The Facilitation of Higher Order Thinking Using the Conception Focused Curriculum

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Abstract

Developing students that can think critically and solve problems is a daunting task and yet businesses are demanding that business schools do the seemingly impossible. Current curriculum models do not facilitate higher order learning. We provide a learning activity grounded in Conception Focused Curriculum that embeds the student into the discipline thereby forcing the student to consider themselves both as a product and as a marketing manager. Empirical results show using this type of learning pedagogy forces students to use higher order thinking skills and develops more dynamic, problem-solving students.

The Problem

Marketing educators continuously struggle to find new and innovative pedagogies to help students solve problems and think critically. For over 15 years, educators have discussed increasing demands from businesses to develop graduates who are adaptive, responsive, and teachable (Tierney 1998), and who possess the potential to transform their organizations (Harvey and Knight 1996). These demands force business schools to develop and deliver curriculum to prepare students with classroom skills and knowledge that can be transferred to other domains (Srikanthan and Dalrymple 2004), like work. This type of student transformation must be grounded in a curricular model with learning objectives that move students beyond basic understanding to mastery and facilitates the students' progression to higher levels of learning. In addition, the curriculum must be organized in a manner that provides students with understanding, thinking, and knowledge creation skills the student can apply in new situations. If this is not the environment in which the student is educated, we are training them in the wrong ways and reaping the wrong results (Mintzberg 2004).

The Innovation

This paper outlines a teaching innovation that challenges the student to move beyond surface learning (e.g. Davies and Mangan 2007) and low levels of Bloom's taxonomy learning (Bloom, 1954) and provides a method for assessing whether the teaching innovation developed higher levels of learning. The learning activity we used draws on the belief that students are more engaged and attain higher levels of learning when (1) their learning activities are based on real world work for which they are preparing and when (2) the student is embedded in the activity.

The Conception Focused Curriculum (CFC) (Burch, Bradley, and Burch 2014) states that students naturally learn using concepts, and develop conceptions based on the way concepts are grouped with other concepts and settings. A simple example is the concept of sport. One develops a concept of sport from childhood where sports such as baseball, football, soccer or basketball are played and observed. Sports are generally athletic activities which are skill based and competitive in nature, varying based upon culture, geographic location, time of year and so forth. Sports are played by individuals at different ages and in different contexts from scholastic, to collegiate, professional and even as part of neighborhood activities.

By itself sport is a concept. However, when considered inside a domain it becomes a conception. When viewed through the eyes of participants, sports provide an athletic and expressive outlet for physical and even mental energy. When viewed through the eyes of a sportscaster, sports provide the grist for TV commentary or newspaper content. When viewed through the eyes of professional marketers, sports provide the vehicle or venue for moving product. The concept of sport does not change, but the use of the concept inside a domain is crucial in enabling students to apply their knowledge of the concept of sport across multiple domains. Sport is one human activity, just as learning is an activity. Viewing these activities as concepts allows the student to begin to develop a higher order conception of various human activities. Although simplistic in nature, this example is characteristic of how the human brain groups knowledge. Although this is a simplistic example, it demonstrates the way the brain groups other knowledge.

Burch and his colleagues (2014) encourage educators and students to identify, as well as, understand the conceptions in a course or field of study. This deep understanding provides the opportunity for higher order learning and transfer of knowledge between disciplines because both the student and educator understand how concepts interact with other concepts inside a particular discipline. Students who understand at this level are capable of transforming organizations because they have developed the ability to create, analyze, synthesize, and evaluate (Bloom 1954) as they master a discipline. This stands in sharp contrast to a curriculum where students are taught isolated facts and skills that they apply on the lower end of Bloom's taxonomy.

While the design of the CFC is paramount, the learning activities embedded in the curriculum play an important part in the development of the student. Learning activities provide the student with opportunities to apply what they are learning and to demonstrate their understanding of the concepts, how the concepts fit together, and how a conception is formed by considering the concepts within a discipline. CFC learning activities are designed so students demonstrate higher order learning and a mastery of the discipline (Burch, Bradley, and Burch 2014) by allowing the student to use their knowledge as practitioners in a discipline, thereby preventing low level knowledge acquisition (Tomlinson, et al. 2009). We used the CFC approach to design the final project for a graduate level Healthcare Marketing course.

