Creation of Exercises for Team-Based Learning in Business

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Team-based learning (TBL) is an approach that builds on both the case method and problem-based learning and has been widely adopted in the sciences and healthcare disciplines. In recent years business disciplines have also discovered the value of this approach. One of the key characteristics of the team-based learning approach consists of exercises that require teams to choose a specific answer and defend it against the answers of other teams. Discipline-specific exercises designed for this approach are not in abundance, and a gap in the literature exists regarding information on how to create effective exercises for the business disciplines. This paper reviews the concept of team-based learning as related to business, discusses the need for help in designing effective exercises, and suggests four avenues for filling the void.

There has been a growing interest noted in the literature in building into university courses more opportunities for students to combine discipline-specific knowledge with practical skills (Dearing, 1997; Gold et al., 1991; Holmes, 1995; Nwanaka, 2011), especially the soft skills of communication, critical thinking, creativity, and collaboration (White, 2013). In business, we find complexity and the need to make effective decisions, with the input of others, under the pressure of time. One successful technique for bringing these realities to the classroom is team-based learning (Argyris, 1993; Burkhill, 1997; Gibbs, Haigh, & Lucas, 1996; Kolb, 1984). Bringing such realities to the classroom strengthens the students' preparedness for the complex environments into which they move after school.

Team-based learning presents complex problems rooted in real-world situations to motivate students working in teams to make a decision. The teams make this decision after considering important concepts and the interconnection of these with other concepts, as well as the myriad environmental variables impinging on a situation. Team-based learning emerged to enhance active learning and critical thinking by engaging students with the kinds of problems they will encounter in the workplace. The major emphasis in team-based learning is on concept application, and the processes through which students learn both the content and the applications are specifically designed so that student groups develop into self-managing teams. This approach fits with that of teaching for meaning as suggested by McTighe, Seif, and Wiggins (2004). These authors urge the schema of working backward from the *big ideas* of the discipline to ask students to inquire, think at high levels and solve problems while applying knowledge and skills in meaningful tasks within authentic contexts. Others concur that this approach serves "… to promote the development of problem-solving skill and self-directedness" (Lohman & Finkelstein, 2002, p. 125).

One thing that sets the team-based learning approach apart from its predecessors, such as case-based learning (Egleston, 2013; Machuga & Smith, 2013), problem-based learning (Nargundkar, Samaddar, & Mukhopadhyay, 2014; Pennell & Miles, 2009), project-based learning (Brady & Davies, 2004; Kloppenborg & Baucus, 2003), inquiry-based learning (Blasco, 2012; Madden, 2010) and task-based learning (Mallin, Jones, & Cordell, 2010; Whittington & Campbell, 1998) is that, while it borrows liberally from its antecedents, the team-based learning approach places intense emphasis on the tight-knit bonding and functioning of the team. Team-based learning distinguishes a mere group from a team by characterizing a group as an assemblage of people, while a true team is defined by a high level of commitment, intimacy and trust as well as the integration of the members into mutually supportive roles based upon mutually beneficial interests (Michaelsen, Knight, & Fink, 2004).

In team-based learning, teams are typically formed by the professor at the beginning of the course, based upon characteristics of diversity, and remain intact throughout, much the way a cross-functional team in a firm might operate. Another feature of team-based learning teams, which is not always true of group work, is that virtually all of the team's collaboration is done inside the classroom in the presence of one another and the professor (Michaelsen et al., 2004). This fact allows for an intense experience with a*ll hands on deck* and the teacher available to supervise the teams as they work.

The melding of the team, out of an assortment of individuals, consists of a series or cycles of activities in which the team members engage in intensive individual study, demonstrate their comprehension of the basic theories and concepts of the discipline, participate in mutual instruction concerning the points on which members are not clear, are exposed to supportive teaching primarily over points that continue to be unclear, apply themselves to a set of exercises over the major concepts that call for a decision from the team,

and contribute to a discussion with other teams about the points of understanding and disagreement (Michaelsen & Black, 1994). As shown in Table 1, this cycle is repeated for each major topic in each major unit of study in a course.

