CHOOSE A TOTAL QUALITY APPROACH: AOL, A TOOL FOR CHANGE

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ABSTRACT
As part of an Assurance Of Learning process, the capstone course of the BBA program at Laval University has been chosen to implement a learning evaluation process during the Fall Semester 2013. Our objective was to assess the capacities acquired by each individual student to demonstrate their skills and knowledge in different areas of business administration with regards to problem solving and decision-making. The question we address is: how to set up an AOL learning assessment and also employ it to support the implementation of a standardized quality management approach? This poses challenges with respect to fairness to students, transparency, social acceptance, homogeneity, and resource management. Building on the principles advocated by the AACSB, we decided with stakeholders to co-construct and manage a quality formula for a course built around a business simulation. This initiative required process innovations developed with the help of ICT, integrated performance assessment in the teaching strategy itself, and ad hoc evaluation tools. Communication of these tools to students gave them clear, attainable, measurable objectives, as well as feedback on their progress. We present here a model of organizational development going beyond control routines, a model that can be used as a strategy for quality teaching and a learning evaluation tool.

Keywords: Assurance of Learning; AACSB accreditation, Total Quality Management (TQM), Organizational Development.

INTRODUCTION
Université Laval (Quebec, founded in 1924) became the first non-anglophone university to obtain the AACSB International accreditation for its Business School on March 20th, 1995. The European Foundation for Management Development EQUIS accreditation, received in 2008 and renewed in 2011, further supports a tradition of excellency and quality embedded in the culture of the School at all organizational levels. This paper concerns the innovation and continuous development process implemented in the Bachelor's of Business Administration (“BBA”).

The rest of the paper is structured as follows. In the next section we introduce the quality management process developed for the BBA through a review of the literature and experience in quality management for institutions of higher education. In the second part, we present our decision of placing the capstone strategy class of the BBA at the center of the teaching evaluation process and our choice of a simulation-based formula. In the third part, we present, firstly, the process of planned change management and organizational development executed since fall 2013, built together with the stakeholders, and, secondly, the development of innovative tools to fulfill the targeted goals. Finally, we analyse the results of a satisfaction survey on the simulation
realised with students in the fall semester of the year 2013. We conclude with recommendations generated by this experience and propose new research paths.

A TOTAL QUALITY MANAGEMENT APPROACH

Total Quality Management was implemented in the industrial sector as a factor for competitive advantage from the end of the 20th century and was progressively adopted by the service sector. This approach, called by some authors a philosophy of management, is oriented toward customer satisfaction and organizational performance (Powell, 1995; Ahire et al., 1996). From the turn of the century, quality as a distinctive factor in a knowledge economy for institutions of higher learning (Dumond and Johnson, 2013) is at the heart of numerous works and publications (Asif, 2013). The implementation of a teaching quality process in business schools facilitates fulfilling performance goals and potential recognition by worldwide accreditation organisms (Elliot, 2013). The Assurance of Learning, as a process for evaluation of attainment of teaching quality standards, participates in terms of vision, strategy and culture in continuous quality management (Lawson et al. 2012; Green, 2012). The literature on TQM in higher education underlines a lack of consensus on what constitutes a customer. Are students customers (Eagle and Brennan, 2007; Mark, 2013)? Are employers (Rodman and al. 2013), employees (Kanji et al. 1999), investors (Curickshank, 2003), regulatory authorities (Fernandez et al. 2013)? We prefer a systemic approach that considers stakeholders in a larger view (O'Mahony and Garavan, 2012; Asif et al, 2013). We agree with Kanji (Kanji, 1999) in considering lecturers and students as internal customers and recognizing the prime importance of their satisfaction (Zineldin et al.2012; Mark, 2013).

A CO-CONSTRUCTED SOLUTION

In 2012, a school committee on Assurance of Learning (“AoL”) staffed by lecturers in the BBA program was created. Two objectives were proposed for a mandatory class that did not yield a high student satisfaction rate:

1. Make the mandatory strategy class more attractive to students and lecturers;
2. Bring skills developed in the students up to the targeted objectives.

