

Improving students' critical thinking, creativity, and communication skills

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ABSTRACT

Business professors continue to face the challenge of truly preparing their students for the workplace. College students often lack skills that are valued by employers, such as critical thinking, creativity, communication, conflict resolution, and teamwork skills. Traditional classroom methods, such as lectures, may fail to produce adequate student participation and skill development. More innovative methods, like client-based, classroom projects, are yielding more favorable results in these areas.

To better prepare students for the business world, the authors have successfully adapted the Six Thinking Hats® system in several marketing courses. In essence, the authors have developed and utilize an interactive thinking and discussion game based on this system. Students learn to view ideas, problems, and case situations from many different perspectives. Not only does this technique help to develop the abovementioned skills, but also it aids in ensuring more balanced discussions, greater empathy, and increased cooperation.

An online survey was conducted among students who used this adaptation of the Six Thinking Hats® system in various courses. Key results indicate that respondents found the technique to be easy to use and interesting, as well as helpful in facilitating creative discussions, understanding other perspectives, and providing a specific focus when addressing a topic. After using this technique, most respondents felt that they would likely increase their future class participation.

Keywords: critical thinking, participation, creativity, teamwork

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INTRODUCTION

A common complaint among employers is that graduating college students often lack sound critical thinking and interpersonal skills (e.g., Peter D. Hart Research Associates, Inc., 2008; Ackerman, Gross, and Perner, 2003). Today, employees are often placed in cross-functional teams where effective communication, conflict resolution, creativity, organization, and understanding other perspectives are essential components of a successful team effort. Business professors must sometimes deal with dysfunctional group dynamics, a lack of participation in class discussions, and students who are seemingly unable to come up with a new idea or to even appreciate a point-of-view other than their own (e.g., Wooldridge, 2008; Sojka and Fish, 2008). Thus, at least to some extent, employer criticisms concerning the preparation of graduating students for interactions in a business setting may be valid.

Indeed, the AACSB (Association to Advance Collegiate Schools of Business) suggests that business curricula should include basic management skills such as “communications, interpersonal skills, multicultural skills, negotiation, leadership development, and change management” (Management Education at Risk, 2002). Determining how to teach the skills is an ongoing dilemma.

Business professors have responded to the challenge of teaching critical thinking skills and team skills through a variety of active learning pedagogical methods. Snyder and Snyder (2008) suggest that critical thinking skills must be learned by actively engaging students in the investigation of information. Active learning is generally considered one of the best ways to facilitate learning (e.g., Geissler, 2002; Graeff, 2010; Norbert, Cater, and Varela, 2009; Snyder and Snyder, 2008; Smart and Csapo, 2007). Group projects, experiential exercises, cooperative learning, learning-centered activities, class discussions, collaborative projects, case projects, simulations, role playing and debating are tools for active learning.

McCorkle, et al (1999) found that group projects can be strongly affected by low quality work by some, poor planning and organization, premature solutions, and coordination difficulties. While students recognize the benefit of teamwork, the effort to learn teamwork skills may come with a potential cost of learning both discipline-related knowledge and skills.

Other studies suggest a more positive outcome. Instructional Activity Sequence that includes both individual and team activities produced active and deep learning, and improved retention of the material in the principles of marketing course (Hernandez, 2002). Laverie (2006) also suggests that a team-based, active cooperative-learning approach with well-structured activities can assist in deep learning and skill development. Further research suggests that learning orientation (thinking outside the box) taught through team-based active learning positively influences marketing program knowledge and creativity (Laverie, Madhavaram, and McDonald, 2008). Peer-led team learning can also produce positive outcomes in critical thinking (Quitadamo, Brahler, and Crouch, 2009). Debating can instill teamwork, time management, and planning (Roy and Macchiette, 2005). Vander Schee (2007) suggests that introducing active learning through The Exchange Game produces an increased level of satisfaction among students and sets the stage for active learning for the semester.