The team-based learning approach in business, as popularized by Michaelsen et al. (2004), is built on a foundation of collaboration within a small team context and satisfies three important criteria that promote optimal learning (Perelman, 1992): (a) the student is immersed in a practical, on-going activity; (b) learning is multi-directional, with feedback from other learners and the instructor; and (c) learning is functional -- based on a real problem. It is through this process of cooperative learning and reflection that students move from passive learners to active learners (Goby & Lewis, 2000) and become responsible for a significant amount of their own education (Speece, 2002).

Team-based learning has improved educational outcomes in science, education, business, and medical education courses (Haidet, O'Malley, & Richards, 2002; Michaelson et al., 2004; Seidel & Richards, 2001). As an instructional method, team-based learning has been found to enhance students' communication skills, group interaction skills, and comprehension of complex course concepts (White, 1998). This accomplishment becomes significant in view of the fact that employers identify communication skills and social skills as the most desirable skills for job applicants (Appleby, 2000), while teamwork and problem-solving skills have frequently been identified by business leaders as key competencies (Goltz, Hietapelto, Reinsch, & Tyrell, 2008). Team-based learning exercises are more prevalent in the health sciences where the process matches well with that of diagnosis, but team-based learning is also finding a home in business education as well.

The Problem

The logic behind team-based learning is compelling and the approach a natural step for those already employing group activities and assignments in classes, such as in cooperative education. However, the backbone of team-based learning, and the single biggest challenge, is that of creating effective exercises (Michaelsen et al., 2004), a recognition which has been borne out in our teaching experience. Unlike cooperative learning, where group activities are used within a pre-existing course structure (Johnson, Johnson, & Smith, 1991; Millis & Cottell, 1998; Slavin, 1996), team-based learning requires the instructor to reconfigure the entire course around uniquely fitted exercises.

Michaelsen et al. (2004) indicate that good exercises promote a high level of individual accountability and motivate vigorous discussion. These same authors suggest that effective exercises should present the teams with a set of specific choices that requires use of course concepts to arrive at a decision. The exercise should also prompt individual thinking which contributes to intense intra-team discussion. The learning process that begins with individual study and preparation and continues through the individual and team assessments (by thinking about and debating the finer points of the posed questions) will persist with concentrated focus on the exercise effort.

Our search of the literature made it clear that most of the available materials dealing with team-based learning in educational settings are in the area of medical and health science education followed by the basic sciences. One reason for this predominance of information in the area of medical education is due to a grant from the U.S. Department of Education awarded to Baylor College of Medicine in 2001 with the specific purpose of exploring the use of team-based learning in medical education (Sibley & Parmelee, 2008). Baylor's award funded several years of nationwide workshops for faculty and provided direct support to medical schools for implementing the team-based learning strategy. Baylor's efforts also involved good timing as Sibley and Parmelee (2008) explained,

> Several medical schools were searching for ways to have more active learning instead of a steady stream of lectures. However, they chose not to develop a PBL [problem-based learning] curriculum because of its high student-to-faculty ratio requirements. Instead, several of these schools sent key faculty to workshops on team-based learning. Many returned to their home campuses and either converted entire courses to the team-based learning strategy (Nieder, Parmelee, Stolfi, & Hudes, 2005) or began to use it episodically in place of existing faculty-led small group discussions (p. 46).

Following the initial dissemination of information by Baylor College of Medicine, many medical schools adopted some version of team-based learning for the value commonly attributed to the process, but they were pleased to also experience unanticipated benefits. Research into team-based learning use at medical schools found additional benefits such as enhanced knowledge retention and critical thinking (McInerney & Fink, 2003) along with a variety of positive academic and noncognitive outcomes of team-based learning in medical education (Baldwin, Bedell, & Johnson, 1997; Dunaway, 2005; Kelly et al., 2005; Koles et al., 2005; Searle et al., 2003; Vasan & DeFouw, 2005). According

Table 1
The Team-Based Learning Process

Step	Activity
Individual study and preparation	Home reading of text, case, and articles
Individual readiness assessment	Quiz to determine preparation to move to the exercise phase
Team readiness assessment	Same as above, but answered as a team
Supportive teaching	*Ad hoc* mini-lectures over points not already comprehended
Individual exercise	This step will be the focus of the remainder of this effort
Team exercise appeal	Applies when a team believes a material error is in evidence
Post-exercise class discussion	Opportunity to learn from other teams
Periodic examinations	Crafted on the exercise model

to Sibley and Parmelee (2008), "Schools of nursing, veterinary medicine, dentistry, physicians' assistants, and other allied health professions programs have also developed team-based learning within existing curricular structures" (p. 46).

