Abstract: In this paper we share experiences obtained from employing a new approach to teaching case studies in on-ground sections of the MBA core course in operations management at a regional university located in the South Central region. Our new approach to teaching cases is of the blended learning variety as an online discussion moderated by the instructor is now conducted prior to the case discussion in the physical classroom. We have found that this new approach aids students with little or no prior exposure to the case method of learning.

1. INTRODUCTION

In their seminal article on how business schools have lost their way, Bennis and O’Toole (2005) discuss how business education is not preparing students for the complex issues they will have to deal with on a daily basis in their professional careers. The authors suggest that professors tend to focus instruction on easily quantifiable methodologies at the expense of nuanced discussion of the complex and dynamic applications of business theory. This same sentiment is echoed in Heames and Service’s (2003) work on teaching dichotomies and Ghoshal’s (2005) critique of management education. This instructional paradigm has led business students to take a
consumerist view of education where they favor rote learning and the use of singular methodologies and non-recursive “to-do” lists (Elias, 2008).

One of the suggestions many of these researchers offer to business schools looking to regain relevance is to shift their educational focus onto applied, active, experiential and practice based learning. For example, Snyder (2003) suggests that a key to facilitating student learning is to offer students complex contexts and scenarios that resist easy solutions. She argues that students have become too comfortable looking for one particular outcome and are uncomfortable in challenging environments that offer multiple solutions. One pedagogical tool available to business school professors that can help achieve this aim is the case method of instruction.

2. LITERATURE REVIEW

Some of the earliest applications of the use of case studies in business education date back to two notable universities at the turn of the 20th century – Harvard and Northwestern (Booth, Bowie, Jordan, & Rippin, 2000; Schlossman, Gleeson, Sedlak, & Grayson-Allen, 1994). The instructional technique was adopted so that students could learn from real-world problems in the classroom. The case method provides a “risk free” environment for students to simulate their managerial aptitude in less structured, more complex settings than traditional textbooks and lecturing permit. The case method allows for multiple solutions that require students to perform a deeper critical analysis to provide justification for their “answers”. The case method of teaching has been so successful that cases have now become a standard practice in most MBA programs.

Over the years much research has shown the benefits of the case approach. For example, Bocker (1987) demonstrates that cases motivate students more than traditional lecturing. As a consequence of heightened motivation, students were able to develop better their cognitive skills and managerial abilities. Cases also help students develop the ability to deal with and succeed in environments that have incomplete information – the very type of environments they are likely to encounter outside of the classroom (Jennings, 1997). In addition, whereas traditional lectures often focus on developing deductive skills, case analysis allows for an inductive basis for teaching. Students are often tasked with developing general rules and techniques for problem solving based on the specific context of the case.

The use of the case instruction does not come without potential pitfalls. Argyris (1980) points out that while most faculty members agree on the espoused theory and benefits of case instruction, the actual implementation of the cases often leads to results that contradict the reasons why cases were chosen in the first place. For instance, most faculty agree that the case method should decrease student dependence on instructors and that there should be a free flow communication among students. However, the findings suggest the opposite is actually true and students become less independent because they rely on faculty to provide the basic underlying structure for case discussion. Another surprising result is that case instruction can often lead students to take fewer risks when thinking of potential solutions. Rather than questioning underlying problems in the case, students often will often become very conservative in their solution strategies and suggest conventional answers to the problems in the case. The students will often ignore the issues that they think are important and instead focus on the issues that the
instructor seems to be leading them toward. All in all, faculty behavioral strategies when teaching cases can lead to a decreased probability that students will work for their own solutions.

