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Rethinking Undergraduate Business Core Curriculum: One School's Experience of Redesigned Curriculum with a Holistic Approach

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ABSTRACT

Due to lacking skills, a drastic LE change, and new accreditation, our business school significantly redesigned our undergraduate business school core curriculum. In this paper we discuss the factors leading to the redesign, the components of the redesign, and expound on a critical element of the new curriculum: woven elements.

KEYWORDS: Curriculum redesign, Undergraduate business core, Business quantitative skills, Communication skills, Accreditation requirements

INTRODUCTION

As the world around us changes, we need to adapt our curriculum. Our school's business curriculum was in need of a change due to a variety of factors. With the millennial generation, we found students were lacking in some needed quantitative and communication skills that were necessary to be successful in business. Our liberal education program underwent a drastic makeover such that our previously required courses from liberal education (LE) were no longer going to be offered as a part of the LE program. With innovation in our LE, we need to adapt how we ensure business students get the specific skills they need for business that previously were met from that program. In addition to changes in the LE program, our school is changing accreditation and needed to reevaluate all of our course content to ensure we could meet new and different requirements.

LITERATURE REVIEW

Student Quantitative and Communication Skills Lacking

There are a number of gaps in the skills of business graduates. Research indicates communication skills along with the ability to solve complex problems among the skills that could be better developed in graduates. According to *The Washington Post*, one study found that 40% of college seniors lacked the complex reasoning skills needed in the business world today (Selingo, 2015). A study conducted by the Association of American Colleges and Universities (AACU) found that employers found students weaker in skills such as oral and written communication as well as critical thinking and problem solving than perceived by

students (Jaschik, 2015). *The Bloomberg Job Skills Report* identified that communication skills were commonly viewed as the most desired skill from employers that is lacking in students being hired (Levy & Cannon, 2016)

Repetition of Concepts Improves Learning Outcomes

Many researchers (e.g., Ericsson, Krampe, & Clemens, 1993; Baddeley, 2002) argue that variances in the amount of practice account for the majority of performance differences between individuals, resulting from differences in the amount and structure of knowledge stored in long-term memory. When students practice solving problems, they increase their ability to transfer practiced skills to new and more complex problems. This is true in childhood (Glover, Ronning, & Bruning, 1990) and adult years (Li et al., 2008). Practice helps students acquire expertise in subject matter and, therefore, it helps to distinguish novices from experts in given subjects (Ericsson et al., 1993). Cognitive gains from practice often bring about motivation for more learning (Kalchman, Moss, & Case, 2001).

REDESIGNING THE UNDERGRADUATE BUSINESS CORE CURRICULUM

A Drastic Change in Our Liberal Education Program

As our liberal education program adopted a completely new model, the courses were no longer typical. In our old LE program, students were required to take one class from each of seventeen categories. Therefore, as part of the LE program, students could choose to fulfill four of their undergraduate business requirements: College Algebra, Macroeconomics, Statistics, and Ethics. In the new LE program (WCore) students take innovative topics that do not fall into a category like previously offered survey courses. Instead, students need to take two classes in each of three broad categories: Fine Arts & Humanities, Social and Behavioral Sciences, and Science and Math. Students may take courses such as Counting Votes (Science and Math), How We Die in America (Social and Behavioral Sciences), or Vampires: Active Reading, Passive Reading (Fine Arts & Humanities).

Lack of a Specific Math Class in Liberal Education

With no specific math classes as part of the general education curriculum, we needed to rethink the math needs of our students. Although we could require students take a math class such as college algebra as a requirement of the business program, the fact that it wouldn't also count for liberal education credit caused us to think more deeply about the math skills our students actually required. Upon closer inspection, we realized that many of the skills needed for math calculations in business were met earlier in a student's math curriculum. We decided that students would learn better by being introduced to math concepts within a business context. The use of more applied math would allow us to ensure that students better understand the logic behind decisions and the math used to determine those calculations. To tackle the additional math instruction, we added two new courses to the curriculum: Business Fundamentals I, Calculating and Applied Business Math and Modeling.

