

Business simulation as an active learning activity for developing soft skills

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ABSTRACT

Business simulations are innovative instruction models for active or cooperative learning. In this paper, we look at the social constructionist roots of these education models in light of the current efforts to enhance employability skills in undergraduate and graduate studies. More specifically, we analyse the role of business simulations in developing soft skills based on an international survey of students' perceptions of developing soft skills during business simulations. Our objective is to test whether business simulations contribute to the development of soft skills and whether gender, ethno-cultural origin, and professional experience affect the acquisition process. We also discuss the use and benefits of these innovative instruction models. The analysis suggests the need to take into account specific factors, especially ethno-cultural origin, when instructing via business simulations. It also calls for sharing best practices in the context of a globalised education.

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Introduction

New instruction methods are often introduced to increase students' employability, including the development of soft skills. Several researchers have studied the use of business simulations in management and accounting education (Arias-Aranda & Bustinza-Sanchez, 2009; van der Merwe, 2013; Riley, Cadotte, Bonney, & MacGuire, 2013; Wolmarans, 2005). The present study examines business simulations from the point of view of developing soft skills in an international context. In a globalised world, the learning environment becomes more complex, and students come from a variety of backgrounds. It is important to determine whether business simulations are effective in this context and to understand if and how different factors can affect the acquisition of soft skills.

Therefore, our research question is whether business simulations help in developing soft skills and whether gender, ethno-cultural origin, and professional experience affect students' perception of the improvement of soft skills based on business simulations. In order to answer this question, we investigate the case of a business simulation deployed in a variety of settings and test students' acquisition of a complex set of 11 soft skills based on a survey. The data were collected using a questionnaire adapted from Barth and Géniaux (2010) and designed to measure the degree of mastery of a complex set of

soft skills considered to be relevant. Similar to Barth and Géniaux (2010), the respondents completed the questionnaire in two phases, once at the beginning and once at the end of the simulation. Improvement in each of the skills was measured by calculating the difference in the levels reported at the end and at the beginning of the simulation. A total of 392 students from different schools (universities and business schools) in France and Morocco participated in a six half-day business simulation. The two-phase evaluation process indicated a significant improvement in each of the 11 soft skills for the 392 participants. The greatest improvements were noted in their ability to express themselves, their entrepreneurial skills, and their ability to understand and adapt to the environment. Furthermore, we identified relevant differences in the improvement of certain skills in relation to student characteristics.

This information will help us to adapt our methods of instruction; find relevant tools to develop soft skills; and better understand how students, coming from different cultures and backgrounds, are sensitive and respond to these simulations. Our main contribution is the analysis of a complex set of soft skills (11 items in total), as previous literature focused only on a single or a few particular soft skills. Also, previous studies were based on the deployment of business simulations in one setting, whereas our study analyses the deployment of one business simulation in different settings and with a variety of participants. While previous studies were conducted mainly in English-speaking countries (UK, Australia, South Africa, USA), our case study is set in French-speaking countries in Europe and North Africa, thus adding new empirical data to a growing mass of research. Moreover, the business simulation analysed in this paper has some specific features (delivered over six intensive half-days, involving group work, and blending active learning with workshops based on transmission of knowledge) that are different from the typical business simulations in the literature (Miller & Savage, 2009; Riley et al., 2013; White, Helms, & Parker, 1990). By exploring these specific features, we also hope to open new avenues for research and make predictions that can be tested in further studies.

The conclusions of our research should encourage further transmission of best practices in accounting education and facilitate the implementation of business simulations in different settings. The study also points out certain differences in skills acquisition based on particular student characteristics, which will enable instructors to tailor their approach to student profiles.

This article is divided into several sections. The next section looks at prior research, focusing on the need to develop soft skills and the use of instruction methods that help develop such skills, including business simulations. In reviewing the literature, we focus particularly on the factors that can impact the acquisition of such skills, like ethno-cultural origin, previous professional experience, and gender. This is followed by a description of the methodology; a presentation and analysis of the study's main findings; and a conclusion outlining contributions, limitations, as well as potential avenues for further research.

Challenges of business simulations for developing soft skills

An increasing need for developing soft skills

There is an increasing need for relevant instructional methods in accounting education (Albrecht & Sack, 2000; Dellaportas & Hassall, 2013). There is also a growing body of

research on soft skills in relation to employability (McGahern, 2009; Stoner & Milner, 2010). We take in our research a broad perspective of soft skills. Following Kramer and Hill (2011), we see soft skills as competences used to perform hard skills and as professional aptitudes that involve personality and behaviour.

Employers, professional associations, as well as national and supranational policy-makers are calling for the development of employability skills, especially soft skills like communication, leadership, and teamwork. Therefore, to be considered first-rate professionals today, accountants must have both technical and soft skills (Stovall & Stovall, 2009). In Canada, for instance, soft skills take up an entire section of the competency map of the Chartered Professional Accountants (CPA), which sets out the required competences for earning the title of CPA (CPA Canada, 2012). On a global level, the Chartered Institute of Management Accountants (CIMA) has integrated this type of skills into its competency framework (CIMA, 2014) and has included soft skills and competences in its research agenda (CIMA, 2014). CPA Australia has a similar approach (Keneley & Jackling, 2011).

Moreover, the European framework for education clearly takes a ‘competency’ turn. In the early stages of the Bologna process, the Bologna Working Group defined several types of competences: cognitive, functional, personal, and ethical (Bologna Working Group on Qualifications Frameworks, 2005). These categories were subsequently condensed into ‘knowledge’ (referring to cognitive competence), ‘skills’ (referring to functional competence), and ‘wider competences’ (the rest of the categories) (Bologna Working Group on Qualifications Frameworks, 2005; Castillo, Caruana, & Wainwright, 2011).

International accreditation bodies in education are showing a similar interest in skills development, including language skills, intercultural sensitivity, and the ability to function in a multicultural environment (European Foundation for Management Development, 2013). The Association to Advance Collegiate Schools of Business (AACSB) also calls for the development of skills such as ‘written and oral communication, ethical understanding and reasoning, analytical thinking, information technology, interpersonal relations and teamwork, diverse and multicultural work environments, reflective thinking, application of knowledge’ (AACSB, 2016).

Therefore, there is increasing pressure in universities and business schools worldwide to develop such skills. These become embedded in the higher education curriculum; however, skills development is a complex process that requires careful analysis (Stoner & Milner, 2010). The following section will further discuss active learning theories and methods as well as the use of business simulations for developing soft skills.

Active learning and the social constructionist approach in education

The pedagogical foundations of business simulations, serious games, and case studies are active and collaborative learning. Active learning theories are based on concepts stemming from a long tradition. As early as the sixteenth century, active learning and student self-determination were components of Rabelais’ humanistic realism and his satire of scholastic formalism. Active learning is also grounded in the writings of Montaigne (2009), for whom study had to be subordinated to ‘the happy life of action’, as knowledge was to be assimilated and ideas were to be realised in conduct (Cordasco, 1976, p. 64). Later, in *Émile*, Rousseau recommended what he termed ‘negative

education', or founding a child's education on the free development of his own nature (Rousseau, 2009).

These philosophical writings had an influence on the subsequent development of education sciences. In the late nineteenth century, Dewey (1897) called for progressive education models and suggested, for instance, that preparing a subject for future life especially meant training him on how to use his capacities and how to take command of himself. In addition, Dewey took a social view of the role of school and education, considering social interaction to be at the basis of education processes: 'I believe, therefore, that the true center of correlation on the school subjects is not science, nor history, nor geography, but the child's own social activities' (Dewey, 1897). While Dewey was talking about 'learning by doing', Freinet's pedagogy was taking a similar stance in France, advocating for alternatives to the central education system (Freinet, 1964). Enquiry-based learning and cooperative learning were the foundational concepts of this new pedagogy.

The social perspective derived from Dewey and Freinet's seminal works sets the foundations for the social constructionist approach in education. Learning is considered to be an experience that can only be created by the student. The focus is on action, social interaction, and self-determination within the learning process. Knowledge and skills are constructed, not simply transferred by the educator to a student-receiver.

This active construction of meaning and knowledge can be achieved in various ways, for instance, through experiential learning, discovery learning, situated cognition, and constructivist learning. While these theories apply to video games and 'serious' games (Kebritchi & Hirumi, 2008), they also apply to the pedagogical grounds of business simulations.