While team-based learning is popular in medical education, we found the majority of prepared exercises and questions to be restricted to persons with login credentials rather than available to the public at large. Of the few exercise and question examples the authors discovered, most were short vignettes centered on patients presenting with a particular set of symptoms. The question and answer choices challenged the students to apply their knowledge within the context of the particular patient situation to explain the meaning of test results, the causes of the symptoms and other such questions leading to the proper diagnosis of the patient's condition and/or the appropriate treatment.

Despite the popularity of team-based learning, according to Michaelsen et al. (2004), a common problem with team-based learning is poorly conceived assignments [exercises]. These same authors insist that these poorly conceived exercises account for discussion domination by some members of the team and social loafing on the part of others. Michaelsen et al. go on to say that a well-conceived exercise will (a) encourage individual accountability, (b) promote closer physical proximity during the team discussion, and (c) promote a high level of interaction and discussion within the team. The outcome of these three phenomena is enhanced learning.

Michaelsen et al. (2004) urge the use of four procedures to create effective assignments. These procedures, sometimes referred to as the 4S Framework, include: (1) use of a *significant*, relevant problem, (2) have all the teams working on the *same* problem, (3) require teams to make a *specific* choice, and (4) have teams *simultaneously* report their choices. These procedures ensure that answers are comparable and that teams commit to their answer without knowing

how others have responded. After the report is made by all teams, discussion/debate can begin.

While these four procedures provide some limited guidance on how to use exercises, very little guidance is available in the literature to assist with the creation of exercises, and virtually no prepared and tested exercises are available. Sufficient information is available concerning procedures for conducting all other parts of the team-based learning process, from forming teams, developing procedures for team management, crafting assessment questions, and conducting peer evaluations. But the largest—and arguably the most significant—gap in information about how to administer a team-based learning approach is in the development of discipline-specific exercises that are properly crafted to accomplish the learning objectives. For teachers new to the team-based learning approach, this gap in exercise materials is a formidable challenge. For team-based learning to be successful, instructors need help to fill the gap.

This article grew out of our struggles to find suitable exercise material for our team-based learning classes in business. The following sections share our experiences and thoughts concerning the development of team-based learning exercises that may be generally applicable to a range of subjects, but they are offered primarily with business disciplines in mind.

Developing Team-Based Learning Exercises

Because the exercise is the core activity in team-based learning, it is critical to get this element of the approach right in order to succeed. According to the approach espoused by Michaelsen et al. (2004), the subject matter of a class should be broken into a manageable number of units: no less than four and no more than seven segments. Each segment will consist of an individual and team assessment of comprehension of text reading and applicable instruction to validate the students' preparation for proceeding with the exercise. It is at this point that some decisions have to be made,

such as: (a) How many exercises will be associated with each unit of material? (b) How long and how in-depth will each exercise be? (c) How many questions will be associated with each exercise?

The instructor's answers to the preceding questions will set the stage for selecting, or creating, appropriate exercises for discussion and decision making. Based on personal experience, we recommend four viable means of developing suitable exercises: cases, news stories, custom episodes and simulations.

Cases

Many textbooks come with cases or case-lets embedded in, or supplemental to, the reading material. Cases are a natural starting point for developing exercises because they already exist and typically come with teaching notes that augment their value for the instructor. However, the cases that we usually find in case texts are often not suitable, in their original state, for the exercises complementary to team-based learning. They are often too long, too far-ranging, or too technique-oriented to be suitable to the team-based learning method. We are not aware of texts in business that have been specifically geared to the team-based learning approach, and the problems and cases that are available tend to be more technique-driven than those called for by the team-based learning approach.

Our experience suggests there is no single template for case selection; a good case will have certain characteristics that will enhance its effectiveness in the context of team-based learning. The case conducive to high-energy team-based education (a) is relevant and interesting, (b) challenges students to process information at higher levels of cognitive complexity, (c) requires students to come to a specific choice, and (d) requires student teams to defend their choice with evidence and logic. Short cases work well when trying to focus on a specific point, while longer cases lend themselves to emphasizing a variety of points within a thematic context.

