# A CYCLE OF ASSESSMENT ON BUSINESS DRESS: FLIES IN THE OINTMENT

**Tim O. Peterson, North Dakota State University**
**Shontarius D. Aikens, Concordia College**

## ABSTRACT

*This manuscript shares the findings of a four-year learning assurance project conducted at an AACSB-accredited university used to assess first-year business students' competency regarding different forms of business dress. Despite various educational interventions, the results of these assessment cycles indicated that students were unable to successfully match the appropriate dress style to two different scenarios: meeting with a client outside the office, and day-to-day in the office. Further research utilizing focus groups revealed incorrect mental models used by students that were contributing to the deficiencies in their learning. The students were themselves the flies in the ointment that prevented the educators from closing the loop completely on a learning outcome. The findings from the assessment cycle, alternative interventions attempted to enhance student learning, the method used to uncover the incorrect mental models, and a description of the incorrect mental models are presented. The authors provide narratives and insights regarding the educators' challenges in closing the loop.*

*Keywords: learning assurance, assessment cycle, business dress, mental models*

## INTRODUCTION

*You must unlearn what you have learned –Yoda*

Business schools are required by their accrediting bodies to participate in rigorous learning assurance activities while also contributing to the scholarly body of knowledge (AACSB International, January 31, 2016: 29; Accreditation Council for Business Schools & Programs, 2017, June 21). Given these two seemingly competing demands, it is possible to use the learning assurance process to benefit the scholarship of teaching process. A common view is that a school's requirements for learning assurance are separate from the school's intellectual contributions requirement. A more beneficial and complementary approach would be for business schools to submit their learning assurance assessments for peer review, which would feed into the intellectual contributions of teaching and learning scholarship which is a required area of intellectual contribution by AACSB (AACSB International, January 31, 2016: 19). Bacon and Stewart (2017) also emphasize the importance of publishing learning assurance work to help other business schools and faculty to benefit from successes and failures to close the loop in learning assurance. Closing the loop in learning assurance usually requires ongoing cycles of assessment and continuous improvement rather than a one-and-done approach. However, what if you cannot close the loop because there is a flaw in the students' mental model about a topic? The idiomatic expression *fly in the ointment* can be traced back to Biblical times (Schwarcz, 2004). It refers to a drawback that was not evident at first. A more modern version is *a bug in the system*. Software engineers often use this phrase when they discover a coding error in a computer program. This same type of error can show up during learning assurance assessment; but in this case the bug is in the learner's mental model.

There are three goals to this manuscript. One, to highlight an important but often overlooked and missing subject in the education and development of business professionals – business dress competency – and how this particular institution educated students on this topic. Two, to explain how different interventions can be used to close the learning gap in situations where students are not achieving expectations. Three, to describe how incorrect mental models held by students may make it almost impossible to close the learning gap until the learner has actually experienced the situation. Our participants continued to hold on to their faulty beliefs even when they were told they were wrong. Because of their incompetence regarding business dress, they continued to assert what they thought was the correct answer and were confident of that answer even when wrong.

The next sections will provide the appropriate context and foundation used to design the business dress learning assurance assessment. To provide the appropriate contextual knowledge, several topics are discussed: a) changes in workplace dress requirements, b) developing the business dress competency, and c) summary and insights used to develop the business dress learning assurance assessment.

## CHANGES IN WORKPLACE DRESS REQUIREMENTS

The issue of business dress is of significance for management educators in several ways. It has been noted that teaching students about appropriate business attire is important in business schools (Kiddie, 2009). Because management educators want their students to be gainfully employed upon graduation, learning how to dress professionally in the workplace is a key employability skill for students (Cutts, Hooley, & Yates, 2015).

Over time, the workplace dress movement pendulum has swung back and forth on the business professional↔business casual spectrum. The business professional standard was established in the late 1980s with John Molloy's book *The New Dress for Success Handbook* (1988) and the 1990s with *New Women's Dress for Success* (Molloy, 1996). This formal dress expectation continued until around the late-1990's, and at that point, most firms began to incorporate a more relaxed business casual dress style (Kiddie, 2009). Sabath (2008: 1) provides an operational definition of the term business casual:

> *The real definition of business casual is to dress one notch down from what is expected in business-professional attire…wearing clothes that will allow professionals to represent their organizations if they are called to a last-minute client meeting,*

Because of the vagueness of the term business casual, guidelines were developed to help individuals understand what it meant to be dressed in business casual style. For example, business casual style consists of keeping one's appearance neat while also dressing to match the attire of the client (Kiddie, 2009: 352).

Eventually firms started moving back to a more formal business professional dress style for the workplace (Kiddie, 2009). Companies began to change the expectations for dress in their companies due to concerns expressed by supervisors. For example, "managers, when surveyed, were upset with the open-toed shoes, tank tops, and sweat pants worn to work" (Saiki, 2006: 1). It appeared that the knowledge of appropriate business casual dress was lacking since business casual in the workplace was misinterpreted or misunderstood by employees (Kiddie, 2009; Reddick, 2007; Sabath, 2008). It is possible that these misinterpretations of appropriate workplace attire could be linked to a lack of education or training on the subject in college.

While understanding appropriate dress at work can impact the career of a future graduate, these behaviors are usually not purposefully integrated within the business education curricula (Allison, Voss, & Dryer, 2001). University stakeholders, especially external stakeholders such as recruiters, are cognizant of this omission (Calongne & Matthews, 2002). One of the reasons business dress may not be covered in the business curriculum is the difficulty of teaching professional behaviors in the classroom (Hall & Berardino, 2006; Lawrence, Reed, & Locander, 2011). In some cases, business schools have been proactive in addressing the importance of business dress with its students. For example, Illinois State University's College of Business instituted a business casual dress code for marketing students when attending classes and the faculty educated the students with specific guidelines to adhere to the new dress code (Damast, 2007). This example of a direct intervention to teach business dress is an exception and not the norm within the business education curriculum.

## DEVELOPING THE BUSINESS DRESS COMPETENCY

When learning any new skill, the ultimate goal is to achieve competency. Angelo (1991) developed a competency framework, which consists of four types of knowledge: Declarative (know what), procedural (know how), situational (know when), and reflective (know why).

Based on this framework, an individual must possess the four types of knowledge to be deemed competent for that particular skill.

