p. 275):

...[W]hen faculty adopt active-learning pedagogies, students are more likely to engage in deep-learning approaches, leading to improved mastery and retention of knowledge and skills, and more sophisticated learning approaches. When faculty adopt transmission-oriented pedagogies, students are more likely to engage in surface-learning approaches, leading to learning and skill-based deficits and more novice-like understanding of their disciplines, to the detriment of themselves and society.

In summary, the CLASSE© survey instrument provides two explicit references to frame the response context that are not included in other student engagement surveys. First, all question items are worded to

⁸ The original Lancaster Approaches to Studying Questionnaire has more than 18 items, but continued refinement by the original authors resulted in a shorter version. Some of the phrasing used was obscure to Canadians and Dr. Knapper provided translations. We used his instrument, which he provided to the researcher personally. It concurs with Woods (2011) and reflects all the question items associated with meaning, reproducing and achieving scales in the 30-item approaches to studying inventory published in Entwistle (1981, pp. 57-61).

ask about Introductory Financial Accounting. Second, each instructor was provided with the opportunity to customize the survey by writing up to eight additional course-specific questions about any aspect of the course in which they were interested. Combining the CLASSE© survey and the Lancaster Approaches to Studying Questionnaire into one instrument is arguably a helpful methodological innovation because it generates individualized information on deep learning intention, strategic learning intention and surface learning intention for each CLASSE© survey respondent. We do not find the assertion that a meaning or deep learning scale can be extracted from NSSE© responses, due to Chen et al. (2009, p. 38), to be compelling because learning about students' attitudes towards learning should involve asking them directly about those attitudes. The NSSE©/CLASSE© instruments ask important questions about how students avail themselves of opportunities embodied in the overall learning environment, but no questions about their underlying learning orientation. This weakness is addressed in the current study.

Limitations and Qualifications

The process of multi-site action research raises a number of challenges. The first is that the research design ensures high interpretative validity, but the results of the study are not generalizable. Research by Gibbins (2002, p. 59) suggests that there are diverse approaches to accounting education across Canada. The intention with this research was to pragmatically choose financial accounting instructors working in a cross-section of institutional settings in order to understand more about what makes them successful, providing a number of cases analyzed with a view to formulating grounded theory in the manner of Charmaz (2006). The four participating institutions provide a range of accounting education contexts.

Collaborating instructors were not chosen randomly. Each was approached because he had significant proficiency teaching the introductory course, either as course director or as a member of a teaching team. These individuals were also selected because they were willing to risk putting a course that is important to them under a microscope and collecting data that could make them think differently about it, to the point of changing their course in some potentially significant way. Because the sample is deliberately chosen using information about the instructional settings and faculty, the instructional approaches and processes that we are trying to isolate and learn from should be interpreted as cases rather than as typical or average situations at institutions with similar characteristics.

The second challenge that arose in the study was devising appropriate interventions that still allowed the instructors to teach from a place of security and confidence. The overarching principle in our research approach, alongside the standard scientific approach of letting the data tell the story, was to “do no harm” in these classrooms. Agreement to participate did not imply agreement to change a course. In fact, in one collaborating instructor's course, the benchmark survey confirmed for him that there was no case for revising any aspect of his course. In this type of methodology, an instructor need not cede control of his course design in any way, because useful and interesting insights about his teaching practice can still be gained naturalistically through reflection and analysis of two sets of data.

Third, as with much educational research involving courses with different groups of students, isolating the impact or the “pure treatment effect” of the intervention, as distinct from naturally occurring differences within the population, is challenging. In collecting survey data, students may individually self-select into one or another group. If there are systematic differences between the two groups, this creates challenges for inference. In our study, the distribution of students across the cohorts is probably random: there is no plausible reason to think that the individuals enrolled in consecutive years of Introductory Financial Accounting are systematically selecting into the different years, although this could in theory be a separate source of bias.

The potential for selection bias arises when students elect to be included in the study. Only a subset of enrolled students in any of the courses studied here participated in the survey. In accordance with the Tri-Council Policy Statement on Research with Human Subjects (CIHR, NSERC and SSHRC, 2010) as interpreted under the terms of the individual research ethics clearances that governed all aspects of the data collection process, participation in the surveys was voluntary. As in all survey research, analysis is

limited to the responses received. It is possible that some latent characteristic associated with the choice to provide data on engagement and approach to learning could be responsible for students' choice to complete the survey. For example, people who choose to participate in the survey may share some attitudinal features that could affect their level of engagement. If such a difference were to be present across the two cohorts, then calculating the simple difference between the intervention group and the benchmark group would misrepresent the change in engagement attributable to the instructional intervention itself, because it would omit the responses of those who exercised their choice not to participate.

We have used statistical modeling to treat selection bias in evaluating impacts of educational interventions; however, this work is exploratory. We argue for creating a comparator (control) group based on similarity in the responding student's approaches to learning indexes and their interest in the course. The models presented below are therefore conditional on the appropriateness of replacing the usual demographic instruments used in the engagement survey literature (Chen et al., 2009; Kuh, 2001) with what we believe to be better instruments – the student's own Lancaster measures of strategic, meaning and reproducing approaches to learning, and their interest in taking the course. Still, Entwistle's (2010) model of learning reminds us that we are investigating an extremely complex process – indeed, he has been revising this model for 25 years in tandem with evolving research. The appropriate choice of instruments to deal with sample selection bias deserves further research. Meanwhile, care should be taken when drawing conclusions based on the quasi-experimental methodology that we are exploring here.

Choosing the Postsecondary Learning Environments in the Study

It was surprisingly easy to recruit thoughtful, committed Introductory Financial Accounting instructors who wanted to look more closely at their practice with the support of a collaborating researcher. These accounting professionals were well aware of the “perilous waters” in which the discipline has found itself over the past decade (Albrecht & Sack, 2000). As connections were made with the instructor team, each reported anecdotes of inconsistent student preparation alongside a perception that the course was unduly challenging. The opportunity to use collaborative action research to explore the first course experience had begun.

The instructors all separately identified enhanced student success as their motivation for getting involved with the study and brought with them a strong commitment to enhancing learning in Introductory Financial Accounting. One instructor observed that many students did not appear to pay attention during his classes and wondered whether disappointing results from recent graduates writing the Uniform Evaluation (UFE, the final licensing examination to become a chartered accountant) could be improved with a learning foundation emphasizing curiosity, proactivity and accuracy. For another instructor, it was not clear whether students were leaving the course with proficiency in reading financial statements or whether his course lived up to its potential as a vehicle for introducing general business concepts to students. Several wondered whether it was too ambitious, in the context of a first course, to attempt to teach students when to step back and make judgments, evaluating the appropriateness of various mechanical rules. The instructors clearly identified that the course had a foundational knowledge mandate, but also felt that developing professional judgment was at least as important.

Table 3 shows the four institutions studied. Following Simmons (2004, p. 152), each has been assigned a pseudonym that captures the essence of the learning context, as identified by the researchers, and which is used throughout this report. Note that we have chosen to refer to the college as Collegial University to avoid any preconceptions of institutional difference that the reader might bring to the results, so that the data may tell the story.

Table 3: Introductory Financial Accounting Courses in the Study

	Traditional University 	Relevance University 	Integrative University 	Collegial University 
<i>Degree Offered¹</i>	Bachelor of Commerce	Bachelor of Commerce	Bachelor of Business Administration and Diploma in Business Administration (concurrent)	Ontario College Diploma; Ontario College Advanced Diploma ²
<i>Collaborating Instructor</i>	Course director; member of a teaching team, responsible for two sections per term	Single instructor of three large sections	Member of a teaching team, responsible for two to three sections per term	Course director; member of a teaching team, responsible for two sections per term
<i>Introductory Financial Accounting</i>	One-term comprehensive course	One-term comprehensive course	Two one-term course sequence	Two one-term course sequence
<i>Course Weeks</i>	13	12	13	15
<i>Contact Hours per Week</i>	2 meetings of 1.5 hours' duration	1 meeting of 3 hours' duration	1 meeting of 3 hours' duration	2 meetings of 2 hours' duration
<i>Class Size</i>	Winter 2009: 300 Fall 2009: 80 Winter 2010: 120	200+	55-65	35-50
<i>Ontario Accounting Accreditation³</i>	CGA accredited CA and CMA recognized	CA, CGA and CMA accredited	CGA accredited CA and CMA recognized	CGA accredited CA and CMA recognized

¹ Degrees noted are those implied by taking the Introductory Financial Accounting course under study. Some programs offer alternative Introductory Financial Accounting courses for different degrees.

² Students completing either of these diploma programs may receive advanced standing in transferring to a degree program: students completing the OCD are eligible for admission into the second year of a four-year degree program; students completing the OCAD are eligible for admission into third year after a qualifying course(s) are completed. These diplomas can be transferred to other institutions, such as a university; transfers of this sort are uncommon.

³ CGA = Certified General Accountants Ontario; CA = Institute of Chartered Accountants of Ontario.

The participating institutions were selected to provide distinct examples of learning contexts across a continuum, using the framework of case study research. There was Relevance University, a large, primarily doctoral university; Traditional University, a medium-sized comprehensive university; Integrative University, a university-college partnership-based institution; and Collegial University, a degree-granting college. The institutions also differed with respect to their commitment to class size. At Collegial and Integrative, class sizes were kept deliberately small (below 50 students at one site and below 65 at another). Relevance and Traditional offered relatively large classes, with sections larger than 200 students, although over the course of the study Traditional reduced class section sizes to between 80 and 120 students.

All four institutions provided foundational training for subsequent certification in accounting, but like many professional designations, there are additional training and practical qualifications required before a

graduate is licensed by a professional organization as required under provincial law (Ontario, 2010). An accredited postsecondary curriculum matches exactly the foundational training objectives of the licensing body, while recognized programs provide combinations of courses that could, if chosen appropriately, provide the requisite credit hours, and an applying graduate would simply submit his or her transcripts to confirm. It is not surprising then that the content learning goals in the introductory courses studied here are very similar, given the role of the course in the respective programs. The content analysis of all course syllabi by an accounting instructor indicated that the content covered only differs in the peripheral and/or enrichment topics, although it is delivered in single courses at Traditional University and Relevance University and in two-course sequences at Integrative University and Collegial University.

Environmental Observations

A first step in the research process was to generate a more thorough understanding of what each instructor hoped to achieve, along with a more detailed understanding of the learning environment and program context.



Traditional University

The Introductory Financial Accounting course at Traditional University served between 400 and 600 students each term. At the outset of the study, the course was compulsory for all commerce majors, although there was not yet an accounting major. Some majors were expected to take the course in their first year of study, while others were expected to take it in second year. Immediately before the study began, the course had been in transition as the department chair and the course instructor developed strategies for an improved learning environment. Rather than carry on teaching Introductory Financial Accounting in a lecture hall that could accommodate as many as 600 students, the dean at Traditional University had made a significant financial commitment to the Introductory Financial Accounting course intended to address an unacceptably high failure rate and a three-inch-high stack of student complaints.

The funds were spent on restructuring the class meetings. Instead of the three-hour weekly lecture that had been offered in previous years, class time was split between a whole-class lecture-format meeting on Monday nights, and a second meeting in one of a number of smaller, seminar groups (similar in structure to Loughheed et al., 2012). Providing a seminar meeting each week was expected to improve social structure within the course, creating a less anonymous and more supportive learning environment.

The new design was first offered in the first term in our study, Winter 2009, and was taught by an instructor recruited for his proficiency with introductory accounting courses. Initially, he maintained the previous instructor's required course textbook and the accompanying software resources for on-line assignments. Assessments included two term tests worth 20% each and a final examination worth half the final grade. The remaining 10% was made up by a two-person group project, worth 5%, and on-line quizzes worth a combined 5%.

This instructor's approach to creating a meaningful introductory accounting course took important elements from Killian and Brandon (2009), such as traditional examinations and on-line quizzes to pursue foundational knowledge objectives and instructor-led review of correct answers. During the study, however, he was somewhat constrained by the large-class structure coupled with the demands of adapting prior instructional experience to a new learning culture.

Practically, the vision of creating two distinct learning environments, one based on formal content delivery and one that could permit a two-way dialogue between students and instructor, was not as enthusiastically embraced by the students as had been hoped. The core instruction happened in the 90-minute whole-class lecture on Monday nights, which was repeated twice in one of the largest classroom on campus to accommodate everyone enrolled. In the twelve 90-minute seminars held over the next three days of the week, problems could be worked on and discussed in learning environments of 50 students each. Seminar attendance was inconsistent; students apparently did not value the seminar time

and attended only sporadically on average, despite student endorsement of the arrangement in planning discussions. In most cases, the students had someone other than the lecturer (our collaborating instructor) as their seminar leader. However, that did not explain the similar low attendance levels in the two seminar sections facilitated by the collaborating instructor.

When the course was next offered in Fall 2009, the seminar was replaced with a second lecture-based meeting. In this version of the course, students had the same instructor for both meetings. Classes of 120 students each met twice a week for 90 minutes using a “demonstration” lecture format in which the collaborating instructor modeled working through problems that students could then review at home. Unfortunately, students still attended class inconsistently in this model; on the day that surveys were administered, one-half to two-thirds of students were absent. However, students’ ability to connect with the material and the instructor seemed more task-centered and enhanced in the smaller room.

Additionally, some changes to the assessments were introduced. The comprehensive final examination was reduced to 40% of the final grade, to accommodate nine weekly assignments worth a total of 5%, which were hand-marked with a pragmatic marking scheme (2 = good, 1 = satisfactory effort, 0 = unsatisfactory effort; solutions were posted on line after each submission). The two-person group project was doubled in value to 10%. Term tests on distinct chapters remained at 20% each, but a single quiz, worth 5%, replaced weekly on-line quizzes. Based on about half of the material on the first term test, this quiz was timed to represent a half-hour preview of the term test experience. The test-based assessments were therefore highly congruent in structure and expectations, just as the course returned to being taught in a traditional lecture method emphasizing practical applications.

The last offering of the course in our study, in Winter 2010, had enrolments in each of the sections capped at 80 students (two-thirds the enrolment of the prior cohort) and identical assessments and grade structure to the Fall 2009 offering.

Table 4 summarizes the characteristics of the learning environment in the Introductory Financial Accounting course at Traditional University.

As the course evolved, students apparently became more comfortable with the pace and delivery of the course content in lectures, and complaints about the course dissipated. The instructor reported an increasing emphasis on application and in-class demonstration of worked examples over the course of the study. The opportunities for reflection and support for the instructor’s design changes coincided with a broader department-wide process of program curriculum change, occurring with the introduction of an accounting major.

Table 4: Learning Environment at Traditional University

	<i>Baseline</i>	<i>First Change</i>	<i>Second Change</i>
Instructional Approach	Lecture, emphasizing demonstration of applications	(no change)	(no change)
Class Size	One 300-student lecture meeting and one 50-student seminar meeting per week	Two medium-large 120-student meetings per week	Two medium-large 80-student classes per week
Assessments	50% final exam; two 20% term tests; two-person project (5%); weekly on-line quizzes (5%).	40% final exam; practice test (5%); 2 term tests (20%); two-person project (10%); weekly written assignments (5%)	Bi-weekly written assignments replace weekly assignments; project grade weight doubled



Relevance University

The introductory accounting curriculum at Relevance University was designed as a foundation for future users and preparers of financial reports, with the objective of helping them understand how financial information is used to inform corporate decision-making. Although it was also a required credit for a number of engineering minors, the majority of students in the course were working towards a commerce degree. The program's accreditation by all three Ontario accounting organizations is a major asset to those planning to pursue a professional designation after graduation. Relevance University students take Introductory Financial Accounting in the first term of their second year, after applying to the commerce program at the end of their first year. They may elect to emphasize accounting within the Bachelor of Commerce degree. A small number of students take Introductory Financial Accounting out of interest.

The course was taught in three 50-minute meetings per week in a large class setting of between 200 and 300 students. The instructional approach employed lectures and traditional testing that combined multiple choice questions and short answer problems. An additional hour-long optional tutorial led by teaching assistants had fairly strong attendance, although this may reflect the nominal participation bonus mark incentive of 0.3% per tutorial offered to students who attend five of the ten tutorials. The course has had the same explicit content objectives, teaching approach and assessments for a number of years. The course syllabus outlines specific strategies for success which the instructor reiterates during class: prepare for each class in advance by completing assigned readings, attempt any assigned questions or examples to be taken up, review your notes and come to every class.

The collaborating instructor began teaching the institution's Introductory Financial Accounting course in the first two years of his tenure-track appointment and took up sole responsibility for the course two years later. When he joined the study, with a decade of teaching experience, he was about to be granted tenure and had just been nominated for a prestigious teaching award for his work in the course. He delayed the first sabbatical break in his career to participate in the data collection for the study.

Attendance was strong in this setting, averaging between 70% and 85% of enrolment. The instructor deliberately fostered an environment that promoted focus and made the most of available class time. A number of rules published in the syllabus governed classroom behaviour. Students were informed that they could not use their laptops or cellphones; side conversations were not permitted; and that they would be asked to leave if they failed to conform to these expectations. Rather than being offended, students seemed to appreciate the focused learning environment that the rules fostered in a large class setting and they respected both the rules and the professor for setting and enforcing them. One anonymous public statement about the course was, "He is strict in class but it makes for a comfortable learning atmosphere and he is quite easy-going in person." Consistent with this instructor's approach, there is recent evidence in support of classroom electronics rules aimed at reducing distraction (see, for example, Kushniryk & Levine, 2012). By creating an environment where paying attention to the instructor is the only game in town, the instructor can easily engage students' interest even in a mass lecture.

