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Facilitating Executive Learning: Development and Application of a Conceptual Model

Anthony J. Mento and Raymond M. Jones

Abstract

We developed our required ten-week Executive MBA Leading Organizational Change course to specifically maximize meaningful learning according to the stipulations of Ausubel's (1968) cognitive assimilation theory. The centerpiece of our work is the implementation of an eight-step explicit conceptually transparent learning model whose components are internally consistent and require the assimilation of new concepts and propositions into existing conceptual frameworks held by the learner. Concept maps (Novak, 1998), which are presented, help explicate our model, and generalizations to other learning milieus are addressed. While we address specific strengths and weaknesses with our approach, we conclude that we have met Ausubel's three conditions for meaningful learning.

Introduction

Many of us, as we teach and work with executives in our courses over time, would like to vary the process and delivery style in our learning materials to make our presentations more valuable to our students. Continuous

improvement undoubtedly affects the content and essence of the materials that we choose to deliver, but the delivery style in conjunction with course management activity and processes can be equally important. We have developed an explicit learning model based on Ausubel's (1968) assimilation theory, which under girds the way in which our 'Leading Change' Executive M.B.A. course is presented and delivered to students.

We began with the inquiry, "why do people have so much difficulty in organizing, using, and creating knowledge?" Based on a careful analysis of the work of Novak (1998) in concept mapping and Ausubel's (1963, 1968) assimilation theory, we agree with Novak's (1998) contention that the learner must choose to learn meaningfully but that the teacher can do much to encourage and facilitate meaningful learning.

Assimilation theory is an educational and psychological theory developed by Ausubel (1963; 1968) that explains how meaningful learning occurs. Learning theories based upon positivism assume that knowledge exists external to the student and that learning is the discovery of that knowledge (Fraser, 1993). Assimilation learning, a constructivist theory of learning, asserts that knowledge is constructed when the individual learns meaningfully by integrating new information into her existing conceptual framework (Fraser, 1993). "Making meaning is central to what learning is all about," according to Mezirow (1991, p. 12). The fundamental idea in Ausubel's cognitive psychology is that learning

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takes place by the assimilation of new concepts and propositions into the existing concept propositional frameworks held by the learner. There is a very important distinction between rote learning and meaningful learning. Three conditions must exist for meaningful learning:

1. The material to be learned must be conceptually clear and presented with language and examples relative to the learner's prior knowledge. Mind Maps (Mento, Martinelli, & Jones, 1999; Mento, Jones, & Martinelli, 1998) and concept maps (Novak, 1995) can be helpful in meeting this condition. Both of these mapping techniques help by identifying large general concepts prior to instruction in more specific concepts and by assisting in the sequencing of progressively more explicit learning tasks that can be anchored in developing conceptual frameworks.
2. The learner must possess relevant prior knowledge.
3. The learner must choose to learn meaningfully. The teacher has only indirect impact on our students' choice to learn by incorporating new meanings into their prior knowledge as opposed to the rote learning of concept definitions or computational procedures. According to Novak (1995) the control over this choice is primarily found in the evaluation strategies utilized. For example, the worst form of objective tests require verbatim recall of statements as opposed to meaningful learning, which involves a process in which new knowledge is assimilated into existing frameworks, thus hindering the recall of specific, verbatim definitions or descriptions. This type of problem was recognized years ago by Hoffman (1962).

The crux of our model is a learning cycle model that continually reinforces the importance of reflection and mind mapping in applying and making the material useful to our students.

The Model

The course that we applied our model to was "Leading Organizational Change," a required Executive MBA class that was offered near the end of the 18-month program. Our application to one course of meaningful learning is depicted in a concept map in Appendix 1. A concept map of our explicit learning model is found in Appendix 2.

These concept maps were created using *Inspiration*® software. Concept mapping is a learning strategy that was developed first as a research tool to represent a learner's prior, relevant knowledge, and later as a tool to enhance meaningful learning (Heinze-Fry & Novak, 1990). Maps consist of "concepts" and "linking words." Concepts are defined as "perceived regularities or relationships within a group of objects or events and are designated by some sign or symbol" (Novak & Gowin, 1984). Concepts are generally isolated by rectangles and connected by lines. Lines are labeled with "linking words" which describe how the connected concepts are related to each other. Linking words tend to be the most important and beneficial part of concept maps in that they reveal how and what the mapper feels about concepts (Ditson, Kessler, Anderson-Inman & Mafit, 1998). Two connected concepts constitute a "propositional linkage," or a statement about how some piece of the world looks or works. Concepts are arranged hierarchically; i. e., the most general concept is found at the top, and lower concepts are less inclusive than higher ones. All of the main and subordinate concepts are enclosed in rectangles (or other graphic elements), while examples (not-enclosed) are used to illustrate concepts. "Cross links" are propositional linkages that connect different segments of the concept hierarchy. They may indicate a synthesis of related concepts or a new interpretation of old ideas, and they require some degree of creative thinking (Heinze-Fry & Novak, 1990). More detailed descriptions of mapping

are found in Novak & Gowin (1984). Another is in Appendix 1, our concept map of meaningful learning applied to our course. “Meaningful Learning” is the most general concept and is arrayed at the top of the map. We see that meaningful learning is achieved by specific activities that require the assimilation of new knowledge. “Is achieved by” and “requires assimilation of” are linking words, and “meaningful learning is captured in new knowledge” is an example of a propositional linkage. The two categories of personal experience “at work” and “in life” are examples used to illustrate the concept of “personal experience” and are thus not enclosed in rectangles.

