Beyond the Boundaries: The Bloomberg Drill for Education Innovation

Authors: Ginny W. Frings, Ph.D., Mary Beth Shagena, MBA, of Xavier University, Cincinnati, Ohio

Abstract:

The demand for an accounting and finance curricular paradigm shift has encouraged researchers, both practitioner-oriented and academic, to evaluate traditional teaching methods and design innovative pedagogies to produce accounting and finance college graduates who are technologically and intellectually savvy in the realms of their disciplines, and with developed critical thinking skill sets suitable beyond the traditional classroom environment. Through study of cognitive science and constructivist literature on students’ learning experiences, we have designed courses with the integration of course text materials, lecture-technology-aids, and Bloomberg supported knowledge retrieval and processing training and projects. Students engaged in courses designed with an active learning approach, facilitated through application of the Bloomberg information technology, learn to integrate necessary skills for effective analysis, decision making, and business strategy development. As an education innovation tool, Bloomberg believes in “long-term vision, innovation, and transparency.” Reducing information risk (Efficient Markets Hypotheses perspective) with students’ ready access to realtime news, announcements, events, capital market shifts and trends, while navigating through a well-documented “data web” where the user can search across and drill down to the needed information set, Bloomberg information technology system functions as an online realtime library giving users access to historical, current, and forward-looking information. When investigating students’ learning successes from a cognitive science and study of learning styles perspective, integration of information technology is a testable key success factor for facilitating the assessment of expected learning outcomes.

Contact information:

Ginny W. Frings, Ph.D.
(513)335-1914
Ginny@ginnyfrings.com

Mary Beth Shagena, MBA
(513)290-7223
shagenamb@xavier.edu

©2011 Ginny W. Frings, Ph.D., and Mary Beth Shagena, MBA, Williams College of Business, Xavier University in Cincinnati, Ohio. All rights reserved. Reprints or copies not allowed without authors’ express written permission. This paper was awarded the Alpha Iota Delta Award for Best Instructional Innovation Paper at the MWDSI 2011 Conference in Indianapolis. Thank you to participants at the MWDSI Conference for their insightful comments.
Beyond the Boundaries: 
The Bloomberg Drill for Education Innovation

Authors: Ginny W. Frings, Ph.D., Mary Beth Shagena, MBA, of Xavier University, Cincinnati, Ohio

ABSTRACT:

The demand for an accounting and finance curricular paradigm shift has encouraged researchers, both practitioner-oriented and academic, to evaluate traditional teaching methods and design innovative pedagogies to produce accounting and finance college graduates who are technologically and intellectually savvy in the realms of their disciplines, and with developed critical thinking skill sets suitable beyond the traditional classroom environment. Through study of cognitive science and constructivist literature on students’ learning experiences, we have designed courses with the integration of course text materials, lecture-technology-aids, and Bloomberg supported knowledge retrieval and processing training and projects. Students engaged in courses designed with an active learning approach, facilitated through application of the Bloomberg information technology, learn to integrate necessary skills for effective analysis, decision making, and business strategy development. As an education innovation tool, Bloomberg believes in “long-term vision, innovation, and transparency.” Reducing information risk (Efficient Markets Hypotheses perspective) with students’ ready access to realtime news, announcements, events, capital market shifts and trends, while navigating through a well-documented “data web” where the user can search across and drill down to the needed information set, Bloomberg information technology system functions as an online realtime library giving users access to historical, current, and forward-looking information. When investigating students’ learning successes from a cognitive science and study of learning styles perspective, integration of information technology is a testable key success factor for facilitating the assessment of expected learning outcomes.

Subject Areas: education innovation, constructivism, information technology in the classroom, Bloomberg, accounting curriculum, finance curriculum, cognitive science, learning styles

INTRODUCTION

“I hear and I forget. I see and I remember. I do and I understand.” Confucious (551 BC – 479 BC)

As business professionals and academicians at the university level, we have the opportunity and responsibility to teach students (our current and future leaders), the knowledge and tools they need to succeed. We work to help students develop their information gathering, analysis, and decision-making skills while preparing them to effectively adapt to a rapidly changing marketplace. Our perspective: With the immediate access to and continual flow of data on a global basis, students need to engage in experiential learning in the classroom for competitive
advantage in the job market. Father Michael Graham, S.J., President of Xavier University in Cincinnati, Ohio, says “A measure of the success of any university is what their students become.”

Questions to consider: How can we provide a learning environment that encourages students to learn beyond the borders of the classroom as they seek to become leaders? Are there pedagogical adaptations we, as professors, can integrate into the curricula to boost students’ knowledge and connections with the organizations, businesses, leaders, and concepts they are studying in the classroom? For this paper, we will focus on accounting and finance course designs where integration of the Bloomberg information technology system into the curricula fosters this knowledge creation and learning connections. In the wake of financial market meltdowns and scandals, accounting and finance graduates are often being called to effectively and efficiently unravel financial disclosures, carry out due diligence in the form of strategic and financial ratio analyses, and understand a company’s asset stewardship policies and procedures in a SOX-regulated world. Integrating information technology such as Bloomberg, into course experiences will help accounting and finance students answer this call.

As faculty develop course goals and expected outcomes within specific educational disciplines in the university environment, they need to consider students’ cognitive flexibility and adaptability of learning styles to each learning situation. While working with the Bloomberg information technology system in the college of business, we are examining methods for optimal integration of Bloomberg into course curricula. What we find each semester is that Bloomberg acts as a conduit for data flows and knowledge creation for both the students and faculty. This technology platform allows educators to guide the students through the instruction and as the students master the system navigation, they take the assignments to completion through individual or team effort. As we continue to introduce the business faculty and staff to the Bloomberg technology, we are meeting with colleagues across the university to demonstrate the utility and necessity of Bloomberg in disciplines other than business, e.g., medicine, law, political science, education, journalism, environmental science, and more. Our goal is to engage members of every educational discipline to learn about the depth and breadth of Bloomberg online real-time data retrieval and processing capabilities.

ACCTOING AND FINANCE PEDAGOGICAL PARADIGM SHIFT

Historically, introductory accounting curricula design has followed a linear approach where we taught accounting courses from the preparer perspective focusing on identifying, classifying, and journalizing accounting transactions with the ultimate goal of preparing GAAP-sound financial statements. In traditional introductory finance classes, we studied time value of money, stock valuation, and capital structure decisions, but without integrated discussion of how these topics and transactions support the business model.

Now, accounting course design and execution follow a nonlinear approach where we start with understanding business models and as Warren Buffett says, when he considers a company for investment, he first seeks to understand how the company makes money, how the company loses money, and identify the strengths of the leadership team. We teach students about business
purpose, how the functional areas of a business interact, and how transactions flow through a business as we journalize those transactions with the objective of preparing a set of GAAP-sound financial statements. And, in finance, how we use the information and with the knowledge learned in introductory accounting, we build upon this foundation in finance courses to more fully understand the financial streams throughout a business organization. Then, we analyze the numbers for reasonableness and tie back the financial representation to the identified business purpose. See Figure 2 for a brief comparison of traditional and new approaches to accounting and finance pedagogy.