Much research has also examined problems with student performance on case study assignments. When analyzing the detailed information within a case, students can fail to recognize key relationships, patterns, and trends in the information resulting in solutions that focus on singular symptoms rather than a holistic, systems view of the underlying problem. As a result there can be a failure to align tactical recommendations with strategic outcomes. Furthermore, students often do not understand how to manage competing priorities and contradictory evidence and as a result they tend to stop at the first solution that seems to address a portion of the symptoms rather than generating and analyzing multiple potential solutions. Finally, students can often feel overwhelmed with the vast amount of information in the case, become overloaded with tangential or spurious information, and thus, unsure of where to begin or how to perform the analytical steps necessary to reach a conclusion. Thus, an opportunity exists to enlighten students in a way that will more likely lead them to perform a successful case analysis.

Students do have access to multiple resources in the way of aids and guides to help them prepare case analysis. For example, Haywood-Farmers’s “Note on Case Analysis” (2000) gives students a twelve step guide to completing case write-ups: reading, problem definition, information summary, information analysis, problem re-examination, formulation of alternatives, listing advantages and disadvantages, evaluation of alternatives, implementation of chosen alternative, control, re-examination, and report preparation. Dess et al. (2010) offer a similar solution methodology; in addition, they offer helpful anecdotes and hints such as “keep an open mind”, “participate and persuade”, “draw on personal experience”, etc.

A methodology to assist the students in achieving these goals is Problem-Based Learning (PBL). The case studies used for this research do not follow the strict definition of PBL because they have a specific outcome and a well-defined path in which the students are to reach the desired outcome. However, the discussion methodology used for this study derives part of its structure from PBL’s use of tutors to mentor students during analysis of the problem to guide the students (Donnelly, 2006; Dykman & Davis, 2008). The tutor’s role is critical because the students involved in these classes have limited, if any, previous experience with cases, especially ones requiring quantitative skills. The ability for them to ask questions during their analysis should help to alleviate potentially incorrect case analyzes. In addition, collaborative learning will be facilitated by giving them access to both other students’ analysis and feedback.

Providing feedback and collaborative learning can be achieved by a variety of methods with one being blended learning which is the melding of e-learning tools and platforms with the physical classroom (Olapiriyakul & Scher, 2006). The benefits include: asynchronous communication, more involvement and active participation of students that might not contribute in a physical classroom setting, and many other benefits (Chen & Looi, 2007). Blended learning can be utilized to incorporate hybrid classes in which a portion of the class is delivered online and a portion face-to-face (Olapiriyakul & Scher, 2006) and to deliver case studies in both environments (Webb, Gill, & Poe, 2005). While these studies show the hybrid approach is a useful tool when combining face-to-face and online education, the authors could not find any
extant literature in which blended learning was applied before the classroom setting to prepare students for a case study.

The goal of this research is to introduce a new step into the case teaching methodology to improve both the teaching of cases as well as student performance through a combination of blended learning and PBL concepts. Namely, we investigate the use of online forums or discussion threads for students to ask each other and/or the instructor questions about the case material before the classroom discussion of the case and/or the formal case report. The motivation of this study comes from a survey of MBA students’ experiences with case instruction. Many MBA instructors assume that students have had a wealth of experience with the case method and, as such, do not provide instruction of how to read and prepare cases. However, our survey found that MBA students, particularly those at the beginning of their program, actually have very little experience with case instruction.

3. METHODOLOGY

3.1 Introduction

For this research, two on-ground sections of the MBA core course in operations management at a regional university located in the South Central region were the test subjects. A profile of the students in the two sections of the course can be found in Appendix B (see questions 1-6). This information was obtained from the students through an anonymous survey. Among other things, we discovered that 83% of the students surveyed had analyzed less than 3 cases prior to this course. In addition, we found the typical student had little or no experience with traditional operations management issues, thus reducing the theoretical framework on which to build the foundations for analyzing the cases. This student profile fits the historic pattern as this course is one of the first introductions to the use of case studies in the MBA program, especially from an analytical perspective. Due to the lack of student experience in using case studies, the authors dub the teaching style as “Cases with Training Wheels”.