In these games and simulations, learners are engaged in direct experience; they have to act and experience the consequences of their actions and decisions (experiential learning). They also interact with their environment to discover the meaning of concepts on their own (discovery learning). Discovery learning experience is thought to be more successful when learners have previous knowledge or experience on the subject (Kebritchi & Hirumi, 2008), which is often the case with business simulations. Also, the learning process does not rely on one-way static transmission of knowledge from the instructor to the student, but it relies on 'enacting and experiencing consequences' (Kolb & Kolb, 2005). It is a question of creating knowledge based on constructing meaning that is realistic to the learner (Dellaportas & Hassall, 2013).

The following section will further define business simulations and, based on previous research, examine how it can enhance soft skills development.

Developing soft skills through business simulations

Business games are regularly used in higher education as learning tools in management, strategy, and finance training (van der Merwe, 2013; Nicholson, 1997; White et al., 1990; Wolmarans, 2005). They also vary in level of difficulty, ranging from introduction to management games (simple, general simulations that introduce a small number of variables and enable students to address the main issues involved in managing a business) to more in-depth games (designed to develop a specific area of corporate management like marketing or accounting), and immersion games (participants receive more variables to

immerse them in a complex environment intended to represent the 'real life' of the organisation).

More specifically, a simulation is a simplified representation of the reality in which the subject under study is defined by a set of inputs and outputs and the relationships between them (Gilbert & Troitzsch, 1999). This type of simulation thus calls for teamwork and decisions on all of an organisation's functions. According to Sawyer, Tomlinson, and Maples (2000) and Barth and Géniaux (2010), involving students in simulations that replicate reality enables them to build soft skills. Further research has shown that case-based pedagogy is more effective than traditional lecture-based instruction in developing students' critical thinking skills (Bonner, 1999; Weil, Oyelere, Yeoh, & Firer, 2001).

Some business simulations are based on team and group work, where teams of students are asked to assume the role of managing an organisation (Barth & Géniaux, 2010). This type of cooperative learning involves building positive self-esteem, perceived achievement, and interpersonal skill building (Lindquist & Abraham, 1996). Cooperative learning techniques allow the instructor to make students managers of their own knowledge (Sullivan, 1996). It enhances the development of critical thinking via discussion, debate, and group work, and it nurtures the ability to work with and learn from others (Fellers, 1996).

Delegating tasks in the team and confidence in the other members' abilities has considerable influence on the teams' final results. Because the decision of each team is a group decision that requires cooperation, various team members who may not know each other and are not used to working together have to develop their listening, debating, and negotiating skills (Barth & Géniaux, 2010).

Simulation-based training helps students develop a number of communication skills and more effectively structure and present their oral and written arguments (Francis, Muldar, & Stark, 1995; Stewart & Dougherty, 1993). Stewart and Dougherty (1993) pointed out that a group of students who practised on case studies improved their performance on essay questions, but they had similar results to another group when dealing with problem solving and multiple-choice questions. Dyball, Reid, Ross, and Schoch (2007) showed that students generally perceived teamwork as beneficial to the development of skills that would be useful to them in their future employment. Bonwell (1997) and Eison (1991) argued that active learning enables students to use a higher order of thinking skills than students who merely observe the demonstration of principles in the classroom. It thus seems that business simulations require the use of a number of soft skills that are advocated by the accounting profession. Moreover, van der Merwe (2013) showed that business simulations are relevant in interdisciplinary teaching, helping to develop professional skills through exposure to real-life practices.

Further on, we look at previous studies that address some of the factors (like ethno-cultural origin, previous professional experience, and gender) that impact students' perception of their soft skills improvement during learning activities.

Influence of ethno-cultural origin

Cooper (2004) argued that studying perceptions and learning patterns of students from different cultures is important in view of increasingly globalised education. This information is particularly significant in accounting, where international student

representation within a group has substantially increased (Cooper, 2004; Li, Chen, & Duanmu, 2010).

Hofstede (1994) defined the cultural dimensions that play a role in the learning process as individualism–collectivism, power distance, uncertainty avoidance, masculinity–femininity, long-term orientation, and indulgence. Other scholars defined culture based on elements such as ‘acquired knowledge, learned patterns of behaviour, attitudes, values, expectations, rituals and rules, a sense of identity and of history’ (Webb & Read, 2000, p. 1). We chose a simpler and more pragmatic approach to culture in this paper that is based on the origin of the students involved in the business simulations. We therefore identified three main groups based on their continent of origin (Europeans, Africans, Asians). Other researchers have established that the difference between domestic students’ and international students’ academic performance is due to different learning styles, learning preferences, and learning approaches (Christopher & Debreceeny, 1993; Cooper, 2004; Hartnett, Römcke, & Yap, 2004; Rankin, Silvester, Valley, & Wyatt, 2003). For example, Hutchinson and Gul (1997) established that there are cultural differences in how students perceive what they have learned. Moreover, Chinese and other Asian students generally appear to be motivated by courses that prepare them to enter their chosen profession (Abeysekera, 2008). However, the results of these studies did not achieve a general consensus. Moreover, previous studies have not looked at business simulations as active learning methods, and we hope to fill this research gap with our study.

Influence of prior professional experience

Ballantine and McCourt (2004) showed that there is no impact of prior professional experience on students’ perceptions of benefits from learning through business simulations. In addition, Arnold and Davey (1994) noted that the more time graduates spend in the workplace, the more they rate themselves as competent in hard skills; however, this conclusion does not apply for soft skills. In their analysis of the benefits of a one-year placement in an accounting firm, Richardson and Blakeney (1998) argued that some benefits may also derive from students’ working part time on an ongoing basis. They concluded that sandwich courses (i.e. training courses with alternate periods of formal instruction and practical experience) provided students with a better perspective of the overall course material and placed them in a better position to begin the last year of their programme. Students are supposed to gain a better understanding of accounting if they can successfully relate their studies to their professional experience in accounting areas (Guney, 2009; Hartnett et al., 2004; Jackling & Anderson, 1998; Koh & Koh, 1999). This implies that the soft skills developed in the industry help them to understand and organise information, which in turn maximises the learning process. In fact, Hassall, Lewis, and Broadbent (1998) claimed that a one-year placement in the industry could have significant implications for accounting and management students because it allows them to approach certain problems from an interdisciplinary perspective. Furthermore, according to Besson, Collin, and Hahn (2004), sandwich courses help students to develop so-called ‘implicit skills’ (i.e. those skills that can only be learned through real work).

Influence of gender

Many studies have been conducted to examine the influence of gender on academic performance (Fallan & Opstad, 2014). However, there are few studies that have looked specifically at the connection between gender and academic performance in the field of management accounting and control, and those that do have not reached a consensus. While Mutchler, Turner, and Williams (1987), Tyson (1989), and Doran, Bouillon, and Smith (1991) suggested that females perform better academically, others, including Gammie, Paver, Gammie, and Duncan (2003), Jackling and Anderson (1998), and Keff and Roush (1997), noted no difference.

Other authors looked for factors that could explain the difference in results. Some pointed out that gender influence depends on the type of evaluation. Ravenscroft and Buckless (1992) showed that females do better on assignments, in contrast to males, who do better on exams. Gammie et al. (2003) observed that females outperformed males in an audit course even though both groups were also completing placement periods at the same time. In their view, females and males have different priorities: females give precedence to the course, while males tend to concentrate on professional and social success. Other factors, such as females' motivation, preparation, and attention to detail, further contribute to explaining these findings (Fortin & Legault, 2006).

Other studies showed that the presence of gender differences with respect to performance may have implications for the results of different learning strategies. For instance, the results of cooperative learning (including business simulations) could have different impacts depending on gender. Males and females have different approaches to learning (Booth, Lockett, & Mladenovic, 1999). Confirming Koh and Koh (1999) and Meyer (1995), De Lange and Mavondo (2004) showed that there may be different learning strategies for female and male students, which could affect their performance. Stainbank's (2010) study on students' perception of the usefulness of cooperative learning also indicated the presence of gender differences.