Accurately describing or operationally defining the abilities of a business dress competency can be tricky. One reason is due to the various opinions and perspectives regarding what is appropriate. This deals with an absolute knowledge of the rules – the do's and don'ts of dress. Consider the following perspective offered by Vangen (2002: 12):

> *In the past 15 years, corporate America has seen tremendous change in the workplace. Perhaps one of the most notable has been the blurring of the line that separates traditional business attire and classic business casual dress. Ask anyone in the business world what their interpretation of business casual is and the answer you get will be as varied as the taste and personality of the people you ask.*

Adding to the confusion caused by varying opinions of individuals is the heterogeneity of organizations. Some organizations have a written dress code, and others do not. Dress codes could vary between organizations and perhaps within an organization based on one's position. Developing an adequate business dress competency would require exposing students to a wide range of illustrations of dress attire that encompasses the entire business professional↔business casual spectrum, thus enabling students to dress appropriately in any work environment.

A second reason could be that it might be difficult to teach a student how to adapt to change, such as understanding when it is appropriate to deviate from the do's and don'ts of a company's dress code. For example, when six Certified Public Accountants (CPAs) were interviewed regarding work attire in the accounting field, a common theme that surfaced. They must find the balance between knowing the rules and expectations of the firm, but also using wisdom and sound judgment to adjust those rules given the nature of the work for that day and the type of client and the preferences of the client they would be interacting with (Fortune et al., 1995).

There are couple of key points from this example. First, knowing the rules and expectations of the firm is important. Second, employees need the wisdom and sound judgment to know when it is acceptable or necessary to break the rules. Given that employees are expected to use good judgment when it comes to their work attire (Sabath, 2008), good judgment can only occur once a person is cognizant of the different dress styles, benchmarks, and guidelines from which to make an informed decision. Therefore, instead of students learning through trial and error during their first-year of employment, it would be more appropriate to help students develop a professional dress competency with a basic level of proficiency sufficient for an entry-level worker.

So, then the question becomes how do management educators provide the basic knowledge that a student needs to know now regarding professional dress while also helping them to learn to exercise sound judgment? Since it is important for workers to align their day-to-day dress attire with a company's recommended formal or casual attire standard (Kiddie, 2009), this suggests that the ability to match work attire to a work situation or scenario is the core skill within the business dress competency. The solution is to apply the competency framework principles of Angelo (1991) to the learning of business dress by addressing each knowledge component in the education process. This can be accomplished in several ways.

To satisfy the declarative knowledge component, students could be instructed to read various dress code policies from companies, to view pictures of employees working that may appear in their annual reports, or to gain this knowledge through direct onsite observation (Kiddie, 2009). In the context of the classroom, an instructor could have student peers dress up for class in order to show a concrete model of a particular dress style. To satisfy the procedural knowledge component, the key would be to provide events or venues that students are required to attend. For example, first-year business students could be required to attend an etiquette dinner dressed in business professional style. After the event, the students would receive a grade for attendance as well as the appropriateness of their dress. Thus, if a student is not dressed appropriately for the event, their grade in the course would be negatively affected.

Satisfying the situational knowledge component appears to be the most difficult to accomplish since it focuses on assessing a student's overall ability to exercise judgment in various situations. Ideally, the preferred goal would be to assess this ability before an event. At a basic level, Burgess-Wilkerson and Thomas (2009:368) suggest that "while it appears that companies are moving toward a more liberal dress code, students are well-advised to err on the side of tastefully conservative business attire". Exercising judgment goes beyond just knowing when to dress up professionally or casually, but also knowing when to wear certain types of outfits or certain colors. Cardon and Okoro (2009: 359) allude to this higher level of situational knowledge:

> *This creates a confounding logic for dressing up for the workplace. On the one hand, business students new to the workplace may want to project competence. On the other hand, they may want to project creativity…Professionals should develop an awareness of the various professional characteristics associated with dressing up more formally and more casually. They may want to prioritize the professional characteristics they intend to project and to strategically adjust their workplace attire periodically to project certain images.*

In order to adequately assess this component, students would have to be provided different scenarios requiring them to choose what would be appropriate to wear in each circumstance. Based on their answers, a determination could be made regarding their situational knowledge. At this institution, an online assessment was created requiring students to pick the appropriate dress for the given scenario.

Satisfying the reflective knowledge component would be difficult as well, since it focuses on assessing one's knowledge after an event has occurred. Unlike a seasoned professional who has extensive reflective knowledge based on work experiences, a business student might not have enough formal or informal opportunities to develop reflective knowledge. Some examples of ways that reflective knowledge could be assessed would be through one-on-one conversations between the instructor and the student or by writing a reflection paper or providing the rationale for why a specific type of business dress was chosen. It should be noted that these activities would have to occur after the event, which might make completing these activities unfeasible.

Based on the review of the literature, there is a dearth of literature that has addressed the topic of incorporating business dress within the business education curriculum. Much of the material on business dress is anecdotal information in articles indicating students' lack of knowledge on this subject and the need for someone to teach it. In addition, we were unable to find existing research studies that have addressed the instruction and assessment of a student's competency regarding business dress. Given this gap in the literature along with the need of this institution to assess one of its learning objectives for accreditation, a learning assurance assessment in regard to the business dress competency was conducted.

## LEARNING ASSURANCE ASSESSMENT 1

The initial assessment (A1) was an exploratory baseline study where the purpose was twofold: a) to determine if students were able to distinguish between the different types of business dress and b) to assess the student's ability to match an appropriate style of dress for a given scenario. Two research questions were developed for this initial assessment:

*R1: Can undergraduate freshmen students distinguish between various styles of business dress?*
*R2: Can undergraduate freshmen students accurately match a certain style of dress for a particular scenario?*

The participants in the learning assurance assessment were first-year freshmen business students (n=220) enrolled in a required freshmen orientation seminar for the college of business and a mid-size public university in the upper Great Plains. The responsibility for teaching this orientation course is shared between the instructor of record (a faculty member who meets with the entire group of students once each week) and a group of peer leaders. An online quantitative assessment was used prior to the seminar course to determine (a) the participants' ability to distinguish between the types of business dress and (b) participants' understanding of the appropriate attire for eight scenarios:

- *Scenario 1 (S1): Dinner Interview*
- *Scenario 2 (S2): Office Client Presentation*
- *Scenario 3 (S3): Client Meeting Out of Office*
- *Scenario 4 (S4): Business Trip*
- *Scenario 5 (S5): Reception*
- *Scenario 6 (S6): Lunch with a client*
- *Scenario 7 (S7): Office Interview*
- *Scenario 8 (S8): Office Day to Day*

These eight scenarios were identified as potentially problematic by the members of the business school advisory board who were business executives and managers. The advisory members helped write the scenarios and identified the appropriate business dress for each scenario. It was important to have industry involvement since they are the very business people with whom our students interact, interview, and ultimately work for in their respective companies.