Changes in Statistics Offerings

As a result of the liberal education changes, the Math department began to rethink what needed to be offered to its students. Of importance to the business school was the Math department's decision to offer two versions of a statistics class. The first course would be called Data and Society and offer statistics more from the view of a consumer of stats rather than a producer of

stats. The outcome of this course would be for students to be able to read and understand how statistics are interpreted. The students would see R code as a part of their program but it would be in the context of code already written to complete specific tasks. Although the student would learn about R and the logic of the code, they would not be actually coding the programs. In the alternate class, Introduction to Statistics, students would receive a deeper level of statistics training that would include chi-square and ANOVA analyses. In this course students would learn to code R and write their own programs for analysis. The curriculum redesign committee felt that either of these classes could meet the needs of business students. For students in areas where they would need additional statistics knowledge, students will be advised to take the Introduction to Statistics course. With a new Data Science minor also introduced by an interdisciplinary group, students wishing to pursue this minor would also be encouraged to take the Introduction to Statistics course. Statistics would no longer be a course that counted towards the liberal education requirements, but we felt that the new offerings would work well for our students as a part of our core curriculum.

Ethics Needed in Curriculum

Similar to the math courses from liberal education previously meeting core requirements, we had previously used a Philosophy course to count towards the ethics requirement for our students. Upon closer evaluation, we felt that business ethics should be included more explicitly in our curriculum. We therefore recommended that ethics be introduced as part of the business law class. Within this class we would introduce the students to a framework with which to consider ethical issues. Then, ethics would also be covered, building on the framework developed in the Business Law & Ethics course in five other courses: Financial Accounting, Business Finance, Principles of Management, Principles of Marketing, and Information Technology.

Engaging the World: A New Requirement

As part of the new liberal education program, students are asked to fulfill a requirement that meets the Global Learning Value rubric from the Association of American Colleges & Universities (AAC&U): “a critical analysis of and an engagement with complex, interdependent global systems and legacies (such as natural, physical, social, cultural, economic, and political) and their implications for people’s lives and the earth’s sustainability.” Students will be able to fulfill this requirement by going on an international study trip, spending a semester abroad, completing an international internship, or taking a course on campus that is approved for this requirement. We believe that this requirement will help our students better understand global issues, an important piece in today’s business world.

Senior Capstone

To help students bring together their learning across the curriculum, a new requirement for each major to have a capstone course was implemented. Previously all students took a strategic management course that acted as a capstone course for most majors. However, we realized with this new senior capstone requirement that it makes sense for each major to identify the best way for their major to experience a capstone.

How to Ensure a Strong Understanding of Concepts

At the same time as the liberal education changes are taking place, our college is seeking AACSB accreditation. Since we needed to re-evaluate the curriculum due to the LE changes,

we also wanted to incorporate all elements that would be desired by AACSB. We felt the curriculum was missing some important components. In order to include all of the topics that we believed to be missing from the previous curriculum, we recommended including two new courses in the core curriculum as well as the rearrangement of several courses from their current state. In order to accommodate the new courses as well as limit the credit hours for the undergraduate business core to be no larger than it was previously, we decided as a faculty to change our core courses from 4-credit-hours to 3-credit-hours. The only exception is the Principles of Management course for which course content was adjusted but the credit hours stayed at 4.

Managerial Accounting and Operations Management were added to the curriculum. We removed the operations component from the Principles of Management course and redesigned that course to incorporate the strategy elements previous taught in the capstone course that all students took. As a result of the new senior capstone in the major, we removed the capstone course from our core curriculum and replaced it with an integrative course to be taken at the completion of all other business core courses.

Table 1 contains a brief description of how each of the Standard 9 elements are addressed in the redesign.