Methodology

Context and description of the business simulation

Study participants were students enrolled in a business simulation course at a university or business school on French campuses (Paris, Lille, Nice) and abroad (Morocco). For three consecutive days (split into six half-day sessions), each group participated in an immersive business game addressing all aspects of business organisations. The subject of the simulation was a fictional leading electronic industrial group (CGX) who was implementing a diversification policy that called for decentralised management. The group had decided to convert some of its divisions into stand-alone companies that would remain under its control. One of the divisions, a factory structured as a limited company (with 100% of its capital held by CGX), marketed two products across the country: non-programmable calculators and wireless door phone systems for private homes.

The business game format allowed the different teams to develop a strategy and follow the results at the operational level. Given the setting, the financial aspect of the game was emphasised, particularly investment financing, cash flow management, etc. However, participants also worked on all other aspects of the business, from production management

(equipment and tools management, maintenance, etc.) to marketing (price policy, advertising, sales team management, payment periods) and human resources (hiring, firing, training, compensation). The instructors had significant power in setting the inputs during the preliminary stages and throughout the activity, especially in determining the levels of difficulty, market conditions, the economic environment, production facilities, employee motivation, and other conditions.

In each location, the students were randomly divided into teams of five; however, the teams were free to make their final membership selection, and once formed, they would be competitors for the rest of the game. Each team was assigned two qualified instructors with extensive experience with business games and the financial professions. The instructors set the pace of the game by establishing decision schedules for the teams. They also set timetables and chose contents for a series of mini technical workshops on the technical issues in the simulation (full cost, dashboards, cash-flow budgets). The first half-day was spent explaining the business game and allowing the teams to familiarise themselves with the material. Over the next four half-days, the teams were required to make a number of decisions, while the instructors provided constant feedback on the simulations and analysis. During the last half-day, the teams gave presentations of their final management reports and were debriefed by the instructors.

In the following paragraphs, we provide further details of the business simulations and connect the different activities to the set of soft skills studied in the survey (in bold, enclosed in brackets, with reference to the classification of skills in Table 1).

The actual business simulation involved making five to seven decisions (lasting approximately two hours each) in each of the teams. In doing this, the members of each team needed to organise and ensure representation of each function (production, finance and accounting, human resources, marketing, etc.). They also had to provide a strategic diagnosis of the company and set their strategy for the next period (**C6a: Ability to manage a project**). Each of the decisions concerned different types of choices: marketing (price, advertising budget, sales team, payment terms), financial (taking out loans, capital increase, investments), production (equipment, overtime), and human resources (hiring/firing, wages, training). Each team could also ask, when they found it relevant, for a market study (**C2a: Ability to obtain and use information**) that provided information about the evolution of demand and competition. When providing the list of decisions, each team also needed to produce supplementary documents, for

Table 1. Mean per skill at the beginning (T1), and Cronbach's alpha after factor analysis.

Description		Mean	SD	Min.	Max.	Cronbach's alpha	Skewness	Kurtosis
Self-knowledge	C1/9	6.578	0.968	1.20	9.00	0.738	-0.684	1.895
Ability to obtain and use information	C2a/9	6.428	1.067	1.00	9.00	0.814	-0.751	1.893
Ability to manage the environment	C2b/9	6.442	1.132	1.50	8.75	0.761	-0.806	1.220
Ability to communicate effectively	C3a/9	6.308	1.282	1.33	9.00	0.814	-0.585	0.559
Ability to listen and share	C3b/9	7.017	1.031	2.17	9.00	0.855	-0.908	2.015
Ability to express orally	C4a/9	5.882	1.251	1.33	9.00	0.864	-0.462	0.256
Ability to express in written form	C4b/9	6.410	1.209	2.40	9.00	0.879	-0.622	0.310
Ability to manage time and activity	C5/9	6.757	1.152	1.00	9.00	0.873	-1.145	2.625
Ability to manage a project	C6a/9	6.319	1.121	1.60	8.80	0.878	-0.539	0.629
Ability to manage work	C6b/9	6.531	1.208	2.67	9.00	0.674	-0.360	-0.257
Ability to act effectively in a team	C7/9	6.963	1.010	2.67	9.00	0.922	-0.698	1.126

example, a full cost calculation after the first session, a dashboard project after the fourth session, and a cash-flow budget for the fifth and sixth sessions.

After each decision, the instructors input all of the parameters chosen by the teams into the business simulation software. The process was done in the presence of the team members in order to avoid material errors or strategy errors that could dramatically penalise the students. The software application simulated the market and provided results for each team: balance sheet, income statement, production status, and human resources aspects.

After each session, the teams had a limited amount of time to analyse their results and those of the other teams in order to prepare the next consensual decision (**C2b: Ability to manage the environment; C6b: Ability to manage work; C7: Ability to act effectively in a team; and C5: Ability to manage time and activity**). This stage, involving negotiation and decision-making in each team, helped develop teamwork skills (**C3b: Ability to listen and share; C1: Self-knowledge; and C7: Ability to act effectively in a team**). The role of the instructors was very important. Beside inputting the information into the software and providing the results, they remained available during the simulation to answer all kinds of questions from the students. They also provided small workshops on the technical issues in the simulation (full cost, dashboards, cash-flow budgets). Moreover, they played the role of bankers in accepting or refusing loans, and they could act upon various parameters of the business simulation software (market demand, price index, strikes or production breakdowns, etc.) in order to adapt the dynamics of the simulation to the dynamics of the teams involved. The teams and their members needed to react in due time and to adapt to uncertainty conditions and crisis situations (**C2b: Ability to understand and to adapt to the environment; C5: Ability to manage time and activity**).

The instructors had to provide feedback and debrief each team after each session based on the documents produced by each team as well as on direct observation of their work. These observations were recorded on specific forms, and they allowed the instructors to identify and analyse the students' teamwork skills. If needed, constructive discussions lead by the instructors helped solve conflicts and improve the functioning of the team.

The last half-day was used for students' presentations of their management reports (both written and oral presentations) to the instructors and the other teams (**C3a: Ability to communicate effectively; C4A: Ability to express orally; C4b: Ability to express in written form**). After each of the 20-minute presentations, the students and instructors discussed the results and choice of policies as well as each team's perception of the simulated environment. This final debate was very important, as it allowed for analysis that took into account the various backgrounds of the participants (different cultures, different professional experiences, etc.). If the financial objectives proved to be easy to reach, the way in which each team and each student dealt with risk, customers, and human resources issues was different and challenged the concluding debate.

The grades awarded to each participant were based half on the global results of the team (from a financial, marketing, production management, and human resources management perspective, but also based on punctuality in providing the documents, the quality of these documents, and the quality of the teamwork as observed and recorded by instructors in the specific form), and half on the individual performance of each student, based on observations recorded by the instructors in the specific form and on the oral presentations at the end of the simulation.

The questionnaire

The skills evaluation questionnaire was based on the questionnaire used in Barth and Géniaux's (2010) study in which several items validated each of the seven soft skills (C1: Self-knowledge [5 items]; C2: Ability to understand and to adapt to the environment [9 items]; C3: Communication skills [10 items]; C4: Ability to express yourself [12 items]; C5: Ability to manage time and activity [5 items]; C6: Entrepreneurial skills [10 items]; and C7: Ability to act effectively in a team [9 items]). The Barth and Géniaux (2010) questionnaire appears to reflect many of the soft skills required by the accounting profession, employers, European education systems (Bologna process), and accreditation associations in education (AACSB), as shown in the literature review.

The simulation and questionnaire were delivered in French in most of the locations and in English in others, depending on the language spoken by the students. A professional translator translated the questionnaire from French to English, and a different professional translator was consulted to validate the translation. Finally, a bilingual instructor teaching in the business simulation was asked to double-check the translation. [Appendix 1](#) presents the English version of the instrument. The answers were rated using a nine-point Likert scale instead of the four-point scale used in Barth and Géniaux (2010), thus allowing for more variability in the students' answers and ensuring more precision in the measurement of concepts.

Sample and data collection method

The study was conducted over a two-year period and involved teams of students participating in business simulations. The sample is made up of 392 students enrolled in a business simulation course as part of their curriculum at a business school or university in France or Morocco. Most of the students were involved in graduate studies, and in one location, they were at the undergraduate level. Most of the students were females (52.3%, or 205/392), and their average age was slightly over 24 (standard deviation [SD] = 4.378). Only 47.2% had professional experience exceeding one year. Most were of French origin (58.2%, or 228/392), while the rest were from other parts of Europe (1%, 4/392), Africa (35.7%, or 140/392), and Asia (5.1%, or 20/392).