For the intervention, the instructor decided to use interactive questioning during class. Using real-world instances of accounting news or practice, he explored an application of the most recent content and posed open-ended questions to further foster understanding and critical thinking. In the previous term, the instructor had frequently used current events to start a typical class and he wanted to expand his use of actual accounting situations, using a news story headline or streaming video to pose a question or thought experiment about how financial accounting concepts are actually used, or the consequences of not using them appropriately. The instructor welcomed responses and a handful of students from the large class typically took up this opportunity, providing a place from which the instructor could debrief the application and link it to recent course material. This consistently used classroom activity is an abbreviated version of the opening exercise described by Stice and Stice (2006). The instructor felt strongly that real examples using actual situations about evolving accounting practice would be most

compelling to students. Such an approach can provide undergraduates with a historical perspective by modeling the broader analytical skills that may have fallen from today's curriculum (Rosen, 2006, p. 277). There were no changes made to the assessments in the course during the study. Table 5 summarizes the learning environment.

Table 5: Learning Environment at Relevance University

	Baseline	Intervention
Instructional Approach	Lectures	Lectures with questioning
Class Size	Three 200-300 student classroom meetings and one 40-student TA-led seminar per week (up to 3% bonus marks for attending more than half of the 10 tutorials, prorated)	No change
Assessments	Comprehensive 50% final examination plus two 25% term tests; up to 3% bonus marks for attendance in tutorial.	No change

The instructor's intention was to make the relevance of financial accounting and the rich nuances of its purpose accessible. Students could internalize the idea that the application of reasoned judgment should accompany the analysis of accounting data. A further hope was that igniting student curiosity with these relevant uses of the content would energize the classroom and provide a way to make connections with learning from the previous class. The instructor also modified his classroom technique somewhat for in-class problem-solving, opting to use the whiteboard to deliver some of the content in real time rather than simply presenting pre-created slides.

Anecdotal reports of the effect of a structured opportunity to discuss current events in class suggest that students saw it as a vehicle for relating the principles of accounting to real-world events. One student credited the class for frequently generating insightful thoughts about financial accounting at times when she was walking, eating or reading the newspaper. The instructor continued to expand his repertoire of topical real world applications of accounting principles after the study period ended.



Integrative University

Integrative University is a compact campus in a single building offering a limited number of programs of study. By programming an innovative four-year curriculum of theoretical and applied knowledge married with practical applications and hands-on learning, the graduating business administration student earns two credentials: a bachelor's degree in business administration and a diploma in business administration equivalent to a college business administration experience.

Another attractive feature of this university is that classroom space limitations allowed for no more than 65 students per section. There are multiple sections to accommodate the approximately 350 business administration students who enrol each year in the two mandatory courses of the Introductory Financial Accounting sequence. The first course in the sequence, dealing with theoretical concepts and their practical applications, meets for three hours once a week each fall. The second course, offered in the winter semester, emphasizes accounting for an organization's long term, using one of the week's three meeting hours for a hands-on laboratory component using the dominant accounting professional software to give students experience with recording and analyzing data. The learning goals and assessments are

common for all sections of each course. Academic freedom gives individual instructors considerable latitude in their teaching approach, but in practice the lecture is the dominant choice.

The collaborating instructor, who was responsible for both courses in the sequence, expressed interest in participating in the study as soon as he heard of it. With more than a decade of instructional experience in the introductory sequence and in higher level courses, he had questions about students' retention of what they learned and the richness with which they appreciated the language of accounting. For the action research intervention, he devised an active learning activity that he incorporated at the end of each class meeting. He distributed carbonless duplicate paper to each student at the end of each week's class and posed a question about the material that had been discussed that day. The question was designed to be open-ended and broad, involving integrative thinking and contextual justification, rather than being factually or comprehension oriented. Students would take five to ten minutes to think about the question and jot down an answer. Then, as they left class, students would separate the copies and pass one to the instructor, keeping one for their own use in reviewing and studying. He assigned the so-called "exit pass" activity in every class except classes scheduled as review or midterm examinations. There were no changes to the assessments in either course during the study.

The students' response to the exit passes was positive. Only very occasionally would a student in attendance decline to turn in the answer to the question (1295 out of a possible 1309 exit passes were received) and students' proficiency with expressing their ideas in written form evolved over the term. The instructor found the exit pass to be simple to administer and not unduly time-intensive. He carried on using the exit pass activity in his sections of Introductory Financial Accounting after the study period ended.

Table 6: Learning Environment at Integrative University

	Baseline	Intervention
Instructional Approach	Lectures	Lectures with exit passes
Class Size	Two 65-student classroom meetings per week	No change
Assessments	Course 1: two 30% midterms and 40% comprehensive final. Course 2: Midterm I (20%); Midterm II (25%); 15% for accounting professional software mediated assignments; 40% comprehensive final.	No change

Note: The intervention was applied in both courses in the sequence.



Collegial University

Collegial University is an Ontario college that offers a number of business diplomas and an accounting degree, among others. The two-course sequence of Introductory Financial Accounting being studied here is specifically designed to serve students working towards a diploma in business or business administration with an emphasis on accounting. All business diploma students, or between 800 and 900 students per year, start their studies by taking the first of the two Introductory Financial Accounting courses in sequence. About half of these students, those specializing in bookkeeping, general business, accounting or management, also take one of two or three second required financial accounting courses in the second term, depending on their area of concentration. For

data collection and study, we chose the second course in the financial accounting sequence taken by general business and accounting students because their career aspirations and preparation seemed more aligned with those of the students at the other three research sites.

All classes at Collegial are small, with enough sections of each course provided to keep the ratio of students to instructors at no more than 50:1. In our study, class sizes were roughly 35 to 40 students. All sections have common learning objectives and common midterm and final examinations. Additionally, all instructors in the program come with significant, ongoing business experience. Our collaborating instructor had been teaching three or four sections each term in the introductory accounting sequence for more than 20 years.

Students learned by doing in his classroom, working through a large number of practice problems. A typical class started with a 20- to 25-minute mini-lecture that includes demonstration of a worked example problem, followed by a ten-minute individually worked problem, cycling through two or three of these sequences before leaving students with their homework assignment at the end of the class. The grade weight devoted to cases, quizzes and assignments, including completed homework, was worth a highly salient 20% of the final grade. Perfect scores for on-line assignments were not uncommon because students could submit as many attempts as they chose. The on-line assignment software provides wholly new parameters for practice questions on the same concepts.

The learning environment that results from these small classes is apparently without anonymity or hegemony. The instructor appears to have created a rapport with students that was clearly observed during the survey administration. Students in focus groups reported a clear meta-message that there was nothing in this course that they could not learn. The participating instructor confirmed deliberately cultivating this attitude in order to overcome potential fear or insecurity with the numeracy demanded by the material, developing repeated instances of success and attendant confidence. In the classroom, the learning experience was observed to reflect many of the principles advocated by Chickering and Gamson (1987) including student-instructor contact, reciprocity and cooperation among students, active learning, prompt feedback, time on task, high expectations, and respect for diverse talents and ways of learning. The instructor reported that his classes had a very small (1% to 2%) rate of attrition each year.

The curriculum in this case was well-aligned with the teaching approach, learning objectives and assessments (Biggs, 1996). For example, the instructor reported that student grades had improved steadily over the five to seven years that the on-line homework had been in use. He wondered, however, whether the performance improvement could be caused by the flexible homework practice, and questions about this were added to the survey instrument as a preamble to future research that could go beyond correlation. Another exercise, observed by the collaborating researcher, taught the importance of precise communication experientially: the instructor handed out what appeared to be a multiple choice problem quiz and directed the students to read the quiz in its entirety before beginning to complete it; some students dove into working on the problems right away. On the last of the 12 printed pages were the real instructions: do the questions as homework, using an answer key that “will help you when studying and give you practice in doing multiple choice questions.” The next sentence told them to put their name on the front page (a typical identification page, single-sided) and to then sit quietly without talking to anyone: “We will see how long it takes for the others to get this far.... Always review the exam/test/quiz first to make sure you know what is expected... I know this is early but have a great April Fools’ Day.”

The collaborating instructor chose to forego an explicit intervention in his class, because he was satisfied with the CLASSE© engagement results that he observed after the initial course offering for the study. His teaching approach combined active learning with a personalized and supportive learning environment. However, it is not clear that at a more subtle level this instructor’s deliberate attention to confidence building and coaching was not enhanced by the benefit of reflection and the process of “trying on” innovative scholarly teaching ideas. Just as it is hard to determine exactly what changed in the formal instructional interventions at the other institutions, it would be wise to remain agnostic about the possibility of an exact duplication of the first cohort and second cohort learning experience at this institution in a research field where so many of the causal factors are hidden.

Table 7: Learning Environment at Collegial University

	Baseline	Intervention
Instructional Approach	Mini-lectures with practice activities	No intervention
Class Size	Two 50-student classroom meetings per week	No change
Assessments	Midterm worth 35%; Final examination worth 35%; cases, quizzes & assignments worth 30%.	No change

In summary, four excellent financial accounting instructors shared their classrooms and insights as part of the current study. Resourcing smaller classes at Traditional University provided an exogenously-initiated change in course environment. Active learning through some instances of engaging open-ended questions about newsworthy applications of the content was confirmed by an observer who had taken the baseline offering of the course at Relevance University. Written integrative question responses were used to conclude weekly classes at Integrative University. The pedagogical practices of Collegial University provide context for engagement and orientation towards meaningful understanding. All instructors use lecturing in their delivery, with Collegial University's instructor limiting lecturing to about 20 minutes at a time. The instructor at Relevance University used an entirely traditional test-based assessment approach; this was also the choice in the first course in the sequence at Integrative University, while the second course added homework using accounting professional software for about a sixth of the final grade. Traditional testing also dominated at Traditional University, with nominal marks given for quizzes and a group project. The use of traditional testing was slightly lower at Collegial University where cases, quizzes and assignments comprised nearly a third of the final grade. Classes were very large at Relevance University, while enrolment evolved from very large to moderately large (around 100 students) at Traditional University. A number of instructors led the accounting fundamentals sequence of classes at Integrative University and at Collegial University, although we only studied those taught by our collaborating instructors. These classes were medium-large at Integrative and medium-small at Collegial.

Next, we present an analysis of the focus group data that was collected during the study. Themes and insights collected after the baseline offering were reported orally to the instructors as they chose and planned three deliberate interventions of new active learning strategies and a case study of a successful active learning environment.

Focus Groups

Student response to an open email call for participants sent to anyone registered in each course was extremely limited. There were only one or two students attending most sessions, with the exception of focus groups at Collegial University, which had sessions of at least five students. At one research site, Traditional University, gift certificate incentives were introduced after the first call with no discernible impact on participation. At another, Integrative University, only one student attended in total. As a result, the focus groups might more accurately be described as semi-structured interviews in some instances. The students who did participate had insightful comments to make that help to describe their experience in each course. Key themes and select quotes are provided below, by institution.



Traditional University

Seven students participated across five focus group sessions during February and March 2010, with one gaining credit in the Winter 2009 offering (one mass lecture and one 50-student seminar) and the other six in the Fall 2009 offering (two 120-student lectures). Two students of the seven had started but subsequently dropped the Winter 2009 offering and re-enrolled in Fall 2009. All participants reported being required to take the course but had clearly experienced different versions of it. None were accounting majors. Some had taken accounting in high school, whereas others were new to the subject. Four of the seven said they would not have taken the course if they had not been forced to. The lecture component was viewed by some as didactic, quiet, boring and too long, particularly in its original three-hour format:

I just remember [the professor] lecturing at us; I think we did questions from the textbook a couple of times, but I don't think that went over very well.

It was definitely a really quiet class... Even if the slides had been any colour but white, I think it wouldn't have been better or any different because I'd walk in knowing that it'd be exactly the same every time; just very black and white and boring in class... I didn't know anyone in the class so I was just sitting there alone.

Not all students saw it this way, however (perhaps due to some of the changes made), and the instructor was appreciated by some for his friendly and out-going personality:

As much as I despise accounting, it was probably one of my favourite classroom environments because of professor [name]... he's so approachable and so real... he's not the kind of guy that... just talks at you. He'd walk around class and randomly start up a conversation... If someone's phone rang he wouldn't get like pissed off... He wasn't like an accounting professor. Like when you think of an accounting professor you think like 'oh God, this guy has no life' you know what I mean? But no, he was really cool...

One student who took the course in Fall 2009 found the instructor's lecture approach to be quite effective:

[The instructor] worked through the problems slow, carefully, concisely, precisely and really elaborated on what the slides were. Yes he posted slides but they were basically just listing the concepts and he's just like 'ok, you can read through these yourself, let's work on the problems.'

Another student who had experienced the course twice (first in the one lecture/one seminar format in the first cohort of the study, and then in the two 90-minute lecture format) commented on the differences he perceived:

The thing with accounting is... it takes a lot out of you; like once you do two balance sheets or two financial statements, like you've pretty much had it, so to break it up into two days was so good just because you do like two problems and you then you [sic] had a day to rest and then a day to come back to it and not have to do it in one big chunk of time... Also too it was good because we're pretty much covering the same topic each week so if I went to the Tuesday class and something was not clear for me, I could go on Wednesday and study it and come back on Thursday and we re-did it and I would understand it so it was re-affirming. It was good.

Students were also asked to comment on the 90-minute seminars offered in Winter 2009 as a complement to the common lecture by the course instructor. Once again they reported having different experiences, in this case depending upon the particular seminar instructor and his or her approach. Some found them to be quite didactic, with the instructor focusing on presenting the solutions to problems, whereas other instructors were regarded as being much more facilitative. One student also found some of the seminar material to be contradictory and disconnected with the lecture:

I need an incentive to go to seminars because I tend to start skipping them if they're just 'here we'll give you the answers to the problem and you kind of copy them down in the seminar'. I'm more interested in seminars that are a little bit more interactive.

It was like he was more like my high school teacher... I feel it's just like easier for me to learn in a smaller setting.

Because they were only an hour long [sic], they were really rushed... I thought we were being contradicted learning things, like she'd be like 'no, this is right...' I just didn't like her teaching style... it was just a lot of telling which I don't like. I did like how [the course instructor] taught so I would've rather had him all the time... [The seminar leaders] weren't there for the lecture so they didn't know what we were being taught...

Students seemed to understand the value of the graded homework assignments, but some questioned the low relative weight given to them and found that demotivating:

I found the weekly assignments to be really helpful and the fact that they were due every week made it even more encouraging to do them. I found working through those problems and going through it all really helped concrete the ideas and concepts.

We had these assignments that were due every week on certain parts of the textbook. I found that really helpful because if they weren't going towards our mark, I probably wouldn't have had much motivation to do it. But, at the same time, we had to do nine assignments and it was only worth I think like 5 per cent of our mark. It would've been better if it had been worth a little bit more because it was a lot of work. It was very time consuming and as helpful as it was, I found it took a lot of time for such a small portion of our mark.

I know a lot of people didn't bother to do the assignments because they did take so long and they weren't a big part of our mark.

Those assignments were key; you have to practice it, you can't just sit there and listen to him talk about it. Accounting is something you actually have to do it... without the assignments, there's no way I would've passed the class because I'm not the self-motivating student to just sit down and 'oh, I feel like doing some accounting questions today to make sure I get it more'. The profs always say that and no one ever does it. The fact that it was worth anything was the only reason I did it.

There were also comments on the grading scheme itself, which assigned marks of 0, 1 or 2 to the weekly assignments depending on effort or the extent to which the work was done, and not on the accuracy of the final answer. In contrast, grading on the examinations was far more exacting, which was perceived by one respondent as unfair.

We had like five problems due every week handed in and it was a zero if it wasn't good or passed in; a 1 if you kinda tried and a 2 if you did all the questions... Well, like if I knew I could get a 100 on the assignment portion of my mark without learning it... there's not that much incentive to spend that much time on it... I could have an entire page wrong and still get perfect.

Coming to class having read the assigned textbook readings with the posted PowerPoint slides and attending study groups were also identified as particularly effective learning approaches:

What really worked for me was reading the chapter before class... my mom actually suggested that I read the textbook before class, like the chapter he was going to cover and once I started doing that I was actually able to participate in class; he would ask questions and I was able to answer them and that made me feel good... And so because I felt better about it, I didn't hate accounting so much because I was actually trying...

I read the textbook; it was pretty much my first textbook that I read cover to cover. I read it because I had never taken it before and I was worried – I was like ‘I’m going to do well in this class’. So I read through the textbook, I bought flash cards, I tried to do all the definitions and everything.

I also went to the student learning groups... if it was something that I didn’t get, I would go there... and I went to the one right after our class, the night of our class, and there’s two or three people there every week... she just goes through everything with us and it was so helpful.

In terms of grading, students were concerned about the fact that the same midterm exam had not been used for all sections of the course and that a grade differential of about 20% had resulted between two sections.

I felt like if we’re going to have different professors teaching different classes and it’s all supposed to be the same material being covered, then they should just write the midterms together.

Recommendations for improving the course from these students focused on strengthening elements associated with the instructor modeling and the students completing practice problems. This included having 90-minute lectures twice a week, ensuring that the seminars focused on facilitating learning (not just presenting the answers to problems) and providing more weighting for completed homework assignment grades. A second set of issues focused more on clarification and consistency of expectations, including using the same midterms and final examinations across sections, having the same instructor for all course elements and having the final integrating project more closely align with work done in class.



Relevance University

Five focus groups were organized at Relevance University during March 2010, between the two instances of the course, and these informed the instructor’s consideration of interventions. One focus group had three students attending, while the other four had one student each. The course was required for all but one of the participants. Four of the seven students were pursuing an accounting designation. Six of the seven students reported doing well in the course. The seventh, a non-accounting major, had failed the course and was expecting to repeat it at summer school. For this student, the course had been a frustrating experience; she felt her lack of prior exposure to accounting had been a considerable disadvantage. She also questioned its relevance to her degree.

It’s so frustrating because I tried my best... it’s kind of expected that you have prior knowledge of accounting, and basically we do the beginning stuff but it’s like one chapter and it’s one week, so basically, I’ve never done accounting before, I never took it in high school so I never really knew what was going on at first... I want to go into marketing so that’s not number related at all. I know it’s important to learn and to have your degree and everything but I just don’t feel that some of it is very relevant or you could apply it to your everyday life, you know what I mean?

