To What Degree Do Selected Instructional Strategies Create Needed Behavioral Changes in Business Professionals?

Laura E. Williamson, MBA, EdD, and Tom Cary, JD

School of Management

Abstract

The leadership literature is clear in its suggestion that learners process information differently. The literature discloses that delivery and design practices for leadership instruction have traditionally been determined by common sense, not cognitive or learning theory. This is largely true because until recently, neither cognitive science nor educational theory have generated sufficient findings to permit extensive application to either consideration (Sweller, 1990).

Based on a study conducted at a global institution of higher learning, headquartered in the western United States, the challenges and strategies of teaching leadership to business professionals were examined. As a result, instructional designers and trainers of leadership must consider their instructional strategies and employ those strategies that reduce or eliminate the need for the learners to use cognitive resources and therefore limit their ability to attend to schema acquisition. Where instruction focuses on behavioral change, as is typically the case with leadership curriculum, creating a takeaway that applies learning theory is perhaps even more critical. It is noted that instead of lecturing to students about the theory of behavioral change in the workplace, materials should be created (specifically, takeaways used immediately on the job) that allow for schema acquisition, thereby increasing self-awareness and therefore creating the needed behavioral change in leaders.

Instructional Strategies Needed for Behavioral Change: A Study

As the traditional delivery of leadership instruction makes way for alternate methods, the question of to what degree selected instructional strategies create the needed behavioral changes in business professionals naturally occurs.

Cognition and Behavioral Change

Richard E. Mayer's cognitive theory of multimedia learning (1996, 1997, 2001) suggests that meaningful learning occurs when the learner engages in three basic kinds of cognitive processes: selecting, organizing, and integrating. *Selecting* involves paying attention to relevant aspects of the presented material (such as steps in a procedure), *organizing* involves constructing a coherent structure (such as a cause-and-effect chain in curriculum design), and *integrating* involves building connections with existing knowledge (such as relating course content to concrete experiences).

Mayer's basic hypothesis is that learners seek to make sense of the material presented by building coherent mental representations. He bases this hypothesis on the human information processing system, which he describes in his theory as diagrammed in Figure 1.
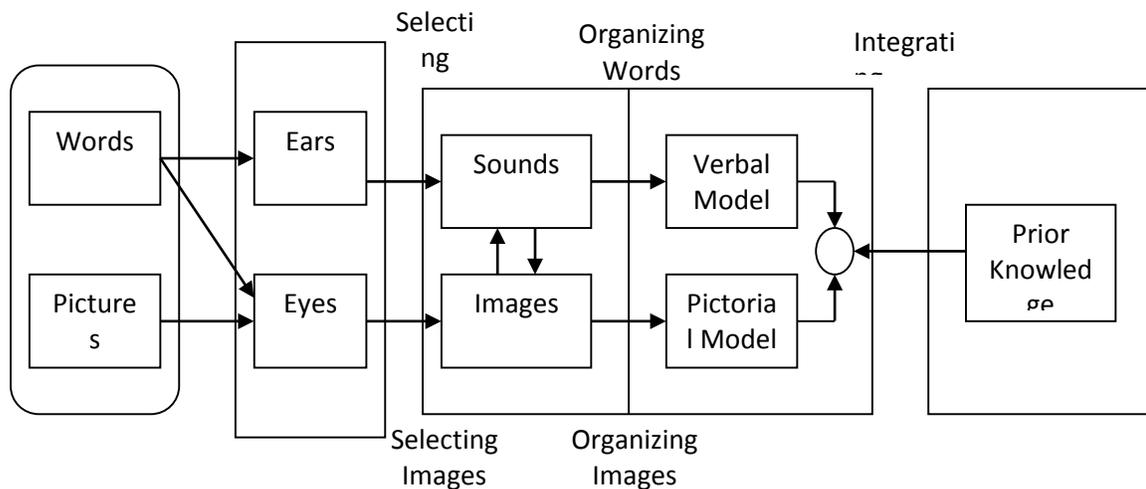

Figure 1. Cognitive Theory of Multimedia Learning

Mayer (2001) states that humans process information in what he terms the presentation modes view of multimedia learning. The presentation modes view proposes that learners are able to use various cognitive coding systems to represent knowledge, such as verbal and pictorial knowledge representations. This theory is consistent with Paivio's dual-coding theory (Paivio, 1986, 1991; Clark & Paivio, 1991; Sadoski & Paivio, 2001; Mayer & Sims, 1994), which assumes that individuals have separate processing channels for verbal and pictorial knowledge.