We have used cases on occasion, in either their full or modified form, but attention must be devoted to preparing questions that conform to the *specific choice* requirement. Already-prepared cases may be a good place to start, especially if an instructor has not had time to develop tailored materials. An instructor may use a case for a single exercise, but an efficient approach can be to assign a case for an entire learning unit and then employ it over and over to explore specific facets of the topic for the unit. This latter approach justifies a heavy investment on the part of the student in becoming thoroughly familiar with the case and doing independent research beyond the case. We have even created cases, later published, with the idea of using them as class exercises (e.g., Morris,

Timmerman, & Lovvorn, 2014; Timmerman, Lovvorn, Barth, & Morris, 2011).

This method may be supplemented with questions provided by the instructor to focus the individual student's preparation, foster contributions to the team effort, and set the stage for questions to come in the team-based exercises. More information concerning question development is covered in a later section; however, the idea is essentially that of a multiple-option listing, all of which are plausible, among which each team must choose and present a compelling defense.

News Items

Other sources of existing exercise materials are news items that fit the teaching objective. It is especially helpful if the item is in print so that it can be easily captured for use. Articles from the *Wall Street Journal, Fortune, Forbes,* and other business publications make great, contemporary backdrops for probing questions relevant to the text concepts as well as making the point that these concepts are current as well as relevant.

We have occasionally used articles directly from the *Wall Street Journal* and other sources, without alteration, as a timely exercise that depicts the current state of affairs. Examples of these instances include an article about the struggles of Staples as a big box store facing the vicissitudes of the economy, Wal-Mart's and Target's various relationships to labor unions, and Campbell Soup's use of neuromarketing in designing product labels. Each of these were used as versatile approaches to allow students to reflect on the meaning of *product*, application of the marketing concept, construction of a value proposition, selection of the best marketing metric, discussion of the product life cycle and the purchase decision process. These articles do not come supplied with ready-made questions. However, the *Wall Street Journal Weekly Review* for professors in various business disciplines comes with a set of quiz questions that can sometimes be adapted for use in a team-based learning exercise.

We have also used modified news stories, such as that of the Winter Olympics in Sochi, Russia. Not only was this a contemporary episode, which engaged student interest more than a more generic scenario, but it helped to show how these non-profit events have business and economic implications and are treated with the same concepts as for-profit organizations. In this instance, the Sochi Winter Olympics scenario was used to allow students to consider how rivals can actually help an organization make inroads into a market, to allow discussion of customer loyalty and CRM efforts, and to consider the application of outside readings.

We believe the key when using news articles is to craft questions that will prove the team's ability to

employ the concepts and tools to which its members have been exposed in the reading assignments. The goal is to gain proficiency in applying concepts rather than merely reciting or defining them.

Custom Episodes

Exercises custom-fitted to the topic can also be a meaningful route for instructors to take. The impetus for the episode can be a news article or an event that has come to the attention of the professor that suits the unit of study. One of the authors bought a reel lawn mower at a garage sale, more out of fascination with the uniqueness of reel mowers than out of an actual need for another mower, not to mention that the price was right. A few days later, the *Wall Street Journal* ran a story on the resurgence of reel lawn mowers in the face of high gasoline prices, shrinking residential lots sizes, concern with air and noise pollution and a rediscovery of the benefits to the lawn of reel technology. Borrowing from personal experience, the *Wall Street Journal* article, and a little further research on the history of mechanical means of mowing and competitors in the market, an exercise was ready to go which focused on the definition of a product and market segmentation as part of a marketing course. The beauty of creating a custom exercise with the objectives already in mind is that the questions are not forced on the exercise, but the exercise is built around the specific questions with which the instructor wishes the student teams to contend.

While the previous example of a custom exercise was based partly on an article found in the *Wall Street Journal*, one of the authors created a totally fictitious exercise. The author was unable to find an existing case or news story that adequately presented the situation needed to support a specific teaching point in a management of information technology course. Thus, the process of creating an exercise from the ground up offered the opportunity to design an entire story with specific circumstances that lead to the appropriate questions and decision choices.

In the contrived account, the author presented a company of a particular sales volume, with a certain number of employees, in a particular industry and competitive environment, possessing a specified information technology infrastructure, with specific strategic needs, goals, budgets and other such particulars. After reading and comprehending the story, the students were asked to make their best choice among the available alternatives using their understanding of the various information system principles while operating within the specific situation and circumstances as described in the fictionalized story. The exercise was well received by the students and provided the opportunity for the desired discussion and debate among the students within each team and then among the teams.