The students were asked to rate all of the above-mentioned items, once at the beginning of the course (T1) and then again at the end (T2). Note that, contrary to Barth and Géniaux (2010), the students did not have access to their T1 answers when asked to complete the questionnaire at T2. The difference between T2 and T1 thus indicated the level of improvement for each skill. Each questionnaire at T1 already had a code number assigned to it, and they were randomly distributed in class. One student (usually the student delegate) kept the list of students and corresponding codes from T1. The student delegate provided the same codes to his or her colleagues at T2, allowing us to match the questionnaires while ensuring anonymity. The list was then destroyed, and this procedure ensured total anonymity and freedom in filling in the questionnaires.

Other study data

As explained in the literature review, the questionnaire also collected data on gender, professional experience of more than one year, and ethno-cultural origin. Professional

experience is integrated as a dichotomous categorical variable. Respondents were asked whether they had professional experience in excess of one year. Responses on ethno-cultural origin were grouped according to continent.

Construct validity of questionnaire variables

The questionnaire was designed to measure the acquisition of soft skills. Based on the answers received at the beginning of the simulation (T1), a factor analysis using the principal component method with varimax rotation was performed for each item relating to the seven skills evaluated. Factors with initial eigenvalues greater than 1 (Tabachnick & Fidell, 1989) were considered to determine the number of factors to extract relating to each skill. Following the factor analyses for the seven skills, there are 11 factors; therefore, four skills were split into two components. Items selection is based on each of two criteria: (1) Watson et al.'s (1995) criterion of variables that load higher than 0.3 in the rotated factor matrix, and (2) values based on Bedford's (1997) criterion of variables that load higher than 0.3 and where the primary loading is more than 0.2 greater than any cross-loading. This selection of the items is presented in [Appendix 2](#).

After factor analysis, each of the 11 skills showed a Cronbach's alpha greater than 0.674 ([Table 1](#)). 'Self-knowledge' (C1), 'Ability to manage time and activity' (C5), and 'Ability to act effectively in a team' (C7) were not modified. Factor analysis of 'Ability to understand and to adapt to the environment' (C2) indicated that this construct generated two factors. This skill was split into two more specific skills: 'Ability to obtain and use information' (C2a), and 'Ability to manage the environment' (C2b). In the same way, 'Communication skills' (C3) were divided into 'Ability to communicate effectively' (C3a) and 'Ability to listen and share' (C3b). 'Ability to express yourself' (C4) was split into 'Ability to express orally' (C4a) and 'Ability to express in written form' (C4b). Finally, 'Entrepreneurial skills' (C6) was split into 'Ability to manage a project' (C6a) and 'Ability to manage work' (C6b).

For each of the 11 soft skills, the total score for the skill corresponds to the mean of the responses on the items that it encompasses. According to the decision rules (Jarvis, MacKenzie, & Podsakoff, 2003) for determining the type of construct developed for each skill, as established in the Barth and Géniaux (2010) questionnaire, the construct is reflective. In this type of latent construct, the indicators are intended to represent the influence of the underlying latent construct, and as such, the direction of causality is thus assumed to flow from the construct to its indicators. Since the construct represents the common cause shared by all of the indicators, these must be significantly and positively correlated, and any variation in the construct must be reflected in the variation of all of the items on the rating scale (Bollen & Lennox, 1991). Rossiter (2002) clarified the procedure for scale development and recommended using the mean indicator in the case of a reflective construct rather than adding them all together.

Data processing method and analysis

Since each of the 11 soft skills is relevant and different in its own way, mean comparisons between T1 and T2 for each skill were analysed to determine the impact of the simulation.

Results and discussion

On several occasions, a student left out one of the items listed under a skill. To take this into account, the missing data were replaced using the mean of the other items relating to that particular skill. Since the skills on the questionnaire are reflective constructs, and given that they are evaluated by using the mean of the items they encompass, this procedure seems highly appropriate.

Table 2 sets out the means obtained at T1 and T2, the degree of improvement, as well as the significance level for the mean comparisons (t-test for paired samples) for each of the 11 soft skills.

Even though the simulation lasted only six half-days, all 11 of the skills that were measured increased. The most significant improvements were noted for 'Ability to express orally' (C4a), 'Ability to manage a project' (C6a), and 'Ability to manage the environment' (C2b).

Mean comparisons made between the end (T2) and the beginning (T1) of the simulation for each skill show a significant improvement ($p < .001$). It thus seems that the simulation enabled the participants to improve their 11 skills. Mean comparisons were also made to test learning differences in relation to gender, professional experience, and ethno-cultural origin. These results are presented in Table 3.

There does not seem to be a significant difference between males and females in terms of their improvement in all of the skills. We partially confirm the findings of Stainbank (2010), as we could not confirm a meaningful gender impact. This is consistent with some studies that did not find any gender impact on performance in accounting courses (Gammie et al., 2003; Jackling & Anderson, 1998; Keff & Roush, 1997). Moreover, the lack of gender difference in our study can also be caused by personality differences and heterogeneity within each female and male student group. Fallan and Opstad (2014)

Table 2. Mean per skill at the beginning (T1), at the end (T2), and improvement.

Description		Mean at the beginning (SD)	Mean at the end (SD)	Mean improvement (SD)	Increase %	Mean comparison (Sig.)
Self-knowledge	C1/9	6.5778 (0.969)	6.9191 (1.023)	0.3413 (0.982)	5.19	.000
Ability to obtain and use information	C2a/9	6.4284 (1.067)	6.8740 (1.007)	0.4456 (1.188)	6.93	.000
Ability to manage the environment	C2b/9	6.4418 (1.132)	6.9149 (1.065)	0.4731 (1.188)	7.34	.000
Ability to communicate effectively	C3a/9	6.3081 (1.282)	6.7519 (1.203)	0.4438 (1.306)	7.04	.000
Ability to listen and share	C3b/9	7.0168 (1.031)	7.2127 (0.974)	0.1959 (1.039)	2.79	.000
Ability to express orally	C4a/9	5.8823 (1.251)	6.6846 (1.136)	0.8023 (1.144)	13.64	.000
Ability to express in written form	C4b/9	6.4100 (1.209)	6.8704 (1.028)	0.4604 (1.205)	7.18	.000
Ability to manage time and activity	C5/9	6.7564 (1.152)	7.0125 (0.998)	0.2561 (1.212)	3.79	.000
Ability to manage a project	C6a/9	6.3188 (1.121)	6.8821 (1.005)	0.5633 (1.144)	8.91	.000
Ability to manage work	C6b/9	6.5309 (1.208)	6.9989 (1.126)	0.4680 (1.218)	7.17	.000
Ability to act effectively in a team	C7/9	6.9632 (1.010)	7.2851 (1.062)	0.3219 (0.978)	4.62	.000

Table 3. Average improvement per skill and per sub-group.

	No.	Self-knowledge	Understand and adapt to the environment		Communication skills		Express yourself		Manage time and activity	Entrepreneurial skills		Act effectively in a team
		(C1)	(C2a)	(C2b)	(C3a)	(C3b)	(C4a)	(C4b)	(C5)	(C6a)	(C6b)	(C7)
Men	187	0.3667	0.4400	0.5066	0.5246	0.2683	0.8146	0.5203	0.1941	0.5601	0.4992	0.3261
Women	205	0.3182	0.4507	0.4425	0.3700	0.1298	0.7911	0.4059	0.3127	0.5662	0.4395	0.3181
Mean test ^a		–	–	–	–	–	–	–	–	–	–	–
Without exp.	207	0.2378	0.4540	0.4582	0.3736	0.1887	0.7290	0.3357	0.2024	0.5013	0.4376	0.2748
With exp.	185	0.4572	0.4362	0.4898	0.5223	0.2039	0.8843	0.6000	0.3162	0.6326	0.5020	0.3745
Mean test ^a		**	–	–	–	–	–	**	–	–	–	–
Europe	232	0.4030	0.4249	0.4272	0.4994	0.2240	0.8370	0.4600	0.2366	0.5620	0.5194	0.3611
Africa	140	0.3088	0.5668	0.6239	0.4126	0.1994	0.8583	0.5342	0.3650	0.6122	0.4854	0.2838
Asia	20	–0.1463	–0.1625	–0.0500	–0.0167	–0.1556	–0.0083	–0.0509	–0.2800	0.2356	–0.2500	0.1333
KW test ^{a,b}		**	**	*	–	–	**	–	–	–	**	–
Tested pairs ^{a,c,d}												
Eu–Af		–	–	–	–	–	–	–	–	–	–	–
Eu–As		**	*	–	–	–	**	–	–	–	**	–
Af–As		–	**	**	–	–	**	–	*	–	**	–

^aNot significant; * $p < .1$; ** $p < .05$; *** $p < .01$.