“I believe that integration of the Bloomberg data platform into the accounting and MBA curriculum enhances the knowledge of our students by illustrating how important it is to know about the types of competitive market data available and the importance of having high quality, readily accessible data.” Sandra Richtermeyer, Ph.D., Accounting Department Chair, Williams College of Business, Xavier University in Cincinnati, Ohio, Chair of Institute of Management Accountants (IMA)

As we continue to shift the pedagogical paradigm toward greater integration of information systems technology applications into introductory accounting and finance course designs, use of data platforms like Bloomberg will be a key success factor for achieving expected course learning outcomes. The current outside demands, i.e., from potential employers, for curriculum innovation have been documented by academic researchers. For example, Diller-Haas (2004) writes: “many employers and CPAs have reinvented themselves as information consultants,” moving away from traditional accounting services in the process; recent events indicate this is not without negative consequences. Accounting education’s failure to keep pace with these changes in the profession may be undermining accounting itself as a discipline (Albrecht and Sack 2000). Diller-Haas and the Accounting Education Change Commission (AECC) recommended that introductory courses provide students with a more realistic perception of the field and the skills needed for success. They stress the need for a paradigm shift in introductory accounting course design from the “preparer” approach to a “blended” approach where students (accounting and non-accounting majors) learn about business models and how economic transactions flow through the functional areas of a business while learning how accounting and finance information is used for strategic decision making. Diller-Haas (2004) says that “many believe the new approach provides accounting majors with a greater understanding of accounting concepts. One instructor pointed out that the new approach was actually a more challenging curriculum, because students cannot rely on memorization as they do in a mechanics-based course. A department chair commented that their accounting majors demonstrated greater critical thinking skills with the new approach.” This comment echoes the conclusions of our experiences with information technology integration in our accounting and finance courses.

Accounting regulators and practitioners are focusing on forecasted changes in the profession, specifically, demands on accounting and finance professionals to better understand the evolving business environment and importance of technological solutions. Sadowski (2002) shared results on the AICPA, AAA, IMA, and major accounting firms’ jointly sponsored research project on “the future of accounting education focused on areas of critical importance to the future of the accounting profession: the impact of changes in the business environment on accounting
education and practice, the profile of students majoring in accounting, and a mandate for the continued improvement of accounting education.” She further notes the “call to action for the accounting profession where the business environment drivers of change are: technology, globalization, and large institutional investors. [And], looks at the implications of information as a commodity and increased competition on the future of accounting education. Practitioners rank order future accounting services as financial analysis, financial planning, financial reporting, strategic consulting, and systems consulting.” Sarbanes-Oxley compliance requirements have increased the need for accounting professionals’ understanding of industry-specific business models, documentation of internal controls, and implications of auditor independence – in fact and in appearance.

Sadowski (2002) cites Bob Elliott, KPMG Partner, and member of AICPA Board of Directors, definition of the five stages of the “information value chain” as business events, data, information, knowledge, and decisions. Accounting course design must address the “preparation of graduates to function well at more advanced stages earlier in their careers than in the past.” Further, educators need to focus on “both the acquisition of a content knowledge base and the development of analytical thinking and research skills.” Demands on the profession drive the need for integration of technology into accounting and finance course design. These information resources must be made available earlier in students’ academic careers to better meet this demand.

COGNITIVE MODELS AND LEARNING STYLES

Educators need to understand the variations in students’ learning styles and utilize resources that foster students’ knowledge processing and retention. Francis et al (1995) suggest: “Accounting faculty may use an understanding of the student’s and their own learning styles to plan assignments, courses, and programs to include the entire cycle of learning. This provides the students opportunities to use their preferred style of learning while also practicing and developing other styles. To be fully effective, a student’s education should include the full cycle of learning experiences and the ability to use a variety of learning styles.” Insert Figure 3 here.

To better understand learning styles, McCarthy (2010) examined related learning cognition studies. In the past thirty years, researchers have completed many studies focusing on learning styles to better understand how students learn and then apply this knowledge to improve course design and outcome measurement. Upon reviewing these works, four distinct approaches to learning emerge:

- Personality
- Information Processing
- Social Interaction
- Instructional Preferences (McCarthy, 2010)

In Kolb’s (1984) experiential learning model (ELM) – model is founded on Jung’s concept of types where development is accomplished by higher-level integration and expression on non-dominant modes of dealing with the world (Kolb, 1984). Kolb found that students’ level of
academic achievement is positively correlated with intellectual abilities, aptitudes, and learning style (Kolb 1984). See Figure 1. Other studies support these findings (Cano-Garcia and Hughes, 2000; Curry, 1983; Hayes and Allinson, 1996; Riding and Cheema 1991). Loo (2002) summarizes Kolb’s model in this way: “Experience is translated into concepts that, in turn, guide the choice of new experiences. Learning is conceived as a four-stage cycle starting with concrete experience which forms the basis for observation and reflection upon experiences. These observations are assimilated into concepts and generalizations about experiences that, in turn, guide new experiences and interactions with the world.” Kolb (1985) describes the two types of perceiving and processing styles: concrete experience – abstract conceptualization on the vertical axis (dimension) and active experimentation – reflective observation on the horizontal axis (dimension). Kolb then categorizes the four quadrants into learning styles: accommodator, diverger, assimilator, converger, where each type of learner gathers and processes data into knowledge differently.

- Accommodators – learn best from hands-on experiences and gut feelings rather than from logical analysis;
- Diversers – view concrete situations from many different points of view;
- Assimilators – work to understand a wide range of information, then put the information into a concise logical form;
- Convergers – Adept at finding practical uses for ideas and theories.

As academicians and business professionals, we see these different styles of learning in our students and colleagues on a daily basis. Loo (2002) echoes Kolb’s conclusion that an “effective learner is one who can use each of the four styles effectively in different learning situations rather than relying upon their preferred style.” Support for developing active learning classroom settings emerges from Healy and McCutchen (2008), where the researchers studied accounting students’ experiences with active learning approaches and reported the following results: all students learned life-long skills such as teamwork, confidence, and self-learning.

Though researchers continue to test and refine the LSI-1985 psychometric instrument for eliciting data on students’ learning styles, the instrument continues to provide utility for alerting educators and learners to individual learning style differences, which can become a motivation for improving learning situation adaptability – not relying solely on “preferred” learning environments (Rakoczy and Money, 1995; Wynd and Bozman, 1996). Loo (2002) investigates the application of Kolb’s four learning styles to a sample of Canadian business students with diverse majors within the business discipline. Loo states that prior to his work, learning styles studies indicated disparities in learning styles within each business major (Kolb, 1976, 1984; brown and Burke, 1987; Reading-Brown and Hayden, 1989). Loo (2002) categorizes business majors into hard and soft distinction (Becher, 19889; Macfarlane, 1994): where “hard” majors emphasizing quantitative analysis (accounting and finance) and technical topics (management information systems), and “soft” majors which emphasize the “people side of management” (marketing, organizational behavior, labor relations, human resource management, general business administration). From the core curriculum philosophy of university level business education, business students are introduced to all hard and soft business disciplines regardless of their major. Completing intermediate and upper level courses in each major then helps the
student focus on the required hard and soft skill sets and knowledge accumulation. Loo’s work complements Kolb’s examination of learning styles of economics majors (quantitative business discipline) where he found their ELM analysis to categorize them into the assimilator style – like the accounting and finance majors in Loo’s analysis. Loo, along with researchers (Collins and Milliron, 1987; Drew and Ottewell, 1998; Kolb, 1984; Rayner and Riding, 1997), recommend that “educators familiarize students with their own learning style preferences and then encourage them to use all four leaning styles, rather than relying upon their preferred style; thus, encouraging educators to expose the students to a wide range of learning methods.” For example, when we teach accounting and finance classes with technology integrations, we demonstrate how the technology application (in this case Bloomberg) can engage all four styles of learning.

As we develop and teach our courses, we need to recognize the connection between instructional style and students’ knowledge reception. Questions to consider as we design the curriculum and select our course materials and technology resources include:

- What types of information are available?
- How is the information presented?
- Is there opportunity for student-driven manipulation of the information for increased understanding?
- How do we frame the question for discovery of the intended solution?