In the absence of an existing case or news story, the development of the crafted story allowed for an exercise that fully met the learning objectives and teaching points associated with a particular section of the course. However, a fully fictionalized exercise may also be the first choice of a professor, rather than the last choice.

Simulations

A fourth viable source of Team-based Learning exercises is business simulations. Anderson and Lawton (2004) raised the question of whether or not simulation exercises would fit the needs of this type of learning process. Though Anderson and Lawton were focused specifically on the problem-based learning approach, their conclusions have the same implications for team-based learning. Anderson and Lawton's work showed support for the use of a business simulation exercise as the *problem* to be addressed by the kind of exercises being discussed here.

In the team-based learning context, simulations can be used in either of two ways. The simulation can comprise the one-time specific exercise for a set of team-based learning questions, or a semester-long simulation can be the basis for exercise questions throughout the term. In the latter case, questions can be posed which direct students' attention to specific understanding or skills they will need to perform well on the simulation. In this sense, the exercises serve as preparation for various aspects of the simulation task. The simulation provides the answer to the question: What backdrop shall I use for exercise questions? The questions will need to be created using the pattern mentioned earlier: questions should be of significance to the simulation work, should be identical among teams, and should include specific choices for which to opt.

There certainly are no rules that require any particular order of precedence among the methods presented here for developing exercises. It simply depends on the individual professor, the specific set of needs and a bit of creativity.

Crafting the Exercise

Exercise Characteristics

Regardless of which method is used to provide exercises matched to the unit topics, the exercise should be fitted to the learning objectives established for that unit. Other elements we consider when creating suitable exercises are: (a) length of time to be made available for students to work on the exercise; (b) how many sets

of questions/decisions each exercise will contain; (c) whether the students will have opportunity to make advanced preparation; and (d) the level of study.

Some professors favor the *big* exercise that requires intense consideration and abstract thought. These are the types of exercises that may be more controversial and require time for negotiating the answer before committing as a team. Other professors like to expose the students to many specific topics, an approach that lends itself to smaller exercises or at least more discrete questions within an exercise.

There is another factor found in the team-based learning teaching method that has implications for exercise length. The issue is whether to hand out the exercise in class at the time of consideration or whether to distribute the exercise early, perhaps in the prior class period or online in the Learning Management System to allow the students to digest the information before being exposed to the questions. Obviously the former approach favors shorter, more manageable cases/exercises that can be absorbed quickly. If one is to permit deep consideration of the case, then handing it out early is an advantage.

An idea that helps promote student preparation outside of class is to assign an individual exercise that must be completed before class and then brought to class to be turned in with the team exercise. Students can be told that they must have their completed individual exercise to be eligible for credit on the in-class team exercise. An example of an individual exercise may be something as simple as writing a brief summary of the case that will be the subject of the in-class team exercise or thought-provoking questions that serve to prep for the exercise. The latter approach, in the context of a marketing course, might consist of asking students to identify the major bases for market segmentation as preparation for the choice of a basis for segmentation in a specific industry in class. Again, such an out-of-class individual activity helps ensure that all students on the team read the case ahead of time, give it some thought, and come to class prepared to contribute to the in-class team exercise.

Team-based learning can be effectively employed both at the undergraduate and graduate levels. However, the type of assessment and exercise questions may vary. We have found that undergraduate students are more in need of mastering the basic concepts and applications of the discipline and in making relatively modest distinctions. Honors and graduate students, on the other hand, should be well beyond a simplistic understanding of the discipline and prepared to deal with complex concepts and a high order of uncertainty. As such, the types of exercise questions can be of a different magnitude of complexity with advanced learners.
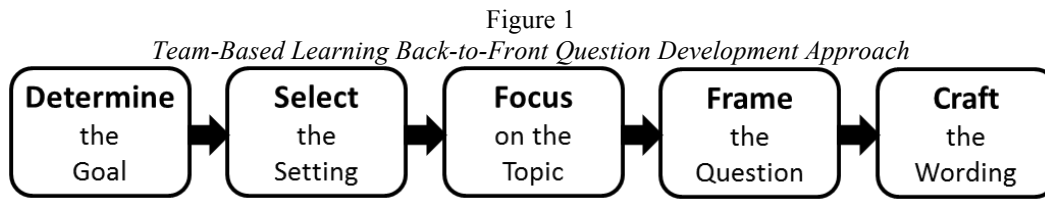
Composing the Questions

In our experience, the most challenging facet of building effective exercises for team-based learning is creating specific questions that accompany the exercise. Ill-conceived exercise questions not only fail to stimulate the type of thinking and team interaction desired, but also can be frustrating for the students and anti-productive.