^bIndependent sample Kruskal–Wallis test.

^cTukey test.

^dEu: Europe; Af: Africa; As: Asia

showed that personality type affects academic performance in management accounting more than gender does. The gender dimension may be too simple and therefore hide the more relevant personality dimension. This represents an avenue for further research and can explain the lack of consensus on gender impact in previous studies.

Students with professional experience exceeding one year improved more than their colleagues with no professional experience ($p < .05$) in two skills: 'Self-knowledge' (C1) and 'Ability to express in written form' (C4b). If we look at the ethno-cultural origin, the differences are more relevant. Overall, Asian students appear to have improved less than the other groups in various skills. Moreover, the Asian students seem to regress in nine of the 11 skills. Table 4 sets out the means per skill obtained at the beginning (T1) per sub-group of ethno-cultural origin to understand this phenomenon.

The results in Table 4 show that Asian students show a slightly higher average than the other two groups of students for five skills and slightly lower for six skills, with only one difference being significant ($p \leq .10$). As we cannot identify any relevant difference between the ethno-cultural groups in T1 (see Table 4), but we do see a difference between groups in the average improvement (see Table 3), this suggests that Asian students perceive business simulations as a less effective instruction method for developing soft skills. This is consistent with findings from previous research on the difficulties of adjustment of Asian students to independent learning methods (Li et al., 2010; Smith & Smith, 1999). We have tried to track comments in the questionnaire that could sustain this explanation. We observed that almost none of the Chinese students made open comments in the questionnaire (which can be interpreted as a reluctance to provide an open opinion, even if anonymity was guaranteed). The one comment coming from a Chinese student referred to improving technical skills, with no mention whatsoever of soft skills: 'I improved my knowledge and skills in strategy, management and financial management.' Chinese and other Asian students generally appear to be motivated by courses that give them the preparation they need to enter their chosen profession (Abeysekera, 2008), and studies suggest that effort, endurance, and hard work are emphasised in the Chinese culture (Hau & Salili, 1991). However, students whose first language is not the language of their study seem to be disadvantaged, as language proficiency plays a crucial role in the learning process (Wardlow, 1999), especially in acquiring skills that directly involve oral communication. Most of the Asian students in our sample were in this situation, which was not the case for the European and African students, who were bilingual or native speakers of the language of instruction in the vast majority of the cases. Moreover, Asian students seem to have difficulties adjusting to an educational environment that is more characterised by independent learning and less by instructor supervision and guidance (Li et al., 2010; Smith & Smith, 1999), and they can be less keen to participate in group discussions or debate in class. They might therefore feel disadvantaged by active learning methods that mostly rely on such activities.

Analysis of additional qualitative data from students' comments

The questionnaire provided a section for students to comment on their learning experience. These comments helped us further understand the benefits of business simulations as based on students' views.

Table 4. Mean per skill at the beginning (T1) and per sub-group of ethno-cultural origin.

	No.	Self-knowledge (C1)	Understand and adapt to the environment		Communication skills		Express yourself		Manage time and activity (C5)	Entrepreneurial skills		Act effectively in a team (C7)
			(C2a)	(C2b)	(C3a)	(C3b)	(C4a)	(C4b)		(C6a)	(C6b)	
Europe	232	6.5509	6.4450	6.4903	6.3513	7.0035	5.9102	6.4307	6.8384	6.3669	6.4900	6.9976
Africa	140	6.6369	6.4121	6.3442	6.2614	7.0827	5.8002	6.3983	6.6029	6.2524	6.5770	6.9740
Asia	20	6.4762	6.3500	6.5625	6.1333	6.7093	6.1333	6.2509	6.8800	6.2267	6.6833	6.4889
KW test ^{a,b}		-	-	-	-	-	-	-	-	-	-	*
Tested pairs ^{a,c,d}												
	Eu-Af	-	-	-	-	-	-	-	-	-	-	-
	Eu-As	-	-	-	-	-	-	-	-	-	-	*
	Af-As	-	-	-	-	-	-	-	-	-	-	-

^aNot significant; * $p < .1$; ** $p < .05$; *** $p < .01$.

^bIndependent sample Kruskal-Wallis test.

^cTukey test.

^dEu: Europe; Af: Africa; As: Asia.

For instance, the students highly valued teamwork and real-life situations. According to experiential learning theories, subjects are comfortable with learning from real cases. Meaning is constructed based on interactions with other team members and other actors from the virtual environment, including instructors, who are perceived as members of the same learning community.

It's good teamwork experience for me. And I can also use my knowledge in actual cases. Since I'm used to working alone, I found working with a team a stimulating and rewarding experience.

Good relationship with the team; cohesive team. Stressful, but interesting game. Schedule too intense.

Business simulations are generally perceived as an enjoyable way to learn.

You learn a lot – techniques, finance, marketing, teamwork – and have fun at the same time.

Very interesting and instructive: a fun way to learn in the classroom.

These activities may be enjoyable, but they also bring their share of the conflict and frustration that are common in such learning activities.

Honestly, I'm very satisfied with this game. It was helpful and provided a lot of information. It helped establish a friendly atmosphere with the other students in the class and we learned how to manage conflicts and exchange ideas with the team members asked to perform the engagement.

It wasn't easy working with people with different backgrounds, ages, experiences and personalities, but in the end, we found our own pace and set group objectives to meet the requirements.

I also noticed that the other members of my team didn't always take me seriously.

Business simulations and other active learning techniques are specifically designed to create socio-cognitive conflicts in order to allow for a mediated solution and promote the development of social and interpersonal skills (Buchs, Darnon, Quiamzade, Mugny, & Butera, 2008). This experience teaches students how to deal with similar situations such as collective decision-making. They learn how to handle criticism and how to negotiate and defend their views.

Being able to fit in with the group. Knowing how to present your ideas and defend them to share them with the group.

Learning how to accept criticism.

Learning from errors is another specific learning mechanism inherent in business simulations. The errors are perceived as part of the learning process and not especially related to the assessment. In this case, the instructor's role is important, both in creating a climate of confidence and in helping students transform a potentially frustrating experience into a learning activity.

I found this game very rewarding. Even though our group made a lot of mistakes, we learned a lot too. Now that we understand these mistakes, we won't repeat them.

A better understanding of the management world. In fact, nothing beats a simulation. It's easier to see where you're going wrong.

Among other things, simulations promote team learning and sharing/passing knowledge with/to colleagues. This is one of the merits of cooperative learning; it is rewarding for those who explain it as well as for those who listen to it.

It's a really interesting game. It's the first time that I totally fit in with my team. I could express myself and the others listened. That made me happy and I made progress.

I was lucky enough to be in a team that I appreciated and that shared their experiences with me. I developed my practical skills, particularly in finance and accounting.

Business simulations facilitate enhanced self-knowledge and self-assessment because they allow the students to make mistakes on their own or as part of a group and then to understand and learn from these mistakes. Some of the comments pointed out that business simulations allowed the students to more effectively assess their level of knowledge and skills at the end of the game. Further research could be carried out to test this potential benefit of business simulations.

After the simulation was over, I realised I had overestimated my potential knowledge/know-how in a couple of areas.

I thought I knew everything about the organisation's accounting, but it turned out I had a lot to learn.

It's true that the work was very stressful, but it taught me to understand my strengths and weaknesses.

The training highlighted the gaps in my knowledge.

During the training over the last three days, I discovered a number of weaknesses in certain areas that I need to work on ASAP (finances/investment/management).