Table 1: AACSB Standard 9 Application

General Skill Areas	
<p>Written and oral communication <i>Addressed by the communication woven skills</i></p> <p>Ethical understanding and reasoning <i>Addressed by the Ethics woven element (introduced in Business Law & Ethics and reiterated in Financial Accounting, Principles of Marketing, Principle of Management, Information Technology, and Business Finance)</i></p> <p>Analytical thinking <i>Added Applied Business Math & Modeling course and included quantitative woven elements to enhance analytical thinking in terms of math skills</i></p> <p>Information technology <i>Include technology as a part of many courses including Business Fundamentals I, Applied Business Math & Modeling, and Information Technology</i></p>	<p>Interpersonal relations and teamwork <i>Students in Business Fundamentals I will take a skills assessment to understand how they contribute to a group, various courses will have teamwork components that will use a teamwork rubric introduced in Business Fundamentals I</i></p> <p>Reflective thinking <i>Throughout a variety of course students will reflect on their own contribution within the context of society</i></p> <p>Application of knowledge <i>As part of the Business Fundamentals II course, students will complete a real-world project that will incorporate all core course content. Additionally, in Business Fundamentals III students will participate in internships in the community. Students will also be required to complete a capstone course as a part of their major that will incorporate synthesis of all ideas as applied to the business world.</i></p>

General Business and Management Knowledge Areas	
<p>Economic, political, regulatory, legal, technological, and social contexts of organizations in a global society <i>Covered in economics courses as well as Principles of Management</i></p> <p>Social responsibility, including sustainability, and ethical behavior and approaches to management <i>Covered as part of the Ethics woven element including Business Law and Ethics course</i></p> <p>Financial theories, analysis, reporting, and markets <i>Business Finance course will cover these topics</i></p> <p>Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution <i>Information Technology and Operations Management, two new courses in the core curriculum will cover these items along with Principles of Marketing</i></p>	<p>Group and individual behaviors in organizations and society <i>Principles of Management will cover both Strategy and Organizational Behavior topics.</i></p> <p>Information technology and statistics/quantitative methods impacts on business practices to include data creation, data sharing, data analytics, data mining, data reporting, and storage between and across organizations including related ethical issues <i>These topics will be covered as part of the Information Technology course as well as the Statistics courses (Data and Society or Introduction to Statistics) and the Applied Business Math and Modeling course. Ethics is a woven element in the Information Technology course</i></p>

Creating a Business Fundamentals Series

The new integrative core course is the middle course in a series of courses we call Business Fundamentals. In Business Fundamentals I, students take two 3-credit hour courses that are linked together similar to a learning community. For each course, the same students will be in both sections of the courses: Business Fundamentals I, Communicating and Business Fundamentals I, Calculating. The focus of this initial class is three-fold. The students will be introduced to basic business concepts by forming a company that will have roles and responsibilities. As a company, the students will determine a set of products to sell such that they earn enough money to cover the cost of a service project they will also plan and execute. Throughout the semester, the students will be assigned roles within the company to manage all of the processes. As the students perform the company duties, they will be learning key communication and quantitative skills that will set the foundation for the skills that will be further built upon in their business courses. We refer to these skills as the 'woven' elements' which we believe to be a critical design component of our curriculum redesign. As Business Fundamentals I is the first course students will take in the business program, it will provide a way to determine a starting point for the student skills that we can then assess later in the program. Business Fundamentals II, Integrative Core is a course that students will take once they have completed all of the core business courses. It will be a project-based course that allows the students to pull together their learning and skills from the business core. This course also provides a place where we can administer testing for assessment purposes. We can test on the skill development from their first course. We can also assess the business core knowledge; we use ETS testing for this purpose. Additionally, we can use this course to better prepare students for what is needed when thinking about their internship. The final course is the Business Fundamentals III, Internship. This course will allow students to have hands-on

experience in the workplace putting their business core and major knowledge to work. An overview of the curriculum and how it is included in the core is shown in Figure 1.