These questions encourage further examination of students’ learning strategies.

To build upon the relationship between cognitive models and learning styles, Mayer (1992) examines the relationship between psychology and education with particular attention to more recent cognitive approaches to education. With the paradigm shift toward “studying the cognitive processes of students in natural settings;” Mayer discusses three views of learning that influence instructional style:

- Learning as response acquisition – drill and practice to increase number of correct responses in learner’s memory
- Learning as knowledge acquisition – lecture and read from textbook to add facts to learner’s memory
- Learning as knowledge construction – help student develop learning and thinking strategies for improved recall of knowledge and transfer of learning to decision-making scenarios

When designing course assignments from the learning as knowledge construction perspective, Mayer emphasizes the need for instructors to recognize underlying cognitive model elements of:

- Learner characteristics – prior knowledge, interest, and motivation
- Instructional manipulations – what is taught and how
- Learning processes – internal cognitive structures constructed during learning such as selecting, organizing, and integrating
- Outcome performance (external performance on tests)

The Bloomberg information technology tool encourages development of different cognitive elements of learning. It allows students to identify and assimilate different types of information.
in various presentation formats, and manipulate data to answer the questions proposed in each assignment.

We introduce students to projects where there are ample opportunities for problem solving, feedback, and iterations for continuous learning and problem solving. Langley and Rogers (CSLI) extend Newell, Shaw, and Simon’s (1958) work on the theory of human problem solving in the context of how humans respond when confronted with unfamiliar tasks, by building a framework of discovery within a theory of cognitive architecture. The base claim in the theory of human problem solving is that problem solving involves “mental inspection and manipulation of list structures.” Newell and Simon (1976) built on their theory with the physical symbol system hypothesis, where they suggest that symbolic processing is a sufficient condition for intelligent behavior. Next, the problem space hypothesis suggests that problem solving involves searching through a space of candidate states generated by operators. Newell and Simon (1972) postulated the through their study of problem-solving scenarios, that humans use “means-end analysis which involves a combination of selecting differences between desired and current states, selecting operators that will reduce the chosen differences, and either applying the operators or creating subproblems to transform the current states into ones in which they can apply.” Langley and Rogers built upon this problem solving framework with:

- Problem solving occurs in a physical context.
- Problem solving abstracts away from the physical details, yet must return to them to implement the solution.
- Problem solving is seldom a purely mental activity, but rather interleaves reasoning and execution.
- Eager execution of partial plans can lead the problem solver into physical dead ends that require restarting the task.
- Learning from successful solutions transforms backward chaining search into informed skill execution.

Larkin and Simon (1987) discussed the benefits of diagrams to problem solving efficacy where diagrams serve as external memories and reduce search by grouping elements that are used together, using location to group information about a given element, and support perceptual inferences that are easy for humans. Bloomberg information technology system is an electronic “diagram” for problem solving. The main menu groups information search options to allow students to create their own algorithm for problem solving. Appendix A provides an overview to navigating the Bloomberg system with emphasis on forward and backward chaining searches by virtue of the way the Bloomberg system is designed.

**COGNITIVE FLEXIBILITY**

Boeger-Mehall (1997) suggests that assuming the application of cognitive flexibility theory of learners in the classroom setting, integration of interactive electronic instructional materials into course design is key to helping students “learn the contours and complexity of the material they are studying, and it helps them work with that content from several different perspectives.” This
thought is based upon the work of Spiro, Feltovich, Jacobson, and Coulson (1992) where they state “according to cognitive flexibility theory, the way students are taught is a significant influence on the type of cognitive structures they create and the way they store and structure knowledge they acquire determines to a great extent how flexible they will be when they must use that knowledge. Encouraging cognitive flexibility requires a flexible teaching environment.” Further, Spiro et al (1992) defines cognitive flexibility where it “includes the ability to represent knowledge from different conceptual and case perspectives, and then, when the knowledge must later be used, the ability to construct from those different conceptual and case representations a knowledge ensemble tailored to the needs of the understanding or problem-solving situation at hand.” Implementing a common information technology application through the college curriculum will provide students with opportunities for repetitive learning and cognizance of the interdependence of disciplines in the business environment. Spiro, Feltovich, Jacobson, and Coulson (1991) encourage educators to make knowledge a “manipulable three dimensional entity for the learner, and provide the tools for creating knowledge arrangements for different purposes.” The design of the Bloomberg application supports across-discipline and across-educational-level (undergraduate and graduate) investigation, where the same question can be proposed and then students can work toward the solution(s) from the perspective of their course discipline, e.g., learning about the historical, economic, and political implications of the Great Depression to the most recent events in Japan. The knowledge is then used in other courses and students see the connections between the core curriculum and major discipline courses.

Bednar, Cunningham, Duffy, and Perry (1995) discuss linkages between instructional systems technology (IST) behavioral and cognitive sciences theory and instructional practice, where “instructional concepts and categories are grouped based on their relevance to the particular learning goal, category of learning, or performance objective.” They support the view of constructivist cognitive science where “learning is a constructive process in which the learner is building an internal representation of knowledge, a personal interpretation of experience. This representation is constantly open to change, its structure and linkages forming the foundation to which other knowledge structures are appended. Learning is an active process in which meaning is developed on the basis of experience. Conceptual growth comes from the sharing of multiple perspectives and the simultaneous changing of our internal representations in response to those perspectives as well as through cumulative experience. Consistent with this view of knowledge, learning must be situated in a rich context, reflective of real world contexts, for this constructive process to occur and transfer to environments beyond the school or training classroom. Learning through cognitive apprenticeship, reflecting the collaboration of real world problem solving, and using the tools available in problem solving situation are key (Brown, Collins, and Duguid, 1989a; 1989b). How effective or instrumental the learner’s knowledge structure is in facilitating thinking in the content field is the measure of learning.”

Dabbagh (2005) suggests designing E-learning tasks in situated cognition scenarios where the students experience a theory-into-practice framework for knowledge collection and processing. We apply the E-learning framework “triangle” (Dabbagh 2005) in our accounting and finance courses through the introduction, processing, and completion of company and investment research projects (see Appendix B). As Bloomberg users and instructors, we understand and
appreciate the information architecture and ready access to myriad data available in this application. Upon review of Dabbagh (2005) and Vygotsky’s concept of information scaffolding, we realized that the Bloomberg information technology system is of the scaffold design where the learner has continual access to supportive assistance within the parameters of his/her zone of proximal development (ZPD) (definitional phrase by Wood, Bruner, and Ross, 1976). Dabbagh (2005) provides examples of how learning technology scaffolding can be integrated in E-learning contexts:

- Providing one-on-one mentoring and guidance via email.
- Providing hypermedia links to embedded online tools such as a calculator, spreadsheet or database program, or other cognitive tools (e.g., the ability to draw a concept map or diagram) that can either perform part of the task for the learner to reduce its complexity, or assist the learner in performing the task.
- Providing a discussion or chat area where students can seek help or learn how to perform certain tasks.
- Providing an online index and/or glossary of important terms and their definitions.
- Providing hypermedia links to carefully selected web-based resources that support the learning task.
- Providing hypermedia links to worked examples of learning tasks or samples of previous projects to clearly communicate to the learners the requirements of the task. (Dabbagh 2005)

Bloomberg believes in “long-term vision, innovation, and transparency.” The application reduces information risk (from an efficient markets hypothesis perspective) with students’ ready access to real-time news, announcements, events, capital market shifts and trends, while they navigate through a well-documented “data web” where the user can search across and drill down to the needed information set. Learning is reinforced when the student realizes that the models and theories that are being taught in the classroom are the foundation for Bloomberg.