The game was really helpful in technical terms and in making me aware of the skills and reflexes required in planning to create a business.

A few comments also addressed the limitations of the business simulation and mentioned some negative points.

This simulation taught us a lot about the different issues it raised, but it was mainly a self-learning activity and lacked structure.

Some of the students expressed the need for a theoretical review before the course as well as more technical briefing. Criticisms were mainly aimed at the difficulty of dealing with new learning techniques, which requires preparation and a certain learning culture that is not equally developed in all groups. The instructor's role in such groups needs to be explained and acknowledged. Unlike the traditional instructor's role, in a business simulation, the instructor has to select the relevant information to pass on, solve conflicts, and help the teams to solve crises. How the game is designed, prepared, and applied enables the creation of active learning contexts and helps the students to improve their skills through being placed in 'real' situations. Analysing the comments provided us with a better understanding of the specific learning contexts under study.

Conclusions and implications

The factors that affect the academic performance of accounting students have attracted significant research interest in the last 30 years. Many of these studies focused on programmes in the USA or English-speaking countries. We focused our research in French-speaking countries and contexts (business schools and universities in France and Morocco), with results that partly confirm the conclusions of previous research.

Our study shows that in general, business simulations benefit male and female students from various ethnic and cultural backgrounds, irrespective of whether or not they have any previous professional experience. One explanation for this general conclusion is based on the democratic, liberal, and egalitarian foundations of active learning. Business simulations actively engage all subjects in learning activities with mediation from instructors; therefore, with proper guidance and feedback during the simulation, this learning

experience proved to be beneficial to all participants. However, a qualitative analysis of the students' comments revealed conflicts and frustrations in the learning process. Nonetheless, the general objective of the business simulations was understood and appreciated independent of the technical outcomes of the game or failures in interpersonal relationships.

The study's conclusions confirm that business simulations contribute to the development of all 11 soft skills under analysis. They also indicate that overall, factors like gender and professional experience have no significant influence on the results, which is an interesting outcome when compared to previous research. In some cases, significant differences were observed between Asians and other groups of students (Europeans and Africans), for instance, the ability to express orally, self-knowledge, the ability to obtain and use information, the ability to manage the environment, and the ability to manage work. Few studies have examined the connection between business simulations and the development of soft skills under the impact of cultural background. The fact that the Asian students perceived business simulations as less beneficial may also be related to factors such as language difficulties, cultural adaptation, different learning habits, etc. The literature acknowledges that Asian students prefer more abstract and reflective learning techniques (Auyeung & Sands, 1996). However, Kember (2000) argued that this abstract learning style is due to factors other than Asian culture and societal factors, like for instance academics' assumptions on learning styles. Moreover, for the majority of the Asian students who participated in the present research, this was their first experience with active and collaborative learning. Rajaram and Collins (2013) explored various instructional techniques that could bridge the cultural gap for Chinese students in culturally dislocated study environments. We join them in their conclusion that even if these students prefer rote learning styles, due to their previous exposure, these might not be the most adapted for their training in new educational environments. Further research is necessary in order to find culturally adapted instruction methods for developing soft skills in these groups. We therefore intend to develop a study based on Hofstede's cultural dimensions and their impact on acquiring soft skills through business simulations.

One of the limitations of the research is that the students were informed of the study, which certainly biased their evaluation. However, a number of elements were introduced to minimise this problem. First, total anonymity ensured them considerable freedom. They also recorded their answers at the end of the simulation without having access to their answers at the beginning. Lastly, since all of the students were required to fill in the questionnaires, it may be assumed that both satisfied and dissatisfied students submitted their evaluation of their soft skills improvement. A second related limitation is subjectivity, enhanced by the fact that students had to fill in the second questionnaire immediately after the end of the simulation. We can assume a post-task euphoria effect, as well as in some cases, frustration related to not achieving the task or having to deal with conflicts in the group work. We preferred to look at perception immediately at the end of the simulation, as the students were involved in intensive modules and internships that would have made a different data collection method more difficult to apply. Moreover, using other evaluation tools to measure the acquisition of soft skills more objectively, through performance achievement, prove also to be problematic.

A last limitation, in our view, is that there were only 20 Asian students in our sample, thereby limiting the validity of the comparisons with this group. However, this number is

not unusual in the French-speaking context. We acknowledge that the findings for this group might not be generalisable to Anglo-Saxon contexts, even if they are most often consistent with the previous literature. However, the findings of our study are relevant for accounting education when referring to international students studying in new education environments. This represents a new research avenue for international education.

Our research adds empirical evidence to previous studies on the impact of business simulations on developing soft skills. This study can be further developed, and we would like to recommend some directions for future research. As pointed out before, more detailed studies of the cultural dimensions would shed light on the adaptability and usefulness of business simulations for particular ethno-cultural groups. Also, the specific features of the business simulation used in our research were less explored in previous literature (intensive module over six half-days, blending active learning with teaching workshops, simulations with group work). It would be interesting to explore these features further in other studies (active learning methods for intensive modules, relevance of time for reflection, effectiveness of group versus individual simulation, effects on metacognition, etc.).

The benefits of tailoring these instruction modes for a variety of students and situations call for more research on the role of the instructor before, during, and after the simulation. The role of instructors in active learning becomes mainly that of a mediator or facilitator, requiring a better understanding of the students (Heuillet, 2002), and their personalities (Fallan & Opstad, 2014). Presenting new empirical evidence will contribute to this ongoing debate on active learning in accounting education, and will help instructors to avoid some of the pitfalls of these new instruction models.

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References

- AACSB. (2016). *Eligibility procedures and accreditation standards for business accreditation*. Retrieved from <http://www.aacsb.edu/~media/AACSB/Docs/Accreditation/Standards/2013-bus-standards-update.ashx/>
- Abeysekera, I. (2008). Preferred learning methods: A comparison between international and domestic accounting students. *Accounting Education: An International Journal*, 17(2), 187–198.
- Albrecht, W. S., & Sack, R. J. (2000). *Accounting education: Charting the course through a perilous future*. Accounting Education Series (Vol. 16). Sarasota, FL: American Accounting Association.
- Arias-Aranda, D., & Bustinza-Sanchez, O. (2009). Entrepreneurial attitude and conflict management through business simulations. *Industrial Management & Data Systems*, 109(8), 1101–1117.