Students at this level possess prior conceptual knowledge, although they may not have considered how they developed those concepts. To help develop this knowledge, the Healthcare Marketing course had two enrollment prerequisites, Principles of Marketing and Marketing Management. The Principles of Marketing course provides a foundational knowledge of Marketing as a discipline, which included the principles and concepts of marketing products and services in a global economy. The Marketing Management course introduced the key elements in developing a marketing strategy and planning a marketing program and includes concepts such as customer segmentation, positioning, branding, consumer research, pricing, marketing communications, new product development, and channel strategy as they pertain to marketing. Before beginning the learning activity, students reviewed the marketing material covered in the prerequisites as it applied specifically to the field of Healthcare Marketing.

The goal of the final project is for students to demonstrate an understanding of the selected marketing concepts, and the ability to apply their knowledge as a product manager. These goals are all higher order thinking skills that are demanded by businesses. We chose to design the learning activity based on the CFC by placing the student in the discipline where they had to consider several concepts simultaneously. We accomplished this by requiring students to create a personal marketing plan. To develop this plan, the students had to conduct interviews of at least three healthcare marketing professionals in careers to which they could realistically aspire and to apply at least five marketing models and/or theories. This process required the students to view themselves as both the product to be marketed and as a marketing professional. This multifaceted process encouraged the students to adjust their concept of a product and the concept of themselves.

Students critically analyzed the market space (i.e. the career field they were studying) to determine whether they, as a product, were a good fit for the market space and what they needed to do to change the product to compete in that market space. Following the CFC, this caused the student to develop a new conception of how products are marketed, thereby developing a deeper level of conceptual understanding.

Effectiveness of the Innovation

The goal of the study was to determine if using an exercise designed around the CFC (Burch, et al. 2014) could increase the level of cognitive thinking by marketing graduates. We anticipated that the teaching innovation would foster the ability of students to develop concepts around marketing models and theories in meaningful ways, thereby increasing higher order thinking that the student could apply in future business endeavors. To evaluate the effectiveness of the learning activity, we used an eleven step procedure (Insch, et al. 1997) for conducting content analysis of the student's final project to determine the relationship between the variables.

We chose to evaluate each project to determine the count of individual words to determine if there was a relationship between the extent that the student embedded themselves and their knowledge into the development of their marketing plan. We used a simple classification categorization since each word has a specific meaning and can be grouped into self, discipline, or cognitive taxonomy level (Bloom 1954). We identified words associated with each level of Bloom's taxonomy (Heacox 2002), commonly used personal pronouns to identify self and discipline-based words to identify those words associated with marketing as a discipline. We conducted a pretest word count of all final projects using word count software to evaluate the extent that the chosen words represented the categories and purified the coding by counting all words in the final projects to determine if it could represent one of the previously selected categories. Next, we collected individual word count data for all projects, across all word categories. Finally, we assessed the construct validity by reviewing the words in each category to ensure the words in one category could only be classified or coded in that category.

Correlations between word categories are shown in Table 1. On average, students used self words personal pronouns (M = 158.7, SD 98.6) and discipline-based words (M = 108.0, SD = 47.6) in their final projects. Students also used words associated with knowledge (M = 10.2, SD = 4.6) and comprehension (M = 13.5, SD = 6.3). This supports the use of word counts as a means of calculating the student's inclusion and understanding of the discipline. Table 1 also shows the inclusion of higher order learning words being present in the final documents. Students used words associated with application (M = 13.1, SD = 5.0), analysis (M = 19.0, SD = 10.34), synthesis (M = 3.1, SD = 3.2), evaluation (M = 10.1, SD = 5.5), and create (M = 23.6, SD = 12.5).