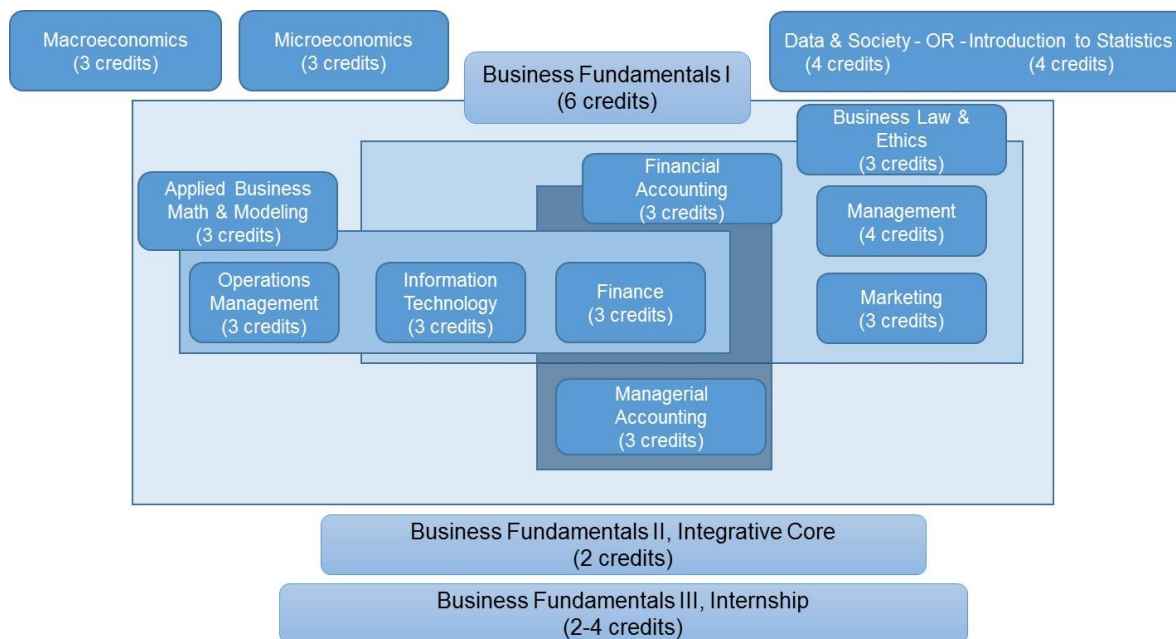


Figure 1: Curriculum Design of Business Undergraduate Core

The Need for Quantitative and Communication Skills

In addition to building the Business Fundamentals series, we also reevaluated the skill needs of the students. Part of this related to the math course as discussed with the liberal education changes, but we also wanted to re-think how quantitative courses in general were offered to the students. To better understand the needs of quantitative skills in the business world, we looked to MBA students who manage positions filled by undergraduates and inquired what skills are most desired. We also surveyed what other peer and aspirant schools were covering in their curriculum, specifically for quantitative skills. We quickly came to the conclusion that students needed to see math in the context of business and they needed to see the skills multiple times throughout the coursework.

Upon further discussion, we determined the following quantitative elements should be 'woven' throughout the curriculum: percentage change, breakeven analysis, markups/margins, time value of money, Excel basic calculations, Excel graphing, graph analysis, solving basic equations. All of these quantitative skills will be introduced to the students in the Business Fundamentals I course. Table 2 shows the distribution of these skills throughout the curriculum. We believe these are the minimum requirements of where the quantitative skills should show up but faculty are encouraged to include these skills whenever possible.

Table 2: Placement of Quantitative ‘Woven’ Elements in Core Business Classes

Breakeven Analysis Business Fundamentals I Applied Business Math & Modeling Managerial Accounting	Markups/Margins Business Fundamentals I Applied Business Math & Modeling Principles of Marketing
Excel Basic Calculations Business Fundamentals I Applied Business Math & Modeling Operations Management	Percentage Change Business Fundamentals I Applied Business Math & Modeling Business Finance
Excel Graphing Business Fundamentals I Applied Business Math & Modeling Operations Management	Solving Basic Equations Business Fundamentals I Applied Business Math & Modeling Business Finance Operations Management
Graph Analysis Business Fundamentals I Elementary Macroeconomics Elementary Microeconomics	Time Value of Money Business Fundamentals I Applied Business Math & Modeling Business Finance

Similar to students needing to build quantitative skills, we also believe students need to see communication elements repetitively to strengthen their skills. After discussing the needs of communication skills, we decided the following communication skills would be ‘woven’ throughout the curriculum: memo, executive summary, letter, report, blog, standard presentation, pitch presentation. Similar to the quantitative skills, these communication skills will be introduced to the students in Business Fundamentals I.