Our model consists of an eight- step cycle that begins with the independent work of students doing the assigned readings and case preparation. We ask students to carefully think about each reading while asking themselves the following questions: What is the essence or key to the article? What questions does it raise?

These ruminations are captured in a Quote and Ask (Q & A) paper, in which a favorite quote or idea from each article is recorded along with a question each student would like to pose to the author of the article. Students are also encouraged to record any commentary associated with the Q & A. A different student for each class session is assigned to *Mind Map* (Margulies, 1991) one of the readings and briefly presents the Mind Map in class. We next add an instructor-led introduction or mini-lecture to the topic and/or a pertinent video. Then we try to use the concepts, models, frameworks and ideas that we have read about and prepared in a case that will be led by the instructor or facilitated by an assigned student team. This is followed by a discussion, summary and closure. Finally, students are required to reflect on the whole process and keep a record of lessons learned.

Again the learning cycle is:

1. Read
2. Reflect
3. Develop Q & A
4. Mind Map presented in class as a quick review
5. In class mini-lecture and/or video
6. Related case facilitation
7. Summary, closure, and key takeaways
8. Reflection with lessons learned

Since steps 1, 2, and 5 are intimately familiar with the reader, the paper will address the remaining 5 steps of our eight -step learning model.

The Purpose of the Quote and Ask (Q & A): Step 3

For each case in the course, two or three readings are assigned. One case is assigned for each class. Students are asked to jot down their favorite thought or idea from each reading, and then to develop one question they would like to pose to the author of the article. The asked question does not necessarily have to be related to their chosen quote. We observed that the process of choosing a quote and developing a question triggers further reflection that we asked students to capture in the form of a commentary. The purpose of the Q & A exercise is to get students thoroughly familiar with each article, and then to internalize it and make connections with their previously stored concepts. Cumulative Q & A's were turned in for grades two or three times a semester. Research suggesting that the Q & A exercise plays a significant role in facilitating class discussion will be addressed later in this paper. A model student-produced Q & A paper with commentary was distributed to each student

in class on the first day and is included as Appendix 3.

Mind Maps as a Quick Review: Step 4

Mind Mapping is a powerful thinking technique developed by Tony Buzan (1989). It is a way of capturing ideas with words and icons horizontally on a sheet of paper, with associated branches emanating from a main idea. Mind Mapping is a powerful technique for enhancing creativity, note taking, studying, and for giving presentations (Wycoff, 1991). It is extensively taught and used at IBM, EDS, Dupont, Boeing, Hewlett-Packard, GM and other major multinational companies.

Appendix 4 shows the course overview captured in a Mind Map. Each main branch refers to a major module in the course (Challenge of Change, Developing a Vision, Leadership for Change, Recipients of Change, and Career Management). Note the use of carefully selected icons designed to induce mental pictures of key concepts found in the readings and cases. This Mind Map was created with MindManager® software.

Students are formally introduced to Mind Mapping in three ways. First a handout is sent to students prior to class with information on Mind Mapping gathered from the Internet, along with selected examples from Margulies (1991). Second the book, "Using Both Sides of your Brain" (Buzan, 1989) is required reading prior to class with special emphasis on chapters 6 – 10 dealing with Mind Mapping. Third a model student-developed handout of a two-stage mind map is distributed on the first day of class.

Whenever possible, each student is required to prepare a two-stage Mind Map for class presentation. Stage one is a Mind Map of the key issues and associated ideas emerging directly from the article from the student's perspective. Stage two of the Mind Map requires

students to be especially thoughtful and integrative with the material. For this stage, the center box (or main idea) contains the words "Integrated Mind Map." There are five branches emanating from the center box, whose key ideas on each branch are specified by the instructor. They are: (1) three most important key takeaways, (2) relationship to other articles, (3) relationship to the case, (4) relationship to work and/or life, and (5) relationship to other courses in the program. The purpose of this Mind Map assignment is threefold: first to give each student practice in preparing Mind Maps; second, stage two requires students to own the concepts and ideas in the reading by making connections, applications, and integrating concepts with their own work and life; and third to give students experience in making presentations. Some of the many benefits of Mind Mapping in an educational setting have been previously documented (Mento et al, 1998; Mento et al, 1999). If there are more students in class than are available articles for presentation, all students not specifically assigned a Mind Map presentation may choose to turn in for credit to the instructor a two-stage Mind Map of any article in the syllabus that has not already been presented in class. Since all Mind Maps are unique to the person creating them, we look for evidence of thoughtful application and integration.

