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## **From Tabula Rasa to Knowledge-Filled Vessels**

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### **Abstract**

College faculty periodically encounter with dismay near-graduates appearing more like a tabula rasa than a seasoned student of the discipline. Expecting them to possess an impressive stockpile of retained knowledge, professors often discover students are not bringing sufficient residual know-how to their capstone course. This paper describes a collaborative effort by a group of marketing faculty members determined to improve student long-term retention of discipline knowledge via the development of a method for studying the degree of course alignment within their core curriculum.

### **Introduction**

Organizations face constant pressures to improve their performance in order to flourish in today's marketplace. This includes institutions of higher learning that are compelled to substantiate the value of a college education. Many business schools have been criticized for allowing students to graduate with either insufficient knowledge or a knowledge base that is misaligned with the needs of the real world (Aistrich, Saghafi, & Sciglimpaglia, 2006; Wellman, 2010). The development of institutional processes that assess how well business schools are doing in the development of quality byproducts—students with an applicable body of general knowledge—is now a critical component of accreditation processes (Evans, 2010; LaFleur, Babin, & Lopez, 2009).

Indeed, if business schools are to mold their students into vessels of knowledge that are aligned with accreditation goals and industry needs, faculty members within business disciplines must coordinate their efforts to ensure students are capable of retaining an applicable body of knowledge upon completion of their degree. This paper describes a collaborative process used by marketing faculty at a Midwestern business school to understand why senior marketing majors were not bringing sufficient residual knowledge into their capstone marketing course from other marketing courses taken earlier in their academic studies. Within this process, we test the effect of the alignment of instructors teaching the introductory marketing course and instructors teaching the subsequent core marketing courses prioritization of marketing concepts on student long-term knowledge retention

## **Student Learning and Retention**

The term *knowledge* in this research is anchored to the seminal of Bloom (1956) and refers to student abilities to understand discipline-based concepts, in this case in the area of business marketing. Long-term retention of such knowledge is needed as students' progress through the marketing curriculum and for later use as their careers unfold after graduation. This topic has recently gained acceptance in marketing education as a means for understanding how learning outcomes in a marketing program can be improved. Research suggests that students who learn and apply the same concepts in several courses spread across a wider period of time retain their knowledge better (Bacon & Stewart, 2006; Evans, 2010).

Much less, however, is understood about mechanisms that stand to improve long-term knowledge retention, especially within the marketing discipline (Evans, 2010). One particular question to be addressed is—how can faculty work together to expose students to the same concepts across various discipline-based courses, each taught by a different instructor? One potential solution explored here is a collaborative-based process that involves examining the fundamental type of alignment amongst those who teach the various courses within the degree program.

Previous research has discussed the importance of educators collaborating to align teaching components throughout a curriculum (Biggs, 2003). It is suggested that students in a disciplined-based program are more likely to improve their intellectual development when their instructors agree on what specific concepts are most important for students to learn, as the continuousness of students encountering the same concepts leads to their repeated reinforcement and memory (Callahan, Strandholm, and Dziekan (2010).

Such a process, however, has not become customary within discipline-based programs. Marketing faculty involved in this study agreed that an initial step for establishing constructive alignment within their degree program would be an assessment of the level of agreement amongst them regarding what concepts were essential for their students to learn and retain. For a majority of marketing programs, Principles of Marketing is used as the course that introduces the essential discipline-based concepts. It is thus plausible to suggest that alignment between instructors teaching this course and other discipline-based courses on the importance of concepts to be learned should result in students' better continuity to and retention of such concepts (i.e., the aligned knowledge base). In contrast, retention should decrease across concepts the instructors disagree on (i.e., the misaligned knowledge base).

### **Phase 1: Identifying the Aligned and Misaligned Knowledge Bases**

Data were collected from the group of marketing faculty at a Midwestern business college during the Fall 2012 semester to identify what discipline concepts they perceived as important for students to retain. This step was critical in the research process as it assists with defining the concepts associated with the aligned versus misaligned knowledge bases.

As an initial step, a Delphi Method was used to identify key marketing concepts essential to the introductory and core marketing courses. The introductory course instructors identified, first independently and then together, which concepts were a necessary part of a thorough introductory marketing course. From these lists and the conversations surrounding them, it was determined that while each instructor teaching the introductory marketing course employed their own unique style and covered

additional related concepts, all of them taught the same core concepts; and thus we found that these instructors were aligned.

Next, a survey was conducted of all marketing instructors to elicit their agreement or disagreement with the importance of concepts identified by the introductory course instructors. An online survey of marketing faculty was administered using Qualtrics to allow the remainder of the marketing faculty to weigh in on how important or unimportant the prior acquisition of specific marketing concepts were to the quality of the student learning experience in the courses they taught.

To identify the aligned and misaligned knowledge bases, a series of t-tests were performed and then the level of significance, together with mean scores and standard deviations, were used to determine which concepts and tools all instructors agreed (the aligned knowledge base) versus disagreed (the misaligned knowledge base) on their importance for students to retain.

Although agreement was evident on some very key marketing concepts, the faculty did not converge on other important elements of marketing such as target marketing, competitive analysis, and, especially, consumer behavior. The presence of both agreement and disagreement amongst marketing faculty, however, allowed us to identify aligned and misaligned knowledge bases that played a critical role in the next phase of our research focused on student retention of concepts.