Schema Acquisition and Leadership

According to Anderson (1973), a schema (singular) represents generic knowledge. A general category (schema) will include slots for all the components, or features, included in it. Schemata (plural) are embedded one within another at different levels of abstraction. Relationships among them are conceived to be like webs (rather than hierarchical); thus, each one is interconnected with many others.

A question is how to support the learner to attend to schema acquisition. Cognitive load theory has some suggestions (Sweller & Chandler, 1994; Sweller & Chandler, 1991). The theory notes that schema acquisition is the building block of skilled leadership performance and may be summarized as follows: (a) Schema acquisition requires attention directed to problem states and their associated moves; other cognitive activities must remain limited and peripheral so as not to impose a heavy cognitive load that interferes with learning. (b) Encouraging or requiring learners to engage in means-ends search or to integrate multiple sources of information misdirects attention and imposes a heavy cognitive load. (c) Because integrating multiple sources of information misdirects attention and imposes a heavy cognitive load, schema acquisition cannot commence until disparate sources of information have been mentally integrated. (d) Material with reduced or unitary sources of information will reduce or eliminate the need for learners to use cognitive resources to restructure material into a form suitable for schema acquisition. (e) Learning is enhanced when learners are allowed to attend to

schema acquisition rather than to information reformulation, which is the case with leadership performance.

Beyond schema acquisition, Sweller and Chandler (1994) reveal two important points to deconstruct with respect to the instructional strategy of *integrating*: the material and the method of delivery. To illustrate their point about the material, the authors provide an example.

> A student learning elementary algebra must learn how to multiply out the denominator of one side of an equation in order to isolate a single pronumeral in the numerator on that side. The student needs to learn what to do when faced with an equation such as $a/b = c$, solve for a. To learn this process, the student must learn that, when multiplying by b, the numerator on the left-hand side is multiplied by b, giving ab; the two bs on the left-hand side cancel out, leaving a isolated; because the left-hand side has been multiplied by b, the right-hand side must also be multiplied by b; multiplying the right-hand side by b gives cb in the numerator on the right-hand side; the denominator remains unchanged at 1, which is not shown in the equation; the net consequence is $a = cb$, which meets the goal of isolating the numerator on the left-hand side of the equation. (p. 189)

Each step in the algebra equation must be learned in conjunction with the others, because in isolation, they do not make mathematical sense. To know how to multiply out a denominator, the learner must understand how to perform the other operations. The authors call this feature of the material *high element interactivity*. The suggestion is that the interaction between each step is essential to understanding the equation. Material with high element interactivity requires a higher resource or "load" of cognition. Sweller and Chandler note that "complexes of elements that are irreducibly

large because they consist of many connecting elements may tax our limited processing capacity and so impose a heavy cognitive load" (p. 189).

The implementation of specific instructional strategies designed to engage the learner in three basic kinds of cognitive processes: selecting, organizing, and integrating and to attend to schema acquisition can positively affect learning. Additionally, there are differing conclusions in the literature regarding the best application of these strategies for the purposes of instruction. Where instruction focuses on behavioral change, as can be the case with leadership instruction, applying these theories is perhaps even more critical.

The Takeaway: Meeting Skills Checklist and Questionnaire

This study examined the degree to which selected instructional strategies can create the needed behavioral changes in business professionals to move organizations forward.