Other research (Mento, 1999) has shown that for maximum benefits to occur from the in-class Mind Map presentation, it is optimal for all students to have completed their own Mind Maps of the pertinent articles prior to class. Novak (1995) has observed this same phenomenon with respect to concept maps and prior individual student preparation before discussion. High quality software is available for creating Mind Maps from www.inspiration.com and www.Mindmanager.com. Research data involving the combination of using Q&A's with Mind Map presentations is to be found in Mento, 1999. Two MBA classes were offered the

opportunity of making Mind Map presentations without the requirement of doing Q & A's on the readings versus two MBA classes who were required to do Q & A's in combination with the presented article Mind Maps (the latter being part of our eight- step learning cycle). For the classes not required to do Q & A's, there was literally no discussion initiated by the class during and after the student Mind Map presentation (other than instructor initiated). Data from the two classes who had prepared Q & A's prior to the article Mind Map in class presentation presented a significant contrast. These classes proactively initiated high quality discussion during and after the Mind Map presentation, with no cues or prompting from the instructor. In fact for those classes that had prepared Q & A's, a major challenge for the instructor was to limit and focus the totally student- initiated discussion with the Mind Map presenter. Empirical evidence clearly suggests that requiring students to do Q&A's serves as an effective enabler for triggering class engagement in active learning.

Ongoing process feedback collected from students suggested that the format for individual Mind Map presentations might be effectively modified in the following ways. Focus the student presentations on the second stage of the Mind Map – the integrative application oriented component – while minimizing emphasis on the first-stage descriptive component. A very effective approach arrived at by student feedback and concentrated thinking was for the instructor to pose a few broad questions to the student presenting the article (what are the three most important things to you in the article and why are they important) and then opening up the discussion to the class, while the student's second stage Mind Map is projected but not discussed. Each person who is assigned a two-stage Mind Map is requested to make enough copies for everyone in class so that each person in class has a complete set of two stage Mind Maps for each article assigned in the course, which offers everyone in the class further

opportunity for integration and consolidation of concepts prior to the integrative Themes, Applications, and Implications assignment. Based on class feedback, this approach works extremely well.

Team Case Facilitation: Step 6

Students are required to form four- or five-person teams for purposes of case facilitation and written team analysis. Process goals are for students to learn and practice team development and group process skills. One class meeting per semester is devoted to exploring and experiencing team conflict issues using exercises developed by Lerner (1994). Once student teams are formed and cases are assigned, the instructor works closely with each team as an internal consultant to ensure that the team facilitation activity is a learning experience for the team and the class.

Teams are not allowed to simply present an oral version of their written analysis because this approach is typically inhibiting to learning. Each team is carefully coached on how to effectively orchestrate the case facilitation. For example, each team is told the following:

Leading a case discussion is a facilitation activity, not just presenting a complete analysis of the case. This requires the team to stimulate interest and draw out ideas and insights from the class, thus creating active participants. Class members then are more likely to have read the case and thought about the assigned case questions. Often the case discussion begins with a brief overview of the firm. Discussion of the assigned case questions are facilitated by using overheads in outline or bullet format, or Mind Maps, with inputs provided by the class. As a group we will try to build a complete analysis of the situation and address problems in the

case by applying relevant frameworks or specific concepts and models presented in the readings. At the end of the case discussion, the instructor will summarize the takeaways for the session.

Criteria for assessing the effectiveness of leading a case discussion include:

- a. Ability to stimulate interest among classmates.
- b. Ability to relate concepts, models, and frameworks to case issues.
- c. Ability to use the discussion to draw out insights and ideas from the participants.
- d. Effectiveness of the team-led discussion.
- e. Completeness of the analysis.

Teams preparing to lead a case discussion should meet with the instructor the week before to discuss the approach and focus to take. The facilitation team should:

1. Provide the instructor with an agenda and a set of all overheads the team plans to use.
2. Be sure to develop an integrative Mind Map of the case to be presented in order to show conceptual linkages and relationships of readings to case questions. A team-developed set of lessons learned is also required.
3. Actively listen to the class and ask lots of questions.
4. Avoid lecturing, thus enhancing active learning.
5. Spend five minutes maximum on case overview.

6. Reach some sense of closure at the end of your facilitation.

After their facilitation, each facilitating team is presented with one page of specific feedback information regarding team leadership of the case facilitation. Each class member also provides feedback to the team with respect to strengths and opportunities for improvement.

The case facilitation concludes with a team-developed integrative Mind Map and lessons learned. The instructor then provides the class with a set of key learning points in either Mind Map or bullet outline format (**Step 7**).

Lessons Learned and the Reflection Process: Step 8.

This component is the last step in the cycle of the explicit learning model. Student learning that occurs while preparing for class, during class, and after class can be improved if individuals are guided to engage in reflection.