Bloomberg is a real-time library (past, present, forward-looking information) – immune to obsolescence and the information system is continually updated with real-time data and responds to user requests.

BLOOMBERG INFORMATION TECHNOLOGY LEARNING ACTIVITY

The students participate in an Introduction to Bloomberg workshop, either during class time or they attend one offered by the Center for Applied Finance. The workshop covers a general description of the Bloomberg system, navigation and introduction to content specific to the project. The keyboard has color-coded keys to aid in navigation. The green keys are action keys that send a specific request to the system to access search and news items. The yellow function keys direct the user to information and analytic functions specific to each market. The various markets are outlined in Appendix A.

The students select a company to analyze from a list specified by the professor. The financial sector is eliminated, as those companies require unique analysis that is out of the scope of either
course. The first screen examined is the general <EQUITY> menu. This screen displays all the
categories of information and analytics available to user. Economic information is displayed
under the Economics Menu. From this page the user can discover economic forecasts at the
global level to national to state, regional and metropolitan data. Other information available is
the calendar of Economic releases, world economic statistics, economic indicators, Central Bank,
Federal Reserve actions, the Beige Book, to name a few. At this point each student is
couraged to discover the various data available. Each screen is customizable so no two
students look at the data in the same order or magnitude (macroeconomic level).

To examine company specific information the students enter a company ticker in the command
window and hit the <Equity> key. The categories displayed on the main menu are specific to
their company. There are two main types of screens in Bloomberg—descriptive and analytic.
The descriptive screens such as the company description screen (DES) screen, displays an
overview of the company financials, management, ratio analysis, product and geographic
segmentation. Company Filings (CF) displays any document filed with the SEC by or on behalf
of the company. Searches can be further refined for a specific filing type or time period.

From the general overview of the company, students examine various analytic screens. The
Financial Analysis (FA) screen displays the financial information and ratios in Statement
analysis available is liquidity, profitability, leverage and efficiency ratios. Each is a different
screen and can be customized by time period and specific ratios and data. The financial
statements can be either raw data or common size.

The Relative Value (RV) screen displays companies that are peers of the selected company. The
peer group can be customized using various specific criteria, or more broad Bloomberg peers,
industry, sector or subsector peers. Users can examine and eliminate the peers they decide do
not fit the criteria they specify. Criteria can be a financial ratio, P/E, market cap, Revenue, Sales,
etc.

A secondary method to examine and compare a peer group is accomplished using the Bloomberg
Industry (BI) function. In this process students use a top down approach starting with the
industry, then sector, sub sector down to the specific criteria they select to define a peer such as
Market Cap, P/E, Revenue, Sales, etc. The search results are displayed and students further add
or eliminate possible peers until a list of at least 5 companies is complete.

The student creates a portfolio of their company and the peer group. By forming a portfolio of
the six companies, the students can monitor news, corporate actions, announcements, company
filings and various other categories of information relevant to their company analysis. Students
type PRTU <GO> to begin creating their portfolio in a 3-step process. Select the Create
Portfolio option; on page 1, enter the name of the portfolio, asset class (equity), and Benchmark.
The Benchmark can be the S&P 500, Russell 2000, or an industry ETF. Selecting a benchmark
allows the student to evaluate their company with respect to a specific peer group as well as the
industry. On page 2 the students input their company and the peer group by either entering the
ticker and position or by dragging and dropping from the RV or BI screens. On page 3 students
select various defaults for the portfolio and save the portfolio.
Once the portfolio is created and saved the portfolio menu (PMEN) screen can be used to monitor or analyze the companies using many of the same screens used for an individual security. The news screens are of particular benefit. By typing NI <GO> Bloomberg displays the top 5 news stories for each company in the portfolio. The user can change the defaults of this screen from the source (Bloomberg News, the web, etc), the time period range or the number of stories displayed.

Using the graph price (GP) screen, students can track the price change, volume and various other data points over a specified time period a long range to intraday. By selecting the events button various events display on the graph itself. Numerous event types can be selected from SEC filings, company announcements, insider trades, etc. This allows the user to track price movements and crosscheck news and/or information to determine the reason for the price change whether positive or negative.

There are several sources of information available to Bloomberg users. The Center for Applied Finance employs students trained on Bloomberg to be available for simple questions. By typing BU <GO>, users have access to online training videos and user guides provided by Bloomberg. On the upper left hand side of the keyboard is the green HELP action key. By pressing the key once, the user can access information and descriptions about the particular screen in use, from how to use the screen, assumptions for models, data used to calculate ratios and FAQs. If further assistance is required, pressing the HELP key a second time will enable an interactive chat window with the Bloomberg Help Desk on a 24/7 basis. The specialist will assist the user either via the chat window, a phone conversation or remote access to the user station until the question is answered. Upon conclusion of the help session the specialist will email the user a complete transcript of the conversation.

Stricht and Hiekey (1988) demonstrated the need for instructional design to integrate the learning of content with the use of the content. They identified particular tasks and taught on the uses of those tasks in functional analysis contexts. The scenario in their experiment was electricity training curriculum and focused on the functional context of electricity knowledge. The options available for customization are as numerous as the number of Bloomberg users.

**CONSTRUCTIVISM AND CONNECTIONS WITH E-LEARNING**

When designing business courses using a constructivist design model, Gagnon and Collay (2001) and Lewis (2001) suggest a prescriptive method for engaging students in classroom activities. The six elements contained in this approach are:

1) Situation – where instructor explains the goals of the exercise and encourages students to form their own opinions;
2) Groupings – the instructor groups the students and the learning activity materials;
3) Questions – critical thinking and metacognitive skills are supported in this stage where students are asked to consider the potential implications of the exercise scenario the groups are studying;
4) Exhibit – goals at this stage are to encourage collaboration and active decision making. Scenario example for this exercise: designing a product.

5) Reflections – Near the completion of the active learning activity, the students should be encouraged to reflect on the learning process – to ponder what they learned and learned from others. (See Figure 4).

Traveling further up the path of curriculum design, from an experiential learning perspective, Nelson (1996) examines changes in accounting education in alignment with the tetrahedral model of learning (developed by Jenkins, 1979 and Bransford, 1979). In this model four factors interact to determine learning outcomes: criterial measures (expected learning outcomes); characteristics of the learners (skills and prior knowledge of the students); nature of materials (curriculum, pedagogy, texts, etc.); and learning activities (students behaviors and learning strategies).

Characteristics of the E-Learning Framework include:

- Instructional strategy (collaboration, articulation, reflection, role-playing, exploration, problem solving); Our project: Financial Statement Analysis project – authentic learning activity with goals/expected outcomes of project assignment using Bloomberg technology
- Pedagogical models and constructs (open/flexible learning, distributed learning, knowledge building communities) – initial instructor guided training and navigation of technology; then, students perform the necessary steps to complete the project
- Learning technologies (asynchronous and synchronous communication tools, hypermedia and multimedia tools, web authoring tools, course management systems) - Bloomberg platform functions as a supplement to traditional accounting and finance classroom models and materials. (Dabbagh, 2006)

From the perspective of bundling information for user adoption and value recognition, Jonassen, Carr, and Yueh (1998) have described the benefits of constructing databases in learning and organizing information. In order for a learner to be able to construct a database, the learner has to be able to i) structure information about their topic, ii) identify and create appropriate and relevant fields, and iii) construct the database based on potential queries that would be helpful and relevant.