The organizational strategy class met these conditions and was chosen to realize this change. Its formula was to be completely retooled to become a genuine capstone course designed to generate meaningful student performance and learning measures for AoL.

During the spring of 2013, a new design for evaluating the skills of the students on an individual basis had to be designed for the next fall. This presented several organizational challenges. How could fair, quality individual evaluations be conducted with in-class as well as online sections, comprising a total of more than 200 students? Which elements would demonstrate skills in the different areas of business administration in a problem-solving approach, this being one of the BAA learning objectives? How could changes be transparent and socially accepted? How could a standardized quality management approach be implemented? How could the human and financial resources necessitated by this change be properly managed?
The search for an innovative process concerns the attainment of, on one hand, quality standards required by an AOL process, and, on the other, meeting a satisfaction rate for customers as defined by students and lecturers. Several challenges were posed by the individualization of the business simulation for the capstone organizational strategy class of the BBA course. In a new individual formula, the workload on both students and teachers was to be increased, especially as regards supporting the students of each section. The need to standardize and coordinate the work of all lecturers was also a challenge as four sections (three in class and one online) and three different lecturers were planned for the semester of fall 2013, with over 200 students.

A project management committee staffed by the department chair, the education coordinator for the organizational strategy class and a project coordinator was established by the end of the spring. As the business simulation was meant to measure oral communication skills as well as problem solving skills, the need to find an economical and efficient way to test oral communication skills at such a large scale was the first problem to address. Through meetings, informal talks and brainstorming, and with the support of the information technology services department, technological solutions and virtual interaction tools were developed so as to allow students to individually prepare a virtual oral presentation in which they explain the decisions they made as part of the simulation. The Camtasia Relay software, and its French language tutorial developed in-house, would be used to enable students to create a 20-minute video capsule at their own pace. In this video, the student would be filmed as a presenter, along with the student's PowerPoint presentation. This was made possible, as a Digital Learning Environment (ENA) has been internally developed at Université Laval. Since 2012, this portal for classes and educational applications is a unique resource providing students and teachers with a convivial educational approach in a constant drive towards symbiosis with the users' needs. On this platform, students, correctors and teachers can access at any time the class websites developed and managed by the latter. The software and tutorial needed for the oral presentation were thus integrated to the ENA website for the four sections of the course.

This innovative solution used tools that were already known or in use by students in their personal time, such as game tutorials or YouTube commentaries, and by lecturers when presenting virtual courses, such as screencasts. This allows both students and lecturers to better manage their time: instructions were presented several months before the delivery date on the course website, and the oral presentations, submitted at the end of the semester, were to be evaluated by correctors and lecturers at their own pace as they are directly accessible from the website through their secure access. Organizing costly physical individual presentations was thus avoided and a fairer evaluation was made possible, especially between students from in class and online sections. Furthermore, the presentations can be archived and kept by the department for a year, as are written examinations.

The fast management of this first problem by the project team and the proposed solution fostered an atmosphere of trust, accelerating the building of a process for evaluating the different assignments towards a goal of total quality. The committee was thus expanded to other stakeholders: two more lecturers, correctors, and the president of Praxem, the company supplying the Navisim simulation. Two other pressing issues had to be addressed: the support of students in the simulation process and the evaluation of the different assignments for the simulation.

Support of students in the simulation process
Students both online and in class were familiarized from the beginning of the session with the simulation through presentation videos made specifically by the lecturer and the Navisim
supplier. They were uploaded at the start of the session and accessible at any time. After the first week, all students were given an individual online access code to the simulation so they could quickly get started with this role-playing game. Two test simulations were used from the first weeks of class for student practice and self-evaluation through the stock price of their enterprise. The simulation website itself included documentation and information for the strategic decisions the student would be taking during the game (scorecards, reports, statistics, market research, economic environment, news from the maritime transport industry in the newspaper l'Écho des Océans...).