Reflection is an untapped tool that students can use to make sense of their academic experience by grounding it within a context of important work and/or life issues. It is a personal cognitive activity that requires stepping back from an experience to carefully and persistently think about its meaning through the creation of inferences (Daudelin, 1996). Other significant work dealing with the importance of managerial reflection and learning from experience can be found in Baird (1997), Garvin (1996; 2000), Kleiner and Roth (1997), Roth and Kleiner (1998), Seibert (1999), Seibert and Daudelin (1999), and Sullivan and Harper (1996).

By directing and guiding students to actively think about the learning that is going on, reflection uncovers insights and learning themes (concepts), connects learning to job performance and/or life experiences, and yields more relevant

personal learning. Reflection is an extremely powerful way to learn from experience. It is a major component of individual learning, and individual learning is the building block for organizational learning.

In this assignment students have the opportunity to be insightful and reflective about what they have learned in class for the day. These are at their simplest significant learning insights that they have arrived at from reading the material, doing their Q & A's, thoughtfully contributing to the two-stage Mind Map presentation, preparing the case, actively participating in the class discussion and finally reflecting over the day's events.

The purpose is to allow for each class an integration of the learning that occurs prior to class through preparation, in class through discussion, and after class through reflection. The final integrated set of lessons learned allows for a similar integration of the course as a whole.

We caution students that we do not want class notes: (i.e., those that merely reflect our analysis or discussion or are a rehash of the case analysis). We don't want students to be stenographers, but rather integrators and synthesizers, key characteristics of learned persons and successful and effective managers (Daudelin, 1996; Daudelin & Hall, 1997). We are clearly seeking important student learning outcomes that they have reformulated, internalized, and recast (assimilated) within their own frame of reference.

Lessons learned are not due every week, but rather as cumulative sets due throughout the semester. The goal here is for students to be able to produce not just a string of unconnected weekly lessons learned, but rather an integrated set. The following are guidelines for developing a set of lessons learned.

1. After you have developed your weekly set of lessons learned, try to reduce the set to three or four of the most important themes or concepts that cut across all of your individual lessons learned, then ask yourself the following questions:
 - a. What did you learn that was new to you or helped you to see something in a different way?
 - b. How can you apply what you learned to make you and/or your organization more effective?
 - c. What are the implications to you and/or your organization as a result of this new learning and its potential application?

The answer to the questions (the integrative part) should be in the form of a narrative, bullet outline, or a story. Students are requested to turn in the integrative part along with their weekly lessons learned as part of the set. They are further told that we view their weekly lessons learned as a catalyst that enables them to develop their integration of weekly lessons learned. As such, the integration is the part we will focus most of our attention on in grading their lessons learned set. Deliverables for this assignment include the clear identification of each theme and the responses to the three questions in the form of a narrative, bullet outline, or story. The integration is the essence of their lessons learned set.

Assessing the Effectiveness of the Conceptually Explicit Learning Model

Assessment data were available comparing student performance in the ten-week Leading Organizational Change Class Executive MBA class (using the explicit conceptual learning model: the experimental group) versus students in a previous year's offering of the Leading Organizational Change Course (the baseline

group). The latter course was taught in a more traditional fashion without using all of the components of the model. All the reading materials, cases, and videos were identical in both classes. Students were comparable with respect to years of experience, GMAT scores, GPAs and annual income.

Contribution to class discussion was qualitatively assessed according to the following criteria:

- Demonstration of good active listening skills;
- Were the comments made relevant to the discussion and linked to comments of others?
- Do comments demonstrate evidence of incorporating the concepts from the readings to the case analysis?
- Is there a willingness to test new ideas, or all comments safe?
- Do comments clearly build upon the important aspects of earlier comments and lead to a clearer statement of the concepts being covered and the issues being addressed?

Team case facilitation was assessed by evaluating the complexity and completeness of the analysis, the quality of the questions asked, and the thoroughness of the team-developed lessons learned.

The daily and integrated lessons learned were assessed for richness of detail, depth of understanding, systemic thinking, creative thinking, and significance of applications and implications.

Across the board on all performance dimensions students' performance in the experimental group indicated a higher degree of competence, critical thinking, systemic thinking, creative thinking, and content mastery than students in the baseline group. In addition, a

variety of classroom assessment techniques (Angelo and Cross, 1993) and unscored written exercises were used to evaluate student learning and insights. In general, students in the experimental group learned a great deal and put considerable effort into thinking about the issues raised by the readings and the cases.

Value to the program

Collecting data pertaining to best teaching practices began in May 1999 and continued through 2001. The purpose was to use the data for the continuous improvement of our Executive MBA programs.

Graduating students were asked to identify the best successfully demonstrated teaching practices or methodologies that they had been exposed to during their time in the program. They were explicitly asked not to evaluate anyone's teaching with this particular data collection instrument. Rather, students were asked to think about all of the different courses and professors that they had experienced in the program.

