

# **The Course Graphic in Finance**

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## **ABSTRACT**

*A course graphic is a graphical depiction of the major concepts of a course and their interrelationships. It provides a visual framework for the students to understand what the major focus of the course is. If developed well, it can facilitate learning of material and the storage and retention of details. This paper summarizes the experience of a finance professor in developing and using a course graphic in a graduate finance course.*

## **INTRODUCTION**

*Words, words, words, I'm so sick of words!  
I get words all day through, first from him now from you.  
Is that all you blighters can do?*

From "Show Me" sung by Eliza Doolittle in My Fair Lady  
(Lerner and Loewe, 1956, side 2 band 4)

Traditional instruction in higher education has long been about words: the professor's lecture, the textbook descriptions, the writing assignments and the examinations. The course graphic is an attempt to capture the structure of a course in an image. The image can then be used to help the student understand and remember more easily the relationships among the content topics. By being able to see the "big picture" of course content, students should be better able to learn and retain details of the content of the course.

## **WHAT IS A COURSE GRAPHIC?**

A course graphic is a simplified representation of course content that introduces the student to the manner in which the instructor has organized the course. It helps to separate the details from the concepts so that the students can see the framework on which the course is built. It takes advantage of the power of visual learning, which can be responsible for over 75% of what a student learns (Beaudry, 2000).

Research in learning shows that students must be engaged in order to effectively learn (Woolfolk, 1993). A course graphic engages a student's mind in a way that only an image can. It is easy to find in a syllabus full of words. By referring to the graphic periodically, the student can review the key content and the interrelationships and reinforce this knowledge.

## **WHY USE A COURSE GRAPHIC?**

A course graphic takes a long list of topics about a course and develops an image showing how the topics relate to each other. Since many of my students do not have much context for the material that is to be covered in the class, explaining what the course is about can be tricky. The vocabulary of the subject means nothing to these students; it is a foreign language of sorts. Research shows that a key to successful acquisition of knowledge is organization (Beaudry, 2000) so a well-organized graphic can assist the student in mastering the course material.

With any new course that introduces the student to a subject in a completely new area for him or her, the material can seem quite overwhelming. New terms, new methods, new ways of analyzing things can swirl around the learner. In trying to master all of these factors, it becomes easy for the learner to “lose the forest for the trees”; in focusing on conquering the details, it is difficult to see the framework of how the knowledge is integrated. By displaying the key concepts to be covered in the course, the instructor can help the student feel a greater likelihood of success which will increase his or her motivation (McMillan & Forsyth, 1991).

Writing and reading are linear processes, however, ideas, patterns and thoughts are non-linear (Hyerle, 2000). Using graphics enhances the learning of content by showing the content in a non-linear manner. Design guidelines for graphics suggest emphasizing the major topics (the “big picture” so to speak) to help organize the material for students. With these images providing a framework, new material may be more easily connected to existing knowledge (Woolfolk, 1993).

### **MY COURSE**

The course that I teach is “Financial Management for the Non-Financial Professional.” It is a graduate level course intended to give professionals an introduction to financial management. The benefits of this course are that it teaches these professionals how to understand financial statements and use the information to run their departments better. It also shows these professionals how and why financial managers operate, thus improving the relationship between the professions. Last, in the post-Enron era, this course emphasizes the increased importance of accurate record-keeping, full disclosure and ethics.

The students that tend to take this course have diverse backgrounds. Many students are in a technical profession. This course was originally designed to be part of a master’s degree program in the College of Management for manufacturing professionals. At the University of Massachusetts at Lowell, engineering doctoral candidates must take three electives in management science and this course is a popular choice. The ethnic backgrounds vary as well; typically, each class has students representing at least eight different countries of origin.

The challenges in teaching this class are many. First is the diversity issue: Students have varying degrees of comfort with the English language so their understanding of my lectures may vary. Although I have 20 years of experience in working with people across the world, there are times when it is difficult for me to understand a question that a student is posing because of their English pronunciation skills; it may take a few exchanges before I can figure out what their problem really is and how to answer it in a way they can understand better. Different cultural backgrounds can make this new subject even more confusing; for example, when talking about 401K plans to illustrate payroll deductions, some students have no concept of what a 401K plan is, thus I need to choose my examples carefully. In some cultures, students are less prone to ask questions of the instructor, especially one who is a woman. Last, the thinking framework is different. In many technical situations, things either work or they don’t; in business whether things work or not may depend on the situation itself. This becomes frustrating for the students who want to know rules that work every time.

### **DEVELOPING MY COURSE GRAPHIC**

Insert Figure 1 here.

Keeping it simple, making it relevant, making it accurately reflect the relationships, having it effectively use color and fonts and shapes -- these are some of the many details that

continually run through the mind when developing a course graphic. The task of developing the graphic itself can be daunting.

Developing a course graphic is very similar to developing a brand new course. One needs to think about the topics to be covered and the sequence in which they will be presented. One needs to evaluate how the course fits into the overall curriculum to avoid redundancy and cover appropriate material in sufficient depth. One needs to think about the typical student profile and why they will be taking the course. Since mine is a business course, I also think about the kinds of jobs the students will or do have so that they learn content that will be useful to them to work effectively.

According to Miller (2003), the primary design elements to think about in creating an effective course graphic are the following:

1. **Simplicity:** Identify three to five key concepts of the subject and the most important subordinate concepts to keep the graphic simple.
2. **Organization:** Represent the relationships of the key concepts and their subordinates in an organized manner; seek to use patterns to reinforce the perception of relationship.
3. **Readability and precision:** Use consistently font sizes and typefaces, color and shapes to enhance readability and precision; avoid clutter; use uniform terms.