In regard to Research Question 1, students were able to correctly distinguish between the styles. Participants were then instructed to read each scenario and to select the appropriate dress style for the scenario. The appropriate dress styles were depicted by sophomore business students in the form of pictures on the monitor during the online assessment. The four different dress style options were casual (also called college casual), business casual, business attire, and business professional. It should be noted that the term *business attire* was created by this institution. Because there is such a wide gap between what is accepted as business casual and business professional – and given the argument made earlier about the difficulty of teaching professional behaviors in the classroom – it was deemed important to develop a middle ground benchmark guideline to help the students better understand the business dress spectrum. The term *business attire* refers to a blend between business casual and business professional. An example of business attire for men might be wearing a sport coat over a dress shirt or wearing a polo shirt with dress slacks. An example of business attire for women might be a dress with a jacket or a blouse, dress slacks, and a jacket. There were pictures depicting both men and women in each style of business dress as well as college casual.

All acceptable answers were pre-determined by both business people and business faculty. The students completed the assessment toward the end of the fall semester prior to attending a required etiquette dinner. Students were awarded points based on their participation in the assessment and not based on the accuracy of their answers.

The accuracy of answers was, however, necessary for assessment purposes. The researchers decided that 70% of correct answers was an acceptable threshold score to demonstrate learning. This is equivalent to a typical undergraduate passing score of ≥70% (letter grade of C).

In order to answer the research questions, the following hypotheses were tested for this assessment:

*H1: 70% of the students can match the appropriate dress style for Scenario 1.*
*H2: 70% of the students can match the appropriate dress style for Scenario 2.*
*H3: 70% of the students can match the appropriate dress style for Scenario 3.*
*H4: 70% of the students can match the appropriate dress style for Scenario 4.*
*H5: 70% of the students can match the appropriate dress style for Scenario 5.*
*H6: 70% of the students can match the appropriate dress styles for Scenario 6.*
*H7: 70% of the students can match the appropriate dress styles for Scenario 7.*
*H8: 70% of the students can match the appropriate dress style for Scenario 8.*

The baseline assessment results indicated that in five out of the eight scenarios the students could correctly identify the appropriate business dress for the given situation. However, three scenarios fell below the 70% threshold used to determine if the learning objective was met: S1-Dinner Interview (39%), S3-Out of office client meeting (18%), and S8-Office Day to Day (44%).

**Table 1**
**Initial Business Dress Assessment (A1) Results (n=220)**

| Scenarios | Correct Answers | Percentage Correct |
|---|---|---|
| **Scenario 1 Dinner Interview** | **86** | **39%** |
| Scenario 2 Office Client Presentation | 183 | 83% |
| **Scenario 3 Client Meeting Out of Office** | **40** | **18%** |
| Scenario 4 Business Trip | 202 | 92% |
| Scenario 5 Reception | 198 | 90% |
| Scenario 6 Lunch with a Client | 185 | 84% |
| Scenario 7 Office Interview | 169 | 77% |
| **Scenario 8 Office Day to Day** | **97** | **44%** |

Success Threshold = 70% correct **Bold** indicates scenarios with <70% correct answers

Thus, for Research Question 2, students were deficient in matching the appropriate style for a particular situation in scenarios S1, S3, and S8. The following fall, with another incoming class of freshmen, we attempted to close the loop by incorporating an educational intervention to address the deficiencies in those areas and improve the scores in all areas This was the purpose of the learning assurance assessment conducted next.

## LEARNING ASSURANCE ASSESSMENT 2

For this assessment (A2), an educational intervention using social media was introduced in the fall of Year 2. Hall and Berardino (2006) argued that additional research is needed to determine ways that faculty can use the classroom in order to teach important professional behavior skills. Given that teaching business dress behaviors can be difficult, this would mean the possibility of implementing a new type of instructional method into the classroom. One possible method could be the use of social media.

Social media tools vary from technology tools such as blogs, web-feeds, podcasting and media sharing, to more interactive tools such as Facebook, Twitter, and YouTube (Dubose, 2011; Junco, Heiberger, & Loken, 2011; Tay & Allen, 2011). The literature indicates an increased use and an increased desire to implement social media within the higher education classroom (Dubose, 2011). However, the simple inclusion of social media in a classroom may not lead to an increase in achieving student outcomes. Consider the following finding:

> *Rather, we would argue, it is the particular pedagogic application of social media – not the technology itself – that will lead to a constructivist learning outcome. Whereas social media might afford us possibilities for collaboration, shared content creation, and participation in knowledge building, those possibilities need to be actualized through the effective integration of social media into learning environments. Additionally, since assessment is an important driver of student learning, this integration needs to begin with the design of student assessment in a way that recognizes the key affordances of the social media tools used (Tay & Allen, 2011: 156).*

In a similar vein of thought, Dubose (2011: 117) suggested that "as instructors become familiar with technology and social media options, student learning outcomes and student satisfaction can improve". This suggests an intentional purposeful use of an appropriate social media tool in order to produce the type of knowledge that will eventually be assessed in the classroom. For the purpose of this assessment, we specifically looked at the segment of social media that is categorized as digital media-sharing. Digital media-sharing is a technology tool with the primary focus of the "dissemination of multimedia information and content over the Internet" (Wilson, Wright, Inman, & Matherson, 2011: 70). The specific tool utilized in this learning assurance assessment was YouTube. Given that there have been few empirical studies conducted on the effect of social media in the classroom (Dubose, 2011), this learning assurance study was designed in a way to explore any possible effect of using social media in instruction in order to achieve student learning outcomes.

Curriculum changes were made to address the deficiencies indicated in the earlier results. Social media education strategies, rather than traditional classroom strategies, are more readily accepted by this generation of college students. It has been noted that traditional methods of instruction and learning may not be congruent or preferred with the methods of instruction and learning used by today's students in their daily lives (Tay & Allen, 2011). Research indicates that younger students prefer videos rather than lectures (Moody, 2010). In addition, college students within the 18-24 age range are heavy internet users (Smith, Rainie, & Zickuhr, 2011). Social media is normally used by students outside of classroom for other informal learning activities. In addition, social media can tap into various learning styles more effectively. It has been indicated that content retention increases when instruction utilizes multiple senses (Callahan, Shim, & Oakley, 2000).

Videos, created by and featuring college students, were developed to illustrate the appropriate attire for men and women in three different styles (business casual, business attire, and business professional). The goal of the videos was to provide students with situational knowledge on business dress. The videos were uploaded to YouTube, and then the YouTube video links were posted in a learning module within the online course management system (Blackboard). Essentially, YouTube was simply utilized to disseminate the information to the students. The students were instructed to view the videos prior to taking the assessment.