The instructional strategy examined in this study was the "takeaway"—creating a student experience outside of class that will lead to behavioral changes. The takeaway involved giving students an exercise to apply at their workplace that requires a reflection of the effectiveness of the exercise. The takeaway is designed, according to Clark (2001), to allow for schema acquisition (mental representation) as the building block of skilled performance. Further, Mayer (2001) suggests that attention must be focused on the content of learning and that materials need to be developed and presented in a way that integrate the necessary learning, allowing for schema acquisition, which is especially the case with leadership.

Specifically, the takeaway was designed to increase schema acquisition, thereby opening an individual to self-awareness and subsequent behavioral change. A premise was that behavior will not change unless the awareness of the need for change is present. A simple example is a coworker who is too loud. The coworker can be well aware of the benefits of workplaces without loud employees, without having any idea that this issue may apply to him/her. An exercise that brings self-awareness of the volume of the coworker (for example, having the employee record noise in the

workplace), and then having them reflect on the experience, might lead to the self-awareness that he/she is too loud. An instructor can also guide the student to specific realizations if the instructor perceives areas of needed change. Of course, changing the volume of one's voice is easier to do than the subtler behaviors that can improve motivation at a workplace and increase an individual's leadership ability.

It is also important to look at the measurement of the effectiveness of takeaways. The variety of strengths and weaknesses of each student mandates that takeaways are more or less effective for each individual. Some people need a lot of work; some are well on their way to being effective leaders in the workplace. After the students practice the takeaway in their workplace for a week, they are asked to evaluate the effectiveness of the takeaway, both in the workplace and for themselves. It is this self-reflection part of the takeaway exercise that is designed to cause the increase in self-awareness that will lead to positive behavioral change.

The study looked at a number of different takeaways used in the leadership training course. The goal was to pick out one that was narrow, specific, and measurable. Ideally, it would be in an area that is most in need of improvement. The specific takeaway chosen was one designed to improve meeting behavior. This takeaway was chosen because every day, 83 million people attend 11.5 million meetings (Smart, 2010). Many of these meetings suffer from a variety of behaviors that make the meetings unproductive. According to Bradford D. Smart (2010), the following are the most common unproductive behaviors:

- 83 percent—Drifting off the subject
- 77 percent—Poor preparation
- 74 percent—Questionable effectiveness
- 68 percent—Lack of listening
- 62 percent—Verbosity of participants
- 60 percent—Length

- 51 percent—Lack of participation

Three standing university committees were selected, and each member was given a specific takeaway. For this study, it was a Meeting Skills Checklist that, according to Scholtes (2003), outlined five specific behaviors that can improve meetings (see Exhibit 1).

Each member was given a series of questions to reflect on in a Participant Meeting Questionnaire prior to receiving the Meeting Skills Checklist. They were asked to reflect on the strengths and weaknesses of the last meeting they attended (see Exhibit 2).

After filling out the Participant Meeting Questionnaire, each member was asked to review the Meeting Skills Checklist, and self-evaluate how much they modeled the five guidelines for effective meeting participation. The member was asked to submit both instruments anonymously.

The chairs of each committee were also asked to use a similar questionnaire and checklist to reflect on the most recent meeting they had led, answering the same questions, but about the committee members, not themselves (see Exhibits 3 and 4).

A baseline of responses from members of the committees and from the chair of each committee about the behavior of the members of the committees and the productivity of the meeting itself was established.

The final step was the Post-Meeting Questionnaire to evaluate the meetings and meeting behavior after the takeaway was reviewed. Both the members (see Exhibit 5) and the chairs (see Exhibit 6) were asked to evaluate the meeting they attended after the takeaway to see what effect, if any, occurred in the individual behavior or in the meeting productivity itself.

Productive and Unproductive Behaviors

The results of the study are detailed below. There was valuable feedback from the participants on the positive and negative meeting behaviors prior to the takeaway review. The observations about the negative outweighed the positive, and were more

specific, covering more issues. Participant feedback from the pre-meeting questionnaire is detailed in the sections below.