The following cases were used in the course: Microlite S.A.: The Pan-Orient Decision (Gray, 1995); Manzana Insurance – Fruitvale Branch (abridged) (Wheelwright, 1997); AIC Netbooks: Optimizing Product Assembly (Wheelwright & Yong, 2011); and National Bicycle Industrial Co. (Fisher, 1995). These cases on operations and supply chain management cover a variety of topics including: production planning, capacity analysis, performance measurement, and mass customization. The students were given a generic guideline: summarize the case, identify the problem to be solved, and provide a summary of the conclusions and recommendations. In addition, they were supplied with a set of questions specific to each case that were meant to act as a framework to begin the analytics. The questions are designed to act as guiderails during the computational and analysis phases of the case write-ups to help the students focus on the key issues.

3.2 Face-to-Face Review

The cases are reviewed during class time to show the instructor’s methodology for analyzing the case, reviewing the computations, and conducting a detailed discussion the analysis and conclusions of the case. Also, the review is used to reinforce teaching points and fundamentals
of the class. A common response from the students, and one echoed by the authors when they were students, was that they didn’t ‘see’ the case the same way as the instructor and their analysis was subsequently very different. Thus, during the class time, instead of learning the finer details of the case and participating in the strategy discussion, much of their attention was diverted to copying down the calculations and trying to understand where they had gone wrong. In order to help alleviate some of these issues, a threaded discussion was set-up prior to the case being turned in for grading to correct issues and guide students.

4. DISCUSSION THREADS

In order to facilitate small group interactions the students were randomly assigned to groups of 8 or less. The discussions opened 7 days before the case was due and the students were required to post a minimum of two times: once by the fourth day and once by the day before the case was due. There were no requirements as to the length or content of the post, just that it happened within the given time frames. Each of the four case discussions was assigned as weight of 1% of the overall class grade for completing at least 2 successful posts. The students were instructed that any topic would be admissible, short of posting the entire calculation and analysis of the case, but smaller sections of calculations would be permitted as long as they were meant for illustrative purposes to help another student or to seek assistance.

4.1 Instructor Interaction

The style of interaction in the classroom reviews and the online discussions were very different, as suggested by Suler (2004) with the classroom following more closely to the ‘sage on the stage’ and the online portions being the ‘guide on the side’. For direct responses to the students, the instructor kept a minimal footprint in the cases and only directly responded when there was an erroneous posting by a student or to answer a question directly asked of the instructor, i.e., procedural issues. The instructor also took the liberty to interject teaching posts when it was appropriate to help the students see how the case was related to a similar topic or to reinforce topics of the class. Overall, the instructor averaged 6.0 responses per group per case, with Appendix A showing the tally of the posts.

4.2 Content of the Discussion Threads

Previous studies, c.f. Keckman and Annabi (2007), show the topical loadings found in case study discussions, but for this study, due to its open ended structure, no a priori categorization was done. The categories were created after reading the first two discussion threads, see Appendix A for a list of the categories of the student responses. In general, the student posts loaded into three categories: procedural and conceptual questions, strategy, and non-value added acknowledgements of other student’s posts. Regardless of the length or value of the posts, the students posted an average of 2.30 times per case.

4.3 Instructor Comments about Discussions

This strategy of using discussions was applied to all the cases employed in the course. Below we examine in detail the first two case discussions. As described below, the student use of the discussion thread changed as the students began to understand its value. Some of the change can also be attributed to the better understanding of how to read the case, identify the problems,
perform the analysis, and outlining the implementation strategies after the first face-to-face review of the case with the instructor.

4.4 Case 1 - Microlite
One of the important observations during the first case is the students focused on the higher-level concepts and were analyzing it in a manner that would be expected of a less quantitative case. The highest loading for 3 of the 4 groups dealt with the implementation strategy of the case and the qualitative strategy of the case. These discussion threads were mostly in the first half of the required discussions at which time almost all of the students hadn’t successfully completed the computational elements of the case. It appears that they were so eager to solve the case that they did not fully comprehend that they needed to be able to provide evidence and support for their decisions. The instructor did not comment on this tact in the discussion threads so as to not influence or bias the study.