For instructional design from the constructivist cognitive science perspective, “real world contexts” situated cognition is a key attribute to the student’s learning experience. This view is supported in Brown, Collins, Duguid (1989a); Resnick (1987); and Rogoff, Lave (1984). Bransford, Sherwood, Hasselbring, Kinzer, Williams (1990) define real world contexts where the task is not isolated, but rather the instructors “design projects and create environments that capture a larger context in which the problem is relevant. To build on this framework, Further, real world context refers to the learning task and the surrounding environment of information base (Brown, Collins, Duguid, 1989a; Resnick, 1987). Spiro (1988) emphasizes the importance of environmental context in instructional design because of the constructivist view that information is not remembered as independent, abstract entities. Rather learning occurs in a
context and the context forms an inexorable link with the knowledge imbedded within (Bednar, Cunningham, Duffy, Perry, 1995).

To build on this framework, Collins (1991) demonstrates that student activities involving cognitive apprenticeship are an application of constructivist theory. For example, Collins applies the cognitive apprentice model a computational learning scenario where the students engaged in activities requiring the processes of:

- situated learning – learning knowledge and skills in the context to which they apply to real life situations;
- modeling – showing how a process develops over time;
- explaining – stating why it (modeling) happens that way;
- coaching – observing students as they work and providing assistance when needed;
- reflection – the student looking back over his/her performance and analyzing the performance;
- articulation – the act of the student verbalizing the reflection stage;
- exploration – getting the student to try different hypotheses, methods, and strategies.

Cognitive apprenticeship – role of the educator is cognitive mentor who shares thought processes and solution derivations with students. Collins, Brown, and Newman (1988) discuss cognitive apprenticeship, noting a key feature of effective cognitive apprenticeship is that the educators’ responses to students’ inquiries are not scripted. Inviting dialogue and open Q&A is significant in this type of classroom experience. This learning experience is supported by Bloomberg’s immediate response to users’ questions.

CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

Going forward: We are currently reaching out across the university to engage faculty, staff, and students in all disciplines to identify how the Bloomberg information technology system can benefit their educational experience. The authors of this article, both accounting and finance professors, examined the potential benefits of integrating the Bloomberg information technology system into the curricula. There is opportunity for research on the usefulness of Bloomberg applications at a broader university level to include evidence gathering in the disciplines of: medicine, law, political science, education, foreign languages, environmental science, and other majors. Identifying global sectors’ formulation, college curricula will help students prepare for entry into real-world occupations: political science, education, foreign languages, sciences, medical industry, law, business, not-for-profit (philanthropic), arts, music, journalism, government, agriculture, energy. McCarthy (2010) recommends a direction for future research as examining the learning styles of future accountants as the US mover from GAAP (rules-based) toward adoption of IFRS (principles-based) standards – will accountants shift from the often categorized assimilator to the converger style of learning and information processing? Developing an effective method for introducing information technology into the academic environment (Silva and Dias, 2007) emphasizes the potential for added pedagogical value of implementing active learning systems as a viable direction for future research.
REFERENCES


APPENDIX A: Training Documents

“In 1981 Bloomberg started out with one core belief: that bringing transparency to capital markets through access to information could increase capital flows, produce economic growth and jobs, and significantly reduce the cost of doing business. Today’s Bloomberg builds on that foundation – everything we do connects decision makers in business, finance and government to a broad and dynamic network of information, news, people and ideas that enables faster, more effective decisions.”

Source: http://www.bloomberg.com/about/

Hand Out #1

GUIDE TO BLOOMBERG’S INFORMATION PROGRAMS

THE BLOOMBERG SYSTEM

Bloomberg is a computer information and retrieval system providing access to financial and economic data, news, and analytics. Bloomberg terminals are common in most trading floors and are becoming more common in universities where they are used for research, teaching, and managing student investment funds. The Bloomberg system provides 24-hour, instant access to information on most U.S. and foreign securities: stocks, bonds, asset-backed securities, swaps, and derivatives; economic information by country; current and historical news and information on corporations and countries; analytical packages for evaluating bonds, equity, derivatives, and portfolios. For detailed applications of the system, one should view the Bloomberg tutorials. These tutorials can be accessed directly from the Bloomberg system by typing BU <GO> to bring up the Bloomberg Information Menu and then clicking “Tutorials.”

Bloomberg Keyboard

The Bloomberg keyboard allows you to access information within the Bloomberg System. The keyboard consists of several specialized, color-coded function keys:

- **Green Action Keys** send a specific request to the system with the system in turn responding:
  - **GO**: Press <GO> for entering commands
  - **NEWS**: Press <News> for accessing 24-hour, on-line global news service
  - **HELP**: Press <help> for terminology, formulas, and defaults. For specific information, type a name and then press <help>; for help from a Bloomberg representative, press <help> twice.
  - **MENU**: Press <Menu> to back up to the previous screen or menu.
  - **PRINT**
  - **PAGE FWD**
  - **PAGE BACK**

- **Yellow Function Buttons** take the user to information and analytical functions for specific markets:
  - **BLAW**: Legal information, opinions, judgments, dockets, legislation
  - **GOVT**: Domestic and foreign securities and indices
**EQUITY:** Equity news, company information, company financial information, historical prices, equity indices, mutual fund information, and equity derivatives (a company’s option, futures, warrants, convertibles, and swaps)

**CMDTY:** Commodities by sector, futures, options, and OTC pricing contributors

**CORP:** Corporate bonds and bond indices

**INDEX:** Indices for markets and countries

**CRNCY:** Foreign exchange spot rates, forward rates, and cross rates, currency monitors, and currency indices

**M-MKT:** Money market rates and indices (e.g., LIBOR, commercial paper rates, and federal funds rates)

**MRTG:** Mortgage securities, agency pool reports, and prepayment statistics

**MUNI:** Municipal indices and Moody’s municipal bonds

**PFD:** Preferred stock information

**CLIENT** – General function for creating, customizing, and updating portfolios

The yellow function buttons are a good way to get started on Bloomberg. For example, to access information on a company and its securities, you press the “Equity” button, [EQUITY], and then press the ‘Go’ button, <GO>. A menu will appear that will identify where a function or information is located. You can then type the number corresponding to the menu option in the top left corner of the screen and press <GO>, or move the cursor to the option and click.

For example, to find a company or security’s ticker symbol from the Equity Menu Screen, you would do the following:

- Press [EQUITY]
- Type 1 on the Menu Screen and hit <GO> (or move cursor to “Finding Securities,” (Option 1) and click. This will bring up the “Ticker Symbol Look Up” Screen.
- On Ticker Symbol Look Up Screen, type the name of the company as accurately as possible. This will bring up a list of companies.
- Scroll down to find the name of the company.
- Click the name of the company or type the ticker symbol to access a menu of information and functions for that company: Company Information/Description, Historical Prices, News/Research.

Similar procedures can be followed to identify tickers or identifies for bonds, corporate securities, commodities, currencies, and indices: Press the relevant “Yellow Key” (e.g., [CORP] or [INDEX]) an <GO> and then type or click the “Find Security” option. Note, if you know the ticker symbol or identifier, then you can access the stock, bond, index, or currency directly by typing the ticker/identifier and then pressing the relevant key; for example to access IBM, enter: IBM [EQUITY].

**Loading Information on a Stock, Bond, Currency, or Index**

In general, to load a corporate security (e.g., stock or bond), index, currency, or commodity in Bloomberg:

- Type in the ticker or identifier
- Press the yellow key that represents the type of asset; e.g., [EQUITY] or [CORP] <GO>
Examples:

- To pull up IBM stock: enter IBM [EQUITY] <GO>
- To pull up IBM’s 6.5% coupon bond maturing in 10/2028, enter IBM 6.5 10/28 [CORP] <GO>
- To pull up the S&P 500 index: enter SPX [Index] <GO>
- To pull up the British Pound: enter GBP [CRNCY] <GO>
- To pull up crude oil futures contracts traded on the New York Mercantile Exchange. Enter CLa [CMDITY] <GO>
- To pull up U.S. Treasury Bonds. Enter: US [GOVT] <GO>

There is an auto complete function that allows the user to select a Bloomberg function or a particular security from a drop down list. Simply type the company or functions you are searching for in the blue command box at the top of the screen, but do not hit <GO>. A list will drop down and clicking on it or typing in the appropriate mnemonic can access the security or function.