Each student was provided with a list of all their courses as well as the professor who instructed them during the program. Students were requested to list the best practice, to explain why it was a best practice and to identify the deliverer of the best practice. Each student was requested to identify up to three or four best practices, one best practice associated with one professor.

A best practice might involve how the course content and materials were delivered as well as encompassing the nature of assignments and feedback received from professors. Citing the components of the eight-step learning model, the first author was rated the number one faculty member with respect to best teaching practices for three consecutive years during exit surveys of graduating Executive MBA students.

Summary and Conclusions

Although this learning model was developed for an MBA executive course, the logic and methodologies could be applied equally well to any particular context. For example Q & A's and commentary might be assigned in almost any class or training program where reading is required. Students might be assigned individual and team presentations in any important subject area, where the emphasis is on application of conceptual models and frameworks.

Mind Mapping has broad applications in all areas of thinking, including creativity, writing, note taking, making presentations, etc. Reflection is an important skill that is extremely relevant in all different content areas, and might be especially valuable to document major personal learning after experiencing major organizational events like promotion, downsizing, and reengineering. The eight-step model designed to facilitate meaningful learning is depicted visually in Appendix 5.

Pluses, Minuses, and Interesting Points (PMI) of Using an Explicit Learning Model

We used a creative thinking approach developed by De Bono (1989) in writing this section of the paper. The PMI technique involves scanning a particular statement or idea and methodically sorting through the pluses, minuses, and interesting points associated with the idea. We started with this statement, "The explicit learning model is an effective way for students to learn meaningfully and think conceptually."

The pluses are:

- Students can see why we are doing what we are doing.
- Different parts are related to each other and reinforce each other.
- Different components logically lead to Mind Mapping, reflection and lessons learned.

- Parts are distinctly different and require different skill sets.
- Skills involve an interaction of individual, group, instructor and class learning.
- The approach moves away from rote learning.
- Students are required to assimilate new conceptual learning into their own context.
- New skills are involved including Mind Mapping, reflection, and lessons learned.
- Some of the skills we are trying to teach are related to those intrinsic to emotional intelligence (Goleman, 1998).

The minuses are:

- Students might not appreciate the logic and internal consistency of the model.
- Not everyone is good at Mind Mapping and reflection.
- Students might not want to know about a conceptual model.
- This approach might not suit different learning styles.
- Students might prefer multiple-choice tests.
- Students might avoid courses taught this way.
- Students might think that this learning process requires too much work.
- Teachers and trainers might view this approach as requiring too much work on their part.
- Students might resist change. They might prefer a passive role and rote learning.
- Not everyone is intellectually curious.

Some interesting points are:

- Would this approach work with teaching scientific and technical courses?
- Do certain types of people do better with this approach?
- It would be interesting if all courses were taught this way.
- Can visual thinking (mind mapping and concept mapping) be taught from the earliest grades?
- It would be interesting if this approach to learning were used to educate ministers and physicians.
- Can concept mapping be an effective tool for facilitating organizational learning?
- Can ideas like Mind Mapping, reflection and concept mapping be transferred to other courses?
- Can ideas like Mind Mapping, reflection, and concept mapping be generalized to work situations and life in general?
- Are students more satisfied with a more traditional approach to learning?
- Does this approach lead to more effective student learning and retention?
- Would different majors (right brain oriented) in creative course do better with this approach than left-brain logically oriented majors like engineers?

We developed our explicit learning model within the principles developed in Ausubel's (1968) assimilation theory. According to the theory for meaningful learning to occur, three conditions need to be met:

1. The material to be learned must be conceptually clear and presented with language and examples relative

to the learner's prior knowledge. We do this through a clear Mind Map of the course logic (see Appendix 4), case studies, and applied practitioner-focused articles from Harvard Business Review. Mind Maps (Mento et al, 1999 and Mento et al, 1998) and concept maps (Novak, 1995) can be helpful in meeting this condition, both by identifying large general concepts prior to instruction in more specific concepts and by assisting in the sequencing of learning tasks through progressively more explicit knowledge. We reinforce this effort in the form of weekly lessons learned and integrated themes, applications, and implications that can be anchored in developing conceptual frameworks. Specific concept maps created for this course are found in Appendices 1 and 2.

2. The learner must possess relevant prior knowledge. This stipulation is ensured by our Executive MBA selection committee which carefully selects applicants with respect to a set of specific criteria including a specified number of years of relevant management experience as well as a minimal GMAT score. Personal interviews as well as reference checks are also part of the selection procedure.
3. The learner must choose to learn meaningfully. The one condition over which the teacher has only indirect control is the motivation of students to choose to learn by attempting to incorporate new meanings into their prior knowledge rather than simply memorizing concept definitions or

computational procedures. According to Novak (1995) the control over this choice is primarily found in the evaluation strategies used. We attempt to control this through explicit evaluation strategies that require students to: (a) develop Q & As with commentary sets that require thoughtful internalization of the readings; (b) conduct case analysis which consistently emphasizes thorough analysis anchored in the explication and application of key concepts, models, and conceptual frameworks, developed via Mind Maps; and (c) reflect which requires thoughtful conceptual development in the form of themes, applications, and implications, which are lessons learned that are to be integrated across the entire course.