While team-based learning can be difficult for the student and the instructor, research indicates that the negatives can be overcome. Brutus and Donia (2010) suggest the use of a peer evaluation system to improve performance. Using smaller groups, establishing interim due dates for longer projects, assigning roles to group members, having students provide evidence of their contribution to the team project, and utilizing group member evaluations help to increase the

effectiveness of groups (McCorkle, et al, 1999). Preparing the class for team-based activities is important by organizing and building the team as well as setting the expectations for the team (Laverie, 2006). Graeff (2010) also indicates that requirements for active learning should be specific and clear to all students.

TEACHING METHOD DESCRIPTION

The authors have successfully adapted and utilized the Six Thinking Hats[®] system (DeBono, 1999) in several marketing courses, including Principles of Marketing, Marketing Strategy, Marketing Research, Product and Service Strategy, and Brand Management to address the concerns above. The technique is appropriate for many business courses, from introductory courses to upper-level undergraduate courses to graduate courses. The authors believe that the sooner students learn critical thinking and discussion skills, the better they will perform throughout their college coursework and subsequent careers. Also, as students near graduation, mastering these skills will serve them well as they transition to their respective careers. It is no coincidence that the selected technique has been used successfully at numerous corporations for years.

Specifically, the objectives for adapting and using the Six Thinking Hats[®] system in marketing courses are to: 1) ensure greater class participation; 2) promote more effective teamwork; 3) stimulate creativity; 4) encourage cooperation, empathy, and conflict resolution; 5) develop critical thinking skills; 6) facilitate balanced, intellectually-stimulating discussions.

The technique involves helping team members think and express themselves in different ways. Six distinct thinking categories are identified by differently colored, metaphorical “thinking hats.” Whenever team members mentally wear and switch “hats,” they can more easily focus and redirect thoughts or the discussion. Briefly, the six thinking hats or modes follow:

- 1) The White Hat – calls for information known or needed
- 2) The Red Hat – signifies feelings, hunches, and intuition
- 3) The Black Hat – exercises judgment and plays the devil’s advocate or why something may not work
- 4) The Yellow Hat – symbolizes brightness and optimism
- 5) The Green Hat – focuses on creativity, including the possibilities, alternatives, and new ideas
- 6) The Blue Hat – manages the thinking process

The authors have adapted this system for use in marketing courses by developing a fun and interactive game. Essentially, students are divided into teams and provided with a discussion topic, such as a proposed product concept or the appropriateness of a marketing strategy in a given situation. Several wooden dice were designed with each of the six colors shown on different sides. Each team rolls a die. Whichever color turns up dictates which thinking perspective they must employ.

To further facilitate the in-class use of this thinking system, students are provided with an overview and specific guidelines. In addition, game cards were designed to show each color and associated thinking category, along with key questions and guidelines for each category. The cards serve as a useful reference and discussion guide during the course of the game. An example of the game cards is shown in Figure 1.

TEACHING METHOD BENEFITS

There are numerous benefits associated with using this thinking hat game in marketing courses. First, each student must participate in class, actively think, and share their thoughts. This may sound like a simple notion, but how often do students sit passively and/or daydream during class? Second, by breaking students into smaller thinking and discussion teams, every student has a voice and can express his or her ideas. In marketing research surveys, respondents are sometimes told that their opinions count. In a similar vein, this thinking hat game is a very useful technique for encouraging respectful and careful consideration of each student's opinions and perspectives, not just those of the brightest or most vocal students. Third, as students mentally wear different "hats," they develop a much greater appreciation for different points-of-view. Also, they become more sensitized to others' feelings. For instance, the red hat wearers are encouraged to express their emotions, intuitions, feelings, and gut reactions. Clearly, this technique elicits more empathy and cooperation among students and aids in conflict resolution. By walking in another's shoes or wearing another's hat, students begin to better understand that not everyone thinks like they do and that considering different perspectives can lead to better decisions.