Once you’ve loaded the security or index, you are taken to a “homepage” menu that categorizes all the functions on the selected security and submenu screens that can be accessed by either typing the number or function in the left corner of the screen or clicking the relevant option.

There are two main types of screens in Bloomberg – descriptive and analytical. Descriptive screens provide information about the underlying security, such as trade information, expiration, and risk information. Descriptive screens pull data from Bloomberg and present it in an orderly fashion; they usually do not perform calculations. Analytical screens, on the other hand, typically solve for the price of the security or portfolio based on customized inputs.

In Bloomberg, many of the functions that are used for evaluating securities are common and as a result have a common command. For instance, the GP function is a price graph that can be used for each security type. Derivatives, indices, interest rates, currencies, commodities, and bond futures often use many of the same functions. If you know the name of the function (e.g. DES for description) and the security is already loaded, then you can access the function’s screen directly by simply typing the name of the function (e.g., DES) in the top left corner; if the security is not loaded, then you can type the ticker, hit the yellow key, and type the function; for example: IBM [EQUITY] DES <GO>. Also note that once you have accessed the function screen, you can always press the green “Help” key to bring up a screen with information, defaults, and instructions related to that function.

**GETTING STARTED**

**BLOOMBERG COMPANY INFORMATION**

- Type Company Ticker
- Hit <Equity>

Example:
- IBM <Equity>
You will see a menu with useful function: Company Information, Historical Prices, and News. Some of the interesting functions and information:

- Press green “Quote 1” or “Quote “ key for a snapshot and market information.
- Hit Relative Performance from Menu or type RV.
- Type FA (Financial Analysis)
- Type HH for Hoover’s Handbook

BLOOMBERG CORPORATE BOND INFORMATION AND FUNCTIONS

- Type Company Ticker
- Hit <Corp>
- You will see a menu of outstanding bonds of the company. Type the number of the bond and press <GO>. This will bring up a “Menu” of functions and information that can be accessed on that bond.

Example:

- IBM <corp>

You will see a menu with useful function:

- Yield and Spread Analysis—YAS (Hit 2 from Menu and then go to YAS)
- Issue and Issuer information: Description (Trace Trade Graph); Ratings; Prospectus
- DDIS: Determines how a company is leveraged using maturity distribution
- RVM: Graphs the historical spreads.
- TRA: Calculates total return of a particular bond
- GP graphs historical closing prices
- RV graphs historical spreads
- ISSD provides an overview of financial data on the issuer
- CRPR views current and historical ratings

Useful functions for interest rates and general bond information:

- YCRV: Yield curve analysis
- BTMM: Overview of current interest rates: Fed funds; Treasuries, Repos and LIBOR.
- GGR: Global summary
- IYC: International yield curves
- IM: Access to Treasury and money-market information
- SRCH creates custom bond searches

BLOOMBERG NEWS AND THE ECONOMY

For general information related to fixed income:

- N to access all Bloomberg news
- NH for current news by newswires
- TOP For Bloomberg news and information
- TOP BON for top bond information
- NI FED for Federal Reserve Information
- NI for information on corporate and country ratings
For economic and financial market information:

- ECO calendar of economic releases
- WECO for world economic calendar. The function can be used to find economic indicators
- ECST to find world economic statistics. The function can be used to find economic indicators and Beige Book.
- CBQ for market summary benchmark information
- FOMC for information on policy changes of the FOMC
- FED for a calendar of Federal Reserve releases
- FWCV used to project implied forward rates

**SETTING UP A PORTFOLIO**

A user can set up a stock or fixed-income portfolio on Bloomberg. Once the portfolio is loaded, the user can obtain current market information and apply Bloomberg analytics to analyze the portfolio.

**Creating Portfolios**

**PRTU:** PRTU displays a list of portfolios. To create a portfolio using PRTU:
Type PRTU <GO> On PRTU Screen, click the “Create New” button. This will bring up a three-page screen for inputting information:
Page 1: Name of your portfolio, Asset Class (Equity, fixed income, balanced), and Benchmark (e.g., S&P 500)
Page 2: Screen for inputting securities by their identifiers (Note: A helpful way to load securities is to go to the index and find the securities of interest; then drop and drag the security)
Page 3 identifies the defaults
Once the portfolio is loaded, hit the menu key. The name you have given to the portfolio will then be displayed on the PRTU Screen.

**Analyzing Portfolios**

**PMEN:** With the portfolio loaded, type PMEN to access a menu of functions to apply to the portfolio: Display and Valuation, Equity Analytics, News and Research headlines. For example, clicking the “News and Research” function (NPH) for the Energy Stock Portfolio displays current news listings for each stock in the portfolio.
BLOOMBERG GUIDE BY TOPICS

GETTING STARTED ON BLOOMBERG

BLOOMBERG KEYBOARD
   Green Action Keys
   Yellow Functional Buttons

FUNCTIONS TO GET STARTED
   BU – Bloomberg Training Resources
   EASY – Display of Tips
   EXCH – List of all Exchanges Available on Bloomberg
   N – Access to Bloomberg News
   BBXL – Overview of How to Import Bloomberg Data to Excel
   BLP – Bloomberg Launchpad for Setting up Interactive Workstation

ECONOMIC AND FINANCIAL MARKET INFORMATION
   ECO — Calendar of Economic Releases
   WECE — World Economic Calendar and Economic Indicators
   ECST – World Economic Statistics, Economic Indicators and Beige Book
   CBQ – Market Summary Benchmark Information
   FOMC — Information on Policy Changes of the FOMC
   FED – Calendar of Federal Reserve Releases
   ETF – Exchange-Traded Funds

MACROECONOMIC AND MARKET ANALYSIS
   ECO – Key Indicators and Economic Information from Economic Menu
   ECST – Key Economic Statistics by Country
      GDP
      Labor
      Sales
      Economic Indicators
      Housing and Construction
      Money and Banking
      Price Indicators
      Manufacturing and Trade
   TOP – Monitoring Economic News
   TNI – Searching for Economic News
   WECE – Identifying Futures Economic Events
   CECO – Creating a Customized Calendar of Current and Upcoming Economic Events

LAW
   BLAW – Law and Cases
FUNCTIONS AND INFORMATION ON THE EQUITY MENU SCREEN
   BQ – Price and Trade Data
   QRM – Bid/Ask Quotes
   CF – Corporate Filings and SEC Filings (EDGAR)
   MOST – Most Active Stocks
   HILO – Stocks, Mutual Funds, ABS, and REITS that have 52-Week High or Low
   HALT – List of Suspended or Halted Stocks by Exchange
   TOP STK – Top Bloomberg News Headline Related to Stocks
   CACT – Displays Calendar of Corporate Actions

FUNCTION FOR STOCK RETURNS AND VARIABILITY
   GP – Price and Volume Graph
   COMP – Compares the Returns of Security with Benchmark Index
   BETA – Beta Calculations
   HRA – Historical Regression
   HS – Historical Spreads
   HVG – Volatility Graph
   ECCG – Credit Company Graph

INDEX BY SECTORS
   IBQ – For industry menu
   BBNI Industry News
   Index Menu
   “Index Symbol” [INDEX] <GO>
   Useful Function on Index Menu:
      RV – Relative Value
      MEMB – Index Weightings
      GWGT – Group Weighting
      MRR – Member Returns