- Arnold, J., & Davey, K. M. (1994). Evaluating graduate development: Key findings from the graduate development project. *Leadership and Development Journal*, 15(8), 9–15.
- Auyeung, P., & Sands, J. (1996). A cross cultural study of the learning style of accounting students. *Accounting and Finance*, 36(2), 261–274.
- Ballantine, J. A., & McCourt, L. P. (2004). A critical analysis of students' perceptions of the usefulness of the case study method in an advanced management accounting module: The impact of relevant work experience. *Accounting Education*, 13(2), 171–189.
- Barth, I., & Géniaux, I. (2010). Former les futurs managers à des compétences qui n'existent pas: Les jeux de simulation de gestion comme vecteur d'apprentissage [Training future managers for invisible competencies: Business simulations as learning drivers]. *Management & Avenir*, 6(36), 316–339.
- Bedford, A. (1997). On Clark-Watson's tripartite model of anxiety and depression. *Psychological Reports*, 80(1), 125–126.
- Besson, M., Collin, B., & Hahn, C. (2004). L'alternance dans l'enseignement supérieur au management (Work-and-study in the graduate management education). *Revue Française de Gestion*, 30(151), 69–80.
- Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, 110(2), 305–314.
- Bologna Working Group on Qualifications Frameworks. (2005). *A framework for qualifications for the European higher education area*. Copenhagen: Ministry of Science, Technology and Innovation. Retrieved from http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/050218_QF_EHEA.pdf
- Bonner, S. E. (1999). Choosing teaching methods based on learning objectives: An integrative framework. *Issues in Accounting Education*, 14(1), 11–39.
- Bonwell, C. C. (1997). Using active learning as assessment in the postsecondary classroom. *The Clearing House*, 71(2), 73–76.
- Booth, P., Luckett, P., & Mladenovic, R. (1999). The quality of learning in accounting education: The impact of approaches to learning on academic performance. *Accounting Education*, 8(4), 277–300.
- Buchs, C., Darnon, C., Quiazade, A., Mugny, G., & Butera, F. (2008). Conflits et apprentissage. Régulation des conflits sociocognitifs et apprentissage [Conflicts in learning. Regulating socio-cognitive conflicts in learning]. *Revue française de pédagogie*, 163(April–June), 105–125.
- Castillo, J., Caruana, C., & Wainwright, D. (2011). The changing concept of competence and categorisation of learning outcomes in Europe: Implications for the design of higher education radiography curricula at the European level. *Radiography*, 17, 230–234.
- Christopher, T., & Debrecey, R. (1993). The impact of English as a second language on the performance of accounting students. *Accounting Research Journal*, 61, 3–7.
- CIMA. (2014). *CGMA competency framework*. Retrieved from <http://www.cgma.org/Resources/Tools/DownloadableDocuments/competency-framework-complete.pdf>
- Cooper, B. J. (2004). The enigma of the Chinese learner. *Accounting Education*, 13(3), 289–310.
- Cordasco, F. (1976). *A brief history of education* (rev. ed.). Lanham, MD: Rowman & Littlefield.
- CPA Canada. (2012). *The chartered professional accountant competency map. Understanding the competencies a candidate must demonstrate to become a CPA*. Retrieved from <http://unification.cpacanada.ca/wp-content/uploads/2012/10/CompetencyMap.pdf>.
- De Lange, P. D., & Mavondo, F. (2004). Gender and motivational differences in approaches to learning by a cohort of open learning students. *Accounting Education*, 13(4), 431–448.
- Dellaportas, S., & Hassall, T. (2013). Experiential learning in accounting education: A prison visit. *The British Accounting Review*, 45, 24–36.
- Dewey, J. (1897). My pedagogic creed. *The School Journal*, 54(3), 77–80. Retrieved from *Informal Education Archives*: <http://infed.org/mobi/john-dewey-my-pedagogical-creed/>
- Doran, B. M., Bouillon, M. L., & Smith, C. G. (1991). Determinants of students' performance in accounting principles I and II. *Issues in Accounting Education*, 6(Spring), 74–84.
- Dyball, M. C., Reid, A., Ross, P., & Schoch, H. (2007). Evaluating assessed group-work in a second-year management accounting subject. *Accounting Education*, 16(2), 145–162.

- Eison, J. (1991). *Active learning: Creating excitement in the classroom* (ASHE-ERIC Higher Education Report No. 1). Washington, DC: George Washington University.
- European Foundation for Management Development. (2013). *EFMD-EQUIS: EQUIS standards and criteria*. Retrieved from http://www.efmd.org/images/stories/efmd/EQUIS/EQUIS_Standards_and_Criteria_2013.pdf
- Fallan, L., & Opstad, L. (2014). Beyond gender performance in accounting: Does personality distinction matter? *Accounting Education*, 23(4), 343–361.
- Fellers, J. W. (1996). People skills: Using the cooperative learning model to teach students “people skills”. *Interfaces*, 26(5), 42–49.
- Fortin, A., & Legault, M. (2006, October). L'apprentissage au moyen d'une simulation en vérification: Impact sur la performance et les perceptions des étudiants [Learning using an audit simulation: Impact on students' performance and perceptions]. *Comptabilité-Contrôle-Audit* (Special Issue), 39–65.
- Francis, M. C., Muldar, T. C., & Stark, J. S. (1995). *Intentional learning: A process for learning to learn in the accounting curriculum*. Accounting Education Series, 12. Sarasota, FL: American Accounting Association.
- Freinet, C. (1964). *Les techniques Freinet de l'école moderne (Freinet methods of modern school)*. Paris: Armand Collin.
- Gammie, E., Paver, B., Gammie, B., & Duncan, F. (2003). Gender differences in accounting education: An undergraduate exploration. *Accounting Education*, 12(2), 177–196.
- Gilbert, N., & Troitzsch, K. G. (1999). *Simulation for the social scientist*. Buckingham, PA: Open University Press.
- Guney, Y. (2009). Exogenous and endogenous factors influencing students' performance in undergraduate accounting modules. *Accounting Education*, 18(1), 51–73.
- Hartnett, N., Römcke, J., & Yap, C. (2004). Student performance in tertiary-level accounting: An international student focus. *Accounting and Finance*, 44, 163–185.
- Hassall, T., Lewis, S., & Broadbent, M. (1998). Teaching and learning using case studies: A teaching note. *Accounting Education*, 7(4), 325–334.
- Hau, K. T., & Salili, G. (1991). Structure and semantic differential placement of specific causes: Academic causal attributions by Chinese students in Hong Kong. *International Journal of Psychology*, 26, 175–193.
- Heuillet, H. (2002). 'Ni père, ni maître.' Quelques mots d'histoire de la pédagogie et de la didactique, de 1880 à nos jours [Not father, nor master. Some thoughts on history of pedagogy and didactics from 1880 to our days]. *Journal Français de Psychiatrie*, 1(15), 32–33.
- Hofstede, G. (1994). *Values survey module 1994 manual*. Maastricht, The Netherlands: University of Limburg.
- Hutchinson, D., & Gul, F. A. (1997). The interactive effects of extroversion/introversion traits and collectivism/individualism cultural beliefs on student group learning preferences. *Journal of Accounting Education*, 15(1), 95–107.
- Jackling, B., & Anderson, A. (1998). Study mode, general ability and performance in accounting: A research note. *Accounting Education*, 7(1), 65–73.
- Jarvis, C., MacKenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30(2), 199–218.
- Kebritchi, M., & Hirumi, A. (2008). Examining the pedagogical foundations of modern educational computer games. *Computers & Education*, 51, 1729–1743.
- Keff, S. P., & Roush, M. L. (1997). New Zealand evidence on the performance of accounting students: Race, gender and self-concept. *Issues in Accounting Education*, 12(2), 315–330.
- Kember, D. (2000). Misconceptions about the learning approaches, motivation and study practices of Asian students. *Higher Education*, 40(1), 99–121.
- Keneley, M., & Jackling, B. (2011). The acquisition of generic skills of culturally-diverse student cohorts. *Accounting Education*, 20(6), 605–623.
- Koh, M. Y., & Koh, H. C. (1999). The determinants of performance in an accountancy degree programme. *Accounting Education*, 8(1), 13–29.