We believe we have clearly met the three theoretical requirements developed by Ausubel (1968) that contribute to meaningful learning. Meeting these requirements allow our students to construct new knowledge and concepts by integrating the newly presented course information with their historical in situ conceptual frameworks. This interaction of the old and the new facilitates the creation, organization and use of this newly evolved knowledge. Effectively this newly created knowledge access? is used by the executive student versus information that is taught and discussed but is never put to its intended use. Our goal is not to have students parrot back rote knowledge but rather have them report back to the class that they have applied their newly created knowledge in their workplace and, most importantly, that it worked for them.

There are, at least, two avenues for future research. An applicability matrix of student level by course subject matter needs to be developed. At one extreme a strategy course for

executive MBA students would seem extremely likely to benefit from this approach. On the other hand the basic undergraduate accounting course for undergraduates would appear to be somewhat more problematic. What of the accounting course for executive MBA's? The range of applicability will be determined by testing the cells of a student level by subject matter matrix.

The second avenue for future research is the possible impact of cognitive learning styles on the effectiveness of our model (Sadler-Smith, 2002). One of the first research questions to be asked is whether or not different cognitive learning does, in fact, impact the effectiveness of the eight-step explicit conceptually transparent learning model? A second question is, if so, whether or not the model can be adjusted to compensate for such differences.

We hope this exploratory research will also motivate others to engage in further research. The authors believe this vein of research is neither "pedantic" nor "populist" but rather can be "pragmatic": i.e., "characterized by both high rigor and high relevance" (Hodgkinson, Maule, Brown, Pearman, and Glaister, 2002; Anderson, Herriot and Hodgkinson, 2001).