During the face-to-face discussion of the case, the instructor found that the students were able to identify the major elements of the case: the problem(s), the available alternatives, and the potential strategies. However, as was seen during the discussions, the students had little ability to provide evidence for their conclusions. One theory is that the students have had few quantitative classes prior to this one and have not begun to view business problems through this lens.

During the in-class review of the case, students had numerous questions about equations and computational aspects, which was quite interesting considering they didn’t post any of these questions in the online threads. One benefit to the instructor was being able to see this lack of questions in the discussion threads, which enabled him to be able identify more quickly the lack of understanding. From a teaching perspective, this preclass intelligence provided an understanding of the areas that need to be addressed during the review. As each class learned differently, this allowed for a more accurate and precise approach to be applied. After the students began to see the computational aspects of the case and their lack of justification for their conclusions, the reinforcement of the concept between guessing and stating facts was able to be highlighted with more effect.

The second major observation and benefit was the instructor’s ability to identify misconceptions, especially the theories of the class, and correct the issues before they contaminated the student’s analysis. For more minor issues or uncertainty from the students, the instructor was able to have ‘teaching moments’ in which the instructor’s experiences with these issues in industry or other examples were able be brought forward to help reinforce particular concepts. During the face-to-face review these points were reiterated and proved invaluable because the students had already begun to associate the case examples with other similar issues in other industries. Thus, the student already had a basis for the example and additional example(s) in class were more easily assimilated.

4.5 Case 2 – Manzana
The second case was from a different industry but had the same general concepts from the first case: capacity and bottlenecks. The carryover from the first case concepts to the second could have been better; however the students, after the face-to-face review, understood that their
quantitative analysis was the well-spring for the rest of the case. This shift was evident during the discussions in which the loading for the mathematical and calculation threads were much higher, as shown in Appendix A. Some students that were able to fully comprehend the first case review were able to help instruct their fellow students as evident in Group B’s marked increase in answer based posts.

Although the students were asking more questions about the quantitative and analytical aspects of the case, they still had issues with the concepts and theories of bottlenecks. Their misinterpretation was an issue; however, with the intervention from the instructor and the interjection of the ‘teaching moments’, the students were able to correct their issues and provide better case reports than probably would have happened without the instructor posts.

During the face-to-face review, the instructor was able to spend more time than typically available with the higher-level strategies of the case and the more nuanced points. As most of the students had their fundamental questions about the calculations of the case already answered, they were able to focus their questions on the assumptions behind the data that were selected, potentially different methodologies that could be used to arrive at a similar answer, and, in general, a more thorough understanding of the implementation of the case strategies.

After the second case, Group A was noticed to have a lower posting rate than the other groups. Upon inquiry into this change with one of the students, the response was that they felt that the instructor would think less of them based on the questions that were being asked. Therefore, the group began to engage in off-thread discussions through e-mail. The result was an echo-chamber in which methodologies and concepts that could have been corrected in the formal discussions led them to have worse case reports than the other groups. One of the lessons learned during this research was to reassure that the students have an environment that is graded on the quality of the posts.