Fourth, not only do students have to actively think, but also they must critically think. For example, the yellow hat perspective focuses on why an approach will work; the black hat wearers must think about why it will not work. White hat thinkers remain neutral. They must determine what information is available and relevant, and what additional information is needed to make a good decision. Fifth, the thinking hat game stimulates creativity and helps generate many ideas. In particular, students on the green hat team brainstorm to gather and consider different ideas, alternatives, and explanations. This group is encouraged to be very open to considering new ideas, no matter how wild they may seem, especially early in the discussion. Sixth, by considering different sides of an issue, the class discussions are fair and balanced. The blue hat wearers monitor and direct the other teams, thus helping ensure this equity. Also, the discussions are intellectually stimulating. Again, the thinking hat game helps facilitate active and critical thinking, as well as a better understanding of and respect for various perspectives.

TEACHING METHOD ASSESSMENT

The authors have received numerous positive comments from students using the Six Thinking Hats® technique, as well as associated higher teaching evaluations in courses where the method was used. To further verify this feedback, a student survey was conducted.

The survey was conducted online (using SurveyMonkey) among students who were exposed to the technique. A total of 128 students completed the questionnaire in various courses, including Principles of Marketing (32), Marketing Strategy (26), Product and Service Strategy (22), and Brand Management (48).

RESEARCH RESULTS

The survey results strongly support the anecdotal evidence that students find the Six Thinking Hats® technique to be very effective. As shown in Table 1, most respondents agreed or somewhat agreed that the technique was easy to use (91%), facilitated creative discussion (87%), and could be applied effectively in other courses (98%). Four out of five respondents (80%) felt

that class discussions were more or somewhat more interesting. Virtually all of the students (98%) thought that the technique was more helpful or somewhat more helpful in being able to see other students' thoughts on an issue or question. The vast majority (90%) also believed that the method was helpful or somewhat helpful in terms of providing a specific focus (i.e., wearing a different hat) when addressing a topic. After using the Six Thinking Hats® technique, most students (79%) claimed that they would be more likely or somewhat more likely to contribute to class discussions or to participate in the future.

In addition, students were given an opportunity to provide open-ended comments concerning the general use of the Six Thinking Hats® technique, and specifically, how this technique might encourage or facilitate team building. Again, this feedback reveals that students are positively disposed to the technique. In fact, the comments were nearly all positive, with only a couple of neutral opinions. Predominant themes involve the value of increasing class participation and of seeing other points-of-view. Some representative comments follow:

“It is great and gets me involved in the discussion. It is always interesting to know how other classmates think.”

“Not all perspectives are the same, and this invites more discussion among team members as they try to get others to embrace their specific perspective.”

“I think being able to hear different viewpoints on a topic is always a good idea. The thought of having different ‘hats’ is a good way to encourage these different viewpoints.”

“The method has been helpful at sparking discussion. It is often difficult to have a classroom discussion (either the class is very talkative or not talkative at all). It also helps avoid situations where there is one outspoken individual who dominates the conversation.”

Understanding other perspectives was also seen as being very helpful in resolving conflicts, gaining cooperation, and team-building. Typical comments include:

“It can facilitate team-building in the same ways it can help with classroom discussion. It also helps people see things from a different perspective, which is very useful when disagreements arise.”

“Once everyone knows where everyone else stands, they can better focus on the task at hand.”

“It brings the team together, even though you might all have different opinions on matters.”

“Team building is about understanding your group or team

better. What better way to learn about your team members' thoughts and ideas than by using this method...you can learn a lot about a person by just listening.”

Finally, respondents felt that this technique was a tremendous aid in stimulating creativity and in exploring and evaluating new ideas.

“By seeing many different perspectives, it really allowed me to think outside the box.”

“Considering all aspects of a new product idea helped our team to develop a much more realistic and potentially profitable product concept.”

DISCUSSION

The research results support the favorable feedback gathered on a more informal basis. Having successfully adapted the Six Thinking Hats[®] system for use in different marketing courses, the authors can attest that this is an exciting and powerful teaching technique. In particular, it is very useful in facilitating better class participation, more balanced discussions, and effective teamwork. Students definitely develop more empathy for their fellow students, and this is very helpful in resolving conflicts and building greater cooperation. The method also strongly enhances critical thinking skills and creativity.