The starting point for developing effective exercise questions for team-based learning is for the instructor to ask him/herself: What are the desired learning outcomes? These backward designed questions (Wiggins & McTighe, 2005) must be thought-provoking and relevant to student learning. The idea is that listing the desired learning outcomes will provide the basis for composing individual questions. Because the nature of team-based learning does not permit coverage of every concept in the text or readings, it is essential to focus on those concepts that constitute the crucial underpinnings of the discipline and, ideally, incorporate an understanding of contributing concepts. By working on the task from the conclusion back to the beginning, the instructor will have a much better handle on how the question should be phrased to evoke deep critical thinking (see Figure 1).

We believe it is best to create questions that feature answers that are all plausible and require a keen appreciation of the conceptions to arrive at an acceptable conclusion. The questions should enhance higher order thinking, as described in Bloom's revised taxonomy (Anderson & Krathwood, 2000), such as constructing, analyzing, evaluating, and synthesizing, while also serving as a means for the instructor to assess student learning and understanding of the issues. It is helpful if the instructor has modeled this type of questioning in class discussions prior to the exercise so that students can relate and find it familiar.

Thus, the heart of a team-based learning exercise is the list of questions that accompany it. If properly framed, team-based learning exercise questions can prompt critical thinking and promote comprehension (McInerney & Fink, 2003) while fostering articulation and defense of a managerial position, all vital characteristics of a business education. We have learned through experience that definitional and identification questions can only go so far in fomenting understanding of the discipline. When used, definitional questions can provoke hairsplitting and arguments over nuances of the terminology or position on a definitional continuum. If this type of question is to be used, the boundaries between the options must be clear and mutually exclusive. Alternatively, we have found using questions that call for a conclusion to be articulated and defended promote higher-order thinking and comprehension. As

Figure 1
Team-Based Learning Back-to-Front Question Development Approach

Determine the Goal	**Select** the Setting	**Focus** on the Topic	**Frame** the Question	**Craft** the Wording

an example of a question that calls for a conclusion, we offer the following for an introductory marketing class.

> *Michael and Ashley Bonner are considering fulfilling their seven-year-old daughter's wish to attend a ballet performance. . .her first. Which problem-solving variation should the Boston Ballet expect parents like Michael and Ashley to use when they make their choice between The Nutcracker, Snow White, and Dance of the Sugar Plum Fairy: extended problem solving, limited problem solving or routine problem solving? Provide ample and telling evidence for your choice.*

The purpose of a question like this one, concerning the Boston Ballet Company, would be to help students clarify their understanding of the different problem-solving approaches. The question could be extended by asking the team to discuss implications for the organization as it develops strategy to serve this audience.

A fruitful line of questioning for graduate and advanced undergraduate courses is one which establishes a choice between strategic alternatives or raises the question of which avenue of action should be taken under a specified set of circumstances. Phrasing a question this way forces the student team to evaluate each alternative, assess its pros and cons, mentally try it in the scenario for fit, and then select a course of action around which it can build a plan for execution. An example for a fitness center scenario would be:

> *The industry in which FitLife is competing is most likely in the early growth stage of the PLC. [True. . . defend. False. . .indicate which stage is more likely and present a compelling argument. Offer the rationale for your pick. What are the marketing strategy implications of this stage for FitLife?]*

The choice is between two specific options but allows for the team to present seven arguments from evidence for either the stage offered in the questions or one of the others for which they have evidence. The real advantage of the question is that after the specific answer has been

defended, the team is directed to go on to recognize and make application of the implications of its answer.

For example, if the objective is for the student to be able to demonstrate comprehension of the major psychological variables that affect consumer behavior, as opposed to only knowing their definitions, then the second in the following pair of questions is preferable.