5. SUMMARY AND FUTURE PLANS

In this paper we shared experiences obtained from employing a new approach to teaching case studies in on-ground sections of the MBA core course at a regional university located in the South Central region. The core course in OM is taken early on in an MBA student’s degree program. As a result many of the students in the core OM course have had little or no prior exposure to the use of cases. It has been our experience that those students lacking this prior exposure tend to be those who struggle the most with cases in the core OM course. The traditional approach in the core OM course has been to require that students do a case write-up that is turned in prior to the discussion of the case in the physical classroom. Our new approach to teaching cases is of the blended learning variety as an online discussion moderated by the instructor is now conducted prior to the turn in of the case write-up and the discussion in the physical classroom. From our limited experience with this new approach (one academic term), it appears that the greatest value from adopting this approach is obtained early on in the semester (during the first couple of cases) when those students lacking prior exposure to doing cases are still trying to find their footing. We found that during the first two cases students often posted seeking guidance (a good thing), which was obtained from the instructor and other students (another good thing), whereas for subsequent cases in the course students seemed to post largely to fulfill the requirement that they post twice during each case discussion. Clearly it is less than
ideal when students post just to post. Fortunately this behavior arose largely in the latter half of the course. In the next iteration of teaching the core OM course using our new approach our plan is to employ blended learning only for the first two cases used in the course, which seems to be the period when students new to cases are most in need of a helping hand and most inclined to reach for one.

References


### APPENDIX A: STUDENT RESPONSES

<table>
<thead>
<tr>
<th>Category</th>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group A</td>
<td>Group B</td>
</tr>
<tr>
<td>Mathematical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- what number to use</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>- why, how, …</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-answer response</td>
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<td>1</td>
</tr>
<tr>
<td>Answer to specific question</td>
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<td>4</td>
</tr>
<tr>
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<td></td>
</tr>
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<td>- what equation,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- how to calculate</td>
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<td>2</td>
</tr>
<tr>
<td>Strategy (case implementation)</td>
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<td>8</td>
</tr>
<tr>
<td>Clarification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- format, procedure, etc.</td>
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<td>1</td>
</tr>
<tr>
<td>Strategy - Qualitative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- worker, labor,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>economic, not specifically stated in case question</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Strategy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- no foundation, jump to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>conclusions</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

| Instructor                        |        |        |        |        |        |        |        |        |

<p>| Total                | 11     | 18     | 23     | 24     | 10     | 26     | 13     | 22     |</p>
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<th>0</th>
<th>0</th>
<th>0</th>
<th>1</th>
<th>1</th>
<th>0</th>
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<tr>
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<td>0</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Redirect - wrong answer/direction</td>
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<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Teaching point</td>
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<td>2</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Confirmation</td>
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<td>1</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Correct minor issue or concept</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

**APPENDIX B: SURVEY**

1) How many years of full time work experience do you have?
   None: 1
   Less than 3 years: 6
   3 to 5 years: 2
   5 to 10 years: 5
   10 to 20 years: 4
   More than 20 years: 1

2) What best describes the industry you work in?
   Manufacturing: 3
   Finance and Insurance: 2
   Wholesale or Retail Trade: 1
   Health Care: 2
   Public Administration: 1
   Transportation or Warehousing: 1
   Professional Services: 2
   Accommodation and Food Services: 1
   Arts, Entertainment, and Recreation: 0
   Other: 6

3) How many semesters have you been at the University of Dallas?
   This is my first semester: 0
   1 to 2: 10
   3 to 4: 4
   5 or more: 5

4) What is your MBA concentration?
   Accounting and/or Finance: 4
   Global Business: 0
   Health Services Management: 3
   Human Resources Management: 1
   Information Assurance and/or Technology: 1
   Management: 1
   Marketing: 1
   Project Management: 1
Sports Entertainment Management: 2
Supply Chain Management: 0
Other: 1
I do not have a concentration: 4

5) Prior to this class, approximately how many business cases have you solved?
   None: 5
   Less than 3: 10
   4 to 10: 3
   11 to 20: 0
   More than 20: 0

6) Prior to this class, approximately how many quantitative or analytical business cases have you solved?
   None: 7
   Less than 3: 8
   4 to 10: 3
   11 to 20: 0
   More than 20: 1

7a) The decision threads helped me to understand the problem definition:
    Strongly Disagree: 0
    Disagree: 1
    Neutral: 5
    Agree: 11
    Strongly Agree: 2

7b) The decision threads helped me to determine which equations to use and calculations to perform:
    Strongly Disagree: 2
    Disagree: 4
    Neutral: 5
    Agree: 7
    Strongly Agree: 1