Other students could see the relevance of the course much more clearly and understood how it fit into a business education. This group included a student who was taking the course as an elective (a senior undergraduate science student who was planning on studying accounting in graduate school):

I would say that it’s not like a course I’ve taken where I need to know the material and write the exam and then probably never touch it again; it’s stuff that I can relate to in the real world and it’s going to be a foundation for a lot of the other courses I do – and I’ve already noticed it applicable in some other courses; there’s stuff in finance, like concepts and stuff that were linked back to accounting. I guess what I found most effective is how it’s going to be

comparable to my other courses and it's not something I take and I forget – the concepts I learned will be used in all five years.

Overall, the students' comments on their experience revealed a highly disciplined lecture environment with a committed and knowledgeable instructor who had little tolerance for distractions. His classes were particularly focused on preparing students for their exams. Students recognized his commitment to their learning and appreciated the additional exam preparation classes he offered in advance of exams. Selected quotes follow:

He was a bit of a dictator in the classroom. He had a strong feeling against cell phones; if he saw anybody texting he'd stop the lecture and single them out which was kind of scary – it happened to me once... but I found it to be an effective strategy, I guess, because it makes sure everybody's focused... it was a massive lecture hall but I'm sure most people were paying quite a bit of attention.

He didn't like people talking, that's for sure, but I think that was important especially when you have such a huge class... it wasn't a social class at all – like at all, but I didn't think it was a bad thing either.

I think he really cared about the stuff he was talking about even though people thought he may be mean.

He didn't teach us stuff that we didn't need to know and what wasn't important. So what he taught was important. So then, if you realized that you'd go to class.

People were able to ask him questions when they were confused and he'd have an answer and he actually did use a fair bit of humour in his lectures too... Once the authoritative wasn't as intimidating you kind of realized he was a really nice guy and he made a lot of jokes.

For the final exam... he volunteered like a couple evenings to go over the material with students because he realized that it was an issue – that a lot of students were struggling... it was really effective and really great of him to do that.

He was also renowned for bringing in news articles that applied to the accounting concepts being taught. This helped to illustrate the relevance of the material as well as issues associated with analysis and application:

It really enhances the learning material. It shows how it's relevant and I really appreciate that... Accounting is not as boring as I thought it would be. It's true, I thought it was all number crunching but it's data analyzing. Intuition can even be an important part of it.

One of my highlights from the course would be every Wednesday for the first ten minutes of the class he would talk about financial news in the world and some of it was kind of related to the course but not really, but the fact that he was tying in the course to the real world and helping us learn where this stuff is going to be useful in the real world was effective.

The students uniformly praised the tutorials, which provided the opportunity to practice problem solving, as well as the mechanism (bonus marks) that served as an incentive to attend.

You could probably learn the most in tutorials... the teacher would be like 'here's a question; let's go over the question'. So, that's definitely where you would learn the most, the tutorials.

Well, it's more a 'did you show up to tutorial or not' so if you show up for x number of sessions, then you get a bonus on your final grade. Whether or not you just sat there and stared at the wall or actually did something in tutorials, it didn't make a difference; it just benefits you if you go to tutorial.

It forced me to do extra problems, not that I wouldn't do it anyway, but I always try to do the problems before tutorial because they'd be posted like a day or two ahead so I tried to do the problems before the tutorials so I'd know what's happening and if I had any questions I could ask during it.

I went to all of them and found them really useful and I actually think that it's better if you do them as a bonus because people get a reward for going rather than 'its 10 per cent for going to tutorial'. Most people don't go to tutorials anyway so they're not going to get it so then it will hurt them in the long run because they won't get as much experience with the material and if it's a bonus then they don't lose anything else out on the grade.

A lot of the problems that were on the tests were pretty complicated so the tutorial helped simplify them and seeing someone else do them before you do them yourself or vice versa definitely helps.

I realized it when the TA said 'this will be on the midterm' that they actually meant 'this will be on the midterm'.

The grading approach to this course centred on two midterms and a final, plus the nominal bonus marks for tutorial attendance. One area where students consistently identified an opportunity for improvement in the course pertained to an additional graded component that would provide more regular assessment (potentially a weekly on-line quiz) that would serve as an incentive to keep up with the readings and assignments. Student comments included:

If you have one each week it kind of keeps you on top of things more, like you don't leave it to the last minute because you have to do it that week, whereas if it's a test or an assignment it's like 'oh I could do it a day before, a couple days before', right? So if it's an assignment you have each week it's a thing you have to do and you have to do it right away, you have to learn it, you're forced to.

In terms of learning approach and materials, the course textbook was seen to have little value by the students. Instead, they commented on the usefulness of the instructor's PowerPoint slides, chapter notes and problem solutions that he posted to the course website. "I didn't really do too much from the textbook because he didn't really focus a lot on the textbook"; "I didn't find we really need a textbook, so if we don't need it, why do we need to buy it?"; "There's way more information in the lecture notes and the textbook was confusing and dry."

The students talked about spending their time in applying course concepts to problem sets, with a high degree of recognition of the need for repetition and practice. One also mentioned the importance of trying to teach the concepts to others:

It's just basically the more I did it, the more I understood it. You understand it by doing it... That's what I found with financial accounting; once you do it, you can actually reason out the answer. There's really no need to memorize... Once you get the logic, you get the answer.

I really just did the questions over and over again until it becomes second nature. I take those key concepts and hopefully retain them so that when I actually see almost the same question on the page but different numbers.

You need the time to have the concepts sink in. I think this is one of the courses where cram and dump does not work... I found that there are a lot of intricacies that you need to be careful in accounting, just small little things you can trip over.

I found it advantageous for me to know my stuff but also be surrounded by people who, for lack of a better word, didn't know what they were doing, just because I got to teach them and

I find if you teach someone, you know it inside and out... that helps me study; I try to teach people at the same time.

Other students acknowledged the need for some degree of memorization of key concepts. Others admitted to a more last-minute approach to studying:

I think there was definitely an element of memorization to the course... like income statements... I found that it had some memorization in it in terms of structure and details; I think it's a detail-oriented course.

For some reason or another, I usually learn the key concepts two days before, all the rush it just all really snaps. It just all comes together.

Yeah, first midterm it was just a couple of days before. Second midterm it was about a week before.

Recommendations for improving the course included introducing regular required assignments or quizzes and discontinuing having a required textbook (the on-line learning materials were considered more than sufficient). Strong support was voiced for the tutorials, which students received "bonus marks" for attending. The students also appreciated the overall course design and the use of real-life applications of course concepts to items in the news.



Integrative University

Although a number of sessions were advertised at Integrative University after the first offering of the sequence was completed, only one student participated. The sample was not representative enough to influence deliberations over an intervention that suited the learning context. Consequently, the instructor instead relied on his course evaluation comments and the insights about the learning context that he had gained as instructor. The student was largely positive about her experience in the course. In fact, she found the instructor so helpful that she continued to seek his assistance with subsequent accounting courses taught by others:

He does an excellent job at going through and explaining; he makes sure nobody's lost 'does anybody need further help?' or he actually stops to make sure you're OK.

This student's focus was to complete the homework questions and compare her answers to the posted solutions, as well as to repeat practice questions:

We'd have assigned homework questions and he would post the solutions so I'd first try to do the question on my own and if I don't get it I'd go and look at the solution. Like right now I'm taking intermediate accounting and there are no solutions and you have to go over to the accountants and they're not the most helpful and it's much more difficult honestly.

Sometimes I'd get behind and wouldn't practice my questions as much as I should. I remember at the exam I did a question I'd practiced at home, but I only practiced it once and when I went to the final I'm like 'I did this, but I can't remember how to do it'... so I really need to practice questions over and over and that's what I'm doing now... and later I go back and try to memorize all the steps.

She also described regularly attending class, being an active participant and focusing on listening rather than taking notes:

I came to school to pretty much every lecture; I participate, ask questions. Yeah, that's pretty much it. If I didn't understand something, like most of the time he would ask if everybody understood it and if not you could always raise your hand and he'd be more than delighted to go over the process with you again.

I can't really write – some students are able to write while listening, I can't – so I sit back and listen to the lectures and just follow how he goes through each example, that's more helpful to me.

Attendance at the accounting lab section of the course was reportedly quite sporadic, and this student found that she often had one-on-one support if she attended.

Even though it was pretty much self-explanatory, he'd always be there; sometimes I was the only person there, it was the two of us there in the lab and he was always there to answer any questions so that was really great and helpful.

Her primary suggestion for the course was to make some of the learning activities mandatory (through grades) or to encourage students to practice completing problems during class time:

I guess for the labs, sometimes I've overheard students doing it at the last minute and it's not ready yet. Kinda like make it mandatory like take attendance or count it towards participation marks, that'd be really helpful. The one thing, I took [another accounting course] with a different professor... and her approach was a little bit different... [the collaborating instructor] would teach us theory and show us the examples, but with [the other instructor] she'd make sure you'd do the work; she would open the book and say 'let's go through problems' and she'd give you ten minutes to do it and then we'd all do it together as a class.

In terms of classroom environment, this instructor was perceived as being too lenient on students who were not engaged, and she suggested that he become more forceful:

I think because he's such a soft professor, like there are the kids who come to class and not pay attention and talk a lot and he's like 'could you be quiet please?' and they're like just ignoring him. Sometimes I would be so annoyed because I would be trying to learn and they're just making noise and he'd stop the class and wait for them. I think it would help to be more forceful.

At Integrative University, according to the student in our focus group, the instructor modeled problems in class and welcomed questions as a check for comprehension. He also assigned practice problems and provided answers that students could use as a further check outside of class, but there was no grade associated with this work. He also did not have students actually practice problems during class time. It was this element that our student identified as an opportunity for further supporting student learning.



Collegial University

Two focus groups were run at Collegial University during the first half of 2012, with five regular students in the first and six co-op program students in the second. The scheduling reflected the instructor's decision, after reviewing compelling survey results, not to undertake an intervention. Consequently, sessions were scheduled before and after co-op study terms in the program. The students spoke with real affection for their instructor, who they described as being a "genuine" person who cared deeply for his students, but also as being "loud", "energetic" and "funny" in the classroom. They described the class environment as "comfortable"; "We felt so comfortable with [this instructor]." They acknowledged his teaching proficiency and suggested that enrolments and attendance in his classes were much higher than in sections taught by other instructors as a result. More specifically, he was described as a teacher who would help the students find the answers for themselves. He also got to know each of his students by name and helped them believe that they could do the work.

He breaks it down for you so that you understand it. He's different with each student. Everybody learns differently so... if you go to him he ends up learning your learning style.

He doesn't make you feel stupid like other professors would. So he'd actually say 'ok, see this is what you're trying to do and I kinda see why you're doing this, but this a better way to do it' so he'll make you feel like 'oh ok, I wasn't right, but I wasn't wrong either'.

He made it like a point to actually get to know his students. Some teachers don't even know your name.

Yeah, he knows if you're there so if you're doing bad he's going to call you out. Like, most teachers now wouldn't even notice if you're there.

He showed an interest in the students and showed that he cared about his students and how they did in the class and wanted them to succeed and that made everyone feel really good about it and made them want to be there. Nobody ever skipped [his] class – ever.

These comments suggested that the instructor had created a one-to-one or customized learning relationship, more akin to an apprenticeship model, whereby the expert helps the novice understand what is being done well and where improvement is needed. The students were impressed that he got to know them as individuals and even provided them with his home phone number. They also appreciated his in-class organization and his approach to taking up homework problems:

[He would say] 'we're doing this today; we're doing this tomorrow; next week we're gonna do this', so you always knew. I always read the chapters ahead of time and I would know 'ok, as long as I read this, this is what we're going to be doing going forward'. I mean, all teachers try to do it, but some are just not as effective at letting you know where you're going exactly in the future so you can come in prepared and read ahead and do that sort of stuff to get ready for it.

[He] made himself available to people. The first day he would write his home phone number on the board and made it very clear that even if it was late at night it doesn't matter ... 'if you have a problem, call me; I don't care if it's the weekend, call me, I will walk you through it.'

When he'd take the homework up, he wouldn't just put the overhead up so you could check your answers. He'd go through the entire thing because a lot of times when the overhead is up there, you see what you did wrong but you have no idea why you did it wrong... it doesn't mean anything until he's going through it.

The students believed that this instructor's approach resulted in a highly collegial group-learning environment:

There's just something about learning with other people; there's something about being in a group, not knowing and then together absorbing – like you're saying, one person asking what everyone was thinking or asking something that no one else even thought about, a good point. It's just the act of being in a group setting and just absorbing it together – it might be different learning one-on-one – it might be better – but the act of being in the classroom, like (name) said, I hate missing class.

The students said that they did most of their learning during class, which was supplemented by practice homework problems at the end of class or at night, followed by a quiz and then the exam:

Yeah, it was like a pattern; you would come to class, you would have the lecture, you'd do examples, you'd get assigned homework, you'd do the homework then you'd do the Lyryx [©] afterwards and then it was a repetitive thing that kept going – people like patterns, right?

The students also appreciated the instructor's selection of learning materials:

I did appreciate the textbook and the workbook that we got with that. It made it a lot easier because our textbook came in a package with two books plus a workbook that was corresponding with all the questions, but it had it all laid out and formatted for us so you didn't have to work on the formatting, you just worked on the accounting.

In terms of the exams, the students felt confident that they knew what to expect: "He told you what was on the exam, he didn't try to trick you, flat out 'this is what's going to be on there', no tricks, no nothing, just know your stuff." Students suggested that the quizzes had been harder than the exams and as a result the class average had been as high as 85%. They contrasted that with grades in subsequent courses where the class average had been as low as 60%.

For these eleven focus group participants, learning with the instructor was accessible and fun. Students appreciated the individuation of their learning experience and took advantage of opportunities for support in an environment of transparent expectations and collegiality.

Taken together, the student voices at all four sites underscored the importance of the instructors modeling and explaining problem-solving processes during classroom time, as well as encouraging purposeful effort and repetition or practice on the part of the students themselves. This encouragement was variously experienced as graded quizzes and homework assignments, tutorials accompanied by bonus grades, and using regularly scheduled classroom time. A common refrain at our two largest sites (Traditional and Relevance) was the importance of using grades to encourage such activity outside of class time. Whether such grades should be offered as bonus marks or integrated with overall course grades was also debated.

Other issues pertained to course structure, integration and the relationship with the instructor. At Traditional University, for example, the movement to a two-lecture 90-minute format seems to have resonated better with students, because of a shorter class and greater integration as a result of having a consistent instructor. The data here confirm the instructor's prior belief that the seminars were not adding the value that had been hoped. At Integrative University, the ability to get help was appreciated by our one participant. We heard that the additional course materials provided to support learning were well integrated at Relevance, as they also were at Collegial where the students who spoke with our collaborating researcher clearly got the message that he cared about their success in Introductory Financial Accounting, knew them personally and was readily available both inside and outside of class.

We now turn to the CLASSE© and Approaches to Studying survey results from the combined instrument that we assembled for the study.

Survey Results

There are three distinct forms of analysis possible with the data that were collected during the study. First, the CLASSE© data are presented in descriptive form, using benchmarks created by the authors. Statistical modeling using matching methods is applied to the benchmarks to estimate the impact on engagement of the interventions in the study, conditional on observable characteristics of survey respondents in the respective course offerings. The overall levels of engagement in each of the five benchmark categories and changes between course offerings are considered both across course offerings at the same institution and, in the absence of outside-of-study normative data, between institutions. We also provide information on one of the conditioning variables, interest, and two others (perceived difficulty of the material and students' attendance), which provide context about the learning environments reflected in the benchmarks.

Second, a quadrant analysis of CLASSE© responses (University of Alabama, 2008) can summarize the places in which student take-up of a particular teaching and learning activity is (in)congruent with faculty perceptions of the usefulness of the activity to student success. The four research sites are further considered with respect to the degree of overall congruence between instructor and student responses.

Finally, data pertaining to the Approaches to Studying Questionnaire are presented by institution for each of the three orientations to learning (meaning or deep approach; reproducing or surface approach; and achieving approach) as well the Approaches to Studying Index, which is calculated by summing the strategic and meaning indicators and subtracting the reproducing indicator. Histograms are also included in the Appendix to provide a snapshot of the range of students' intentions in their approach to learning in each environment. Each of these analyses is presented in turn below.

CLASSE© Responses: Benchmark Analysis

The CLASSE© provides a snapshot of the type, quality and relative quantity of learning activities undertaken, within this study in respect of specific Introductory Financial Accounting courses. In addition to the standard questions, it has room for the instructor to write up to eight course-specific question items on any aspect of the course that fits their curiosity. The companion faculty survey, which asks how important the activity is to success in the course, is a ready indicator of a particular instructor's priorities. The nearly 50 question items can provide a set of indicators of student engagement across a number of vectors: participation in educationally-purposeful activities; required learning tasks; perceptions of the learning environment; and demographic features (Kuh, 2009).

Due to its considerable limitations, however, care must be taken when interpreting these results (Kuh, 2003, p. 26). One issue pertains to the self-reported nature of the data. The National Survey of Student Engagement (NSSE©) has been criticized for assuming too much recall on the part of respondents and too little specificity in the question items (Porter, 2011; Lutz & Culver, 2010). While finding NSSE© a weak predictor of grade point average in their study, Campbell and Cabrera (2011, p. 96) also cite a 2008 presentation by Pascarella and coauthors arguing that NSSE© benchmarks are "good measures of precursors of liberal arts outcomes." While more research is clearly needed to understand the strengths and limitations of this family of instruments, they are nonetheless widely used in the study of student engagement (Conway, 2010; Kuh, 2009). Student engagement, in turn, is strongly correlated with student learning and intellectual maturity in higher education (Astin, 1993; Pascarella & Terenzini, 2005).