Responses to: *Please list 2-4 productive meeting behaviors you observed. Please do not give specific names.*

- Chair started and ended meeting on time.
- Chair sent out notes for review in advance of meeting and set expectations.
- Chair kept meeting focused on purpose.
- Participation by all was encouraged.
- Well facilitated, kept things moving, and ended on time. Reviewed tasks as related to charge to maintain focus.
- On time.
- Open discussion.
- Task-oriented.
- Some kudos are shared with faculty.
- I have learned new information that I didn't know from this meeting.
- Started on time.
- Time for Q & A.
- Had guest speaker who educated the team about another area of the university.
- Followed the agenda.
- Everyone gets a chance to talk and be heard.

Responses to: *Please list 2-4 unproductive meeting behaviors you observed. Please do not give specific names.*

- One member had minimal participation.
- Occasionally going off topic, but generally this is roped in pretty quickly.
- There are some negative comments and/or snark from some committee members, but it is not endorsed by the committee at large.
- A few members rarely participate, which denies the group their perspectives.

- Stay focused on agenda items.

- Do not encourage off-task conversations, as it wastes time.

- Schedule one time-efficient meeting per month.

- This meeting could be meaningful and informative.

- Did not end on time.

- People talking with one another while the main speaker was presenting.

- Discuss issues/technologies that we know we don't want but feel we have to give everything its proper amount of time.

- Let people talk too much.

- Talk topics to death.

- Let people talk off topic.

- Chair or members many times push her/his own agenda or desires.

- Many times you feel the decisions are already made but going through the motions.

- Hour and a half is too long. Attention span dwindles.

- Agenda items are not always pertinent to all members or members don't have the knowledge to make judgments.

- Should bring in folks who have the knowledge or who it affects.

The chairs of the meetings also noted a number of positive actions along with some significant concerns with general meeting protocols and member behavior. Those concerns are detailed in the sections below.

Responses to: *Please list 2-4 productive meeting behaviors you observed*

- Agenda was posted.

- Personal greetings to all before start.

- Several attendees asked probing questions.

- Redirecting "bird walks" back to the agenda.

- Asking questions to seek understanding.

- Seeking agreements on work.

- Committee members asked questions about the information that was shared to gain clarification.
- Committee members contributed concerns they had about specific projects to ensure their feedback is considered and included in the final solution.
- Committee members contributed ideas and shared in the work necessary to develop a student communication on the coming e-mail migration.

Responses to: *Please list 2-4 unproductive meeting behaviors you observed*.

- Many phone attendees did not give indicators that they were listening or attending to the topic.

- Leader did not specifically ask individual phone attendees for input.

- Some attendees did not have Collaborate running, so couldn't see PowerPoint or other docs.

- Side conversations.

- Multitasking not related to meeting (electronic).

- Committee member ranted about lack of coordination for content management across the university without providing any recommendation on how the committee could contribute to a positive solution.

- Committee member admitted to full knowledge of the content management issue, to attempting to recommend a solution in their first one to two years on the job, then giving up any further attempts despite understanding the negative impact on CityU.

- Committee members sometimes uncertain as to how to proceed with improvements to student-facing systems that are managed outside their departments.

Conclusion

The literature is clear in its suggestion that learners process information differently. As a result, instructional designers and trainers of leadership must reconsider their instructional strategies and employ those strategies that reduce or eliminate the need for learners to use cognitive resources and therefore limit their ability to attend to schema acquisition. Where instruction focuses on behavioral change, as is typically the case with leadership curriculum, creating a takeaway that applies learning theory is perhaps even more critical.

The issue of the power of suggestion was also revealed in the study. The meeting chairs perceived meetings improved, even though the participants did not. This might be a useful direction for further research in leadership instruction.

Exhibit 1

Meeting Skills Checklist

Takeaway Study

Instructions: Think about your last meeting and reflect upon your meeting behavior. Fill out the **Meeting Skills Checklist**, noting *Never, Occasionally*, or *Often* where appropriate.

Behavior	Never	Occasion ally	Often
1. I suggest new ideas, activities, problems, or courses of action.			
2. I initiate attempts to redefine goals, problems, or outcomes when things become hazy or confusing.			
3. I ask others for information and/or opinions.			
4. I relate my comments to previous contributions.			
5. I ask speakers to explain the reasoning that led them to particular conclusions.			