7c) The decision threads helped me to understand which data was NOT relevant to the case analysis:
    Strongly Disagree: 0
    Disagree: 3
    Neutral: 1
    Agree: 11
    Strongly Agree: 4

7d) The decision threads helped me to determine which numbers (i.e. data) to use:
    Strongly Disagree: 3
    Disagree: 2
Neutral: 5
Agree: 8
Strongly Agree: 1

7e) The decision threads helped me to understand the concepts of the case:
   Strongly Disagree: 0
   Disagree: 1
   Neutral: 4
   Agree: 10
   Strongly Agree: 4

7f) The decision threads helped me to understand how the discussion from could be applied to the case analysis:
   Strongly Disagree: 0
   Disagree: 1
   Neutral: 3
   Agree: 15
   Strongly Agree: 0

7g) The decision threads helped me to gain better insights into quantitative strategy:
   Strongly Disagree: 1
   Disagree: 4
   Neutral: 2
   Agree: 8
   Strongly Agree: 4

7h) The decision threads helped me to gain better insights into qualitative strategy:
   Strongly Disagree: 0
   Disagree: 2
   Neutral: 4
   Agree: 10
   Strongly Agree: 3

7i) The decision threads helped me to understand how the concepts of the case apply to other topics:
   Strongly Disagree: 0
   Disagree: 7
   Neutral: 5
   Agree: 7
   Strongly Agree: 0

7j) The decision threads helped me to understand how the concepts of the case apply to other industries:
   Strongly Disagree: 1
   Disagree: 7
   Neutral: 5
Agree: 5
Strongly Agree: 1

7k) The decision threads helped me to understand how the concepts of the case apply to your job and/or profession:
   Strongly Disagree: 1
   Disagree: 5
   Neutral: 5
   Agree: 6
   Strongly Agree: 2

8) Rate your overall impression of using discussion threads for cases:
   Not helpful at all: 0
   Slightly helpful: 6
   Moderately helpful: 6
   Very helpful: 7

9) If you knew the discussion thread format would be offered again for another class, would you be more or less likely to register for that class?
   More likely: 6
   No influence: 12
   Less Likely: 1

APPENDIX C: SURVEY – STUDENT COMMENTS

This appendix contains miscellaneous student comments captured by the survey instrument.

1. I feel that the discussion threads could be more effective if there were specific topics that would help guide the discussions. Assistance in knowing what to look for and what to avoid would be helpful. I enjoyed walking through and working the case studies in class. There appeared to be a better flow of ideas though the in class discussions. Not having prior knowledge or experience with case studies of this magnitude made it a little difficult.
2. You have to wait for the professor or someone else that can appropriately respond to your question.
3. We should talk previous to the deadline about how to approach the case in a more specific way.
4. Discussion threads have been a great help to me while solving the class case problems. I strongly suggest the use of these threads. Thanks
5. Both cases were really hard to understand. I think we should have taken two weeks to solve each case study. One week should have discussed online, next week should have discussed the problem very clearly in the class so that students understand the cases thoroughly before solving it. Some of the professional students are coming to class after work, it was really difficult to spend all the time to solve case study after work and in the weekend. Moreover, some people will not use it at workplace. I am learning in hard
way for some reason. I did like micro lite case study compare to Manzana case study. Good luck with your case study in the future.

6. I think that a free flow of ideas in a discussion thread is a good idea, but I think that it should be a complete class discussion instead of teams. I have the feeling that everyone would be more "on the same page" if all were in the same forum. I am not a fan of the requirement to post by certain times, but I understand that this is probably the only way to push everyone to actually participate.

7. Somehow I feel that cases are better solved with discussion, but the online mode is virtually zero helpful. Since people shoot questions that more often tend to push us on the wrong side!

8. Have an optional set time for class to chat live the evening before the case is due. This would help with any unclear directions and last minute question that students feel they need to address.