Table 1: Pearson Product Moment Correlations

Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9
1. Self	158.7	98.6									
2. Discipline	108.0	47.6	-.08								
3. Self/Discipline	266.8	106.1	.89**	.38							
4. Knowledge	10.21	4.59	.22	.03	.22						
5. Comprehension	13.50	6.27	.66**	-.27	.49*	.28					
6. Application	13.14	4.99	-.43	-.40	-.58**	-.36	-.23				
7. Analysis	19.00	10.34	.32	.09	.34	-.10	-.23	-.22			
8. Synthesis	3.07	3.22	.01	.68**	.32	.00	.01	-.12	.20		
9. Evaluation	10.14	5.47	.29	.07	.30	.56**	.08	-.43	.21	-.15	
10. Create	23.64	12.5	.22	.24	.31	.53**	-.09	-.32	.11	.05	.78**

* *p*significant at .10 or less

** *p*significant at .05 or less

It was anticipated that the count of self words and higher order learning words would be positively correlated since students who embedded themselves more completely would discuss how they used higher order thinking skills to develop their marketing conceptions, thereby increasing the number of words associated with higher order thinking. Results in Table 1 show that correlations range from .01 for synthesis to .32 for analysis. This suggests that simply adding the student into the project may not be sufficient for developing higher order thinking. We also expected that the inclusion of key marketing models and theories would force the students to develop stronger conceptions and therefore increase higher order learning. The correlations with discipline-based words ranged from .07 to .68 for synthesis. Again, only adding concepts and refining concepts may not lead to the development of conceptions and higher order thinking.

More support for the CFC model is seen when the number of self words and discipline-based words are added together and then correlated with the higher order thinking variables. The sum of self and discipline words produced correlations that ranged from .31 to .34 which are considered to be moderate correlations. It appears that it is the combination of the student and the discipline that are both critical in the development of conceptions that can be used for higher order thinking and learning. It is also interesting to note that students who used more self words and words of the discipline used fewer lower level learning words as seen in the negative correlations between self, discipline, and self/discipline with application. This gives further support for the effectiveness of the project to encourage higher levels of learning.

Challenges and Concerns

Companies are not seeking individuals who are only able to recite facts and perform well on multiple choice exams. Instead, they are seeking employees who are capable of understanding a problem, defining the boundaries, and creating solutions. The teaching pedagogy innovation presented in this paper leads students through the process of understanding concepts and developing useful conceptions by embedding the student in the discipline. Students were not simply asked to memorize lists and provide short responses to basic questions. Instead, they were required to develop accurate conceptions based on specific marketing concepts and then apply those theories to their own careers. In the business world, these students will be well prepared to use the refined concepts and conceptions as they transfer them to new environments.

The learning innovation provided an opportunity for the students to see themselves through the eyes of product and brand managers. Functioning in these roles gave the students an opportunity to develop themselves beyond the scope of the classroom in preparation for the work force. This exercise gave students a real glimpse into the lives of practitioners in two ways. First, students learned directly from professionals already functioning in the careers they selected. Second, the student started working as a professional by developing their personal marketing plan. This understanding, as well as the skills gained, can be leveraged in the workforce from the first day in a new marketing job and will continue throughout the students' careers.

Implementing learning activities based on the CFC is not easy since it requires educators to move beyond the textbook and conduct critical evaluations of the course and discipline in order to identify key concepts and conceptions associated with the field of study. Although the development of conceptions is natural, it is often difficult to meta-cognitively consider all of the concepts necessary to develop an accurate conception. The CFC approach also encourages the educator to develop higher order learning objectives that demonstrate the essential understandings of the discipline. These outcomes are important, but they are not as easy to evaluate as facts or simple computational skills. A final concern is that educators need to design the learning activities and assessments to mirror the work of a practitioner. We propose that although it is initially more demanding to develop learning activities around the CFC, students enjoy these activities more and that they give the student the opportunity to demonstrate understanding by using the skills and knowledge required.

Adaptability to Other Courses

Even with limited marketing skills and background, graduate and undergraduate marketing students alike will find CFC based learning activities to be challenging and engaging. In particular, the idea of placing the student inside the discipline is adaptable for every level of marketing course. Embedding the student in the discipline would serve as an excellent activity in a principles of marketing course to show students the depth and breadth of marketing as a discipline and the career choices that exist. This learning activity can easily be adapted to other disciplines and various levels within marketing. Lower level marketing courses will need to account for depth of knowledge of a concept and how similar concepts work together to form conceptions. The true value of using CFC activities is to develop entire programs that use concepts and conceptions to help students develop the skills and critical thinking skills that businesses are demanding.

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