Furthermore, for an easier access to fast, interactive online help, a Facebook group was created. Joining this group was proposed to each student at the start of the simulation through a link. The group was managed by a lecturer who was experienced with this type of virtual collaboration with students. A Frequently Asked Questions folder was created, developed from the analysis of the questions asked in past semesters by students to the lecturers and to the simulation software supplier. During the simulation, the students could thus ask questions, receive real-time feedback and interact with colleagues from all sections. The Facebook community manager also had an access to the Navisim website, so that like the lecturers she could see each student's past decisions and the informations regarding the student's company. The teachers and the simulation provider were also members of the group and could read the questions asked by students and interact if they wished to do so.

Interestingly, a coopetition process was brought to light during these virtual exchanges (Brandenburger and Nalebuff, 2011; Muijs and Rumyantseva, 2013). Each student using the Facebook group was also competing with nine others, themselves also members of the group. Nevertheless, from mid-semester onwards, peers were collaborating as shown by correct answers and astute advice given in real time to their competitors/colleagues.

Evaluation of the different assignments
It was decided to evaluate business knowledge and skills through a strategic plan set at the beginning of the semester, an interpretative report, the value of the company’s stock at the end of the competition and an oral presentation. All these evaluations were of course measured on an individual basis. The corrector and teacher for the students they evaluated created a spreadsheet. Data entry was automated as much as possible, reducing workload for correctors and decreasing sources of errors. These grids, built by taking into account AoL learning goals and the history of previously taught classes, facilitated the establishment of performance standards. An harmonized evaluation method between different correctors and a more comfortable correction tool was obtained thanks to a precise framework.

In order to support an educational approach to the performance expectations of students and create a transparent, fair, motivating, socially accepted approach, finalized evaluation grid with detailed grading per deliverable goal was communicated to the students from the beginning of the semester. Presenting specific, measurable, attainable, relevant objectives was part, in our approach, of a research into self-regulation of learning and maximal motivation (Zimmerman and Schunk, 2013; Locke and Latham, 2013). Furthermore, the evaluation grid for the strategic plan was communicated to each with their individual detailed scores. The median and average of the scores for the sections were, as well, accessible on the website to everyone. These grids then contributed to an immediate feedback, allowing students to situate themselves towards expectations, adapt their behavior to adequately reinvest their skills, achieve a learning loop and prepare for next steps (Earl, 2012).

STUDENTS SATISFACTION STUDY
Student satisfaction towards this new teaching formula represented one of our goals and an important component of total quality management (Ardi et al. 2012). We agree with Mark that [customer focus] "provides a framework for ensuring student satisfaction by embedding quality into the learning process through quality instruction, quality assessment, and greater attention to students' needs" (Mark, 2013, p.8) and second the recommendations from Montserrat and Gummensson (Montserrat and Gummensson, 2012) about centering quality evaluation by students in the co-creation process. In order to measure the quality felt by the students and their appreciation of the experience of the simulation in its new individual form, and to use the experience for continuous betterment, we constructed a Student Feedback Survey. This survey was designed with the objective of collecting information to answer the following questions.

**RESEARCH QUESTIONS**
1. Did students find the choice of the simulation a relevant educational strategy?
2. How did the students find the content of the Navisim simulation and associated support?
3. How much effort did the students think the simulation required?
4. What parts did they most like and dislike?
5. What recommendations would students make for improving the simulation?
6. In general, how satisfied are the students with the Navisim simulation in this course?
7. Is there a correlation between the performance of the student in the simulation, as measured by stock price, and their specific academic major or minor?

**METHODOLOGY**
The students filled out the survey in class in a paper format during the last class period. This collection method is likely to lead to high response rate. Indeed, the total response rate for the 3 classes was 87.8% (101 of 115). The decision to collect data only from in class sections was made on the basis that these three sections make up the majority of the group. Their answers should thus be fairly representative of the whole group. The survey was nominative and students had to identify their major. The 25-question survey was developed directly around the first 6 research questions.