In order to build upon the findings in the initial assessment and given that an intervention was introduced, it was appropriate to add an additional research question for this assessment (A2):

> *R3: What is the overall effect of social media tools (specifically YouTube instructional videos) on business dress learning outcomes?*

There were 199 students in the fall orientation course for this learning assurance assessment during Year 2. As with the initial assessment (A1), participants completed the online assessment (A2) toward the end of the fall semester prior to attending a required etiquette dinner function for the students in the class. Again, the students were awarded points based on their participation in the assessment and not based on the accuracy of their answers. In order to determine any possible effect of the social media educational intervention and to determine if there would be change (positive or negative) in the ability of students to demonstrate procedural and situational knowledge, this assessment utilized the same hypotheses from the initial assessment plus the additional research question stated above.

The detailed results from this second assessment and the percentage of improvement between the two years are shown in the Table 2. The second assessment (A2) results indicate that there was an improvement in overall scores on the assessment, especially within the three deficient scenarios identified in the initial assessment. The S1-Dinner Interview scores improved to 46%, the S3-Client Meeting Out of Office scores improved to 35%, and the S8-Office Day to Day scores improved to 67%. Scores for other scenarios above the threshold nearly all improved, while one stayed the same.

One possible reason for improved assessment scores could be an increased intrinsic desire for students to learn. As suggested by Moody (2010: 6), "undergraduates learn best when they perceive the relevance of course content to their common goals" which is also consistent with adult learning theory (Forrest & Peterson, 2006). Perhaps incorporating YouTube videos enabled the students to visualize themselves as true business professionals. If they were able to visualize themselves, then there would be a connection suggesting that this information was important and relevant to them.

While there was notable improvement which could be attributed to the YouTube videos, the second assessment (A2) results indicate that these three areas (S1, S3, and S8) are still below the 70% threshold; although S8 came very close with a percentage of 67%.

| Table 2<br>Second Business Dress Assessment (A2) Results (n=199) | | | | |
|---|---|---|---|---|
| Scenarios | A2 # Correct | A2 % Correct | A1 % Correct | Change A1→ A2 |
| **Scenario 1 Dinner Interview** | **92** | **46%** | **39%** | **7%** |
| Scenario 2 Office Client | 168 | 84% | 83% | 1% |
| **Scenario 3 Client Meeting Out** | **70** | **35%** | **18%** | **17%** |
| Scenario 4 Business Trip | 184 | 92% | 92% | 0% |
| Scenario 5 Reception | 181 | 91% | 90% | 1% |
| Scenario 6 Lunch with a Client | 189 | 95% | 84% | 11% |
| Scenario 7 Office Interview | 172 | 86% | 77% | 9% |
| **Scenario 8 Office Day to Day** | **133** | **67%** | **44%** | **23%** |
| Success Threshold = 70% correct | **Bold** indicates scenarios with <70% correct answers | | | |

Since scenarios S1, S3, and S8 were deficient in both assessments (A1 and A2), it indicates that these scenarios need further attention and instruction in the future. While the scores in these three scenarios improved in the second assessment, they are still below the 70% threshold. Since the deficiencies existed in the same areas over two academic years, we can rule out the possibility of students selecting random answers throughout the assessment for the sole purpose of obtaining the participation points. We concluded that if students were in fact just clicking on answers to get participation credit, we would expect other scenario scores to be deficient due to the randomness of answers.

After reviewing the findings from this assessment, two additional educational interventions were developed in order to correct the deficiencies in these three scenarios. To determine if the educational interventions were successful in improving the students' learning, the assessment was repeated during the fall semester of the following year.

## LEARNING ASSURANCE ASSESSMENT 3

For the third learning assurance assessment (A3), the participants were first-year business students enrolled in the first-year seminar course (n=202). The two initial social media educational interventions were used and two additional educational interventions were introduced. The first was an additional social media educational intervention in the form of another YouTube video. This video directly addressed all eight scenarios in more depth while also discussing reasons and ways for a person to determine the appropriate dress style for the situation. The second intervention was a direct in-class instruction educational intervention. Six peer leaders (three males, three females) came to class dressed up to ensure that each dress style was modeled. Students practiced identifying and labeling each dress style as modeled while also indicating which dress style was appropriate based on the given scenario depicted on the PowerPoint slides. These two interventions were designed to be more intentional to determine if the three deficiency areas (S1, S3, and S8) would improve to the 70% threshold. The assessment scenarios did not change and the same research questions were used as guides for this assessment. As with all previous assessments, achievement at the 70% level would be determined as successfully meeting the learning objective.

The findings from the third assessment are depicted in Table 3. We have eliminated from Table 3 all the scenarios that met the success threshold in order to keep our focus on the three that still had not reached the success threshold. Once again, five of the eight scenarios met the 70% threshold; however, once again S1, S3, and S8 did not make the required learning threshold. Scenario S1 scores were at 55% which is an additional increase of 9%. Surprisingly, Scenario S3 dropped by 11% to 24%, and Scenario S8 dropped by 15% to 52%.

**Table 3**
**Third Business Dress Assessment (A3) Results (n=202)**

| Scenarios | **A(3) # Correct** | **A(3) % Correct** | **A(2) % Correct** | **% Change A(2)→A(3)** | **Total % Change A(1)→A(3)** |
|---|---|---|---|---|---|
| **Scenario 1 Dinner Interview** | **112** | **55%** | **46%** | **9%** | **16%** |
| **Scenario 3 Client Meeting Out of Office** | **49** | **24%** | **35%** | **(11%)** | **6%** |
| **Scenario 8 Office Day to Day** | **105** | **52%** | **67%** | **(15%)** | **8%** |
| Success Threshold = 70% correct | | | | | |

The findings of the third assessment were both interesting and alarming for several reasons. First, although there was an overall improvement between the initial first assessment and the current third assessment, we noticed that deficiencies occurred in the same scenarios (S1, S3, and S8) as in previous assessments. They still did not meet the 70% threshold. Second, it was unlike the findings from the second assessment (A2) where the educational intervention improved scores in all three scenarios (S1, S3, and S8). During the third assessment (A3), only the score from one scenario (S1) improved. In fact, the scores from two scenarios (A3 and A8) actually decreased. Third, we were curious as to why only one scenario (S1) improved. Given these findings, it was determined that some form of in-depth analysis would need to be conducted to determine any underlying factors that could be the cause for the deficient areas, thus continuing the cycle of learning assurance in order to close the loop.

## PEER LEADER ASSESSMENT (PLA)

Due to the unexpected findings from the third assessment, the decision was made to collect data from a different group of students using a focus group of student peer leaders. To assist freshmen in the orientation course, sophomore students who successfully completed the course the previous year are selected to serve as role models for the incoming students. These peer leaders are chosen through an application process and enroll in a training course during the spring semester preceding their peer leader role the following fall.