One of the techniques for managing the useful information generated by a large survey in the NSSE© family is to organize it around the benchmarks designed into the instrument (Kuh, 2003; Chen et al., 2009). Our focus on teaching approaches and expectations for an introductory financial accounting context makes a slightly different organization more useful, and so, in the spirit of the CLASSE© instrument, which is tailored to the individual course, we created benchmarks that better suited our enquiry with a subset of the most contextually relevant question items from the CLASSE© survey. Our benchmark categories are: Student Engagement Within Class; Student Engagement Outside of Class; Student Engagement with Instructor; Engagement with Higher-Order Thinking; and Student Effort. First, questions 15 and 16 were omitted because in-class presentations and community-based projects were not relevant to any of the courses that we were studying. We reversed the response order for question 6 ("So far this semester, how often have you come to class without having completed assignments?") and question 29 ("how many times have you been absent?"), so that increasing values concurred with the success factors informally inferred from individual conversations with the instructors. For Student Engagement Outside of Class, we dropped question 27 because we were not sure how to interpret the engagement effect of homework that took longer than an hour: a high frequency reported by students could reflect fear and disconnection or overwhelm, but it also could reflect thorough, deliberate engagement with learning.

Under Student Engagement with Instructor, question 18 concerning prompt feedback was considered problematic as well. Although clearly about interaction with the instructor, it seemed not to be grounded in the student's own engagement actions. Feedback "happens to" students, more or less without their involvement or at their decision, and therefore is too distantly derivative from their own activities to be informative of their engagement with the instructor. Yet question 18 was to us the most surprising question in the survey: all instructors except the instructor at Traditional University reported a high value of prompt feedback, and additional verification through probing questions revealed that these three provided feedback on examinations and homework within a few days. Yet students in those classes

universally responded that they rarely received prompt feedback, so it is not clear what is going on in this question. It may be that students wanted a different kind of feedback than they received or that they did not have the same definition of “prompt” as the instructor did.

Questions 4 (“worked on a paper or project that required integrating ideas or information from various sources”), 5 (“included diverse perspectives of races, religious, genders, political beliefs in class discussions”) and 9 (“put together ideas or concepts from different courses when completing assignments”) were omitted from Engagement with Higher-Order Thinking because they might depend on particular activity modalities that were not reflected in our classrooms, and so would not be indicative of critical and higher thinking *for our purposes*. Likewise, question 20 (“Memorizing facts, ideas, or methods from your courses and readings so you can repeat them in pretty much the same form”) was also removed, even though it is included under Cognitive Skills within the CLASSE© survey itself. While we accept that some degree of memorization is necessary in order to be competent in any discipline, our focus was on skills more closely associated with a meaning orientation; including memorization with other higher-order thinking skills might complicate the interpretation of the benchmark measure, quite possibly overstating the extent to which the other higher-order thinking skills were being developed, particularly in the introductory financial accounting context. Congruent with this view, two of the four instructors consistently did not rank memorization as important to success in the course.

Table 8 shows the 38 standard CLASSE© questions organized into the benchmark categories that we created and indicates, by strikethrough, which CLASSE© question items we have omitted from our benchmarks for the accounting context. Note that the Course-Specific Items from Section 5 of the survey, which are designed by the individual instructors and vary by course, are omitted from the benchmark analysis, although they were highly salient to the instructors’ decisions about interventions and are included in the other analyses in this report.

Table 8: CLASSE© Question Introductory Financial Accounting Benchmark Categories (questions omitted from benchmarks indicated by strikethrough)

<p>Student Engagement Within Class: 1: Asked questions in class 2: Contributed to a class discussion 6: (R) Came to class without having completed readings 7: Worked with others during class 15: Made a class presentation 30: Took notes in class</p>	<p>Student Engagement with Instructor: 12: Used email to talk to instructor 13: Discussed grades or assignment with instructor 17: Discussed ideas with instructor outside of class 48: Received prompt feedback from instructor 35: Comfortable talking to instructor</p>
<p>Student Engagement Outside of Class: 3: Prepared two or more drafts of a paper or assignment 8: Worked with classmates outside of class 10: Tutored or taught other students 11: Used an electronic medium to discuss or complete an assignment 14: Discussed ideas with others outside of class 16: Participated in a community based project 25: Prepared a report of more than five pages in length 27: Homework problems took more than one hour to complete 28: Typically spent more than three hours per week</p>	<p>Engagement with Higher-Order Thinking: 4: Integrated ideas from multiple sources 5: Included diverse perspectives 9: Integrated ideas from different courses 20: Memorizing facts in order to repeat them 21: Analyzing an idea, experience, or theory in depth and considering its components 22: Synthesizing & organizing more complex interpretations & relationships of ideas 23: Making judgments about the value of information, arguments or methods 24: Applying theories or concepts in practical problems or new situations</p>

<p>preparing</p> <p>31: Reviewed notes between classes 32: Participated in a study partnership 33: Attended a review or help session 39: Percentage of assigned readings completed</p>	<p>Student Effort:</p> <p>19: Worked harder than you thought you could 26: Challenged to do best work on exams 29: (R) Number of times absent</p> <p>all CLASSE© course-specific questions</p>
<p>Additional CLASSE© Items:</p> <p>34: Interested in learning the course material 37: Found the material difficult 36: Enjoyed group work in this class 38: Found the classes easy to follow</p>	

Responses to question items 6 and 29, marked with (R), were recoded as follows: 1=4, 2=3, 3=2, 4=1.

Finally, there were some items that we felt were more akin to demographic variables, as we believed them to be relatively enduring. These included question 34 (“How interested are you in learning the course material?”) and question 37 (“How difficult do you find the material in the course?”).⁹ The course-specific questions (questions numbered 39 or higher in the Appendix) were designed for each institution by the respective instructor and therefore were withheld from the financial accounting benchmarks, but naturally were included in the quadrant analysis that follows.

The remaining variables in each category were recoded and summed using a method that paralleled that used to construct the NSSE benchmarks (Indiana University at Bloomington, 2013). The benchmarks are averages of the component question items scaled to lie between 0 and 100, calculated for each survey response. With these, average mean values of the benchmarks using propensity score matching (Leuven & Sianesi, 2003) are estimated, conditional on the sample, to get a sense of the magnitude of financial accounting engagement benchmarks in each course offering. These are presented together with the average treatment effects between sequential pairs of courses in **Table 9** below.¹⁰

Given that the five benchmarks are unique to the current study, normative findings for the purpose of comparison were not available. However, preliminary comparisons of the conditional estimates can be made across the sites, in the spirit of meta-analysis. For example, we found that, in general, student engagement appeared to be highest overall for the categories of “higher-order thinking” and “student effort” and lowest with respect to “instructor engagement.” Our two largest sites (Traditional and Relevance) reported moderately high rates of engagement both in and outside of the classroom, whereas for the two smaller classes, “within class engagement” was considerably higher than out-of-class engagement, suggesting that the instructors may have placed more emphasis on this activity or that novice learners felt more comfortable in an organized or directed learning situation. The shading in **Table 9** highlights the top two and bottom two engagement scores in each category, as well as the sites that saw the largest changes over time (both positive and negative):

- 1) Collegial University ranked highest on engagement in nine out of ten cases. However, it also saw the most significant declines between the two course offerings and ranked second lowest on student effort.
- 2) Relevance University ranked lowest on engagement for five out of ten benchmarks calculated, but saw modest increases in everything but higher-order thinking skills.
- 3) Integrative University had the lowest scores for outside-of-class engagement in both versions of the first course in the sequence, as well as for higher-order thinking in the first offering of the first course. Students also reported the highest effort in the first offering of the first course.

⁹ Indeed, question 34, “How interested are you in the course material?”, became an instrument in the statistical matching methods used to estimate the impact of the interventions across the various offerings.

¹⁰ We have not reported bootstrapped standard errors for the estimated average treatment effects because they are highly dependent on the choice of instrument, and might convey disproportionate confidence in the estimates. We prefer to contextualize significance using triangulation through mixing methods of analysis.

- 4) Traditional University had the highest engagement with higher-order thinking skills and also made the most improvement between the very large first offering (which primarily had test-based assessments) and the moderately large second offering (which introduced the team-based project), improving its scores in three of five categories. It also had the lowest score for effort in the final version of the course.

The measured average treatment effect sizes are quite small: a change of 10 in the reported effect size reflects an *average* difference of 0.3 in the mean responses of the underlying survey questions (which ran from 1 to 4), which would be hard to distinguish statistically from zero.

A number of alternative matching specifications were estimated to check the range of the presented benchmark evidence. In particular, the estimates of matching using the demographic variables typical in the literature were suspect because of the small samples involved (Conway, 2010), which may contribute to their variability. These small effect sizes are also comparable to those found using simple regression.¹¹ The estimates can be refined by exploring the weights and taking a closer look at the observations that do not have sensible matches, which we reserve for future work in light of the availability of other analytical methods for triangulation.

How might these results be interpreted? At first glance, they may be considered – by the researchers and the participant instructors – to be somewhat disappointing. Here are four highly committed instructors, reflecting critically on their courses and making changes in support of enhancing student engagement, but with nearly imperceptible effects. All of these values are clumped very close in a benchmark index that runs from 0 to 100. However, in using these data to make tentative conclusions, it is important to recall that, in this first cycle of action research, we are still expanding our understanding of how the CLASSE© instrument can be used appropriately to characterize engagement in Introductory Financial Accounting. As we continue to hunt for normative CLASSE© scores in accounting contexts, we may well find that our sites did quite well.

Furthermore, the actual assessment approach did not change significantly at any of our sites and the influence of assessments on student behaviour (see Ramsden, 1997) is one of the most enduring results in the scholarship of education. Also, given the fact that the differences between institutions appear to be much greater than within any one site, it may be that differences in context (classroom size) and the attitudes and abilities of the students may be particularly important for this analysis, and that cross-institutional comparisons will generate further insights. Consistent with this view, arguably the most significant transformation to be implemented occurred at Traditional University, where class size was significantly reduced. It was also here that the most substantial increase in engagement scores was observed (for Within-Class and Higher-Order Thinking engagement benchmarks).

Also related to class size, of the two sites offering small to medium-size classes, Collegial University appears to have achieved a much higher degree of engagement. As shown in **Table 10**, students here also reported a higher degree of interest (3.5) and found the material least difficult (2.1). Whether the material was actually easier or whether the students simply found it easier is difficult to say from these data, although it may be that, through the adoption of a personally supportive, apprenticeship-type pedagogical approach, this instructor helped to reduce perceived difficulty among his students. A review of the course syllabus, homework assignments and examinations led to the collaborating researcher's conclusion that introductory accounting was respected at all sites as having challenging content that could easily become daunting without a certain amount of resilient confidence on the part of the student.

¹¹ Other estimators based on instrument methods were not identified for this sample.

Table 9: Introductory Financial Accounting Student Engagement Benchmarks (Δ = across matched cohorts)

University & Cohort		Within Class		Outside of Class		Instructor		Higher-Order Thinking		Student Effort	
		Level (n)	Δ	Level (n)	Δ	Level (n)	Δ	Level (n)	Δ	Level (n)	Δ
	Winter 2009	37.70 (n=145)	+3.26	41.34 (n=145)	-1.71	32.83 (n=145)	+3.98	54.97 (n=145)	+5.46	61.74 (n=145)	-6.35
	Fall 2009	40.96 (n=139)		39.63 (n=139)		36.81 (n=139)		60.43 (n=139)		55.39 (n=139)	
	Fall 2009	41.51 (n=139)	-0.18	40.68 (n=139)	-2.13	35.24 (n=139)	-3.70	61.63 (n=139)	+3.24	56.82 (n=139)	-3.66
	Winter 2010	41.33 (n=65)		38.55 (n=65)		31.54 (n=65)		64.87 (n=65)		53.16 (n=65)	
	Fall 2009	29.72 (n=576)	+0.97	32.28 (n=576)	+0.01	19.96 (n=576)	+2.37	55.68 (n=576)	-3.90	59.48 (n=576)	+2.63
	Fall 2010	30.69 (n=303)		32.29 (n=303)		22.33 (n=303)		51.78 (n=303)		62.12 (n=303)	
	Fall 2009	41.26 (n=51)	+1.84	29.20 (n=51)	-2.04	31.75 (n=51)	-5.60	52.87 (n=51)	+0.14	65.13 (n=51)	-3.64
	Fall 2010	43.10 (n=58)		27.17 (n=58)		26.15 (n=58)		53.01 (n=58)		61.49 (n=58)	
	Winter 2010	53.43 (n=42)	-7.66	42.01 (n=42)	-2.49	35.57 (n=42)	+0.37	55.84 (n=42)	-3.02	59.37 (n=42)	+1.82
	Winter 2011	45.77 (n=67)		39.53 (n=67)		35.94 (n=67)		52.61 (n=67)		61.19 (n=67)	
	Winter 2011	64.49 (n=68)	-10.3	59.45 (n=68)	-15.0	51.33 (n=68)	-0.98	62.90 (n=68)	-7.70	63.58 (n=68)	-8.80
	Winter 2012	54.16 (n=72)		44.44 (n=72)		50.34 (n=72)		55.20 (n=72)		54.78 (n=72)	

Legend:

 = Highest two

 = Lowest two

Perceived difficulty reported in **Table 10** stayed steady at Relevance University and Integrative University and was reduced over the course of the study at Traditional University. Interestingly, at Collegial University, where no formal intervention was implemented, perceived difficulty also fell. Interest remained more or less consistent across the four sites, confirming our *a priori* assumption that interest is a relatively enduring attribute. There was also little change within sites on reported attendance; it remained highest at Integrative University. The full set of CLASSE© survey results tables is reported in the Appendix.

All of these CLASSE© observations will be given further consideration, vis-à-vis the other data, in the final section of this report.

Table 10: Estimated Average CLASSE© Responses (Unmatched Responses)

Response ranges

Q. 34: 1 = very uninterested; 2 = uninterested; 3 = interested; 4 = very interested

Q. 37: 1 = easy; 2 = somewhat difficult; 3 = difficult; 4 = very difficult

Q. 29: 1 = 5 or more classes missed; 2 = 3-4 missed; 3 = 1-2 missed; 4 = never miss class

University & Cohort		Q. 34: How interested are you in the course material?	Q. 37: How difficult is the course material?	Q. 29 (R) How often do you attend class?
	Winter 2009	2.7	3.0	3.0
	Fall 2009	3.0	2.5	2.8
	Winter 2010	2.9	2.6	2.7
	Fall 2009	3.0	2.8	2.5
	Fall 2010	3.0	2.9	2.6
	Fall 2009	3.0	2.3	3.5
	Fall 2010	2.8	2.5	3.5
	Winter 2010	3.0	2.5	3.3
	Winter 2011	2.8	2.6	3.1
	Winter 2011	3.4	2.4	3.0
	Winter 2012	3.5	2.1	2.8

CLASSE© Responses: Quadrant Analysis

The next analysis we present uses the companion CLASSE© Faculty survey to provide some insights from the instructor's perspective about the relative value of each of the engagement activities to their students' success. According to these responses, the instructor at Traditional University was strongly encouraging students to prepare: do the readings before coming to class, spend adequate time on homework and problems, and talk to each other about the material and assignments. He ranked timely feedback very highly but not as highly as memorization and being challenged to do one's best on examinations. At Relevance University, the instructor's CLASSE© Faculty survey also emphasized preparation for class. He ranked the elements of our financial accounting higher-order thinking benchmark as very important for success, while he ranked memorizing as being of low importance.

The instructor at Integrative University ranked many of the items as important or very important to success. He indicated that students should find classes easy to follow and be prepared, through doing assignments and practice problems, and being prepared to ask questions (in or out of class) or contribute to discussion. The instructor at Collegial University similarly put high value on doing assignments and extra problems, but he also ranked memorization as less important and being able to ask him questions in person or by email as very important to success.

It was not surprising to observe that instructor attitudes about what was important to success were not static over the course of the study as they looked more closely at how students were engaging with the material and their teaching practice. Each learning environment was studied for at least a year and a half, during which time the instructor and the student culture evolved. Consequently, we have elected to compare instructor responses on the final survey in each institution's sequence to represent the level of engagement achieved at each site. Complete results for all cohorts of student and instructor CLASSE© survey responses are presented in the tables in the Appendix.

A simple way to summarize these findings is using quadrant analysis (Ouimet & Smallwood, 2003; University of Alabama, 2008). The quadrants are combinations of importance, as perceived by the instructor, and self-reported frequency or perceived usefulness to the student (depending on the question), tabulated from the average responses in each instructor's student sample.¹² Engagement items with low average frequency or usefulness in the student's perspective and low importance in the judgment of the instructor present no problem, because students and their instructor have well-aligned beliefs. Likewise, items that students find useful or access frequently and that the instructor also judges important to success also represent a congruence of beliefs. However, if students are spending a lot of time doing things that the instructor judges to contribute weakly to student success, or if students are missing things that the instructor believes are really important, these aspects are good candidates for further consideration in the action research cycle.

Colour is used to remind the reader of which questions "go together" in terms of our Introductory Financial Accounting benchmarks. Here, we have again omitted questions that provide less insight into these classrooms, although fewer questions than were omitted in constructing those benchmarks.¹³ Each of the four classroom environments in the study has a different local culture to work with, and as the results show, each collaborating instructor had different priorities for the CLASSE© survey's Course Specific Items. Consequently the higher-numbered questions are not uniformly represented at all institutions (questions 40 and above). As in the engagement benchmarks reported above, two of the CLASSE© questions have reversed response scales for students and instructors. Question 6 asks students how frequently they come to class *without* having completed the suggested readings, and the corresponding

¹² The quadrant analysis uses raw (unmatched) survey responses.

¹³ Questions 15, 16, and 5 were omitted from the quadrant analysis because they were not relevant to any of the learning environments.

question for the instructor is how important is it that students *do* come to class prepared. Higher unpreparedness responses by students would therefore map misleadingly to higher importance to success in the instructor's eyes. The same was true for question 29, where students are asked how many times they have been absent so far and instructors indicate how important it is to attend class. In what follows, the student responses for these scales have been reversed to reflect behaviour congruent with increasing success.