**RESULTS ANALYSIS**
94 out of 101 surveys were analysed as 7 were incomplete and therefore not included in the analysis sample. The vast majority (91.49%) of respondents agree that the Navisim simulation is a relevant educational tool in the context of this course. Nevertheless, over a third of the surveyed students (36.17%) do not think it enabled them to explore the main concepts taught in this business administration strategy course. The comments given on the subject of this insufficient exploitation of the course concepts concern the difficulties the students faced in reconciling the subject matter to the situation (64.71%): "I don't know which concepts I applied", "Strategic coherence did not influence the results", "not applied enough", "[the simulation] even goes beyond the class concepts", "better explore strategic principles and explain them in relation to the simulation". The remaining justifications were tied between a lack of familiarity with the simulation itself (8.82%) and applying the knowledge acquired over the course of the BBA program (11.76%). Interestingly, by placing in relation the answers to both questions (#4 and #6) concerning the frequency of use of their knowledge of management strategy in their decision-making (96.81%), there is evidence that the students correctly used the knowledge acquired in class to solve the problems offered by the Navisim simulation. However, they cannot relate *a posteriori* the decisions to specific concepts. This manifests a transfer from explicit knowledge to tacit understanding, that is, the internalisation of the concepts as a learning action (Nanoka, 1994, p. 340).
On the question of satisfaction with the content and support offered by Navisim, three quarters (75,56%) of respondents perceived the simulation as complex, and in some (6,38%) cases, too complex. The information from Navisim's website (scorecards, statistical reports, market research) were on the whole considered sufficient for strategic decision-making (89,36%). However, 40% of students considered the Navisim documentation, the information given by the lecturers, and the two practice decisions insufficient in understanding the simulation and making the last six decisions. Explanations of the disagreement significantly concern (78,95%) the lack of opportunity for familiarisation with the simulation either in class or as teams, "knowing the impact of the decisions", "interaction, explicative videos, animations".

On the subject of the Facebook page support, most students (72,34%) found it good (48,94%) or very good (23,40%). Notably, 24,47% of respondents declared not having used it, mostly justifying it by their lack of awareness that one existed: "I didn't use it, I didn't know it was there", "I only learned about the FB's existence last week". According to these results and in agreement with Robleyer (Robleyer et al. 2010), we understand that "students are much more likely than faculty to use Facebook and are significantly more open to the possibility of using Facebook and similar technologies to support classroom work". We also believe, like Lee (Lee et al. 2013) that the group administrator has an influence on the sense of satisfaction, motivation and knowledge transfer: " Based on the experimental results, even if students use Facebook every day and see the new posts in the online group, when the group manager does not run the group properly, students will not be motivated to actively join the interaction. However, if proper strategy for managing the online group is used, such as providing a guideline, stimulating students to get involved, and helping them to link what they learn to field applications, it is highly possible to help them to learn and involve more throughout the whole semester. Taking advantage of the nature of knowledge sharing of Facebook services, it is also possible to synchronize the knowledge learning and field applications. ".

We tried to quantify the perception of the respondents as far as the workload was concerned, namely for its distribution between the three types of assignments (strategic plan, decision making, interpretative report). The numbers for decision-making exercise (13,41h) as well as the strategic plan (12,59h) truly represent the time spent on the exercise, whereas the average of time reported for the interpretative report is most likely underreported as over a third of the respondents declared having spent no time on this report (not having started it at the time of the survey). If the reported times are averaged over the length of semester, even doubling the numbers for the interpretative report exercise, the average workload is less than four hours per week.

Over two thirds of respondents (68,08%) declared themselves satisfied with the Navisim simulation overall. The students reported having particularly enjoyed being able to choose their own strategy and quickly analyze the impact of their decisions (30,85%). The students enjoyed the competition and managing the competitors (13,30%) and the virtual management of a real company, the realism of the simulation and the clarity of the website (13,30%). The remaining answers concerned the use of a mix of knowledge from different fields (9,57%), the way information was made available (6,38%), the conviviality and gamelike aspect ("we like games") (5,32%).