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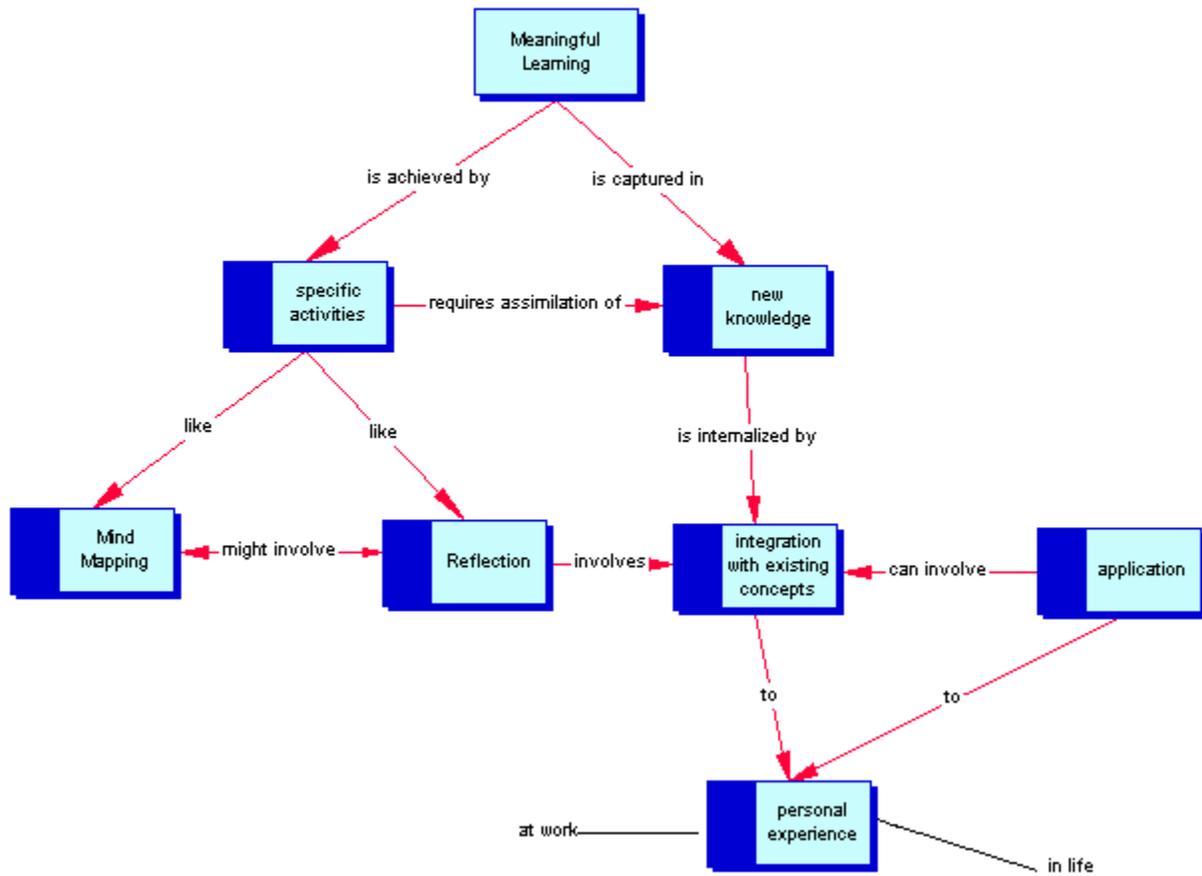
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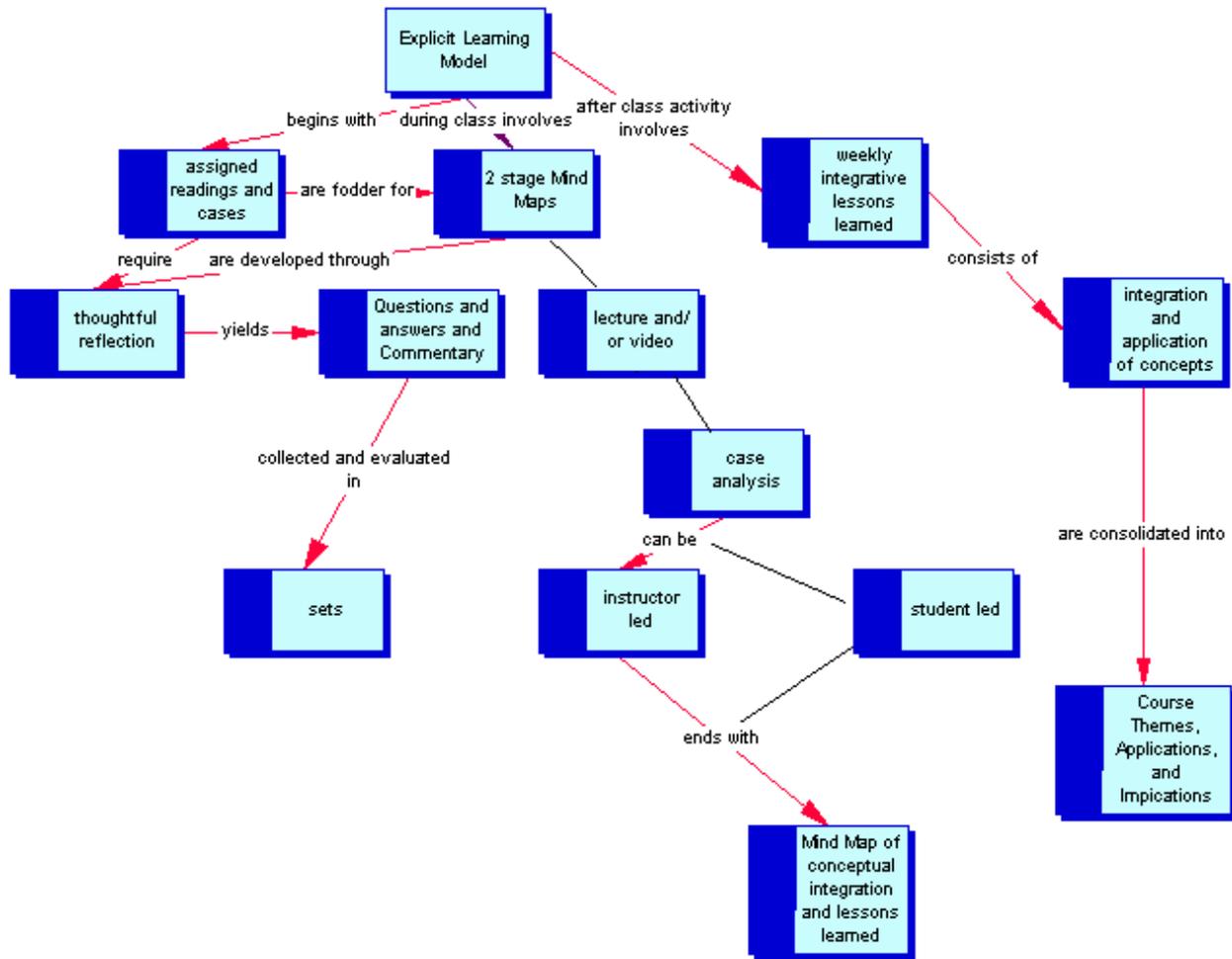
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Appendix 1