- Kolb, A. Y., & Kolb, D. A. (2005). Learning styles and learning spaces: Enhancing experiential learning in higher education. *Academy of Management Learning & Education*, 4(2), 193–212.
- Kramer, R., & Hill, T. (2011). Soft skills: A case for higher education and workplace training. *T+D*, 65(11), 16.
- Li, G., Chen, W., & Duanmu, J. (2010). Determinants of international students' academic performance: A comparison between Chinese and other international students. *Journal of Studies in International Education*, 14(4), 389–405.
- Lindquist, T. M., & Abraham, R. J. (1996). Whitepeak corporation: A case analysis of a Jigsaw 11 application of cooperative learning. *Accounting Education: A Journal of Theory, Practice and Research*, 1, 113–125.
- McGahern, R. (2009). Post-graduates use soft skills to succeed at work. *Training Journal*, (April), 22–23.
- van der Merwe, N. (2013). An evaluation of an integrated case study and business simulation to develop professional skills in South African accountancy students. *International Business & Economics Research Journal*, 12(10), 1137–1155.
- Meyer, J. H. F. (1995). Gender-group differences in the learning behaviour of entering first-year university students. *Higher Education*, 29, 201–215.
- Miller, C. R., & Savage, A. (2009). Vouch and trace: A revenue recognition audit simulation. *Issues in Accounting Education*, 24(1), 93–103.
- Montaigne, M. (2009). *Essais* (Essays). Edition Gallimard. Paris: Collection Quarto.
- Mutchler, J. F., Turner, J. H., & Williams, D. D. (1987). The performance of female versus male accounting students. *Issues in Accounting Education*, 2(Spring), 103–111.
- Nicholson, A. (1997). Bringing management reality into the classroom: The development of interactive learning. *Journal of Management Development*, 16(6), 438–451.
- Rajaram, K., & Collins, J. B. (2013). Qualitative identification of learning effectiveness indicators among mainland Chinese students in culturally dislocated study environments. *Journal of International Education in Business*, 6(2), 179–199.
- Rankin, M., Silvester, M., Valley, M., & Wyatt, A. (2003). An analysis of the implications of diversity for students' first level accounting performance. *Accounting and Finance*, 43, 365–393.
- Ravenscroft, S. P., & Buckless, F. A. (1992). The effect of grading policies and student gender on academic performance. *Journal of Accounting Education*, 10(1), 163–179.
- Richardson, S., & Blakeney, C. (1998). The undergraduate placement system: An empirical study. *Accounting Education*, 7(2), 101–121.
- Riley, R. A., Cadotte, E. R., Bonney, L., & MacGuire, C. (2013). Using a business simulation to enhance accounting education. *Issues in Accounting Education*, 28(4), 801–822.
- Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing*, 19(4), 305–335.
- Rousseau, J. J. (2009). *Emile ou de l'éducation* [Emile or on education]. Paris: Editions Flammarion.
- Sawyer, A. J., Tomlinson, S. R., & Maples, A. J. (2000). Developing essential skills through case study scenarios. *Journal of Accounting Education*, 18(3), 257–282.
- Smith, P. J., & Smith, S. N. (1999). Differences between Chinese and Australian students: Some implications for distance educators. *Distance Education*, 20, 64–80.
- Stainbank, L. J. (2010). Students' perceptions of the usefulness of an accounting project in acquiring accounting knowledge and professional skills. *SA Journal of Accounting Research*, 24(1), 79–100.
- Stewart, J. P., & Dougherty, T. W. (1993). Using case studies in teaching accounting: A quasi-experimental study. *Accounting Education: An International Journal*, 2(1), 1–10.
- Stoner, G., & Milner, M. (2010). Embedding generic employability skills in an accounting degree: Development and impediments. *Accounting Education*, 19(1), 123–138.
- Stovall, D., & Stovall, P. (2009). Professional accountants: Void of 'soft skills'? *The Cambridge Business Review*, 14(1), 99–104.
- Sullivan, E. J. (1996). Teaching financial statement analysis: A cooperative learning approach. *Journal of Accounting Education*, 14(1), 107–111.
- Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics* (2nd ed.). New York: HarperCollins.

- Tyson, T. (1989). Grade performance in introductory accounting courses: Why female students outperform males. *Issues in Accounting Education*, 4(Spring), 153–160.
- Wardlow, G. (1999). International students of agriculture in U.S. institutions. Precursors to academic success. *Journal of Agricultural Education*, 30, 17–22.
- Watson, D., Clark, L. A., Weber, K., Assenheimer, J. S., Strauss, M. E., & McCormick, R. A. (1995). Testing a tripartite model: II. Exploring the symptom structure of anxiety and depression in student, adult, and patient samples. *Journal of Abnormal Psychology*, 104(1), 15–25.
- Webb, V., & Read, J. (2000). *The challenge of cultural heterogeneity to educational development*. Paper presented at LAOIII conference, Pretoria, South Africa.
- Weil, S., Oyelere, P., Yeoh, J., & Firer, C. (2001). A study of students' perceptions of the usefulness of case studies for the development of finance and accounting related skills and knowledge. *Accounting Education*, 10(2), 123–146.
- White, C. S., Helms, M. M., & Parker, B. (1990). Simulations versus cases: Impact on the interpretation of financial statements. *Journal of Financial Education*, 19(Fall), 33–36.
- Wolmarans, H. P. (2005). Business simulations in financial management courses: Are they valuable to learners? *Meditari Accounting Research*, 13(1), 121–133.

Characteristics of respondents:

8 - Age: _____

9 - Gender: Male Female

10 - Have you already worked with an employment contract for more than a year? (Check one.)

1	0
Yes	No

11 - If you answered 'yes' to the previous question, indicate the number of years of experience, your professional level, and the function performed (finance, accounting, engineering, etc.).

Title	Function	Number of years
Owner/manager		
Senior management		
Middle management		
Supervisor		
Employee		
Self-employed, other: _____		

12 - Which ethno-cultural origin do you identify with? (Check one.)

- French
- Moroccan
- Algerian
- Tunisian
- Chinese
- Vietnamese
- Ivorian
- Cameroonian
- Senegalese
- Other, please specify

Thank you very much for your cooperation!

Appendix 2: Factor analysis (FA)

Initial soft skill	% of variance	Components	Items	Item loading
C1: Self-knowledge	48.95%	C1: Self-knowledge	• Self-assessment, identifying your strengths and weaknesses (capacity for critical analysis)	0.708
			• Determining and selecting areas for improvement	0.759
			• Identifying your professional goals	0.723
			• Assessing your commitment to the game and the teamwork	0.64
			• Being realistic (defining and managing your ambitions, following objectives, endurance, perseverance)	0.662
C2: Ability to understand and to adapt to the environment	58.86%	C2a: Ability to obtain and use information	• Identifying sources of information	0.767
			• Organising information for future use	0.802
			• Validating the information gathered and developing critical thinking	0.777
		C2b: Ability to manage the environment	• Using the information gathered	0.733
			• Integrating into the context	0.655
			• Adapting to changing conditions	0.748
			• Performing missions in various fields	0.744
C3: Communication skills	62.67%	C3a: Ability to communicate effectively	• Managing uncertainty, the unexpected	0.777
			• Transmitting a message: clear, structured, efficient	0.601
			• Transmitting a message: convincing, persuading	0.912
		C3b: Ability to listen and share	• Transmitting a message: influencing	0.893
			• Receiving a message: listening	0.78
			• Receiving a message: understanding others, adapting	0.83
			• Creating an exchange: 'feeling' the exchange (signs, attitudes, non-verbal communication)	0.644
			• Creating an exchange: showing responsiveness	0.737
C4: Ability to express yourself	62.02%	C4a: Ability to express orally	• Creating an exchange: maintaining positive relations with others	0.67
			• Creating an exchange: adapting to differences (considering the diversity of behaviours, beliefs, cultural references)	0.715
			• Speaking: adapting to the public, organising your thoughts, your speech	0.817
			• Speaking: time management	0.653
			• Speaking: expressing yourself dynamically	0.821
			• Speaking: using non-verbal communication	0.775
		C4b: Ability to express in written form	• Speaking: using your voice (intonation, rhythm, volume)	0.81
			• Speaking: controlling your emotions	0.62
			• Writing: summarising in writing (a meeting, a thought, a project)	0.785
			• Writing: structuring the written text (introducing, concluding, organising ideas)	0.813
• Writing: formatting (readability, titles, punctuation, etc.)	0.795			
• Writing: adapting the text to the assigned context	0.843			
• Writing: mastering the various forms of writing (draft, professional letter, report)	0.735			

C5: Ability to manage time and activity	66.56%		• Setting and achieving goals	0.794
			• Identifying and implementing priorities	0.834
			• Organising time, making a schedule	0.839
			• Delivering on commitments (appointments, documents)	0.768
			• Organising activities, etc.	0.842
C6: Entrepreneurial skills	62.77%	C6a: Ability to manage a project	• Initiating and leading a project to completion	0.789
			• Anticipating actions, steps, difficulties	0.812
			• Implementing, verifying, and readjusting actions	0.818
			• Finding and verifying the information, developing critical thinking	0.69
			• Presenting and organising information	0.736
		C6b: Ability to manage work	• Developing work capacity	0.566
			• Stress management	0.779
			• Taking chances, making proposals	0.795
			• Finding your place within the team: successfully asserting yourself within the team, reaching out to the others	0.728
			• Finding your place within the team: integrating the team	0.809
C7: Ability to act effectively in a team	63.17%		• Finding your place within the team: communicating with other team members, exchanging and sharing information	0.852
			• Finding your place within the team: participating in the teamwork (performing your work, bringing ideas, contributing to the organisation and formalisation of work)	0.86
			• Getting involved in the team's work and activities: adhering to the team's projects and efforts	0.844
			• Getting involved in the team's work and activities: student's cooperative and constructive spirit within the team, commitment to succeed	0.831
			• Getting involved in the team's work and activities: ability to keep the course in terms of time and tasks (meeting objectives, endurance, reliability, fatigue management, stress management)	0.673
			• Getting involved in the team's work and activities: ability to constantly participate in all activities	0.757
			• Getting involved in the team's work and activities: ability to comply with commitments made to the team and the schedule	0.779

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