My first task is to evaluate the course topics and student learning objectives. With this course being an introductory graduate level course, there are a lot of topics that are covered. The focus is mostly on declarative and procedural learning. The textbook that I use for this course separates the material into two sections: Financial Accounting and Managerial Accounting. This course is intended to be broader than an accounting class so topics from the finance curriculum are added. The typical students in the class will be working in either a corporate environment (like research and development or manufacturing) or in a university research lab so the topics should be relevant for those careers.

Once I have settled on the topics and their sequence, I next turn to chunk the topics (put topics into groups) so that the number of groups displayed on the graphic is reasonable. This can be quite tricky because I want to avoid making things so simple and generic that the graphic and relationships are not memorable. Yet if there are too many elements on the page, the graphic is too busy and difficult to remember.

After drafting the design, I try to view it through the students' eyes. I practice presenting this diagram to make sure I can explain it clearly. Since most of my students have never been exposed to a course graphic, I also need to describe how it can help them learn the concepts. Lowe (1993) outlines several questions that a student may ask including "what is this diagram trying to explain to me and how am I supposed to make use of it to help me learn?" (p. 44).

I settled on having three main concepts for my course: Transactions (the recording of data); Financial Statements and Financial Analysis. Typically transactions are included in Financial Accounting because they are necessary to produce the financial reports. However, in my view, transactions are also critical to performing accurate financial analysis so I felt it was more appropriate showing this as a separate concept with a relationship to both financial statements and financial analysis.

The main topics are identified under each concept. Along with the concepts and topics, I wanted to include some key words that would differentiate each concept from the other and make it more understandable for the students new to the subject. One key differentiator is the timeframe; transactions are done in the present, financial statements reflect historic results and analysis focuses mostly on the future. The other key differentiator is the primary audience;

financial statements are primarily oriented to someone external to the company and financial analysis is primarily oriented to someone internal to the company. (Yes, it is true that outside analysts do analysis tasks and internal managers look at financial statements, but I am taking the perspective with students about primary audience, not every audience.)

The shapes that I decided to use were ones that could physically fit together. I did not want to use boring, old rectangles. The transactions are the bottom shape since they support the other two elements. In addition to fitting with the triangle of the transactions, I chose the trapezoids because they are congruent and create the image of a book when lined up together. I centered the text about the concepts (in bold text) and topics, then decided to put the differentiators along the sides of the trapezoid to make them look different than the concepts. I am using only black and white for practical reasons; we have no color copiers for our syllabi nor do I want to justify the expense of reproducing them in color. Eventually I may make my electronic copy in color, but for now, I prefer to be consistent with the copies the students have.

### **USING MY COURSE GRAPHIC**

I incorporate the course graphic into my syllabus and into several lectures throughout my course. It is useful for non-finance majors because it helps them to monitor the content and our progress through the course. As new terms are introduced it can help the students to put the terms into a framework and note the relationships.

I include the course graphic in my syllabus so that the students have a copy of it. It serves as a roadmap for the content of the course. To me, it makes for a more interesting review of how the content will be presented rather than reviewing a calendar which says, “week one we do chapter one; in weeks two and three, we’ll cover chapter two; etc.” Since one strategy for memorizing information is repetition (Munter & Russell, 2002; Olgren, 1998), presenting it to students on the first day becomes their first exposure to it.

Throughout the course, I display the graphic at the beginning of the class to remind students about where we are and how it fits into our overall plan. It gives me the opportunity to remind the students about what topics we have covered and how they have related to each other. At times, I ask the students to explain to me why they think that I grouped certain content together. Before the students have come to understand the material, it is just another picture to them. As they learn the material, the relationships begin to make sense and the picture becomes an image that they can relate to better. Since they have a copy in their syllabus, it is easy for them to find it and annotate it each time we review it. The image reinforces the material and serves as a memory aid (Beaudry, 2000).

To engage the students in the graphic, beginning about mid-semester when I display the graphic in different lectures, I ask them questions about the relationships. This involves them more actively in the graphic and tests how well they can reflect on the information. Their responses also tell me how effective the graphic is at making its point. If students have a difficult time recalling relationships and cannot construct the relationship on their own, they may be having trouble with the material; if this is the case, I try to trace where the difficulty lies and plan to resolve it. If the failure for recall is due to the lack of effectiveness on behalf of the image, then I try to rethink the course graphic to make it work for these students. Student verbal and non-verbal reactions to my descriptions of the graphic help me in tailoring the graphic more effectively, as well.

There are other methods for engaging students with the graphic, such as giving them one with blanks to fill in. I decided that using the graphic as described above was the best method to

use with my students. It makes use of repetition and ties things back to the key concepts. In my experience, my graduate students tend to be very motivated to learn, so I try to respect their natural motivation and not overemphasize things that people understand quickly.

### **CONCLUSION**

I have experienced success in using my course graphic in this and another course. Students have made some worthwhile remarks indicating that the graphic has aided their learning of the material. The exercise of putting the graphic together has made me think of my course differently, analyzing my assumptions and questioning what the real value of the course is to the student. The course graphic has become my framework to ensure that I emphasize the key concepts and make clear to the students how the details relate to the concepts.

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Figure 1 Course Graphic for Finance for the Non-Financial Professional

# Finance for the Non-Financial Professional Course Content