Questions and issues concerning the technique have primarily involved its execution. For example, should all teams wear the same hat at the same time? Or, should each team wear a different hat? The authors have had success using the technique in both ways.

If each team wears a different hat, should students know which hat each team will be wearing ahead of time? Or, should the discussion contain an element of surprise? Whether this information is shared with the other teams is up to the instructor. One of the great features of using this technique is its flexibility. For example, not revealing the selected thinking categories for each team upfront typically makes for a more stimulating discussion by keeping the team members on their toes. That is, there is an element of surprise when the teams do not know what to expect from each other ahead of time.

Another question involves what to do if more than one team rolls the same color on their dice. Again, the instructor can decide this, depending upon his or her objectives. In general, having each team select a different color seems to ensure a more balanced and interesting discussion. Thus, in the event that more than one team lands on the same color, they are instructed to continue rolling the die until they obtain a different color.

In closing, the authors have used the Six Thinking Hats[®] technique in various marketing courses as mentioned above, and contend that it can be effectively adapted to many other undergraduate or graduate business courses. The technique is very versatile and quite effective, regardless of the subject matter or course level. And, the research results show that students clearly agree with this assertion. While this technique can be used in both on-campus and online courses, it is worth noting that some students commented that they feel the technique is more effective in the classroom than online, mainly because it is more interactive, provides quicker feedback, and is somewhat easier to execute in the classroom setting.

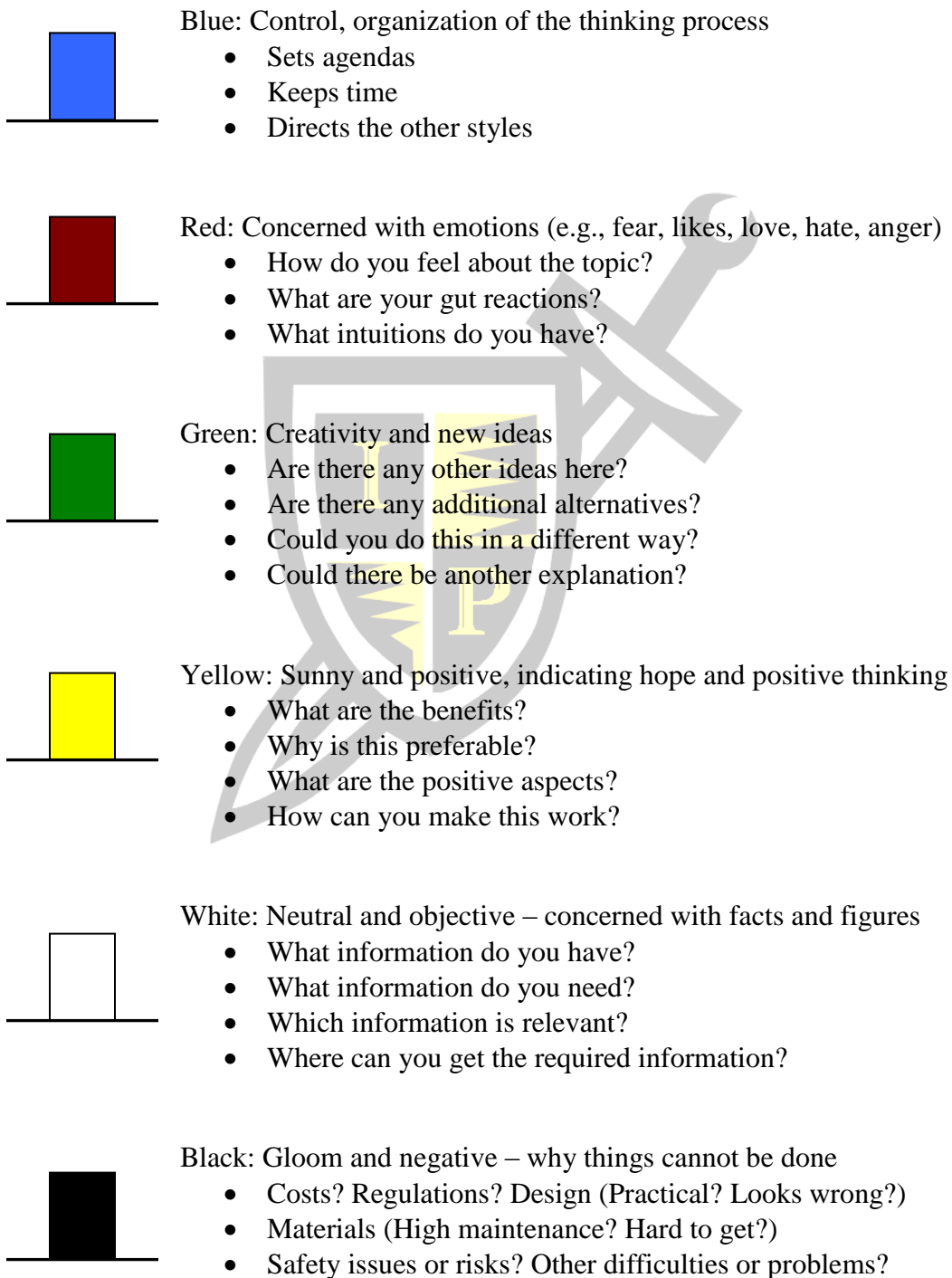
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APPENDIX