During this spring training course, the peer leaders are trained in topics such as facilitating group conversations, communication tactics, different strategies for academic success, and intercultural competence. While a faculty member is the instructor of record for the freshmen course, student peer leaders are used as a supplement to the first-year course experience. The faculty member meets the entire large class of students once each week, then the peer leaders meet with small groups of students on the other class day. Each peer leader consistently meets with the same small group for the entire semester. The use of student peers can be a more effective method to positively influence and engage students in the classroom (Ender & Newton, 2000). Each peer leader is assigned to a small group of freshmen. Some of their responsibilities include presenting course material, facilitating group discussions, and providing additional assistance as needed for the students in their scope of responsibility. The spring focus group of peer leaders (n=11) consisted of 3 males and 8 females who would be serving as peer leaders for the next fall semester.

There were two main reasons for choosing the peer leaders as participants in the focus group. First, the peer leaders were chosen because they were high-performing students during the previous fall class. This would be a good starting point to get some additional insights. Second, if the analysis indicated that the peer leaders struggled with these concepts, then it could be assumed that other students would as well. The next section of this manuscript will discuss the assessment results from the peer leaders.

### Quantitative Assessment

The student peer leaders were asked to complete the same online qualitative assessment regarding business dress used with first-year students. It should be noted that it was the same assessment that they recently completed as freshmen during the previous semester as part of the third dress assessment (A3). This time the peer leaders had once again received instruction about appropriate dress. The results of this spring peer leader assessment (PLA) are shown in Table 4, which compares the peer leaders' data for the three problematic scenarios to the same students' results of the previous fall assessment when they were first-year students (A3).

**Table 4**
**Spring Peer Leader Business Dress Assessment (PLA )Results (n=11)**

| Scenarios | # Correct Answers PLA | % Correct Answers PLA | Previous % Correct A3 | Percent Difference |
|---|---|---|---|---|
| Scenario 1 Dinner Interview | 8 | 73% | 47% | 26% |
| **Scenario 3 Client Meeting Out of Office** | **2** | **18%** | **26%** | **(8%)** |
| **Scenario 8 Office Day to Day** | **7** | **64%** | **54%** | **10%** |
| Success Threshold = 70% correct | **Bold** indicates scenarios with <70% correct answers | | | |

This time the peer leaders scored above 70% for scenario 1. This may be because they had already taken the assessment once. In addition, at the end of the fall semester (before they took the peer leader training and assessment), they had attended the mandatory etiquette dinner which is similar to Scenario 1. The quantitative results are similar to the deficient areas (S3 and S8) identified from the previous three assessments. Since this indicated that even peer leaders were having trouble with these two scenarios, we decided that it was important to conduct an additional assessment component. However, this time the analysis would be qualitative using the peer leaders as a focus group. We wanted to get more insights to understand the rationale behind their answers in order to understand more about their mental models regarding professional dress that they would hand down to freshmen business students during the following fall semester.

### Mental Models

Mental models are defined as "psychological representations of real, hypothetical, or imaginary situations" (Mental Models and Reasoning, n.d.). It is suggested that human beings approach tasks based on some type of mental model based on their understanding and reflections from past experiences (Vandenbosch & Higgins, 1996). Mental models are important and powerful, because by shaping what a person sees or looks for, they affect and influence what people do (Senge, 1990). In addition, mental models enable individuals to make decisions and to take actions on events and situations that could occur in the future (Solansky, Duchon, Plowman, & Martinez, 2008). Mental models exist in all domains (Brewer, 1987).

Based on this information and applying this concept to student cognition, an assumption could be made that students could be applying incorrect professional dress mental models in the learning assurance assessments. Unfortunately, this might not become evident until after a period of time. At this point we decided to explore this idea in our additional data collection.

Since peer leaders spend so much time with their students, their faulty ideas regarding appropriate business dress can be shared with their students. The ultimate result would be a continued deficiency in the scores for the scenarios. Given that this has been a persistent problem for three years, we didn't want to rule out this possibility of mental models being inadvertently spread and reinforced by the peer leaders. The next section will discuss the qualitative strategies used in the focus group.

### Focus group

For the qualitative data collection, we met with the peer leaders during a one-hour period of their required training class period during the spring semester. During the class session, we provided them with a paper copy of the assessment for scenarios S1, S3, and S8. The students were asked to complete the paper assessment during the class session for these three scenarios. One of the eleven peer leaders was absent the day we conducted the qualitative assessment, so her results have not been included (n=10). In order to obtain additional data for possible analysis, we added two additional types of feedback responses: a) a question to assess the students' confidence in applying their answers to a real-life situation and b) an open-ended question to understand the rationale for their answers. Each peer leader provided their measure of self-confidence for their answer for each scenario expressed on a scale of 0 to 100. After they completed the assessment, we facilitated open discussions regarding each question. Students used their completed paper assessment as a starting point to verbally express their answers and their rationale. Once every student provided their answers, we shared with them the correct answers and explanation of why they were correct. This then prompted us to have discussions to uncover the gaps, and we solicited suggestions from students on ways to help students in the future to correct these deficiency areas.

The results from the spring peer leader assessment (PLA) are depicted in the next three tables. The peer leader results for scenario S1 are shown in Table 5, the peer leader results for scenario S3 are shown in Table 6, and peer leader results for scenario S8 are shown in Table 7. These tables also include how each peer leader answered this same question the previous fall, when they were students in the class (A3). In these three tables, responses in bold indicate a correct answer. After careful review, it was clear that overall, the peer leaders believed that their answers were correct. The confidence scores ranged from 65 to 100, with a mean score across the three scenarios of 83.5.

One could expect that if an exam is taken more than one time, that there should be a increase or improvement in scores. As the results show, even after taking the same assessment multiple times, the answers were mostly consistent – although incorrect – which is a reasonable indicator that their most recent answer is a valid indicator of their true thinking and belief as applied to the scenario. Thus, we concluded that incorrect mental models were most likely present regarding professional dress for these scenarios.

For Scenario 1, the scenario read:

*Dinner Interview -- You have begun interviewing with a potential employer. After submitting an application, you received an on-site interview. This primary interview went great, now you have been offered another interview over dinner with a few people from the employer. What would the appropriate dress be for this situation?*

The correct answer for this S1 scenario is business professional (BP). The key indicator or cue is that it is another interview over dinner. For those students who answered it correctly, the common theme behind the rationale for their answers centered on the idea that it is better to be overdressed than underdressed.