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Exhibit 2

Participant Meeting Questionnaire

Committee Name: _____

Date: _____

Participants: Thank you for your willingness to participate in this improvement effort. We are looking at ways to improve meeting effectiveness, and the chair was kind enough to let us try it out on this committee. Please review the questions below and respond accordingly. Drop your questionnaire and checklist by **March 4**. Thank you.

All responses will be confidential and any identifying characteristics will be removed.

1. Consider your last meeting in February.

- Please list 2–4 productive meeting behaviors you observed. Please do not give specific names.
- Please list 2–4 unproductive meeting behaviors you observed. Please do not give specific names.

2. Now, review the attached Meeting Skills Checklist.

3. Think about your last meeting and reflect upon your meeting behavior. Fill out the Meeting Skills Checklist, noting *Never, Occasionally*, or *Often* where appropriate.

4. Submit the Checklist and Questionnaire.

5. There will be another brief activity after the March meeting.

Exhibit 3

Meeting Skills Checklist—Chairperson

Meeting Study.

Instructions: Think about your last meeting and reflect on the meeting. Fill out the Meeting Skills Checklist, noting *Never, Occasionally*, or *Often* where appropriate.

Behavior	Never	Occasionally	Often
1. Participants suggested new ideas, activities, problems, or courses of action.			
2. Participants initiated attempts to redefine goals, problems, or outcomes when things become hazy or confusing.			
3. Participants asked others for information and/or opinions.			
4. Participants related their comments to previous contributions.			
5. Participants asked others to explain the reasoning that led them to particular conclusions.			

Exhibit 4

Chairperson Questionnaire

Committee Name: _____

Date: _____

Chairperson: Thank you for your willingness to participate in this improvement effort. We are looking at ways to improve meeting effectiveness. Please review the questions below and respond accordingly. Submit your answers by **March 4.** Thank you.

  All responses will be confidential and any identifying characteristics will be removed.

1. Consider your last meeting.

- Please list 2–4 productive meeting behaviors you observed.
- Please list 2–4 unproductive meeting behaviors you observed.

2. Now, review the Meeting Skills Checklist—Chairperson.

3. Think about your last meeting and reflect upon the meeting behavior. Fill out the Meeting Skills Checklist, noting *Never, Occasionally*, or *Often* where appropriate.

Exhibit 5

Post-Meeting Questionnaire

Committee Name: _____

Date: _____

Participants: Thank you for your willingness to continue participating in this improvement effort. Please review the questions below and respond accordingly. Drop this questionnaire by **March 15**. Thank you.

All responses will be confidential and any identifying characteristics will be removed. After your most meeting, please reflect on the following questions:

On a scale of 1–4, did your behavior in the meeting change having reviewed the Meeting Skills Checklist? (please circle the number that best reflects your view)

1	2	3	4
My behavior did not change at all.	I noticed a slight change in my behavior.	I adopted some of the behaviors listed in the checklist.	I adopted most or all the behaviors listed in the checklist.

    a. If your behavior changed, how did it change?

    b. On a scale of 1–4, did the meeting as a whole seem to be more productive?

1	2	3	4
The meeting did not change at all.	I noticed a slight change the productivity of the meeting.	The meeting was noticeably more productive.	Most productive meeting ever.

c. If you noticed any changes, please describe below:

Exhibit 6

Post-Meeting Questionnaire—Chairs

Committee Name: _____

Chair: _____

Participants: Thank you for your willingness to continue participating in this improvement effort. Please review the questions below and respond accordingly. Drop this questionnaire by **March 15**. Thank you.

　　All responses will be confidential and any identifying characteristics will be removed.

After your most recent meeting, please reflect on the following question:

     d. On a scale of 1–4, did the meeting as a whole seem to be more productive?

1	2	3	4
The meeting did not change at all.	I noticed a slight change the productivity of the meeting.	The meeting was noticeably more productive.	Most productive meeting ever.

     e. If you noticed any changes, please describe below:

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