Figure 1 – Six Thinking Hats Game Card Example



The figure displays six colored rectangular cards, each representing a different thinking style. Each card is a solid color and sits on a horizontal line. To the right of each card is a brief description of its function and a list of associated questions.

- Blue:** Control, organization of the thinking process
 - Sets agendas
 - Keeps time
 - Directs the other styles
- Red:** Concerned with emotions (e.g., fear, likes, love, hate, anger)
 - How do you feel about the topic?
 - What are your gut reactions?
 - What intuitions do you have?
- Green:** Creativity and new ideas
 - Are there any other ideas here?
 - Are there any additional alternatives?
 - Could you do this in a different way?
 - Could there be another explanation?
- Yellow:** Sunny and positive, indicating hope and positive thinking
 - What are the benefits?
 - Why is this preferable?
 - What are the positive aspects?
 - How can you make this work?
- White:** Neutral and objective – concerned with facts and figures
 - What information do you have?
 - What information do you need?
 - Which information is relevant?
 - Where can you get the required information?
- Black:** Gloom and negative – why things cannot be done
 - Costs? Regulations? Design (Practical? Looks wrong?)
 - Materials (High maintenance? Hard to get?)
 - Safety issues or risks? Other difficulties or problems?

**Table 1 – Student Survey Results
(n = 128)**

Teaching Method Assessment	Disagree (%)	Somewhat Disagree (%)	Neutral (%)	Somewhat Agree (%)	Agree (%)
Easy to use	0	3	6	24	67
Facilitates creative discussion	0	0	13	22	65
Could be applied effectively in other courses	0	0	2	26	72
	Less Likely	Somewhat Less Likely	Neutral	Somewhat More Likely	More Likely
Likelihood of future class participation after using method	1	0	20	8	71

	Less Interesting	Somewhat Less Interesting	Neutral	Somewhat More Interesting	More Interesting
Whether discussions are more or less interesting when using method	1	0	19	6	74
	Less Helpful	Somewhat Less Helpful	Neutral	Somewhat More Helpful	More Helpful
Whether method is more or less helpful to be able to see others' thoughts on an issue or question	0	0	2	6	92
	Not at all Helpful	Somewhat Not Helpful	Neutral	Somewhat Helpful	Helpful
Helpfulness of having a specific focus (e.g., Black Hat, Red Hat) when addressing a topic	0	0	10	6	84