**Table 5**
**Peer Leader Assessment - Scenario 1 (n=10)**

| Peer Leader ID Gender | A3 Fall Answer | PLA Spring Answer | Self Confidence Level | Rationale |
|---|---|---|---|---|
| PL1 Male | BA | **BP** | 100 | Because you are still in the developing phase with the employer and want to put the best foot forward. Adding a level can only help. |
| PL2 Male | **BP** | BA | 95 | You wear Business Attire to dinner meetings because you are in a public setting, and it is less formal than a regular interview. |
| PL3 Female | **BP** | **BP** | 75 | I chose this because it's an important interview and you should look your best. It would be better to be over dressed than underdressed in this situation. |
| PL4 Female | **BP** | **BP** | 85 | I would want to impress my potential employer as best as I could. |
| PL5 Female | BA | BA | 95 | I chose Business Attire because it is quite Formal. I believe business professional would be to [sic] dressy in this situation, because the initial interview was the most formal and dinner is not as formal. |
| PL6 Female | **BP** | **BP** | 75 | I decided on business professional because it's better to be overdressed than underdressed. I think also if you want to feel your best you want to look your best. If your dressed to your absolute best you should feel that way. |
| PL7 Female | BA | **BP** | 65 | It is better to be overdressed than under dressed, and now you would be meeting more than one person as well as going out so you would want to have a good first impression. |
| PL8 Male | BA | BA | 85 | Since it is the first time meeting the dress is very important. However being that it is a dinner and not a meeting on office space, I choose Business Attire. I choose this because it is in between the most formal and casual ways of business dress. |
| **Table 5** **Peer Leader Assessment - Scenario 1 (n=10)** | | | | |
| PL9 Female | **BP** | **BP** | 90 | I chose Bus. Professional because you're going to dinner, which is a formal meal, and you are going with potential employers who have not hired you yet so you should still be trying to look your best. |
| PL10 Female | BA | BA | 70 | Because it makes sense. You have already been through some interviews. So now they have another and I feel they are more so looking to find out about you. Plus, it is semi-professional looking. |

Legend: C = Casual; BC = Business Casual; BA = Business Attire; BP = Business Professional. Correct answer is in **Bold**

Comments from Peer Leader 3 and Peer Leader 6 picked up on the cue in their responses that the person has not been hired yet and thus should still look their best. However, they are both only 75% confident in their answer. For those students who answered it incorrectly, the common theme behind the rationale for their answers centered on the idea that dinner is not as formal as an interview, thus dress for dinner is not as formal as dress for an interview. This is particularly evident based on comments from Peer Leader 5 and Peer Leader 8. In this case, they were 95% and 85% confident of their answer respectively. In this case, the dysfunctional thinking is that they focused only on the word *dinner* rather than associating the word dinner in the context of an interview.

For Scenario 3, the scenario read:

> *Client Meeting out of the Office -- The client has decided to move your meeting to a local restaurant, and they have indicated that they would like to make this an informal dinner to discuss your upcoming business plans. What is the appropriate dress for this dinner?*

The correct answer for this scenario is business attire (BA). The key indicator or cue is that the person is already employed with the company but is conducting business over dinner with a client. For those students who answered it correctly, the common theme behind the rationale for their answers centered on the idea of balancing professionalism but not so much to where the person overdresses for the client.

This is evident in comments from peer leaders 1 and 3. For those students who answered it incorrectly, the common theme behind the rationale for their answers centered on the idea that the person should dress more informally in a public place. The comments of peer leaders 7 and 8 confirm this belief. The dysfunctional thinking occurs between the purposes of business casual dress and business attire dress. Business casual is associated with day-to-day office wear; however, in a situation where a meeting is taking place with a client, the level of dress should be a bit higher while allowing the flexibility to dress down if needed. For example, an employee can move from business casual to business attire simply by putting on a jacket, or back to business casual by taking the jacket off based on the circumstances of the event.

**Table 6**
**Peer Leader Assessment - Scenario 3 (n=10)**

| Peer Leader ID Gender | Fall Answer | Spring Answer | Self Confidence Level | Rationale |
|---|---|---|---|---|
| PL1 Male | **BA** | **BA** | 90 | Due to the fact that it is still regarding business I would like to display myself in a high regard with the client. |
| PL2 Male | BC | BC | 90 | The client moved the meeting to a public place so that it is less formal, and so you should wear something that you wouldn't necessarily wear in the office every day. |
| PL3 Female | **BA** | **BA** | 85 | It looks professional while also toning it back just a little from the business professional look. |
| PL4 Female | **BA** | **BA** | 85 | I would not want to over dress, but I would still want to show my client that I am professional. |
| PL5 Female | BC | BC | 100 | You are representing a business, so you should be slightly dressed to impress with Business Casual. |
| PL6 Female | BC | BC | 75 | I picked business casual because you are still w/ someone important from the work place and you should look some business-like. |
| PL7 Female | BC | BC | 80 | You wouldn't want to dress casual because you are still meeting with a client, but business attire would be overdressing for a local restaurant. |
| PL8 Male | BC | BC | 100 | It is a professional meeting meaning that casual would be out of the question, but the client wished to make it informal meaning that business casual would be a good choice. |
| PL9 Female | BC | **BA** | 90 | I chose Bus. Casual because your [sic] going to do business and you have already decided w/ the client that it will be Bus. Casual. |
| PL10 Female | BC | **BA** | 70 | It is still a business situation, so you still have to look professional. It is not formal so it is what I would wear. |

Legend: C = Casual; BC = Business Casual; BA = Business Attire; BP = Business Professional.
Correct Answer is in **Bold.**

For Scenario 8, the scenario read:

*Office Day to Day Question -- You just got your first job out of college, and you are nervous about making a good first impression on your first day on the job. Your supervisor said that the dress in the office is business casual. What should you wear?*

The correct answer for this scenario is business attire (BA). The key indicator or cue is that it is the person's first day on the job and they are nervous about making a good first impression. For those students who answered it correctly, the common theme behind the rationale for their answers centered on the idea of overdressing to make a good first impression.

For those students who answered it incorrectly, the common theme behind the rationale for their answers centered on the idea that one should dress exactly as the supervisor said. The dysfunction in this thinking is that there are different perceptions of what constitutes business casual, and this is often misinterpreted by employees (Kiddie, 2009; Reddick, 2007; Sabath, 2008). Taking this kind of risk on the first day of employment is not wise. Thus, a measure of precaution should be taken. The comments made by peer leaders 1 and 4, who answered the question correctly, indicates an understanding of the need to be flexible and going into a new situation prepared just in case their concept of business casual is different than their supervisor's.