An analysis of the reported negative aspects shows that the workload is considered too important by a significant margin (23,34%). The effort invested by the students was judged to be very high (69,89%). The students also criticized not being able to understand the impact of their decisions on the remaining variables (15,96%), and noted a "random" aspect to the results. This is supported by a request for more indicators, especially scorecards (9,04%). Having their grade
linked to the results of the competition contributed to dissatisfaction among students (6.38%), while 8.51% of respondents mentioned the difficulty of completing the simulation on their own, without interacting with teammates or mentors on specific decisions.

Students were polled on one or two improvements they would bring to the simulation. Almost one-fifth of the respondents sought to go back to team-based evaluation. 32.38% suggested technical improvements on the simulation software with better explanations of the process, preferably in an interactive format. 14.36% of the students recommended that a different weight be given to the evaluations. Most (62.34%) would weigh the strategic plan to 15% of the final grade (up from 10%), whereas opinions are mixed concerning the interpretative report (15% or 20%, up from 10%). Meanwhile, 71.43% would prefer the stock price result, currently weighed at 20% of the final grade, to go down to 10%, and 94.81% would devalue the oral presentation, currently weighed at 10%, down to 5%.

**Statistic Tests Results**

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F (2,99) = .771; p > .05

In order to answer question 7, on the subject of the correlation between student performance in the simulation and their major, an ANOVA test was conducted between the dependent variable (stock price result), continuous and following a normal distribution, and a nominal variable (student major). The H0 hypothesis (no difference between student results when students are from different majors) could not be rejected.

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<td><strong>Total</strong></td>
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F (3,98) = 1.520; p > .05
In order to answer question 7, on the subject of the correlation between student performance in the simulation and their minor, an ANOVA test was conducted between the dependent variable (stock price result), continuous and following a normal distribution, and a nominal variable (student minor). The H0 hypothesis (no difference between student results when students are from different minors) could not be rejected.

In both cases the test showed no significant results. It is then possible to conclude that there is no relationship between student declared major or minor and student performance in the simulation (based on a fictive stock price). It follows that the simulation is a fair evaluation of the different skills and knowledge developed by students over the course of the BBA.

LIMITATIONS
The sample was limited to a subset of the students enrolled in the capstone course of a single university. The study did not concern all students in the class as the survey was only administered to the in-class sections.

CONCLUSION
In light of the results of different quantitative and qualitative data analyses, we recommend the following:
1- Keep the simulation as an individual project in the ADM-3050 capstone course.

2-Allow the students to become familiar with the simulation from the first sessions onwards, by structuring a third of the class around labs and giving the students teaching support during this time.

3- Integrate the different assignments as steps in between the different decisions to be made, thus linking the grading grids presented to the students to the different steps in the course and their progress in the simulation. This would lead to a better retroaction and better learning through the analysis of the impacts of the Navisim decisions.

4- Keep the same grade distribution between the assignments. We believe that as work is spread throughout the semester and follows the rhythm of the class, the perception of the workload should be less intense.

5- Perform another satisfaction survey at the end of next semester, once changes have been put in place.

6- Integrate the project management committee within the change management process.

7- Set up a focus group to further investigate the sources of satisfaction and dissatisfaction of the students.

8- Maintain the Facebook group and eventually create a more complex Facebook page for the members, with a FAQ.

This experimental formula and associated research project allowed us to implement a participative process of total quality through satisfaction of the stakeholders, by building together ad hoc tools and putting forward performance control goals with respect to fairness to students,
transparency, social acceptance, homogeneity, and resource management. We "closed the loop" and will be using this new knowledge to maintain a process for continuous improvement through sharing and integrating results and experience.

REFERENCES


Portail de cours ENA, http://www.ena.ulaval.ca/4_minutes/player.html