TECHNICAL FUNCTIONS ON A STOCK’S EQUITY MENU
   Relative Strength Index – RSI
   Moving Averages – MACD
   Overview Chart – GOC
   Bollinger Bands – BOLL
   Money Flow – GM
   Bullish and Bearish Trends – CND

STOCK PORTFOLIO FUNCTIONS—PRTU

   STEPS FOR CREATING PORTFOLIOS
      Step 1: PRTU: Create a Portfolio Using PRTU
      Step 2: Type PMEN to access a menu of functions to apply to the portfolio

PORTFOLIO BASKET
   CIXB – Newer Bloomberg basket function
CORPORATE BOND INFORMATION—Ticker [CORP]
  RATC – Search of Credit Rating Changes in the Market
  ISSD – Quick Overview of Company Key Ratios
  DDIS – Company Outstanding Debt
  NIM – Monitoring New Bonds
  SRCH – Find Corporate Bonds

TREASURY AND FEDERAL AGENCY INSTRUMENTS – [GOVT]
  BBT – Monitors and Compares Prices of Government Security Dealers

MUNICIPAL BONDS – [MUNI]
  PICK – Find the Latest Municipal Offering
  SRC – Find Municipals Using Bloomberg Customized Search

INTERMEDIATE SECURITIES
  Money Market Information – [M-MKT]
  Mortgage Security Information – [MRTG]
  Common Equity Information – [EQUITY]
  Bond Information by Corporation – [CORP]
  Government Securities – [GOVT]

BOND PRICE AND YIELD INFORMATION

Corporate Bond Price and Yield – Ticker [CORP]
  DES – To Obtain Information on the Bond Coupons, Day-Count Convention, Maturity, and other Features
  BFV – To Analyze where the Bond Should Trade given Comparable Bonds
  YAS – To Determine the Bond Price, YTM, and Yield to Worst

Treasury Security Price and Yield – [GOVT]
  DES – To Obtain Information on the Bond Coupons, Day-Count Convention, Maturity, and other Features
  BFV – To Analyze where the Bond Should Trade given Comparable Bonds
  YAS – To Determine the Bond Price, YTM, and Yield to Worst
  SRCH – To Search for Government Bonds Using Different Criterion
  BTMM – Find Major Rates and Security Information
  GGR – Find Global Summary of Government Bill and Bond Rates for Countries
  FMC – Find Yields Across Maturities of Multiple Corporate and Government Bonds

TOTAL BOND RETURN
  TRA – To Determine Total Return

YIELD CURVE INFORMATION
  YCRV – Current and Historical Yield Curves for Government and Corporate Bond Sectors
  IYC – Find Yield Curves for Different Countries Using
  FWCV – Project Implied Forward Rates
INFORMATION AND NEWS AFFECTING THE STRUCTURE OF INTEREST RATES
- Top Bond Information
- Federal Reserve Information
- Information on Corporate and Country ratings

DEFAULT RISK
- Evaluate a Corporation Current and Historical Credit Ratings
- Evaluate a Bond Spread
- Evaluate Corporate Financial Information

EXPLORING FIXED-INCOME PORTFOLIO FUNCTIONS ON THE PMEN SCREEN
- Market Value and Price Display
- Shock analysis on current portfolio given multiple yield curve shifts
- Proposed Trade and Impact Analysis on Current portfolio
- Portfolio Distribution by Sector and Maturity

ASSET-BACK SECURITY FUNCTIONS
- Glossary of CMO Class Types
- Yield Table
- Cash Flow Graph
- Weighted Average Life Graph
- Collateral Composition
- Historical Prepayments
- Collateral Information
- Display Table of Dealer Prepayment Assumptions
- Chart of Prepayment Model Available on Bloomberg
- Displays of Prepayment Model Based on Select Scenarios
- Values a Mortgage or Asset-Backed Security Given Different Assumptions

FUTURES CONTRACT INFORMATION
- Contract Table Menu
- Contract Table

FUTURES PRICING AND HEDGING FUNCTIONS
- Find the Fair Value and Carrying Cost Value
- Find the Number of Futures Contracts Needed to Hedge a portfolio

OPTION INFORMATION
- Find the Most Actively Traded Options on a Particular Stock

- Option Strategy Functions: Generates Profit Tables and Graphs
- Values Options using the Black-Scholes, Binomial, and other Option Pricing Models
- Volatility Smiles and Surfaces
- Historical Volatility Function
- Historical Implied Volatilities
- Option Greek: delta, theta, gamma, vega and rho
CALL and PUT – Find a Security call and put values, implied volatilities, and Greeks
COAT AND POAT – Option Value Sensitivity Analysis
OVX – Evaluate Exotic Options

CREDIT SWAPS
  CDSW – Credit Default Swap Valuation Calculator
  ASW – Asset Swap Spread and Z-Spread Calculation
  CDS – Evaluate a Default Swap Basket
APPENDIX B

CLASS PROJECTS INTEGRATING COURSE CONCEPTS AND BLOOMBERG INFORMATION TECHNOLOGY SYSTEM

Finc 300 Company Analysis Project

Vertical and Horizontal Analysis:
Choose a company from the following list:  3M Company, Alcoa, Caterpillar, Du Pont, Exxon Mobil, Hewlett Packard, IBM, Johnson & Johnson, Kraft, McDonald’s, Merck, Coke, Home Depot, United Technologies, Verizon, Wal-Mart, Walt Disney

Income Statement:
Examine the last 5 (common size) annual Income Statements.
Answer the following questions:
How do expenses affect Net Income?
  Cost of Goods Sold
  Selling & Gen Expenses
  Depreciation
  Interest Expense
  Income Taxes
Compare Income statements from the last 5 years. Make at least 5 observations.
How would Management address a favorable/unfavorable change?

Balance Sheet:
Examine the last 5 (common size) annual Balance Sheets.
Answer the following questions:
What is the relationship of Assets to each of the following items?
  Cash and Cash Equivalents
  Inventory
  Accounts Receivable
What is the relationship of Total Liabilities and Shareholder Equity to each of the following items?
  Long Term Debt
  Equity
  Retained Earnings
How is the company funding purchases of assets?
How have Liabilities and Shareholders’ Equity changed?
What are the drivers for this change?
Compare Balance Sheets from the last 5 years. Make at least 5 observations.
How would Management address a favorable/unfavorable change?

Company Analysis

Describe the company.
Evaluate the company using ratio analysis. As a minimum evaluate:
  Profitability
  Liquidity
  Efficiency
  Use of leverage
What economic factors influence your company?
What are the company strengths, weaknesses, opportunities and threats (SWOT)?
Compare your company to 5 industry peers. Make at least 5 observations.
Calculate the price of the stock using the Dividend growth model and the CAPM.
Given the price you calculated, the financial ratio analysis, economic analysis and SWOT analysis make a decision to buy, sell or hold. Explain your rationale.
Vertical and Horizontal Analysis:
Choose a company from the following list: 3M Company, Alcoa, Caterpillar, Du Pont, Exxon Mobil, Hewlett Packard, IBM, Johnson & Johnson, Kraft, McDonald’s, Merck, Coke, Home Depot, United Technologies, Verizon, Wal-Mart, Walt Disney, P&G

Income Statement:
Examine the last 5 (common size) annual Income Statements.
Answer the following questions:
How do expenses affect Net Income?
  - Cost of Goods Sold
  - Selling & Gen Expenses
  - Depreciation
  - Interest Expense
  - Income Taxes
Compare Income statements from the last 5 years. Make at least 5 observations.
How would Management address a favorable/unfavorable change?