> Question 1: *Ranchers who frequent Acme Farm Supply express deep pessimism about the future of ranching in the U.S. This pessimism is an example of which of the following psychological variables: perception, attitude, opinion, personality or motivation.*

> Question 2: *To help change the prevailing pessimism about the future of ranching in the U.S., the Department of Agriculture should develop public service messages that target positive changes in which of the following: perception, attitude, opinion, personality or motivation? Discuss how this targeting should occur and provide an example of how a message might be constructed to target the selected psychological variable.*

Question two has the advantage of not only eliciting information about the students' understanding of the various psychological variables, but of observing how the students are able to employ this information in a realistic marketing setting. Further examples of team-based learning questions in business are provided in Appendix A.

Evaluation Rubric

Because team-based learning calls for intensive use of exercises that permit teams to receive frequent feedback, it can assist both the team and the instructor to employ a scoring rubric that captures the essential qualities for which the instructor is looking. Not only will the rubric facilitate efficient feedback, but it will concisely define for the team how to focus its attention. The learning process is assisted when the instructor

determines in advance which factors to focus on and the weight each factor should carry.

For upper-division and graduate classes, a set of scoring factors has been outlined in Appendix B, which is offered as one example of an evaluation rubric for a team-based learning exercise. Instructors can use the rubric in Appendix B as a starting point for customizing their own scoring rubrics. The rubric in Appendix B was designed for a graduate strategic marketing course, and so the factors, weights, and scoring ranges (shown in parentheses at the bottom of each cell) reflect the high level and mature ability of the students. After considering the nature of the course being taught and the learning objectives for the particular exercise, the instructor could customize an appropriate rubric to fit the specific application.

Again, the beauty of the rubric is that it provides guidance to students for responding to the exercise questions and feedback once the exercise is completed. If the instructor employs the essential components of carefully determining the learning objective, selecting an appropriate exercise scenario, crafting robust questions, and using an informative rubric to supply feedback, then the instructor is placed in a great position to make the team-based learning process an effective educational tool.

Conclusions

Team-based learning is an educational approach similar to case-based and problem-based learning that presents teams of students with complex problems rooted in real world situations. While the team-based learning approach has seen wide adoption among the sciences and health-related disciplines, its adoption within the business-related disciplines has been more recent. Even so, the approach of team-based learning is being accepted as a good fit for business courses.

For any teacher who desires to use team-based learning, it is critical to understand that the backbone of the entire team-based learning approach, as well as the biggest single challenge for any teacher, is the creation of effective team exercises, including the questions that accompany them. Yet, the largest gap in the available literature concerning the administration of the team-based learning approach is the lack of detailed information and guidance concerning how to develop discipline-specific exercises that accomplish the associated learning objective(s). The purpose of this article is to help fill that gap.

Based upon our research into the extant literature concerning team-based learning, and drawing upon our experiential learning from business disciplines, four broad categories or sources for creating effective exercises are identified: existing cases, news items, custom episodes and simulations. We offer guidance concerning how teachers can use each of these sources to build and create appropriate, effective exercises to support the team-based learning approach for their courses. We extend a call to other educators who use the team-based learning approach to also codify and share their experiential insights in an effort to further expand knowledge concerning the creation of exercises that are appropriate and effective within the team-based learning methodology.