Engagement in Introductory Financial Accounting at Traditional University

In Winter 2010, Traditional University's Introductory Financial Accounting class was largely an independent place with little discussion and few questions being asked. Students were busily taking notes, which were only considered by the instructor to be somewhat important to success, and most students were not reviewing those notes before coming to class. Students did not always complete the readings and assignments before coming to class, which to the instructor was the most important classroom engagement activity. Integrating ideas from multiple sources was ranked by the instructor as an important higher-order thinking activity for understanding, no doubt because of the integrative group project he assigned, but most students did not report more than a couple of instances of doing this activity. Almost 90% of respondents reported never integrating information from multiple sources in their coursework, yet 75% of them apparently incorporated ideas from different courses when thinking about accounting concepts. Although the instructor considered memorizing and analyzing to be the most important higher-order skills for success, more than half of the respondents indicated that they employed all five of the cognitive skills quite a bit, including synthesizing complex relationships of ideas, making judgments about the value of arguments or methods, and applying theories or concepts in practical problems or new situations.

The majority of students may have been underutilizing engagement outside of class, never or seldom spending more than an hour on their homework and infrequently utilizing a study group, which was important to success in the eyes of the instructor. In other areas of assessment engagement, respondents were acting more congruently with the view of the instructor, giving low priority to the activity. Prompt feedback was the only instructor engagement item that the instructor ranked as important to success, but students apparently did not perceive this as having occurred, with 50% reporting never and 25% reporting only once or twice having received prompt feedback. Approachability does not seem to explain their perception, because 86% of respondents were comfortable or very comfortable with talking to the instructor. Students generally did not email (50%) or had emailed the instructor only once or twice (35%). However, two-fifths responded that they needed to talk to the instructor. About one in 20 discussed ideas about accounting with the instructor, while three-quarters reported never doing this.

Both the instructor and responding students gave high value to being interested in the course. The instructor did not view the other elements of student motivation to be more than somewhat important to success. Just as they reported infrequently forming study groups, students reported tutoring others relatively infrequently or never, while, somewhat incongruently, the majority reported engaging in study partnerships twice or more. These reported study partnerships could be referencing attendance at one of the library-organized study sessions for the course. Seventy per cent of students did more than half of their chapter readings and generally came to class, even though, uniquely among participating instructors, this instructor did not view attendance as important to student success.

There is no doubt that being challenged to do one's best work was a very important demand to make for success, and over four in five students reported being quite or very challenged to do their best. Lectures were perceived as easy to follow, another important success factor, but three out of five students perceived the material as difficult, though that was not considered vital to success. The students found verbal explanations and practice problems to be helpful or very helpful, completing more than half of the assignments and practice problems. Students were apparently working hard, but perhaps not as hard as they should on their course work, which might explain perceptions that the material was difficult and that practice problems and examples were helpful activities.

According to these end-of-study responses, there was a high degree of congruence between the Traditional University instructor's view of the various engagement activities in the survey and the students' frequency of undertaking those activities. Most of the things that the CLASSE© survey asks about were not viewed as important by the instructor and many of these, including within-class engagement activities like asking questions in class or contributing to discussion, were not reported as frequently engaged in by students.

The instructor valued working with others outside of class, preparing a project and doing one's best work on exams, and these activities naturally featured in the assessments he set. In the first offering under study, when the course structure included seminars, the instructor also valued working with others in class. This became unimportant in later offerings when the class meetings were structured as two lectures. Finding the classes easy to follow was a congruent value for both instructor and students. Although the students on average reported finding the material difficult, the instructor did not think this was important to success in the course. Asking questions in class was rare, with twice as many students reporting never raising their hand as ever asked a question. Most students talked to the instructor about accounting ideas either never (75%) or only once (21%).

Students certainly attended to all of the activities raised in the course-specific questions. There was accord between instructor and students on in-class problem demonstrations and on the importance of memorization and analysis in this foundations course. By the end of the study, some of the survey questions designed by this instructor had become less important, in his view, to student success. For example, at the end of the study the instructor found it more important to success that students just did assignments and extra practice problems and less important that they find them helpful.

Class preparation was an important area of disconnect, with almost 70% of respondents reporting three or more cases of coming to class without having completed the readings or assignments. This response is consistent with the apparent agreement by both the instructor and students on attendance being relatively unimportant. It is clearly challenging for an instructor to convince students that coming prepared is important, but it is a challenge mirrored at all four institutions. Another disconnect in common with the other collaborating instructors was the high value placed on prompt feedback, even though students apparently did not perceive the feedback they received to be prompt.

Table 11 brings one issue about the survey instrument into sharp relief. The instructor clearly valued effort for report preparation, both in his CLASSE© Faculty survey responses and in the assessments including a group-prepared report; but in the CLASSE© survey students are only asked how many of them they did, not how valuable or helpful report preparation was to their learning. Most students did indicate the correct answer to be either never or once (depending on how they interpret the group project assignment) but judging by the frequency of responses higher than two times, the team wondered whether some students may have included the parsimoniously graded homework assignments within this category, and consequently whether there was a discord between the instructor's and some students' interpretation of the question. The context of the assignment matters, however: here, a low frequency of engagement with this activity is perfectly consistent with the course requirements, so its position in the upper left-hand quadrant should be interpreted neutrally. Likewise, a low average frequency of homework assignments that took more than an hour to complete, when homework was rated by the instructor as important and assigned only biweekly, may not raise much concern. Students and instructor were in accord about the low importance of long weekly preparation for class, with nearly 85% of students reporting at most one instance of spending more than three hours preparing for class. Presumably, this suggests that the instructor felt that assignments could be adequately prepared and sufficient mastery achieved during this time frame.

Finally, the low value placed on attending class and the high value of memorization seem incongruous with commonly accepted conceptions of engagement, perhaps raising questions about the instructor's intentions. As one explanation, perhaps the data are picking up a course environment that was serving only non-accounting majors as the department transitioned to supporting a new accounting major, with new opportunities to connect with and engage students in the next offering. Or perhaps the instructor

most highly valued student completion of assignments and practice problems outside of class in support of learning for meaning, recognizing that examinations (worth 90%) would give primacy over short-term recall, tested through multiple choice and true and false question formats while, given the number of students in the course, the classroom environment would be challenged to provide an engaging experience.

Table 11: Traditional University CLASSE® Quadrant Analysis (mean response)

INSTRUCTOR: Importance of Activity Important or Very important Not or Somewhat Important	6: (R) Came to class having completed readings (2.42) 8: Worked with classmates outside of class (2.40) 27: Homework problems took more than one hour to complete (2.18) 18: Received prompt feedback from instructor (1.79) 4: Integrated ideas from multiple sources (2.26)	20: Memorizing facts in order to repeat them (2.93) 21: Analyzing an idea, experience, or theory in depth and considering its components (3.03) 26: Challenged to do best work on exams (3.14) 40: Completed the assignments (3.61) 42: Completed practice/extra problems (2.57) 45: Found working problems in class helpful (3.65) 34: Interested in learning the course material (2.93) 38: Found the classes easy to follow (2.85)
	1: Asked questions in class (1.88) 2: Contributed to a class discussion (1.78) 7: Worked with others during class (1.69) 3: Prepared two+ drafts of paper or assignment (2.08) 10: Tutored or taught other students (1.56) 11: Used an electronic medium to discuss or complete an assignment (1.86) 14: Discuss ideas with others outside of class (2.36) 25: Prepared a report of more than five pages in length (1.88) 28: Typically spent more than three hours per week preparing (2.07) 31: Reviewed notes between classes (2.08) 33: Attended a review or help session (1.94) 12: Used email to talk to instructor (1.75) 13: Discussed grades or assignment with instructor (1.49) 17: Discussed ideas with instructor outside of class (1.36) 9: Integrated ideas from different courses (1.97) 19: Worked harder than you thought you could (2.03) 29: (R) Attended class (2.61)	30: Took notes in class (3.65) 32: Participated in a study partnership (2.83) 39: Percentage of assigned readings completed (2.85) 35: Comfortable talking to instructor (3.19) 22: Synthesizing & organizing more complex interpretations & relationships of ideas (2.85) 23: Making judgments about the value of information, arguments or methods (2.69) 24: Applying theories or concepts in practical problems or new situations (3.17) 43: Found assignments helpful (3.44) 44: Found verbal explanations helpful (3.35) 46: Found working through practice/extra problems helpful (3.25) 36: Enjoyed group work in this class (2.51) 37: Found the material difficult (2.61)
STUDENT Engagement/Perception LOW Frequency or Usefulness HIGH Frequency or Usefulness		

Responses to question items 6 and 29, marked with (R), were recoded as follows: 1=4, 2=3, 3=2, 4=1.

Engagement in Introductory Financial Accounting at Relevance University

Communication between students and the instructor at Relevance University figured highly in the outside class engagement category. Students recognized that the instructor valued preparation very much and only a quarter of the responses indicated weekly preparation time below three hours. Students also seemed to know that being conscientious about homework was important, because more than half reported spending more than an hour on assignments at least occasionally. Forming a study group was

somewhat important and about two out of five students did so at least once. Nearly 90% of respondents talked about ideas from the class with other people from outside of class at least once; less than a third said they had never gone to a review session, which was considered important to success. Finally, three-quarters of respondents availed themselves of study partnerships, which were ranked as important to success; only about half tutored another student, which was ranked as less vital to success.

The instructor stressed higher-order thinking skills in his classroom, particularly in the last offering in the study, but students did not apparently differentiate skills in the same manner. Including ideas from other courses was rated as important to success and once again students' responses were commensurately lower on that item, with about half reporting never doing that. About three out of five students reported engaging in memorization quite a bit or very much, although it was only somewhat important in the instructor's view. While they spent relatively less on the higher-order skills of synthesizing and making judgments, students responded that they did engage relatively often in analyzing and applying theories to practical problems, in congruence with the instructor's views.

In this extremely large classroom, more than 40% of students reported at least once asking a question and also participating in discussion, despite the instructor's expectations about the limited necessity of these to success. Most took notes often or very often and fewer than 10% never took notes but instead relied on the instructor's own notes posted after the class. More than half of the students responded that they review these notes before coming to class. These two practices are ranked as very important to success. However, most students failed to do the important activity of completing the readings before class, which might have hindered their ability to be optimally on task in class.

Students apparently reported putting purposeful effort into the class and quite often the instructor ranked these items to be important or very important to success. Eighty-five per cent of them reported working harder than they thought they could and most were being at least somewhat challenged to do their best work. But what stands out is the reception of the instructor's message about the importance of attendance. About half regularly attended class and 70% report going to at least one review session.

Several of the student effort items designed by the instructor that were associated with success were positively represented in students' responses. Nearly all students reported attending more than 80% of the tutorials, a very high number indeed given that the bonus mark incentive was only worth a total of 3%. The instructor ranked finding the course easy to follow as very important to success. No one said the course was difficult to follow, although about a third reported having had some challenges and nearly all reported that the material was at least somewhat difficult. Responses showed consensus in finding the instructor's explanations helpful, finding problems in class helpful and finding the instructor's lecture notes helpful. Liking group work was not important to success and not necessary to this lecture course and most students reported being okay with working alone most of the time.

Taken together, these results suggest that this was apparently a class of independent students: they were highly comfortable talking to the instructor even though most did not do that and many did not email the instructor or ask about their grades. Although many did not discuss ideas with the instructor, the number that did is larger in this category than in other forms of direct communication. But what the instructor believed was most important is prompt feedback. For some reason, three in five students report never receiving prompt feedback in contradiction with the facts. Overall, it is not surprising that this instructor was nominated for a Relevance University undergraduate teaching award. Even in such a large class, he appears to be challenging his students appropriately and, based on the evidence in this sample, they were rising to the challenge. Perhaps most striking in reviewing these results is that at this site there are only two items (memorization and difficulty of material) on which the students scored highly that were not matched by the instructor. This suggests that there was little the students were doing that the professor did not perceive as important.

Table 12: Relevance University CLASSE© Quadrant Analysis (mean response)

INSTRUCTOR: Importance of Activity Important or Very important Not or Somewhat Important	6: (R) Came to class having completed readings (2.03) 27: Homework problems took more than one hour to complete (1.78) 28: Typically spent more than three hours per week preparing (2.26) 31: Reviewed notes between classes (1.77) 33: Attended a review or help session (2.14) 18: Received prompt feedback from instructor (1.60) 9: Integrated ideas from different courses (1.70) 22: Synthesizing & organizing more complex interpretations & relationships of ideas (2.35) 23: Making judgments about the value of information, arguments or methods (2.42)	30: Took notes in class (3.14) 14: Discuss ideas with others outside of class (2.82) 32: Participated in a study partnership (2.62) 39: Percentage of assigned readings completed (2.64) 35: Comfortable talking to instructor (2.66) 21: Analyzing an idea, experience, or theory in depth and considering its components (2.83) 24: Applying theories or concepts in practical problems or new situations (2.61) 19: Worked harder than you thought you could (2.56) 26: Challenged to do best work on exams (3.47) 29: (R) Attended class (2.56) 41: Attended tutorials (3.84) 44: Found verbal explanations helpful (3.07) 46: Found working through practice/extra problems helpful (3.34) 49: Found instructor's lecture notes helpful (3.28) 34: Interested in learning the course material (2.96) 38: Found the classes easy to follow (2.81)
	1: Asked questions in class (1.56) 2: Contributed to a class discussion (1.58) 7: Worked with others during class (1.30) 3: Prepared two+ drafts of paper or assignment (1.24) 8: Worked with classmates outside of class (1.68) 10: Tutored or taught other students (1.72) 11: Used an electronic medium to discuss or complete an assignment (1.76) 25: Prepared a report of more than five pages in length (1.02) 3: prepped 2 + drafts of assignment (1.24) 8: worked w/ classmates outside class (1.68) 12: Used email to talk to instructor (1.30) 13: Discussed grades or assignment with instructor (1.27) 17: Discussed ideas with instructor outside of class (1.45) 4: Integrated ideas from multiple sources (1.22) 42: Completed practice/extra problems (2.30) 36: Enjoyed group work in this class (2.00)	20: Memorizing facts in order to repeat them (2.79) 37: Found the material difficult (2.93)



STUDENT Engagement/Perception
 LOW Frequency or Usefulness HIGH Frequency or Usefulness

Responses to question items 6 and 29, marked with (R), were recoded as follows: 1=4, 2=3, 3=2, 4=1.

Engagement in Introductory Financial Accounting at Integrative University

Analyzing the congruency of perceived instructor importance and self-reported student behavior at Integrative University was a little more challenging than the two sites just reviewed, given the fact that it involved a sequence of two courses. Specifically, the focus has been on the final offering of the course, in order to reflect the latest evolution of the instructor's thinking. At this site, as the course is the second in a sequence, we considered it useful to look at the final offering of the first course as well, to see what complementary environmental features apply to the commensurate content. Where we do that, the reader should bear in mind that these are a different pool of respondents with potentially non-random responses.

The data suggest a conversation desired by the instructor that was not being picked up by the students in this sample. Seventy per cent of students reported rarely or never emailing the instructor and slightly more than that percentage rarely discussed their assessment grades with him, even though not a single respondent indicated being uncomfortable with talking to him. These are very important activities to success in this instructor's view, and while he ranks discussing ideas with the instructor as being only somewhat important, two-fifths of respondents report never engaging in this way. In the classroom, there is more evidence of a missing conversation. For example, asking questions was considered to be very important to success, something that could quite easily be facilitated in a small to medium-sized classroom environment. Nonetheless, 30% of respondents reported never asking a question in class and half reported asking only once or twice. These respondents were not really consistently contributing to classroom discussion, but instead seemed to be engaged in an internal conversation. More than 90% reported taking notes and a quarter of respondents reviewed these notes before coming to class, both of which were considered to be very important activities to success in the eyes of our collaborating instructor.

Students' own motivation was quite congruent with the instructor's view of important activities for success: 80% reported fewer than three absences and 70% reported attending review sessions. They also brought a high degree of interest in the content. Although working harder than they thought they could was viewed as important to the instructor, nearly two-thirds of respondents reported being stretched in this way either never or only occasionally. Another important activity for which there was incongruence was coming prepared with the readings and assignments completed, although two-thirds reported doing more than half of the readings at some point. About 70% reported being in a study partnership at least once, which was somewhat important to success.

A number of outside-class activity responses were fairly congruent with the instructor's perceptions of the merits of these activities to student success. Nearly all students reported at least one instance of taking more than an hour with their homework, while nearly 40% reported three or more such occasions. Almost three-quarters of students reported putting in more than three hours to prepare for their course at one time or another, although perhaps more consistently thorough preparation could be valuable. Students were also congruent with the instructor in how many drafts they prepared of a report and whether they elected to form a study group to prepare for assessments, although perhaps more use of electronic media to discuss their assignments with one another is indicated.

In terms of the cognitive skills that they brought to understanding the material, more than half of responding students report memorizing, analyzing and applying concepts quite a bit or very much, and doing somewhat less synthesizing or judging. In contrast, the instructor viewed the higher-order practices to be very important, while memorizing was viewed to be only merely important to success. Perhaps differing perceptions between students and instructor could explain the large proportion of students reporting not having worked on a paper or project, even though there were biweekly integrative assignments viewed as important by the instructor; the instructor was not referring to the integrative "exit pass" activity for this question item, although the students may have been. The pattern of rarely or never integrating information learned in other courses, an important practice to success, was consistent with a certain insularity towards opportunities and perhaps part of the internal conversation.

Two practices in the quality category emphasize insularity. Although perceived as very important to success, about 30% of respondents did not do more than half of the assignments and about half did less than 20% of the practice problems. The data show that these assignments were perceived to be helpful (very important to success), as were verbal explanations in class (important) and online resources made available through the textbook publisher (somewhat important). Some congruence of expectations was apparent here too, as respondents mainly agreed that lectures were somewhat easy or easy to follow. The material was apparently difficult for the majority of respondents. However, being challenged to do one's best work was very important to success, and four out of five respondents affirmed that experience.

So if this data are indeed capturing an internal conversation going on, then the exit pass intervention is particularly timely. Exit passes engage students with an open-ended question that can help to shape learning through a process of information parsing, and although the earlier data do not show stark differences in classroom engagement, the structure of the exit pass exercise can make the internal conversation somewhat more productive.

occasionally came to class without having completed the readings. Only a quarter of respondents reported never working with someone in class and four out of five respondents took notes in class. The instructor considered it somewhat important to review these notes before class and correspondingly only 16% reported never having done so. Students and instructor apparently agree that the classroom is a valuable place to engage.