Table 3: Placement of Communication ‘Woven’ Elements in Core Business Classes

Blog Business Fundamentals I Principles of Management Operations Management	Report Business Fundamentals I Business Finance Principles of Marketing
Executive Summary Business Fundamentals I Managerial Accounting Operations Management	Standard Presentation Business Fundamentals I Business Finance Information Technology Principles of Management Principles of Marketing
Letter Business Fundamentals I Business Law & Ethics Business Fundamentals III: Internship	Pitch Presentation Business Fundamentals I Business Fundamentals III: Internship Financial Accounting
Memo Business Fundamentals I Applied Business Math & Modeling Principles of Management	

Execution of Design Plan

In order to create these new courses, we received a grant for course development. Faculty applied to be course designers. Each course designer was responsible for developing the course description and learning goals. These were then evaluated by the departments and/or critical stakeholders. The course designers then created a 14-week course topic plan to demonstrate content coverage in terms of breadth and depth of material. This step was also evaluated by the departments and/or critical stakeholders. The final step is for course designers to select the textbook/materials to be used for the course as well as develop a full syllabus to include all of the woven elements, course learning goals, and course content as developed in previous stages. For each course, a minimum requirements has been created to ensure consistency across sections and different professors. To ensure the content is covered as designed, faculty and adjuncts teaching the course will need to complete a form each semester that demonstrates how each of the required elements will be met in the course. These will be evaluated by the course owner who will ensure the standards are being met.

Future Plans

We are interested to see how our new curriculum is evaluated by the students. We are encouraged by the design of the woven elements as well as the assessment points to see how students are developing as they move through our core curriculum. Our curriculum has been designed but not yet implemented. We have designed a process to capture how each course incorporates the assigned woven elements and general knowledge areas. We will be collecting feedback on the experience of using the woven elements after our first semester with the new curriculum. It will be a couple years until the incoming class of 2020 takes the Business Fundamentals II course where they will be assessed on the business content of the curriculum via the ETS exam as well as their quantitative and communication skills as a part of the course. We are excited about the new curriculum and look forward to determining its effectiveness.

REFERENCES

- Baddeley, A. D. (2002). Is working memory still working?. *European psychologist*, 7(2), 85.
- Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological review*, 100(3), 363.
- Global Learning VALUE Rubric. (2015). Retrieved March 18, 2016, from <https://www.aacu.org/value/rubrics/global-learning>
- Glover, J. A., Ronning, R. R., & Brunning, R. H. (1990). *Cognitive psychology for teachers*. New York, NY: McMillan.
- Jaschik, S. (2015). Well Prepared in Their Own Eyes. *Inside Higher Ed*.
- Kalchman, M., Moss, J., & Case, R. (2001). Psychological models for the development of mathematical understanding: Rational numbers and functions. *Cognition and instruction: Twenty-five years of progress*, 1-38.
- Levy, F., & Cannon, C. (2016, February 9). The Bloomberg Job Skills Report 2016. Retrieved March 17, 2016, from <http://www.bloomberg.com/graphics/2016-job-skills-report/>
- Li, S.C., Schmiedek, F., Huxhold, O., Röcke, C., Smith, J., & Lindenberger, U. (2008) Working memory plasticity in old age: practice gain, transfer, and maintenance. *Psychology and Aging*, 23 (4), 738
- Selingo, J. J. (2015, January 26). Why are so many college students failing to gain job skills before graduation. *The Washington Post*.