**Table 7**
**Peer Leader Assessment - Scenario 8 (n=10)**

| Peer Leader ID Gender | Fall Answer | Spring Answer | Self Confidence Level | Rationale |
|---|---|---|---|---|
| PL1 Male | **BA** | **BA** | 90 | This choice gives you some flexibility regarding the outcome of the situation. As well as putting a good stop on your first day. |
| PL2 Male | **BA** | BC | 100 | The supervisor told you to wear business casual, so that's what you should wear. |
| PL3 Female | **BA** | **BA** | 70 | On the first day, it's a good idea in my opinion to go one level higher when dressing to make a good impression on new coworkers & other you meet. |
| PL4 Female | BC | **BA** | 90 | Even though the dress is Business Casual, I would wear Business Attire because I would want to make a good impression. Also, if I was over dressed, I could always take my jacket off. |
| PL5 Female | BC | BC | 100 | You should fit the mold of the business in which you have received the job. I believe it would be inappropriate to not follow the ways of the business. |
| PL6 Female | BC | **BA** | 70 | If you want to make a good impression you should dress like you care and want to be there. Dressing nicer on the 1st day might not be a bad idea. After the 1st day you can gage how everyone ese dresses. |
| PL7 Female | **BA** | **BA** | 95 | Wearing business attire is similar to business casual, and wearing attire would not be too overdressed. |
| PL8 Male | **BA** | **BA** | 100 | I would choose business attire because I am worried about making a good impression and it is one step above the required office dress. |
| PL9 Female | **BA** | BC | 100 | I chose Bus. Casual because that's what the employer asked you to wear. |
| PL10 Female | BC | **BA** | 80 | I chose this because you look very professional. I heard it is better to overdress when going to a job. You can also take off your sport coat and have on business casual |

Legend: C = Casual; BC = Business Casual; BA = Business Attire; BP = Business Professional. Correct answer is in **Bold**

## LEARNING ASSURANCE ASSESSMENT 4

Based on the findings from the assessment of peer leaders, we decided to use the summer term following Year 3 to create new interventions that would overcome the incorrect mental models we discovered. For the fourth learning assurance assessment of incoming freshmen students, we designed two new educational interventions: 1) small group discussion session and lecture on these three scenarios regarding keys to look for in situations to ascertain the appropriate dress style and 2) a handout document put in student binders to illustrate and guide students with the situational knowledge piece of professional dress. In order to be consistent with previous years, the online assessment was unchanged and all previous educational interventions remained in place.

The following fall, we administered the fourth assessment again to 229 first-year business students. The results are available in Table 8.

**Table 8**
**Fourth Business Dress Assessment Results (n=229)**

| Scenarios | A4 #Correct Answer | A4 % Correct | A(3) % Correct | % Change A(3)→A(4) | Total % Change A(1)→A(4) |
|---|---|---|---|---|---|
| Scenario 1 Dinner Interview | 179 | 78% | 55% | 23% | 39% |
| **Scenario 3 Client Meeting Out of Office** | **101** | **44%** | **24%** | **20%** | **26%** |
| **Scenario 8 Office Day to Day** | **120** | **56%** | **52%** | **4%** | **12%** |
| Success Threshold = 70% correct | | | | | |
| **Bold** indicates scenarios with <70% correct answers | | | | | |

As you can see, we have now successfully brought S1 above the learning threshold. However, S3 and S8 are still below the learning threshold; though they have improved. Thus, we want to focus on the two scenarios that have resisted all attempts to be raised to an acceptable learning threshold. We have uncovered some faulty mental models in Scenarios 3 and 8, and they have become quite resistant. These peer leaders are convinced (average confidence score 86%) that they are right, although some of their answers remain incorrect. This may be an example of the Dunning-Kruger effect (Kruger & Dunning, 1999), which is described as a cognitive bias in which people wrongly overestimate their knowledge or ability in a specific area. This inability to accurately estimate their ability is caused by lack of metacognitive ability that would prevent them from accurately assessing their own skills.

One possible explanation for this mental model is that business casual seems like a large incremental formality from college casual. They also misread the situation. As one peer leader said for Scenario 3, “Business attire would be too overdressed for a local restaurant.” Most students mostly likely do not go out to eat with their friends dressed above business casual and most often in college casual. Therefore, the jump to business attire does not fit into their mental model. For some reason, they have not picked up on the importance that situations matter (Sommers, 2011) which indicates their situational knowledge is lacking. For Scenario 8, it seems the mental model is to do what the supervisor says. The corollary is that doing what the supervisor says means that you cannot be wrong. In fact, you can be wrong, if you do not pick the right level of business casual, which is consistent with the advice from CPA executives (Fortune et al., 1995).

## DISCUSSION

Despite conducting a four-year assessment on professional dress, we were unable to reach the acceptable threshold for the two scenarios S3 and S8. Applying the Lewin (1947) change model to this assessment, in all eight scenarios, we attempted to unfreeze, change, and refreeze the mental models related to student’s understanding of situational professional dress. Five of the scenarios were successful early on, while one S1 was successful only on the last attempt.

However, for two scenarios, we don’t think we were successful in unfreezing the existing mental model held by students. Or perhaps, we were successful in unfreezing them, but our teaching interventions were not strong enough to permanently change the students’ mental model. Thus, for the two scenarios, it refroze or remained unchanged. In retrospect, we have come to realize how difficult it can be to break through a mental model adopted by students, and at this point, we haven’t found the right way to correct these incorrect mental models.

Given the amount of energy and time invested in this assessment, it would be natural to be disappointed that we could not completely close the loop for all eight dress scenarios. However, what we experienced is the norm. Research indicates that difficulty in closing the loop in the assessment process is common (Schoepp & Benson, 2016). The fact that this assessment was longitudinal indicates that we demonstrated the spirit of continuous improvement, or the assessment spiral (Wehlburg, 2007) as a way to improve student learning, because we kept going. To continue this spirit, we wanted to make sure that our assessment design was sound. A review of the literature indicates that was the case and that we met appropriate standards and best practices. For example, data collected should be used to guide curriculum improvements (Martell, 2007). This was evident based upon the social media interventions implemented for assessments two and three. We made these pedagogical changes expecting that it would lead to an improvement in learning (Schoepp & Benson, 2016), which did occur at the end of assessment four but not as much as we desired. Our study also contained many of the components recommended to assess soft skills (Beard, Schwieger, & Surendran, 2008), specifically the use of both quantitative and qualitative data during our spring peer leader assessment and analysis. Also, it contained various closing the loop activities (Muuka &

Ezumah, 2013), specifically documenting the process and explaining what has been done and why at each stage of the assessment process. Given this, we assume that we have done everything possible to build a sound assessment.