In contrast, just over half of the outside-class engagement benchmark items were not considered important to students' success with the course. Participating in a study group and spending more than an hour preparing homework were rated important by the instructor: 60% of students reported working in a study group three or more times and only 11% reported never working in a study group, while less than 10% of respondents reported never spending more than an hour on homework. Preparing a report of more than five pages in length was not important and 90% of respondents reported never doing this in the context of this class. Students seemed to understand what they should do and put congruent and appropriate weight on those things.

The instructor identified the in-depth analysis of cases and the application of concepts and theories as very important to success, with synthesizing also being important, while memorization and making judgments about methods were not important. Students apparently got this message, because only half reported memorizing quite a bit or very much and around 40% reported judging quite a bit or very much. Seventy-seven reported being engaged in analysis quite a bit or very often, however, and likewise two-thirds reported applying concepts quite a bit or often. None of the other aspects of engagement with higher-order thinking were important and students ranked these congruently with the instructor.

Each of the instructor-designed question items was viewed as very important to success by the instructor. Again, student responses were highly congruent with this viewpoint. Two-thirds of students were moderately to highly challenged to do their best work. Respondents did not find the material too difficult on average, and no respondent said the instructor was difficult to follow. In fact, nearly 90% said his classes were easy or very easy to follow. Forty per cent reported completing all of the assignments and nearly that many again reported completing more than 80%, but not all, of them. Seventy per cent of respondents completed more than half of the practice problems. Nearly everyone found assignments, verbal in-class explanations, problems worked in class and practice problems to be helpful or very helpful.

The instructor valued a number of activities representative of motivation and engagement outside of class and we received strongly congruent student responses of their use of these activities. Students helping students was very important: 70% of students had tutored at least once, with 70% having formed a study partnership twice or more and only 15% saying they had never formed a study partnership. Attendance was apparently understood to be important because about a third of the class never missed and only 14% reported more than five absences. Interest was important to the instructor and 95% of students reported being interested or very interested in financial accounting. Another activity important for success was working harder than they thought they could, which 20% reported never experiencing, while about 40% of students reported experiencing this sort of challenge often or very often. A quarter of respondents had never gone to a review session, which might not have been important if they were engaged in class, availing themselves of the classroom discussion activities and practice problems.

The value of the classroom experience for learning the material stood out in the instructor engagement category, where lines of communication with the instructor were very important and discussing ideas with the instructor was only merely important. A third of students reported never emailing the instructor, which may not be necessary in this environment. A fifth of respondents reported never discussing their grades with their instructor, although 97% of respondents said they were comfortable or very comfortable talking to him (64% were very comfortable and no one reported being uncomfortable). However, as at other institutions, there seems to be an inability to perceive prompt feedback, at least for a quarter of respondents, despite receiving it and despite it being very important to success in the instructor's eyes.

Table 14: Collegial University CLASSE© Quadrant Analysis (mean response)

INSTRUCTOR: Importance of Activity Important or Very important Not or Somewhat Important	2: Contributed to a class discussion (2.28) 6: (R) Came to class having completed readings (2.49) 7: Worked with others during class (2.44) 10: Tutored or taught other students (2.19) 27: Homework problems took more than one hour to complete (2.39) 39: Percentage of assigned readings completed (2.25) 12: Used email to talk to instructor (2.08) 13: Discussed grades or assignment with instructor (2.32) 17: Discussed ideas with instructor outside of class (2.03) 18: Received prompt feedback from instructor (2.40) 22: Synthesizing & organizing more complex interpretations & relationships of ideas (2.35) 19: Worked harder than you thought you could (2.29)	1: Asked questions in class (2.53) 30: Took notes in class (3.38) 8: Worked with classmates outside of class (2.78) 32: Participated in a study partnership (3.07) 35: Comfortable talking to instructor (3.62) 21: Analyzing an idea, experience, or theory in depth and considering its components (2.98) 24: Applying theories or concepts in practical problems or new situations (2.93) 26: Challenged to do best work on exams (2.78) 29: (R) Attended class (2.85) 40: Completed the assignments (4.07) * 42: Completed practice/extra problems (2.75) 43: Found assignments helpful (3.47) 44: Found verbal explanations helpful (3.58) 45: Found working problems in class helpful (3.66) 46: Found working through practice/extra problems helpful (3.52) 34: Interested in learning the course material (3.52) 38: Found the classes easy to follow (3.30)
	3: Prepared two+ drafts of paper or assignment (1.64) 11: Used an electronic medium to discuss or complete an assignment (2.26) 25: Prepared a report of more than five pages in length (1.21) 28: Typically spent more than three hours per week preparing (2.49) 31: Reviewed notes between classes (2.40) 4: Integrated ideas from multiple sources (1.70) 9: Integrated ideas from different courses (2.15) 23: Making judgments about the value of information, arguments or methods (2.30) 37: Found the material difficult (2.12)	20: Memorizing facts in order to repeat them (2.60) 14: Discuss ideas with others outside of class (2.67) 33: Attended a review or help session (2.72) 36: Enjoyed group work in this class (2.85)

STUDENT Engagement/Perception

LOW Frequency or Usefulness HIGH Frequency or Usefulness

* Response ranges from 1 to 5, with 5 being “completed 100%”
 Responses to question items 6 and 29, marked with (R), were recoded as follows: 1=4, 2=3, 3=2, 4=1.

In summary, then, there was a high degree of congruence found in the relative merits of the various engagement activities at Collegial University. Incongruences seem to be concentrated in students’ conversation with the instructor, perhaps because their needs to communicate and engage were met in

other ways, or in a degree of under-preparedness, possibly because alternative methods of engaging and achieving success were available to students in this class context.

The CLASSE© quadrant analysis condenses a great deal of information, some 49 questions for each of the four institutions, into an accessible visual of the approximate congruence of instructor beliefs and student practices in these courses at the end of their first complete cycle of collaborative action research. At Traditional University and Relevance University, students apparently were not engaging as much as might be optimal in coming prepared for class and applying adequate time to homework, two areas affecting preparedness to learn. It is perhaps not surprising that the two learning contexts with smaller classes, Integrative University and Collegial University, reported lower frequencies of the important activities of communication with the instructor, because connection might be occurring right in the class, with or without actual dialogue, in these less anonymous classrooms. As with all data in the study, the conclusions drawn from them must be interpreted judiciously and confirmed in the other methods of analysis available to us. For some items, the CLASSE© responses most certainly are picking up interpretative, definitional or memory differences between student and instructor that are a constant part of qualitative response surveys – how else can one explain the apparent disregard for what, from our perspective as academic instructors, is clearly prompt feedback in our disciplines? Read with that knowledge, the quadrant tables confirm that all four sites had many items of strong congruence between student engagement activities and instructors' expectations for success.

More specifically, a count of the number of items showing agreement across all four sites revealed a range in the number of items (between 8 and 17) that were perceived as both important from the instructors' points of view and were highly reported behaviours from the students. In this instance, Collegial University appears to be the site with the greatest congruence, with 17 items of agreement, followed by Relevance at 16. For those items that were considered by the faculty to be the least important, and least engaged in by the students, the number of items ranged from 9 to 17, with Traditional University having the highest number. In terms of behaviours in which students were invested that were not particularly valued by the faculty, the range was from 2 to 12. On this item, Traditional University stood out as being one in which students were engaging in many more activities than the instructor perceived to be important. Finally, with respect to those items that the faculty valued but that the students did not report engaging in frequently, the range was from 5 to 18, with Integrative University having the highest number. As a result, one conclusion may be that there was a higher degree of congruence between expectations and behaviours at Collegial and Relevance than there was at Traditional or Integrative, differences that perhaps could be reduced through enhanced communication and/or changes in course design.

Approaches to Studying

In this section the results of the Lancaster Approaches to Studying questionnaire are presented by institution for each of the three categories of approaches (meaning, achieving and reproducing), as well as the Approaches to Studying Index, calculated by summing the learning scores for strategic and meaning orientations and subtracting the reproducing score. Theoretically, the Approaches to Studying Index runs from -24 to +48: each of the three component scales is created by simple sums of the responses to six questions, so each ranges between 0 and 24 because responses range from 0 to 4 along each six-question category. Histograms are also included in the Appendix to provide a picture of the range of students' intentions in their approach to learning in each environment.

As **Table 15** below shows, the average of the meaning scores for each site ranged from 14.02 to 17.11; achieving scores ranged from 16.14 to 17.71; and reproducing scores ranged from 16.20 to 18.34. The overall Approaches to Studying Index ranged from 13.15 to 17.42. These results compare favourably to the mean results reported by Entwistle and Ramsden (1983, pp. 241-243) for a range of academic subjects and are somewhat higher on all scores than the North American data (Woods, 2011, p. 284).

At each institution except for Integrative University's winter courses, there was a modest but positive increasing trend in the Approaches to Studying Index between the first and final cohorts, showing that over the course of the study, students on average moved away from reproducing towards a more meaning-oriented and achieving response to the learning environment. While it is tempting to attribute this to the interventions, the sample is clearly smaller than the population of students in these class cohorts, and other factors could be at play. If our sample were random, t-tests at the 5% significance level could only substantiate the hypothesis that the means were different at Collegial University.

Table 15: Approaches to Studying Index Means (and standard errors)

University & Cohort	Approaches to Studying Index (meaning + achieving – reproducing)	Meaning Index	Achieving Index	Reproducing Index
 Winter 2009	13.15 (0.554) n = 145 (CLASSE© n = 161)	14.02 (0.314)	16.14 (0.268)	17.01 (0.273)
 Fall 2009	14.54 (0.475) n = 139 (CLASSE© n = 148)	14.58 (0.298)	16.87 (0.249)	16.91 (0.253)
 Winter 2010	15.74 (0.652) n = 65 (CLASSE© n = 72)	15.23 (0.406)	17.35 (0.403)	16.85 (0.337)
 Fall 2009	15.44 (0.285) n = 576 (CLASSE© n = 576)	15.33 (0.149)	16.74 (0.144)	16.64 (0.146)
 Fall 2010	15.72 (0.377) n = 303 (CLASSE© n = 303)	15.31 (0.196)	17.25 (0.185)	16.84 (0.194)
 Fall 2009	13.51 (0.891) n = 51 (CLASSE© n = 57)	14.96 (0.547)	16.49 (0.391)	17.94 (0.351)
 Winter 2010	15.38 (1.000) n = 422 (CLASSE© n = 48)	15.33 (0.563)	17.29 (0.493)	17.24 (0.400)
 Fall 2010	13.91 (0.846) n = 58 (CLASSE© n = 60)	15.52 (0.496)	16.74 (0.436)	18.34 (0.363)
 Winter 2011	14.04 (0.850) n = 67 (CLASSE© n = 70)	14.97 (0.518)	16.82 (0.446)	17.75 (0.343)
 Winter 2011	15.21 (0.764) n = 68 (CLASSE© n = 73)	15.10 (0.459)	16.31 (0.418)	16.20 (0.358)
 Winter 2012	17.42 (0.705) n = 72 (CLASSE© n = 73)	17.11 (0.410)	17.71 (0.420)	17.40 (0.362)

The most dominant learning approach for each cohort is shaded in **Table 15**. Most of the courses we sampled for this study show the prominence of an achieving orientation, which can be described as applying one's time and abilities wisely to succeed in the course. A movement, conditional on sample, from reproducing as the dominant approach towards achieving is reflected at Traditional University, where class size gradually diminished and some modest adjustments were made to the assessment approach. For Relevance University, where class size remained large and the intervention was engaging students with real-world examples, an achieving orientation remained dominant for both cohorts. Here, the instructor clearly communicated what the expectations would be for the examination and the students focused on those activities that they felt would enhance their success.

For Integrative University, where class size remained small and the dominant intervention was to use exercises that encouraged students to reflect more deeply on their work, the students reported a preference for a reproducing orientation to learning for three of the four cohorts. This site achieved the highest overall reproducing score (18.34) within the study. Compared to the winter course in the sequence, the fall course seems to have consistently lower overall approaches to studying index scores. This may reflect the opportunity to incorporate more hands-on lab work in the fall semester.

For Collegial University, where class sizes remained small and the instructor ultimately opted not to introduce an intervention, the class atmosphere was regarded as highly supportive and encouraging and an achieving orientation was most prominent for both cohorts. The first cohort at this site reported the lowest surface learning orientation (16.20) for the study as a whole, and the final cohort reported the highest overall scores for both an achievement (17.71) and meaning orientation (17.11).

In analyzing these results, it is perhaps surprising that students reported such high meaning and achieving orientations in a first-year introductory course, in a discipline that has been criticized for its over-reliance on multiple choice exams and short-term memory work (AAA/AICPPA, 2012; Hall, Ramsay & Raven, 2004). Nevertheless, scores for a reproducing orientation were high, which is consistent with such attributes. However, recall that the participating instructors were considered to be highly skilled and committed to student learning. They placed significant emphasis on practices which have been found to foster learning for meaning, including breaking up the lectures into 20-minute mini-lectures with problem activity breaks (Collegial), using questioning to break the passivity of didactic lectures and support comprehension (Integrative; Relevance), and encouraging students to engage with the material through repeated problem exercises (whether in class, seminar or tutorial, through on-line quizzes or graded homework assignments).

Somewhat unexpected is the observation that the students at Collegial University reported the highest meaning and achieving orientations across all sites. This is contrary to the generally held belief that college students are more likely to engage in reproducing approaches and university students in more meaning oriented approaches. It may therefore be instructive to revisit what was unique about this particular learning environment.

Just as Hemmingsen (2002) asserts for Canadian college accounting programs broadly, Collegial University differentiates itself by taking a philosophy to instruction that is distinct from the usual perception of a university instructional context. At Collegial, students learn by trial and success, with ongoing practice and offers of remedial help for anyone who is struggling. The instructor identifies coaching and confidence-building as vectors that are available to him because of the small size of the class and the rapport that he attempts to construct. Failure to learn in this environment would be difficult if the only barriers to understanding were scholastic.

However, this first-year accounting course sequence at Collegial presents a significant challenge in terms of engagement. Although technically available to a number of students in bookkeeping, business administration and management, our sample only included students from two programs: General Business and Business Administration – Accounting. These two first-year accounting courses are considered a rite of passage for these programs. However, according to our collaborating instructor,

approximately 80% of students enrolled in the Business Administration – Accounting program are apparently engaging in content review of their high school accounting. There is currently little if any scope for working on accounting material that these students might find more interesting or challenging.

Discussion of Results: A Study of Similarities, Differences and Insights

Before considering the diverse results that were found at these four sites, it is valuable to recall that they each share a number of important similarities. First, there are strong similarities concerning the role that the Introductory Financial Accounting course plays in each of the postsecondary institutions studied. As a foundational course, it is the place where a number of core accounting techniques, models and threshold concepts are taught to students in a variety of programs and business majors. Second, there are significant content commonalities across the sites, confirmed by an independent accounting expert. Third, a single assessment approach, traditional testing using multiple-choice and short answer questions, dominated across sites, with upwards of 85% of final course grades devoted to this style of midterm and final examinations in three of the four sites; the figure was 70% at the fourth site. This commonality is likely due in part to the influence of the accounting accreditation process and the desire to have accounting students perform well on certification exams post-graduation. Another likelihood is the importance of foundational knowledge to subsequent accounting courses in an integrated program of study. In other words, accounting instructors may to a large degree perceive their primary task as “teaching to the test” for certification, despite the fact that the vast majority of students in Introductory Financial Accounting are not intending to pursue an accounting designation.

The participating instructors were also all found to be highly committed to and interested in enhancing their students’ learning. All sites handled a large number of students in each first year cohort by offering multiple sections (either for lectures and/or tutorials/seminars/labs), although they did so for varying class sizes (ranging from 35 to 300) and with varying numbers of instructors. This was a key point of difference in the learning contexts studied. At Traditional and Relevance, for example, single instructors taught large lecture sections, assisted by others in tutorial or seminar settings. At Traditional University, where a team of instructors was involved for the seminars of the first cohort, there was some evidence of variation in the perceived pedagogical effectiveness of the seminar leaders and perceived disconnects between the content being taught between seminar leaders and course instructors. As instructors were added in the movement to smaller lecture sections without seminars, students perceived inequity across midterm assessments. At Collegial and in the second cohort at Relevance (where a sessional instructor took one of the three sections that semester), perceived inequity in the quality of the learning experience across sections resulted in more students trying to transfer into our participating instructors’ sections.

The collaborative action research questions developed by the study team concerned engagement and approaches to learning:

- 1) How are students experiencing the course?
- 2) To what extent are students availing themselves of opportunities to engage with the material afforded by the course environment?
- 3) To what extent are students creating personal meaning and understanding in Introductory Financial Accounting, as distinct from primarily memorizing the material?
- 4) How can the instructor foster active learning to maintain or improve engagement?
- 5) As changes are being made to the learning context, how are engagement and approaches to studying (meaning/reproducing orientations to learning) evolving as a result of the changes?
- 6) How effective is the intervention in supporting engagement and learning for understanding?

Students experienced the four courses that were the focus of our study in a variety of ways and availed themselves of various opportunities to engage with the material, the instructors and the course environment. Based on the CLASSE© results and on our use of our five benchmark engagement

categories – Within Class, Outside of Class, Instructor, Higher-Order Thinking and Student Effort – we found that student engagement appeared to be highest overall for the categories of higher-order thinking and student effort, and lowest with respect to instructor engagement. Our largest two sites reported moderately high rates of engagement both in and outside of class, whereas for the two smaller classes, within class engagement was considerably higher than for out of class engagement. The site with the highest overall engagement scores was Collegial University. The site with the largest increase in engagement score was Traditional University, as it moved from a single mass lecture with breakout seminars to two medium-large lecture class meetings that focused on modeling problem-solving, and which were taught by the same person.