### **Phase 2: Retention of the Aligned and Misaligned Knowledge Base**

The purpose of Phase 2 was to test retention of the aligned and misaligned knowledge bases by marketing students at various stages of their marketing program. To achieve this, the faculty devised an assessment test that measured students' retention of the concepts identified above. This approach was consistent with prior research on retention that used tests as a measure of retention (Bacon & Stewart, 2006; Evans, 2010). The assessment test was administered online to 63 marketing students (Median age = 23, 56% females, 71 % seniors, Median years at the college = 4, Median number of marketing courses taken = 3) enrolled in one of two core marketing courses: Introduction to Marketing Research or the Marketing Strategies capstone course. To start, participants indicated what marketing courses they took prior to their current marketing course. Next, participants were given a recent business publication article to read and then instructed to answer 16 multiple-choice questions purported to measure the marketing concepts identified in Phase 1.

Retention scores were subsequently created for each knowledge base by summing up the test scores for each concept and then calculating their average. Specifically, the aligned knowledge base retention score represents the mean test score for marketing concept and marketing mix questions. Whereas the misaligned knowledge base retention score was the average of target marketing, competitive analysis, and consumer behavior questions.

To test whether student retention was better with marketing concepts associated with the aligned (versus misaligned) knowledge base, a pairwise t-test was performed to compare the retention mean scores for the aligned and misaligned knowledge bases. As expected, students performed better on the aligned knowledge base questions ( $M = 71.96$ ,  $SD = 21.91$ ) than the misaligned knowledge base questions ( $M = 56.92$ ,  $SD = 16.59$ ;  $t(62) = 4.81$ ,  $p < .001$ ). This suggested that knowledge retention was better across the knowledge base with higher faculty alignment. Additionally, Pearson's correlation was used to explore whether aligned and misaligned scores were affected by the number of marketing courses taken

prior to the assessment test, number of years at the college, and students' age. No significant correlations were found.

As such, the outcome of our research process provided initial insights and evidence for the important role of faculty alignment within a discipline-based program. The results supported our notion that student retention is likely to improve if there is agreement amongst faculty on what concepts students need to retain after completing their introductory discipline-based course and provides opportunity for future improvements in alignment and student retention.

The faculty involved in this study believed that working together to understand why educators often fail to foster long-term knowledge retention and how it can be improved are critical components of the curricula development process required to prepare students for future careers. The misalignment between what the introductory course instructors believed was important student discipline-based knowledge and what the subsequent course instructors believed was important had a negative effect on student long-term retention. The alignment, on the other hand, of what faculty teaching across the curriculum deemed important student discipline-based knowledge had a positive impact on student long-term retention. Lastly, the number of discipline-based courses students had taken, their number of years in college and students' age have little impact on retention of aligned and misaligned knowledge bases.

### **Implications for College Educators**

In an attempt to determine how to involve students in a learning process that facilitates long-term retention of important discipline-related knowledge, this research shows the value of faculty members working together to align their thinking and priorities throughout the curriculum. Our findings support prior research (e.g., Bacon and Stewart 2006; McIntyre and Munson 2008) revealing that alignment contributes to student knowledge retention, but defines a new level of alignment that educators can use to improve student learning outcomes. Furthermore, the results provide a method for educators to evaluate the level of agreement amongst faculty and identify gaps where results-producing improvements can be made. Once identified, it is the misaligned knowledge base that requires attention, especially if it contains concepts that the program has deemed critical to student success.

Another contribution evolved from this work, a proposed a method for studying the degree of PM-CM alignment as a means for improving long-term knowledge retention and thus learning outcomes in discipline-based programs. The stepwise approach in the two phases of the research involved a collaborative faculty effort to generate needed data. The analysis of the information garnered from the process clearly delineated where the faculty agreed and where they did not. If the data gathering and analysis were confined to illuminating insights into just one program's curriculum this research would be beneficial, but limited. The tests we performed uncovered strengths and deficiencies in one particular marketing curriculum but also offer a path for improvement of other programs.

There were no unique or proprietary tools or school specific limitations to the process we employed in generating the needed data. We contend that the process is readily repeatable, the data generated valuable, and that marketing departments that duplicate the process will benefit from it. The systematic process used in this empirical inquiry, if followed at other institutions, will provide insights that allow those programs to identify areas of (mis)alignment, providing the opportunity to improve the level of agreement among marketing faculty resulting in greater student knowledge retention.

## Conclusion

Most college faculty members show concern for their ability to pass on sufficient knowledge to students. However, long-lasting student discipline-based knowledge requires educators to work together as a group, and not individually, to identify what students should learn and retain. The value of the systematic approach utilized in this research is that it is relatively easy to employ, produces actionable information, and enhances the faculty's capacity, as a cohesive team, to have impact.

Despite the value of the method developed here, the reliability can still be improved. For instance, schools employing this approach should conduct a pre-test of student knowledge retention prior to identifying (mis)alignments. Once changes are made to align teaching around concepts, tools and skills identified by faculty as high priority, student outcomes should be re-measured and compared to prior results to ensure effectiveness of the modification. As other institutions utilize this approach, refinements will be identified and suggested for continuous improvement. In the current reality of increasing pressure to provide more value in undergraduate education, the outcomes of this research reinforce the need to align the concepts taught throughout a discipline-based curriculum and provide a system for evaluating and strengthening the collective efforts of faculty.

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