Given this, the question becomes when you have done everything you can possibly do to no avail, now what? Does the faculty just decide that the students are incompetent and are flies in the ointment? We were unable to find assessment literature that addresses specific steps on what should be done when closing-the-loop activities fail. While we recognize that there are no perfect business schools, our hope is to share our perspectives for others who are in the same situation that we are in. Our biggest takeaway is that when doing learning assurance, you may find that underlying mental models held by students, rather than faulty assessment design or lack of faculty follow through and action, may be the culprit. While the literature indicates reasons or challenges in closing the loop (Harvey & McCrohan, 2017), we have identified three main reasons that are germane to our specific professional dress assessment and why we could not close the loop. These items will be discussed in the next sections.

### Consequences Must Be Experienced Rather Than Simulated

Getting students to understand how the limitations in their deeply held mental models can negatively affect their ability to think and to make decisions is difficult (Wilson, 2014). This brings up the concepts of single loop learning versus double loop learning as posited by Argyris and Schön (1996). In single loop learning, mental models held by people do not change, while in double loop learning, mental models do change as a result of underlying beliefs that do change. It would suggest that for this type of assessment (dress proficiency) that only double loop learning would be appropriate in helping the students to change their mental model.

An example of a double loop learning event that would assist in this context would be failure. As suggested, "we learn best after dramatic errors" ("Double Loop Learning", n.d.). As stated by Gooblar (2018), "Often, I tell my students, the only thing that can change our minds is going through something ourselves and learning the hard way." We posit that students need to have a real-life experience, perhaps even a negative one, to cause deep learning, which can change a mental model. In retrospect, we think that this assessment was not a strong enough intervention to push students to failure in order to have the learning stick. The only way for double loop learning to happen, for these two scenarios, is for the student to experience a real-life failure in a job setting. Mezirow (1991) discusses how it may take a disorienting dilemma in the workforce to occur to cause a shift in mindset for a student to change their mental model concerning the appropriate dress for a scenario. For example, a recent graduate may lose a job opportunity or a promotion, or perhaps be disciplined, due to inappropriate or mismatches in business dress expectations (Hazen & Syrdahl, 2010). This would cause a disorienting dilemma which could lead to a transformative learning experience. While as management educators, we don't want our students to fail, we try our best to prepare them. When applying Kolb's experiential learning theory framework, we contend that we tried to give the students an experiential learning experience in a business class curriculum. Perhaps, this method of experiential learning may not be strong enough for change. Therefore, we should concede that it is possible that we cannot teach some situational knowledge in a controlled environment within the business curriculum. Some things can only be learned through real experience.

### Underlying Complexities of Social Identity as It Relates to Professional Dress

Pratt and Rafaeli (1997) recounted the following in their research with regard to professional dress and social identity:

> *We were invited to conduct this study by a manager who was trying to decide what her employees should wear. Our collection of data was motivated by our interest in organizational dress. Yet what we found ourselves talking about was various facets of identity" (p. 868).*

Surprisingly, as a result of this research, we have experienced something similar to this. In our research, we were trying to figure out ways to teach students how to dress appropriately for specific work situations. As a result of our experience and uncovering these deficient mental models and determining why we could not close the loop for those two categories, we have stumbled upon the possibility that identity issues could be a possible reason.

While a complete and thorough review of the literature on social identity is out of the scope for this paper, we do recognize several things of importance as it relates to professional dress. First, there appears to be tensions or competing factors when it comes to identity. Upon graduation, students are not only transitioning from being a student to an employee, there is an additional tension in the workplace between “fitting in” and “being yourself” which is way more than just a decision about what to wear at work (Cutts, Hooley, & Yates, 2015). As a result of determining boundaries and possible overlaps between personal and professional identity, students or recent graduates might struggle with this process (Scholar, 2013). In this regard, we concede that perhaps we underestimated how complex the concept of teaching professional dress to students in these scenarios may be.

In addition, there was a factor beyond the control of the researchers as they pursued the cycle or assessing learning, creating new interventions, and re-assessing learning.

### Change in Administrative Leadership

The high turnover rate in administrative leadership at colleges typically results in new changes or directions in assessment programs (Banta & Blaich, 2011). At the institution in which this assessment was conducted, several things have happened. First, the long-time dean has retired. Second, the new dean has now crafted a new mission statement that no longer includes professional dress as critical mission criteria. In addition, there has been a shift away from soft skills, and there appears to be a greater emphasis on quality research and basic common body knowledge. Therefore, we won’t be allowed to continue with this assessment.

Therefore, we felt it important to write this manuscript at this time to accomplish several purposes. First, in regard to the increasing importance of accreditation and learning assurance, some schools may feel the pressure to meet or exceed all learning goals established. Plus, there may be fear that the failure to achieve learning objectives or to close the loop will result in punitive measures by accreditation administrators. It is our assertion that some learning objectives may not be achieved, no matter how hard a faculty member tries. Second, what would be important, in light of accreditation, is to provide robust documentation that could suffice as evidence of a school's bona fide attempts to help students achieve learning objectives. We feel that this paper is an example of that effort that other schools who are in similar situations can emulate – and expand on.

## LIMITATIONS

There were several limitations to these studies. First, due to the design of the assessments, we did not collect other variables of interest (i.e. gender, GPA, etc.) from the first-year students. Thus, it is possible that a latent variable could be responsible for the change or lack of change in scores. In addition, we cannot for certain suggest that YouTube was the sole reason for the improvement in the scores between the different assessment studies. A second limitation is the quantitative design used to answer the research questions. Given the exploratory nature of these assessments, a very thorough and detailed quantitative analysis was not needed. While the scores did improve, we cannot determine if the change in scores is significant in terms of a more detailed quantitative analysis. Third, this study does not take into consideration the effects of different learning styles on the student's ability to retain and demonstrate knowledge. While we will go no further with this study, we will continue to examine learning assurance around other topics.

## CONCLUSION

While it is possible to attribute deficiencies in student learning to a lot of factors, consistent deficiencies that continue over time despite intentional improvement efforts could be the result of dysfunctional thinking embedded in mental models being employed by students. In these instances, it is imperative for those conducting assessments to conduct additional analysis and research. This can be done by embedding qualitative questions into assessments. In the context of learning assurance and assessment, continuing through the cycle of assessment, intervention, and re-assessment in these situations will help faculty have a better understanding of how students learn, the knowledge they possess, and ways to correct that knowledge if dysfunctional thinking is apparent. This is extremely important since their performance and behavior on learning assurance assessments is correlated to the achievement of student learning goals which impacts accreditation. This paper makes an impact on learning and learning assurance by showing how by adding intentional interventions and by probing deeply into the thinking of the learner you can increase the impact of learning. By providing full disclosure of this assessment, it is our hope that researchers at other schools will have additional tools and ideas to address and improve student learning at their respective colleges and universities on this important topic for management education.

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