Interestingly, we saw little change in reported benchmark rates of engagement between the intervention and the comparator cohorts. After accounting for selectivity bias, the effect on all of our financial accounting engagement benchmarks of smaller classes at Traditional University was not much different from zero, and in a negative direction for the outside class engagement and student effort estimates. However, these engagement differences are swamped by the differences in estimation of the Fall 2009 cohort mean, which serves as treatment group in the first estimate and comparator group in the second. After implementing additional critical questioning at Relevance, where large samples gave the estimated selection model its best chance of being well specified, we saw only modest conditional improvements in student effort and instructor engagement, and we observed reduced higher-order thinking. Treatment effects at Integrative University were hard to interpret, with the two courses' estimates being in opposite directions in four of the five benchmark categories despite using the same intervention. Finally, seeing all benchmarks fall by the largest estimated amounts seen in any of the sites' estimates simply does not hold a ring of truth for us, given the rest of the data and the messiness of the estimation technique.

We offer three tentative suggestions for why this might have been the case. First, all institutions participated on the condition that there would be no significant changes in the assessments used. Because students are well known to take their primary behavioural cues from the assessment approach, changes in student engagement should not necessarily have been anticipated. In fact, students at three of our four institutions continued to be assessed using very traditional exam-based assessments for 85% to 100% of their final grades. Only at Collegial University was a substantial amount of weight given to other activities, and there it was not changing either. Second, the interventions arguably represented relatively minor changes to the learning environment when considering the total experience of the course. Only the change in class size at Traditional University could be perceived as a significant change, which appears to have resulted in the largest, positive changes in engagement observed. Finally, questions about possible ambiguity or absence of common interpretation of the object of some of the CLASSE[©] questions and benchmarks have been raised.

The quadrant analysis indicated highest congruence between faculty expectations of importance and self-reported student behaviours at Collegial University and Relevance University. In contrast, at Traditional, students reported participating in a lot of activities that were not highly valued by the instructor. This included classroom attendance. While we did not question the collaborating instructors about what was behind their various perceptions of importance, in this case we surmised that he may have thought that as long as students completed and understood the readings and problem assignments, whether or not they came to class was up to them. This is reflective of assumptions often made within adult learning environments. Conversely, at Integrative, the instructor perceived many more behaviours as being important than the students reported engaging in. Interestingly, these students reported some of the highest levels of classroom attendance. This instructor's unmet expectations might be reflective of a novice learning approach, in which students placed more emphasis on being in class than being fully engaged in class. Kember and Gow (1989) point out that it is hard to inspire a student who has become proficient at rote learning to become curious or to embrace learning for learning's sake. According to Biggs (1996), changing from acquisitive to inquisitive is unlikely to happen without a change in assessment.

With respect to the Lancaster Approaches to Learning instrument, all four sites reported scores that were significantly higher than the available normative findings. Both the individual orientation scores –

meaning, achieving and reproducing – and the overall Approaches to Studying index were in fact quite high across sites. In this case, unlike the CLASSE© engagement results, the Approaches to Studying index scores generally moved in the anticipated direction following the interventions. This raises further questions about the suitability of the CLASSE© instrument, at least for our purposes. Although a student's approach to learning represents an inherent orientation, it should certainly influence the degree to which students avail themselves of the engagement activities in the learning environment, and yet we found that following the interventions, students reported approaching their learning in a more meaningful or deeper manner but engagement scores declined for our sample. Could it be that the CLASSE© instrument is not sensitive enough to pick up the responses of interest to us? In any case, taken on its own we can report that we observed the highest overall Approaches to Studying Index scores for Collegial University, with the final version of Traditional and Relevance being a close second and third. Students at Integrative University also reported the highest overall rates for a reproducing orientation. Again, however, it is important to note that the overall scores for Integrative were much higher than the normative findings across all three Lancaster approaches categories.

These results, along with the focus group data, provide important insights into how active learning (and in particular, consistent problem practice) might be fostered to maintain or improve student engagement in these four sites (and potentially within other Introductory Financial Accounting courses with similar contexts as well). Financial accounting is an evolving, nuanced and increasingly complex area of study. Each of our sites used pedagogical approaches that were helpful to varying degrees in fostering engagement and effective learning approaches. Although the nature of the interventions and statistical constraints prevent us from being able to declare definitively what the impact of each intervention might have been, when triangulated with other evidence, a number of observations can be made.

At Traditional University, demonstration and incented practice were clearly considered vital. Students described the instructor's approach as demonstrating how to work through the problems "carefully, concisely, precisely." They also valued the fact that there were regular graded assignments that encouraged practice; "you have to practice it, you can't just sit there and listen to him talk about it. Accounting is something you actually have to do... The fact that it was worth [grades] was the only reason I did it." At first, small seminars were introduced in support of such outcomes but these proved to be unsuccessful for a variety of reasons including the fact that most were not taught by the course instructor, and they were poorly attended. A format involving smaller classes and more time on demonstration lectures (groups of 80 for two 90-minute lectures per week) appeared to be much more effective. Regular, graded on-line quizzes, followed by paper-based assignments, proved to be much more effective at encouraging student learning and problem completion. Students reacted negatively to the parsimonious grading scheme, however, based more on effort than quality of performance. They also felt that the proportion of the grade given to these assignments was insufficient for the amount of work involved. As a result, some apparently opted not to do the work. Also at Traditional University, a culminating project required students to integrate and apply course material to an actual company. While some students enjoyed this exercise, others found it disconnected from the classroom experience and were confused about expectations and approach.

At Relevance University, students observed: "the more I did it, the more I understood it... Once you do it, you can actually reason out the answer. There's really no need to memorize..." and, "I really just did the questions over and over again until it becomes second nature." For the instructor, the message was also about practice and preparation: complete the practice assignments and prepare to be focused and on task while attending class in a highly disciplined classroom learning environment. Students were encouraged to practice by doing rather than by memorizing outside of the classroom and also to integrate habits of professional judgment and professional behaviour. Students in the focus group recognized the need to find the logic behind the problems and appreciated the learning environment that the instructor created. They attended class to get the benefit of his take on the material and to see theories and concepts contextualized by real-world accounting events. Furthermore, given the extensiveness of his customized notes, they felt that a textbook was unnecessary. Students reported attending the optional tutorials and exam preparation sessions to practice problem completion and for direction about what to expect on the exams. In fact, the focus group participants mentioned the real-world applications and the

critical thinking questioning somewhat less than the bonus marking scheme for tutorial attendance, even suggesting that a similar incentive should be put in place for the ungraded homework assignments to encourage students to keep up with the work.

The instructor at Integrative University was seen to be regularly putting out messages to students, suggesting how they might expand their learning activities and better take advantage of the resources available to them, including practicing problems. Homework, however, was ungraded and therefore perceived as optional. The student in our focus group observed, “We’d have assigned homework questions and he would post the solutions so I’d first try to do the question on my own and if I don’t get it I’d go and look at the solution” and, “Sometimes I’d get behind and wouldn’t practice my questions as much as I should.” This instructor’s in-class intervention provided an ungraded but socially mandatory communication from student to instructor in the form of exit passes. His hope to open students’ eyes to the intricate, nuanced conversation that is accounting and encourage integration, stood in the face of students who ranked effort and preparation highly but from a reproducing orientation. These students appeared to be missing much of the learning support that was on offer in this environment, including the laboratory component that was part of the winter offering that should familiarize students with standard accounting software (of great practical benefit). Finally, it is important to note that the two-course sequence at Integrative University gave these students more than double the scheduled learning time of the students at Traditional and Relevance University. With a moderately sized class such as this, the opportunity exists for more applied, hands-on problem completion within regularly-scheduled class time.

At Collegial University, the smallest class in our study, the students focused on the instructor’s supportive, methodical and customized approach: “he breaks it down for you so that you understand it. He’s different with each student”; “he’d actually say ‘ok, see this is what you’re trying to do and I kinda see why you’re doing this, but this a better way to do it’”; “when he’d take the homework up, he wouldn’t just put the overhead up... He’d go through the entire thing”; “it was like a pattern; you would come to class, you would have the lecture, you’d do examples, you’d get assigned homework, you’d do the homework then you’d do the Lyryx [©] afterwards and then it was a repetitive thing that kept going - people like patterns, right?” The instructor’s message was that engagement both inside and outside of class was essential, as was belief in one’s ability to do the work. For this instructor, ensuring his students were adequately prepared meant that there was nothing they could not do well on in a test situation. His focus was on being ever-present (including by phone on the weekends). Using what might be described as an apprenticeship model, he operated more as a coach than a teacher, personalizing his delivery to each student. He made a point of knowing his students’ names, identifying their learning preferences and creating an engaging routinized classroom environment in which students joked with and learned from him and one another. In addition to receiving the highest engagement and Approaches to Studying Index scores, this course had the highest percentage of non-examination-based assessment activity and the most students who participated in the focus groups. Interestingly, these students also reported the highest degree of interest but the lowest perceived difficulty of course material. The fact that engagement scores dropped most significantly between the two offerings of the winter course could be attributed to a cohort fixed effect because at this site the instructor opted not to introduce an intervention. Finally, similar to Integrative University, it is important to note that the two-course sequence gives these students more than double the scheduled learning time compared to the students at Traditional and Relevance University.

The final research question we were to answer is, “How effective was each intervention in supporting engagement and learning for understanding?” Based on our findings and dependent on the instruments used in the estimation, engagement changed very little due to the interventions that were implemented. We look forward to exploring the balancing conditions and individual matches on the propensity score method to refine the estimation. With a broader understanding of the CLASSE© instrument, we can also go back to the individual question items for effects that may have been washed out by aggregation to benchmarks to look for evidence of engagement given the opportunity to do or take part in engaging things. Our judgments about the CLASSE© data are appropriately constrained by the judgments of the instructor, the expert on the respective learning environments. As for the Lancaster instrument, we learned that achieving was a dominant approach in all but one site, and while learning for understanding

may have been enhanced following the interventions, the design does not afford us adequate conditioning variables to infer magnitudes of causality reflected in the various approaches to learning scores. Finally, we note that small but significant changes in learning approach due to solving problems in groups are found by Hall, Ramsay and Raven (2004) in an introductory accounting course using Biggs' (1987) Study Process Questionnaire.

As this cycle of collaborative action research comes to an end, a new one starts. The rich data set we have collected has yielded what we believe to be very good instruments and some advances in our theoretical framework for effective learning that we look forward to developing further. What is clear is that strategies that enhance learning were happening in each classroom, as the Lancaster data show. Characteristics that were unique to each setting present challenges for understanding how to affect engagement, and what measures and techniques could be used to provide sound evidence of that effect. Teaching practice evolves as time is taken to think more about the ways we conceptualize teaching (Kember, 1997). These instructors return to the classroom having thought systematically about their teaching, and about how to bring out students' best effort in this vital first course in financial accounting.

Conclusions

This study sought to investigate student engagement and approaches to learning in four Introductory Financial Accounting courses at various postsecondary institutions in Ontario. For a variety of reasons, such courses are considered to be particularly important and challenging, including the fact that they often involve large numbers of novice learners with varying degrees of preparation and interest in the subject.

The learning environments in the study were characterized by both considerable similarities and differences. While the overall learning objectives for each of the courses were found to be strongly similar, as was the commitment of the instructors to fostering student learning and the formal assessment plan (which was largely exam based), there were also key differences. These differences largely pertained to course structure, including class size (large, medium or small), classroom pedagogy and environment (whether using a predominantly didactic lecture-based format or something more active and participatory) and learning activities and assessment (whether homework, problem-assignments and tutorial attendance were graded, bonus-marked, embedded within the classroom experience or treated as being entirely optional).

In this study, a multi-step action research process similar to Paisey and Paisey's (2005) provided participating instructors with support as they asked relevant questions about their instructional practice and set out to collect diverse data to answer them. Two familiar instruments, the CLASSE© and the Lancaster Approaches to Studying Questionnaire (ASQ), were used to collect data, as were student focus groups.

The data presented above provide a rich pool from which to draw insights. Collegial University scored highest overall on student engagement and the Approaches to Studying Index. At this site, student time on task, student-instructor contact and student-student cooperation figured prominently in the students' experience (Chickering & Gamson, 1987). The instructor was also highly organized, outgoing and supportive. Given our observations and analysis, it is not surprising that students believed that it would be difficult not to do well in this course. Collegial University appeared to offer an ideal "apprenticeship-style" learning environment which naturally the instructor did not want to change after reviewing his CLASSE© data. Whether it is significant that this learning environment was also the one college course in our study and is more reflective of generalized expectations regarding the college experience or whether differences in resourcing constraints might have played a role in its design is hard to say. Students did comment, however, that their experience in this course was very different from their other courses at the same institution (and even in the same program), suggesting that the primary difference was what the instructor chose to do within the context he was given and not the institutional context itself. Such a course would presumably be expensive to run given how low the student/faculty ratios were and the total

amount of time involved (more than double the classroom contact hours of two of the courses in the study). In a university setting, having Introductory Financial Accounting as a double-weighted course could similarly support students' enhanced learning in accounting, but detract from other learning opportunities, such as electives that support the more liberal educational outcomes that universities are committed to offering.

Once an accounting class was perceived as large, Hill (1998) found no difference in student performance. However, class size affects the choices of feedback and assessment vehicles that are available. For student participants in our study, their effort on learning activities (and in particular practice problems that figured prominently in their experience of these courses) appeared to be more aligned with perceived appropriateness of the assessment approach. Whether or not attendance or participation in seminars or tutorials was graded or resulted in bonus marks, and similarly whether or not homework assignments were graded or received bonus marks, seemed to have a significant effect on student attitudes towards these activities. Similarly, whether quizzes were felt to be given the appropriate weighting for the work involved affected student participation. In short, by combining student focus group input from our two largest sites, it appears that some kind of incentive was needed to get the students to do the work that was essential to learning in this course and which was not easily accommodated within a large-class setting. In this regard, bonus marks may be more motivational than a formal weighted grade. Students expected the grades to be commensurate with the work involved, whereas this did not appear to be the case for bonus marks (anything extra was a bonus!).

A key refrain throughout the study was the need for students to “practice, practice, practice” in order to do well in the course. Activities that encourage students to maintain regular practice with problems similar or identical to those they will encounter on their exams are those that need to be emphasized. It is our contention that this may be why one of our participating instructors did not appear to believe that classroom attendance was all that important: as long as students were prepared to practice problems until mastery was achieved, where they do this is far less important. To the extent that classroom attendance encourages practice, however, such ambivalence may in fact be accurate but perhaps misguided, particularly when applied to novice learners.

In terms of next steps, what is clearly needed now is more critical attention to the instruments used to measure the quality of learning. The Scholarship of Teaching and Learning (SoTL) movement is a relatively new field and as such is in need of the development of trustworthy instruments and clear guidance on their appropriate usage. We feel the time is right for the CLASSE© to undergo a substantial review, to better understand possible overlap of its various items, as well as a qualitative investigation of how particular items are being interpreted and how their intended meaning might be more clearly expressed. Connected to all of this is the need for greater clarity on the appropriateness of various statistical treatments in order to confidently ascertain the existence of statistical differences between pre-treatment and post-treatment course offerings involving different student cohorts. To this end, we suggest that rather than use demographic variables to control for subject pool difference, other variables better suited to explaining choice in subject participation (such as attendance, interest in the course and approaches to learning) might be far more appropriate.

In conclusion, we did not intend for this study to be a comparison between four sites, even less a competition. In the absence of normative findings, however, each site served as a useful benchmark for the others, through which our observations were made. Each instructor made context-dependent choices using the extensive knowledge of their students' characteristics and the larger institutional environment, augmented by systematic study in this collaborative action research. Clearly, there is a great deal of foundational learning to be done in an introductory course and many ways to achieve it. The profession has a wide breadth of knowledge and a significant commitment to lifelong learning. Each instructor in our study appears to be making strong use of the resources available to them. Equally clearly, there are choices to be made about how to structure classes and assessments going forward in order to make that environment most conducive to the objectives envisioned for the profession. A significant conclusion emanating from this study is that pedagogical and assessment approaches that encourage students to engage with the material in a meaningful way, by repeatedly practicing problems that require judgment

and analysis, will be beneficial to student learning and success, both within our research sites and likely in other introductory learning contexts as well.

References

- AAA/AICPA (2012, July). *The Pathways Commission: Charting A National Strategy for the Next Generation of Accountants*. Retrieved from http://commons.aaahq.org/files/0b14318188/Pathways_Commission_Final_Report_Complete.pdf
- AACSB International (2012). *Eligibility Procedures and Accreditation Standards for Accounting Accreditation*. Tampa, FL: The Association to Advance Collegiate Schools of Business. Retrieved from Accounting Accreditation Standards, <http://www.aacsb.edu/accreditation/accounting/standards/Standards-accntg-Jan2012.pdf>
- Accounting Education Change Commission (AECC) (1990). Objectives of Education for Accountants: Position Statement No. 1. *Issues in Accounting Education*, 5(2), 307-312.
- Adler, R. W., Milne, M. J., & Stringer, C. P. (2000). Identifying and Overcoming Obstacles to Learner-centred Approaches in Tertiary Accounting Education: A Field Study and Survey of Accounting Educators' Perceptions. *Accounting Education*, 9(2), 113-134.
- Albrecht, W. S., & Sack, R. J. (2000). Accounting Education: Charting the Course Through the Perilous Future. *Accounting Education*. Series no. 16. Sarasota, FL: American Accounting Association. Retrieved from American Accounting Association, <http://aaahq.org/pubs/AESv16/toc.htm>
- Albrecht, W. S., & Sack, R. J. (2001). The Perilous Future of Accounting Education. *CPA Journal*, 71(1), 17-23.
- Angrist, J. D., & Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton: Princeton University Press.
- Astin, A. W. (1993). *What Matters in College? Four Critical Years Revisited*. San Francisco, CA: Jossey-Bass.
- AUCC (2011). *Trends in Higher Education*. Volume 1 – Enrolment. Ottawa: The Association of Universities and Colleges of Canada. Retrieved from Association of Universities and Colleges of Canada, <http://www.aucc.ca/wp-content/uploads/2011/05/trends-2011-vol1-enrolment-e.pdf>
- Baldwin, B. (1993). Teaching Introductory Financial Accounting in Mass-Lecture Sections: Longitudinal Evidence. *Issues in Accounting Education*, 8(1), 97-111.
- Becker, W. E., & Green, W. H. (2010). Sample Selection in Economic Education Research. *An Online Handbook for the Use of Contemporary Econometrics in Economic Education Research*. Retrieved from the American Economic Association, http://www.aeaweb.org/committees/AEACEE/Econometrics_Handbook/index.php
- Biggs, J. (1987). *Study Process Questionnaire Manual*. Melbourne: Australian Council for Educational Research.
- Biggs, J. (1996). Enhancing Teaching through Constructive Alignment. *Higher Education*, 32(3), 347-364.
- Biggs, J. (2003). *Teaching for Quality Learning at University: What the Student Does*. Second edition. Philadelphia: Society for Research in Higher Education and Open University Press.
- Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor Study Process Questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*, 71(2), 133-149.