Concept Map of Meaningful Learning Applied to our Course



**Appendix 2
Concept Map of Explicit Learning Model**

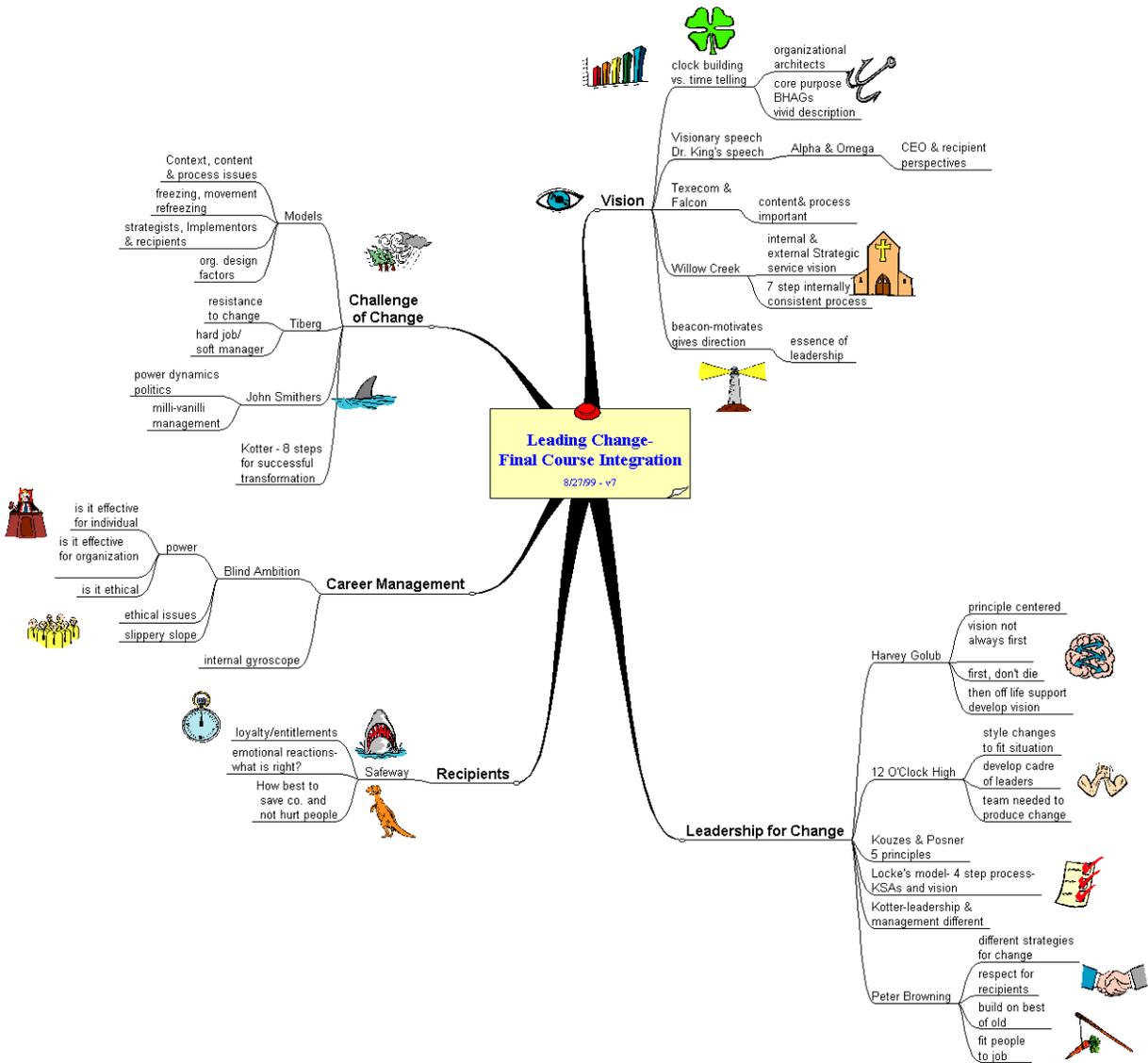


Appendix 3 – Example of a Quote and Ask with Commentary

Reading	Quote	Ask (and some Commentary)
Hill, Linda A. “Power Dynamics in Organizations”	Political conflict over scarce or key organizational resources is inevitable, given the challenges of managing in contemporary organizations.	Are there different forms of power? For example, is the power to reward different from the power that punishes?
Kotter, John P. “Leading Change: Why Transformation Efforts Fail.”	They then find ways to communicate this information broadly and dramatically, especially with respect to crises, potential crises, or great opportunities that are very timely.	While the need to express urgency is necessary, is there a problem when this is over done? Constantly declaring crisis and urgency would, I believe, lead to the “cry wolf” syndrome in which employees no longer believe that there is a crisis.
Schaffer, Robert H and Thompson, Harvey A. “Successful Change Programs Begin with Results.”	Frequent reinforcement energizes the improvement process.	The assumption of the quote is that results-driven programs provide measurable results needed for the short-term wins that Kotter describes in his “Leading Change: Why Transformation Efforts Fail” as necessary for successful change. However, do all changes have measurable identifiable results? Is it possible that an organization may not know what the best results are going into a change? The underlying point of the question here is that an organization should be careful what it wants—they may actually get what they want to their regret. Results-driven performance does not allow for discovery. Consider the example cited by Collins and Porras in “Clock Building, Not Time Telling” in which they cited the example of Hewlett and Packard who “decided to first start a company and then figure out what they want to make.”

Appendix 4

Mind Map of Key Course Concepts



Appendix 5

Eight Step Conceptual Model