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Appendix A

No.	Question Examples	Commentary
1	*The following is an effective value proposition for OfficeMax:" To be the most trusted source for office solutions…" (2010 Annual Report) [**Agree…** make a compelling defense, showing how it complies with the qualities of a good VP. **Disagree…** draft an effective value proposition for Staples. Indicate how an effective value proposition can promote success.]*	The purpose of this question is to help students refine their understanding of the wording and use of a value proposition. Like the other questions in this list, it calls for a specific answer which the teams will reveal simultaneously to prevent any risky shift. The teams are required to defend their response with rationale and then to discuss their reasoning and demonstrate an understanding of the characteristics of a competently worded value proposition.
2	*Suppose Kentucky Fried Chicken first crafted an advertising campaign to promote its new spicy wings and then developed a marketing plan to complement the campaign. Does this sequence of activities resonate well with the marketing concept? [**Yes…** clearly explain why. **No…** why not?]*	This question meets the criterion of having specific and mutually exclusive answers. It also tests comprehension of both the definition of the marketing concept as well as how it fits with other activities the firm will pursue. Not only will a team learn as it debates its answers, but teams will learn from each other during the inter-team discussion.
3	*From a multi-dimensional conceptualization of "product," (1) what is the essential (or quintessential) product that Bovine Boots is marketing? (2) How is this quintessence delivered/transmitted to the customer? (3) Is there even more to the "total product?"[You **may** answer the preceding questions by diagramming a multi-dimensional model of the product, with commentary.*	In this question about shoes for cows designed to prevent them getting hoof disease in wet conditions, not only does the exercise take the student out of their zone of familiarity, but gives them the opportunity to define an unfamiliar product in terms of its relevant strategic dimensions. While not explicitly contained in the question, the answers should be part of the students' knowledge base from classroom discussion. The question allows teams to demonstrate their appreciation for how the components of a product relate.
4	*The price elasticity of demand for ComfortAir Patient Warming System markets are relative price inelastic. [True/false? Why?]? How is the price elasticity likely to affect marketing strategy?*	This question provides a mechanism to consider the meaning and effects of price elasticity of demand. Teams will reveal their answer simultaneously and compellingly present their case to the other teams.
5	*Which approach should Coastline Marine use to determine the advertising budget for the coming year: competitive parity, percentage-of-sales or objective-task method? Demonstrate how the method selected would be applied by determining the amount of the recommended budget for the coming year and suggesting how it should be allocated across promotional types.*	This question addresses promotion budgeting methods studied in one class and permits students to demonstrate a comprehension of the nature and differences between the methods. The beauty of the approach is that by the time the three-step process of individual consideration, team consideration and inter-team discussion has occurred, the class should be on the same page AND will have engaged in peer instruction which is sometimes more effective than faculty-to-student instruction.

Appendix B

Team Exercise Evaluation Rubric

Exercise # _____   **Team # _____**

Elements	Wt.	LEVEL 4	LEVEL 3	LEVEL 2	LEVEL 1	Points
Accurate	.20	Demonstrates clear and deep understanding and identifies all the main issues; employs terms and concepts properly and where appropriate; consistent/noncontradictory with marketing vocabulary (19-20)	Demonstrates generally clear understanding and identifies some of the main issues; uses terms and concepts of the discipline most of the time and does so properly and with general consistency (16-18)	Demonstrates limited/surface understanding and identifies only the most obvious issues; insufficiently uses terms and concepts of the discipline; employs marketing vocabulary incorrectly or inconsistently (11-15)	Demonstrates superficial understanding or identifies only a few of the issues in the exercise; fails to appropriately use terms and concepts of the discipline or makes "fuzzy" use of marketing vocabulary (0-10)	
Complete	.30	All parts of issue are addressed; "thick" analysis is evident; considers a germane range of factors; multi-dimensional (28-30)	A few parts of issue are addressed; "medium" analysis is evident; considers a limited range of factors; limited dimensionality (23-27)	Limited parts of issue are addressed; "thin" analysis is evident; considers an overly narrow range of factors; one dimensional (16-22)	Few or no parts of issue are addressed; analysis virtually nonexistent; considers an insignificant range of factors; almost non-dimensional (0-15)	
Logical	.40	Rationale fully articulated; logic holds together well; makes appropriate, insightful and powerful connections between the issue/problem and marketing concepts; argument is highly consistent/coherent; reveals keen insight (37-40)	Rationale is passably articulated; logic is adequate; makes appropriate connections between the issue/problem and marketing concepts; argument is reasonably consistent/coherent; reveals good insight (31-36)	Articulated rationale is skeletal; logic not well knit together; makes appropriate but somewhat vague connections between the issue/problem and marketing concepts; lacking in compelling sense; argument is inconsistent; reveals hazy insight (22-30)	Rationale is ineffectively articulated; logic quite lacking; unclear; makes little or no connection between the issue/problem and marketing concepts; argument is nonexistent or incoherent; reveals no real insight (0-21)	
Well Expressed	.10	Very effectively presented; compellingly stated; clear and concise (9-10)	Adequately presented; could be more compellingly stated; generally clear (7-8)	Ineffectively presented; unpersuasively stated; lost focus at times (5-6)	Poorly presented; lack of focus and clarity in statement; hard to follow (0-4)	

Further Comments: **Score:_____**