- Bloemhof, B. (2012). Assessing Outcomes of Problem-based Learning in Economics. In Poikela, E., and Poikela, S. (Eds.), *Competence and Problem Based Learning: Experience, Learning and Future* (pp. 52-66). Rovaniemi, Finland: Rovaniemi University of Applied Sciences Publications A # 3.
- Cameron, A. C., & Trivedi, P. K. (2005). *Microeconometrics: Methods and Applications*. New York: Cambridge University Press.
- Campbell, C. M., & Cabrera, A. F. (2011). How Sound is NSSE?: Investigating the Psychometric Properties of NSSE at a Public, Research-Extensive Institution. *The Review of Higher Education*, 35(1), 77-103.
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada (2010, December). *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. Catalogue No: MR21-18/2010E-PDF. Ottawa: Her Majesty the Queen in Right of Canada. Retrieved from the Interagency Advisory Panel on Research Ethics, Government of Canada, http://www.pre.ethics.gc.ca/pdf/eng/tcps2/TCPS_2_FINAL_Web.pdf
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage Publications Limited.
- Chen, P. D., Gonyea, R. M., Sarraf, S. A., BrckaLorenz, A., Korkmaz, A., Lambert, A. D., Shoup, R., & Williams, J. M. (2009). Analyzing and Interpreting NSSE Data. *New Directions in Institutional Research*, 141(Spring), 35-54.
- Cherry, A. A., & Reckers, P. M. J. (1983). The Introductory Financial Accounting Course: Its Role in the Curriculum for Accounting Majors. *Journal of Accounting Education*, 1(1), 71-82.
- Chickering, A. W., & Gamsen, Z. F. (1987). Seven Principles for Good Practice in Undergraduate Education. *AAHE Bulletin*, 39(7), 3-7.
- Christensen Hughes, J., & Mighty, J. (2010a). Practices of Convenience: Teaching and Learning in Higher Education. In Christensen Hughes, J., and Mighty, J. (Eds.), *Taking Stock: Research on Teaching and Learning in Higher Education* (pp. 3-13). Montreal and Kingston: McGill-Queen's University Press.
- Christensen Hughes, J., & Mighty, J. (2010b). A Call to Action: Barriers to Pedagogical Innovation and How to Overcome Them. In Christensen Hughes, J., and Mighty, J. (Eds.), *Taking Stock: Research on Teaching and Learning in Higher Education* (pp. 261-277). Montreal and Kingston: McGill-Queen's University Press.
- Conway, C. (2010). *Implementing Engagement Improvements through Targeted Interventions: Final Report: Intervention Processes, Impacts and Implications*. Toronto: Higher Education Quality Council of Ontario. Retrieved from HEQCO, <http://www.heqco.ca/SiteCollectionDocuments/NSSE%20ENG.pdf>
- Duchac, J. E., & Amoruso, A. J. (2012). A Descriptive Study of Institutional Characteristics of the Introductory Accounting Course. *Issues in Accounting Education*, 27(1), 1-16.
- Entwistle, N. J. (1981). *Styles of Teaching and Learning*. Chichester, UK: Wiley.
- Entwistle, N. J., & Ramsden, P. (1983). *Understanding Student Learning*. New York: Nichols Publishing Company.

- Entwistle, N. J. (1991). Approaches to Learning and Perceptions of the Learning Environment: Introduction to the Special Issue. *Higher Education*, 22(3), 201-204.
- Entwistle, N. (2010). Taking Stock: An Overview of Key Research Findings. In Christensen Hughes, J., and Mighty, J. (Eds.), *Taking Stock: Research on Teaching and Learning in Higher Education* (pp. 15-57). Montreal and Kingston: McGill-Queen's University Press.
- Fedoryshyn, M. W., & Tyson, T. N. (2003). The Impact of Practitioner Presentations on Student Attitudes about Accounting. *Journal of Education for Business*, 78(5), 273-284.
- Frederickson, J. R., & Pratt, J. (1995). A Model of the Accounting Education Process. *Issues in Accounting Education*, 10(2), 229-246.
- Geiger, M. A., & Ogilby, S. M. (2000). The first course in accounting: Students' perceptions and the effect on their decision to major in accounting. *Journal of Accounting Education*, 18(2), 63-78.
- Gibbins, M. (2002). The Future of Accounting Education: the Implications to Canadian Universities. *Canadian Accounting Perspectives*, 1(1), 57-67.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine.
- Glass, G. V., & Smith, M. L. (1978). *Meta-analysis of Research on the Relationship of Class Size and Achievement*. San Francisco, CA: Far West Laboratory for Educational Research & Development.
- Hall, M., Ramsay, A., & Raven, J. (2004). Changing the Learning Environment to Promote Deep Learning Approaches in First-Year Accounting Students. *Accounting Education: An International Journal*, 13(4), 489-505.
- Hand, L., Sanderson, P., & O'Neil, M. (1996). Fostering Deep and Active Learning through Assessment. *Accounting Education*, 5(1), 103-119.
- Hattie, J. (2005). The Paradox of Reducing Class Size and Improving Learning Outcomes. *International Journal of Educational Research*, 43(6), 387-425.
- Heckman, J. (1979). Sample Bias as a Specification Error. *Econometrica*, 47(1), 153-161.
- Hemmingsen, R. (2002). CAP Forum: The Future of Accounting Education: A Canadian Community College Perspective. *Canadian Accounting Perspectives*, 1(1), 68-79.
- HEQCO (2012). *The Productivity of the Ontario Public Postsecondary System Preliminary Report*. Toronto: Higher Education Quality Council of Ontario. Retrieved from HEQCO, <http://heqco.ca/SiteCollectionDocuments/HEQCO%20Productivity%20Report.pdf>
- Hill, M. C. (1998). Class size and student performance in introductory accounting courses: Further evidence. *Issues in Accounting Education*, 13(1), 47-64.
- Indiana University at Bloomington (2013). *Construction of the NSSE Benchmarks*. Retrieved from the Center for Postsecondary Research, http://nsse.iub.edu/_/?cid=403
- Indiana University at Bloomington (2009). *NSSE: National Survey of Student Engagement*. Retrieved from the Center for Postsecondary Research, <http://nsse.iub.edu/index.cfm>
- Kaenzig, R., & Keller, R. (2011). A comprehensive effort to recruit and retain accounting students. *Journal of Accounting Education*, 29(4), 315-323.

- Kavanaugh, M. H., & Drennan, L. (2008). What skills and attributes does an accounting graduate need? Evidence from student perceptions and employer expectations. *Accounting and Finance*, 48(2), 279-300.
- Kember, D. (1997). A Reconceptualisation of the Research into University Academics' Conceptions of Teaching. *Learning and Instruction*, 7(3), 255-275.
- Kember, D., & Gow, L. (1989). A model of student approaches to learning encompassing ways to influence and change approaches. *Instructional Science*, 18(4), 263-288.
- Kemmis, S., & McTaggart, R. (Eds). (1988). *The Action Research Planner* (third edition, substantially revised). Geelong, Australia: Deakin University Press.
- Kennedy, P., & Siegfried, J. J. (1997). Class Size and Achievement in Introductory Economics: Evidence from the TUCE III Data. *Economics of Education Review*, 16(4), 385-394.
- Khandker, S. R., Koolwal, G. B., & Samad, H. A. (2010). *Handbook on Impact Evaluation: Quantitative Methods and Practices*. Washington, DC: The International Bank for Reconstruction and Development/The World Bank.
- Killian, L. J., & Brandon, C. D. (2009). Using the Significant Learning Taxonomy and Active Learning to Improve Accounting Education. *Journal of Faculty Development*, 23(3), 30-36.
- Kinzie, J. (2010). Student Engagement and Learning: Experiences that Matter. In Christensen Hughes, J., and Mighty, J. (Eds.), *Taking Stock: Research on Teaching and Learning in Higher Education* (pp. 139-153). Montreal and Kingston: McGill-Queen's University Press.
- Knapper, C. K. (n.d.). *Short Version of the LASQ and CPQ*. Waterloo, ON: University of Waterloo.
- Kuh, G. D. (2001). Assessing What Really Matters to Student Learning: Inside the National Survey of Student Engagement. *Change*, 33(3), 10-17.
- Kuh, G. D. (2003, March-April). What We're Learning About Student Engagement from NSSE: Benchmarks for Effective Educational Practices. *Change*, 35(2), 24-32.
- Kuh, G. D. (2009). The National Survey of Student Engagement: Conceptual and Empirical Foundations. *New Directions in Institutional Research*, 141(Spring), 5-20.
- Kushniryk, A., & Levine, K. J. (2012). Impact of Multitasking on Listening Effectiveness in the Learning Environment. *The Canadian Journal for the Scholarship of Teaching and Learning*, 3(2), 1-13. Article 7, DOI: <http://dx.doi.org/10.5206/cjsotl-rcacea.2012.2.7>.
- Leuven, E., & Sianesi, B. (2003). *PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing*. Retrieved from REPEC, <http://ideas.repec.org/c/boc/bocode/s432001.html>
- Lougheed, J., Kirkland, J., & Newton, G. (2012). Using Breakout Groups as an Active Learning Technique in a Large Undergraduate Nutrition Classroom at the University of Guelph. *The Canadian Journal for the Scholarship of Teaching and Learning*, 3, 1-15. Article 6, DOI: <http://dx.doi.org/10.5206/cjsotl-rcacea.2012.2.6>.
- Lucas, U. (2002). Contradictions and Uncertainties: Lecturers' Conceptions of Teaching Introductory Accounting. *British Accounting Review*, 34(3), 183-203.

- Lucas, U., & Meyer, J. H. F. (2005). 'Towards a mapping of the student world': The identification of variation in students' conceptions of, and motivations to learn, introductory accounting. *British Accounting Review*, 37(2), 177-203.
- Lucas, U., & Mladenovic, R. (2007). The Potential of Threshold Concepts: An Emerging Framework for Educational Research and Practice. *London Review of Education*, 5(3), 237-248.
- Lutz, M. E., & Culver, S. (2010). The National Survey of Student Engagement: A university-level analysis. *Tertiary Education and Management*, 16(1), 35-44.
- Maddala, G. S. (1983). *Limited Dependent and Qualitative Variables in Econometrics*. Cambridge: Cambridge University Press.
- Marton, F. A. (1975). What Does It Take to Learn? Some Implications of an Alternative View of Learning. In Entwistle, N. J. (Ed.), *Strategies for Research and Development in Higher Education* (pp. 32-43). Amsterdam: Swets & Zeitlinger.
- Marton, F. A., & Säljö, R. (1976). On Qualitative Differences in Learning: 1 – Outcome and Process. *British Journal of Educational Psychology*, 46(1), 4-11.
- Marton, F. A., Dall'alba, G., & Beaty, E. (1993). Conceptions of Learning. *International Journal of Education Research*, 19(3), 277-300.
- Maudlin, S., Crain, J. L., & Mounce, P. H. (2000, January-February). The accounting principles instructor's influence on student's decision to major in accounting. *Journal of Education for Business*, 75(3), 142-148.
- McNiff, J. (1994). *Action Research: Principles and Practice*. London: Routledge.
- Mostyn, G. R. (2012). Cognitive Load Theory: What It Is, Why It's Important for Accounting Instruction and Research. *Issues in Accounting Education*, 27(1), 227-245.
- Meyer, J. H. F. (2010). Helping Our Students: Learning, Metalearning, and Threshold Concepts. In Christensen Hughes, J., and Mighty, J. (Eds.), *Taking Stock: Research on Teaching and Learning in Higher Education* (pp. 191-213). Montreal and Kingston: McGill-Queen's University Press.
- Naser, K., & Peel, M. J. (1998). An exploratory study of the impact of intervening variables on student performance in a Principles of Accounting course. *Accounting Education*, 7(3), 209-223.
- Ontario (2010). Chartered Accountants Act. *Statutes of Ontario*. Chapter 6. Retrieved from Legislative Assembly of Ontario, http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&BillID=2162&detailPage=bills_detail_the_bill
- Quimet, J. A., & Smallwood, R. A. (2005). CLASSE – the Class-level Survey of Student Engagement. *Assessment Update*, 17(6), 13-15.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How College Affects Students*. Volume 2: A Third Decade of Research. San Francisco, CA: Jossey-Bass.
- Paisey, C., & Paisey, N. J. (2005). Improving Accounting Education Through the Use of Action Research. *Journal of Accounting Education*, 23(1), 1-19.
- Perry, W. G., Jr. (1970). *Forms of Intellectual and Ethical Development in the College Years: A Scheme*. New York: Holt, Rinehart & Winston.

- Porter, S. R. (2011). Do college student surveys have any validity? *The Review of Higher Education*, 35(1), 45-76.
- Prosser, M., & Trigwell, K. (1999). *Understanding Learning and Teaching: The Experience in Higher Education*. Berkshire, UK: The Society for Research into Higher Education and Open University Press.
- Raimondo, H. J., Esposito, L., & Gershenberg, I. (1990). Introductory Class Size and Student Performance in Intermediate Theory Courses. *Journal of Economic Education*, 21(4), 369-381.
- Ramsden, P. (1983). *The Lancaster Approaches to Studying and Course Perceptions Questionnaire: Lecturer's Handbook*. Oxford, UK: Educational Methods Unit, Oxford Polytechnic.
- Ramsden, P. (1992). *Learning to Teach in Higher Education*. London: Routledge.
- Ramsden, P. (1997). The Context of Learning in Academic Departments. In Marton, F., Hounsell, D., & Entwistle, N. (Eds.), *The Experience of Learning: Implications for Teaching and Studying in Higher Education* (pp. 198-216). Edinburgh, UK: Scottish Academic Press.
- Ramsden, P., & Entwistle, N. J. (1981). Effects of Academic Departments on Students' Approaches to Studying. *British Journal of Educational Psychology*, 51(3), 368-383.
- Rosen, L. S. (2006). CAP Forum on Forensic Accounting in the Post-Enron World: Accounting and Auditing Education Reform. *Canadian Accounting Perspectives*, 5(2), 275-279.
- Saunders, G., & Christopher, J. E. R. (2003). Teaching outside the box: A look at the use of some nontraditional teaching models in accounting principles courses. *Journal of American Academy of Business*, 3(1-2), 162-165.
- Simmons, N. (2004). *Collaborative Reflection: Supporting One Practitioner's Development of Online Learning Communities*. Unpublished master's thesis, Faculty of Education, Brock University.
- Smallwood, R. A., & Ouimet, J. A. (2009). CLASSE: Measuring Student Engagement at the Classroom Level. In Banta, T., Jones, E., & Black, K. (Eds.), *Designing Effective Assessment: Principles and Profiles of Good Practice* (pp. 193-197). San Francisco, CA: Jossey-Bass.
- Stice, E. K., & Stice, J. D. (2006). Motivation on Day One: The Use of Enron to Capture Student Interest. *Journal of Accounting Education*, 24(2-3), 85-96.
- Summerlee, A., & Murray, J. (2010). The Impact of Enquiry-Based Learning on Student Performance and Student Engagement. *Canadian Journal of Higher Education*, 40(2), 78-94.
- University of Alabama (2008). Results. *CLASSE: Classroom Survey of Student Engagement*. Retrieved from the University of Alabama Academic Affairs, <http://www.assessment.ua.edu/CLASSE/Results.htm>
- Wieman, C. (2007). Why Not Try a Scientific Approach to Science Education? *Change*, September-October, 9-15. Reproduced in Christensen Hughes & Mighty, *Taking Stock* (2010a), pp. 175-190.
- Warren, D. L., & Young, M. N. (2012). Integrated Accounting Principles: A best practices course for Introductory Accounting. *Issues in Accounting Education*, 27(1), 247-266.
- Watkins, D. A., & Hattie, J. (1985). A Longitudinal Study of the Approaches to Learning of Australian Tertiary Students. *Human Learning: Journal of Practical Research & Applications*, 4(2), 127-141.

- Wiggers, R., & Arnold, C. (2011). *Defining, Measuring and Achieving "Student Success" in Ontario Colleges and Universities*. Toronto: Higher Education Quality Council of Ontario. Retrieved from HEQCO, <http://www.heqco.ca/SiteCollectionDocuments/AtIssueStudent%20Success%20ENG.pdf>
- Wilkerson, J. E., Jr. (2011). A Few Reflections on the First Course in Accounting. *Issues in Accounting Education*, 26(4), x.
- Williams, D. Z. (2011). A Half Century of Close Encounters with the First Course in Accounting. *Issues in Accounting Education*, 26(4), 759-776.
- Woods, D. R. (2011). *Motivating and Rewarding University Teachers to Improve Student Learning: A Guide for Faculty and Administrators*. Hong Kong: City University of Hong Kong Press.
- Young, M., & Warren, D. L. (2011). Encouraging the Development of Critical Thinking Skills in the Introductory Accounting Courses using the Challenge Problem Approach. *Issues in Accounting Education*, 26(4), 859-881.
- Zhao, H. (2011). *Student Engagement as a Quality Measure in the Ontario Postsecondary Education System: What We Have Learned About Measures of Student Engagement*. Toronto: Higher Education Quality Council of Ontario. Retrieved from HEQCO, <http://www.heqco.ca/SiteCollectionDocuments/AtIssueStudentEngagement.pdf>.