Balance Sheet:
Examine the last 5 (common size) annual Balance Sheets.
Answer the following questions:
What is the relationship of Assets to each of the following items?
  - Cash and Cash Equivalents
  - Inventory
  - Accounts Receivable
What is the relationship of Total Liabilities and Share holder Equity to each of the following items?
  - Long Term Debt
  - Equity
  - Retained Earnings
How is the company funding purchases of assets?
How have Liabilities and Shareholders’ Equity changed?
What are the drivers for this change?
Compare Balance Sheets from the last 5 years. Make at least 5 observations.
How would Management address a favorable/unfavorable change?

Company Analysis

Describe the company.
Evaluate the company using ratio analysis. As a minimum evaluate:
  - Profitability
  - Liquidity
  - Efficiency
  - Use of leverage
What economic factors influence your company?
What are the company strengths, weaknesses, opportunities and threats (SWOT)?
Compare your company to 5 industry peers. Make at least 5 observations.
Perform distress prediction analysis (we will discuss methods include calculation of Altman’s z-score).
Given the price you calculated, the financial ratio analysis, economic analysis and SWOT analysis make a decision to buy, sell or hold. Explain your rationale.
WACC CASE STUDY

Requirements:

Use Bloomberg to find the following information for Cintas:

Find the book value of the debt and the book value of the equity.

Estimate the cost of equity:
1. What is the most recent stock price for Cintas?
2. What is the market value of the equity or market capitalization?
3. How many shares outstanding?
4. What is the most recent annual dividend?
5. Can you use the dividend discount model to value the stock? If so, what is the cost of equity?
6. What is the beta for Cintas?
7. What is the yield on a 3 month treasury?
8. Using the historical market risk premium, what is the cost of equity using the CAPM?

Estimate the cost of debt:
1. Find the YTM for each issue of Cintas’ bonds outstanding.
2. What is the weighted average cost of debt for Cintas?
3. Does it make a difference if you use market value weights or book value weights?

Calculate the WACC using book value weights.
Calculate the WACC using market value weights.
Assume Cintas has a 35% marginal tax rate.
Which cost of capital is more relevant?
Figure 1: Kolb Learning Styles

<table>
<thead>
<tr>
<th>Feeling (Concrete Experience - CE)</th>
<th>Doing (Active Experimentation - AE)</th>
<th>Watching (Reflective Observation - RO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodating (CE/AE)</td>
<td>Converging (AC/AE)</td>
<td>Assimilating (AC/RO)</td>
</tr>
<tr>
<td>Thinking (Abstract Conceptualization - AC)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Kolb, 1984)

Concrete Experience - CE (feeling) ---- V ----
Abstract Conceptualization - AC (thinking)
Figure 2:
Comparison of Traditional and New Blended Approaches in Accounting and Finance Education

<table>
<thead>
<tr>
<th>Traditional Approach</th>
<th>Blended Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introductory accounting and finance courses focus on transaction mechanics and financial equations.</strong></td>
<td><strong>Introductory accounting and finance focus on the role of accounting and finance in society and in organization; increased focus on using information for decision making.</strong></td>
</tr>
<tr>
<td>Heavy emphasis on teaching rules.</td>
<td>Increased emphasis on the learning process—learning how to learn.</td>
</tr>
<tr>
<td>Heavy emphasis on technical courses</td>
<td>Broader emphasis on general education and business and organizational knowledge.</td>
</tr>
<tr>
<td>Students seen as passive recipients of knowledge.</td>
<td>Students seen as active participants in learning.</td>
</tr>
<tr>
<td>Little integration of subject matter; accounting and finance courses taught in isolation</td>
<td>Heavy integration of tax, managerial accounting, financial accounting, systems and auditing; heavy integration of functional areas of financial management, financing, liquidity, profitability.</td>
</tr>
<tr>
<td>Technology used sparingly in noncomputer courses</td>
<td>Technology use integrated throughout the business curriculum</td>
</tr>
</tbody>
</table>

*Source: Adapted from Williams, 1993 (Journal of Accountancy) and further adapted by Shagena and Frings*
Figure 3: A Comparison Between Traditional and Experiential Learning

<table>
<thead>
<tr>
<th></th>
<th><strong>Traditional Learning</strong></th>
<th><strong>Experiential Learning</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student</strong></td>
<td>Student is passive</td>
<td>Student is active</td>
</tr>
<tr>
<td></td>
<td>Student as spectator</td>
<td>Student as participant</td>
</tr>
<tr>
<td></td>
<td>Vicarious experience by student</td>
<td>Direct experience by student</td>
</tr>
<tr>
<td></td>
<td>Low student involvement</td>
<td>High student involvement</td>
</tr>
<tr>
<td></td>
<td>Low student commitment</td>
<td>High personal commitment for student</td>
</tr>
<tr>
<td></td>
<td>Less risk for student</td>
<td>More risk for student</td>
</tr>
<tr>
<td></td>
<td>Impersonal</td>
<td>Personal</td>
</tr>
<tr>
<td></td>
<td>Student as “empty cup”</td>
<td>Student as “full cup”</td>
</tr>
<tr>
<td><strong>Teacher</strong></td>
<td>Teacher-centered</td>
<td>Student-centered</td>
</tr>
<tr>
<td></td>
<td>Teacher has control</td>
<td>Student has control</td>
</tr>
<tr>
<td></td>
<td>Teacher’s experience primary</td>
<td>Student’s experience primary</td>
</tr>
<tr>
<td></td>
<td>Teacher as transmitter of knowledge</td>
<td>Teacher as guide/facilitator to learning</td>
</tr>
<tr>
<td></td>
<td>Teacher decision-maker</td>
<td>Student decision-maker</td>
</tr>
<tr>
<td></td>
<td>Teacher knows</td>
<td>Student knows</td>
</tr>
<tr>
<td></td>
<td>Teacher responsible for learning</td>
<td>Student responsible for learning</td>
</tr>
<tr>
<td></td>
<td>Teacher as judge</td>
<td>Absence of excessive teacher judgment</td>
</tr>
<tr>
<td><strong>Learning/Knowledge</strong></td>
<td>Predefined learning</td>
<td>Customized learning</td>
</tr>
<tr>
<td></td>
<td>One-way communication</td>
<td>Two-way communication</td>
</tr>
<tr>
<td></td>
<td>Broadcast learning</td>
<td>Interactive learning</td>
</tr>
<tr>
<td></td>
<td>Goal of Knowledge accumulation</td>
<td>Goal of knowledge, skills and attitude</td>
</tr>
<tr>
<td></td>
<td>Stress cognitive processes</td>
<td>development</td>
</tr>
<tr>
<td></td>
<td>Linear, sequential learning</td>
<td>Includes cognitive, affective and behavioral</td>
</tr>
<tr>
<td></td>
<td>Instruction</td>
<td>processes</td>
</tr>
<tr>
<td></td>
<td>Predictable outcome</td>
<td>Non-linear learning</td>
</tr>
<tr>
<td></td>
<td>Emphasis on pedagogy/didactics</td>
<td>Discovery</td>
</tr>
<tr>
<td></td>
<td>School as regiment</td>
<td>Outcome not always predictable</td>
</tr>
<tr>
<td></td>
<td>Product (knowledge)-oriented</td>
<td>Emphasis on learning</td>
</tr>
<tr>
<td></td>
<td>Theory-based</td>
<td>School as fun</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process-oriented</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Student’s perception-based</td>
</tr>
</tbody>
</table>

Sources: Baker et al, 1993; Gardiner, 1989; Integration of Bloomberg model: Shagena and Frings