

## What and How We Teach Introductory Finance Through Inductive Learning

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### Abstract

The financial markets are an arena that has been changing very rapidly in recent years. This article developed as a pedagogy discussion about what and how to teach finance using the inductive teaching and learning. This method stimulate the students to learn the subject and, developing analytical attitude and critical skills. This paper also reviews both the use of literature on learning and assessment methods used in the field of finance, and intended to be discussed to increase efficiency of learning and ensure better learning outcomes for our students.

### Introduction and Literature Review

Improving educational outcome in Indonesia is a challenging problem, and this problem have become a crucial thinking for such a long time from educational policy makers, reformers and leaders. They are calling for more complex and ambitious goals to prepare youth for the demands of the 21st century. There is a constant challenge to bridge the gap between learning experience and the complexity of the real world. However, there is an arguement that an authentic learning experience should be concerned with doing exactly that: linking the real world to the classroom. These experiences allow students to combine concepts and theories from formal education and apply them to real world practice (Bennett, et al., 2002; Borthwick, et al., 2007).

In this paper author describe the visions of better schooling for finance students. In today's changing economy we relise that finance industry in Indonesia have been growth significantly and it needs youth with finance knowledge competencies to fill the positions the industry preserve.

Finance presents the theory and application of corporate finance and considered as one of the most quantified and theorized disciplines in business curriculum. The dynamic and complex nature of finance requires continuous development of new theories. Over the last few years the whole profession of finance have been continously introduced to new models, theories, and empirical results thereof over the recent years and the trend continous. The rapid changes in finance have had a profound implication for business education. Especially, such extensive and rigorous theoretical developments over the recent past have made finance teaching in college classrooms increasingly challenging. (Chang. S. J, 2005).

Teaching introductory finance is a challenge, even for experienced instructors (Biktimirov & Nilson, 2003). Teaching finance is unique because finance is a subject that are debatable and need to be researched over and over extensively.

In general the goals of introductory finance teaching and learning is to prepare the undergraduate students to become competitive when they enter the finance professional world as a practitioners or expertise after graduating. In order to get the students ready we need to tell them what finance is all about, career opportunities in finance and the basic of managerial finance role and responsibility such as financial analysis, forecasting and planning; investment and financing decisions; financial coordination and control; dealing with the financial markets; and risk management. These general finance denominator topics devided into several sub topics according to the syllabus used in the faculty.

To accomodate the needs of interactions between knowledge and skills, Cohen, Raudenbush, & Ball, 2003 describe it in a diagram bellow called instructional triangle. They argue that teaching practice is the work represented by the bidirectional arrows of drawing on professional knowledge and skill to make these interactions most productive of students' learning.

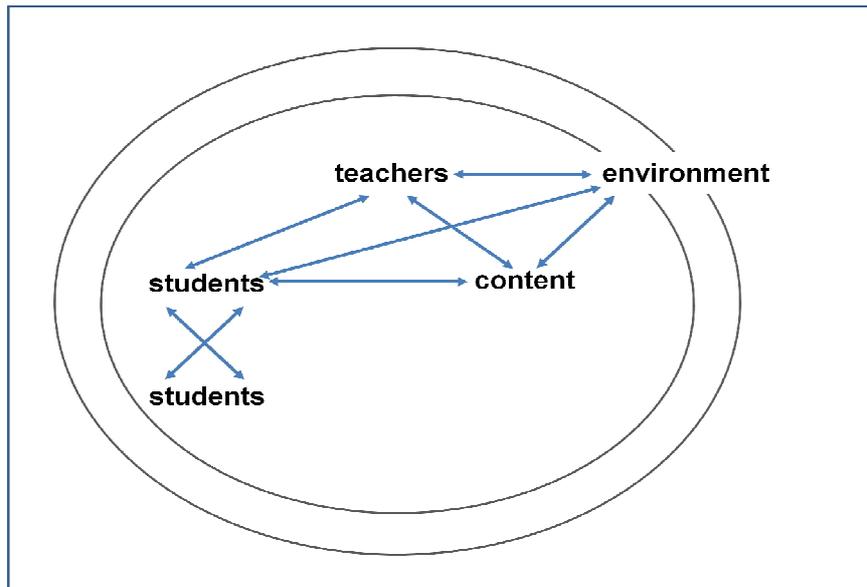


Figure 1. The instructional triangle  
Source: Cohen, Raudenbush, and Ball (2003)

The aims of this paper is to describe what and how the best teaching methods that is most suits to the students. In this paper we review some challenges that would make finance teaching and learning process becoming more interesting, challenging and easy to understand.

### What Should We Teach in Finance

In the introductory finance, students are taught how to understand the theory and practice of corporate finance. With the emphasis on the practical application of principles, concepts, and tools of financial management, students are brought to broaden their point of view about what is finance is all about.

Finance leading thinkers and teachers around the world are responsible to create the finance students who are capable to become a financial managers once they enter the industry after graduating. The financial manager of a firm plays an important role in the company's goals, policies, and financial success. The financial manager's responsibilities include financial analysis and planning; investment decisions; financing and capital structure decisions; management of financial resources; and risk management.

Reviewed to the recent developments in the theory and practice of finance in the industry, we realise that updated knowledge and skills for thinkers, teacher, and students who are going to be professional in industry is must and therefore learn finance must be of interest to graduate students, managers and researchers who wish to understand more about the latest developments in this rapidly changing field.

Our goals in teaching and learning of finance are: (1) to create a teaching circumstances that would help students make better financial decisions; (2) to provide a text that could be used in the introductory finance course, and also complete enough to be used as a reference text in follow-on case courses and after graduation; (3) to motivate students by demonstrating that finance is both interesting and relevant; and (4) to make the teaching process clear enough so that students could go through the material without wasting either their time or their professor's time trying to figure out what we were saying.

In this paper author offer the application of inductive teaching and learning to make better understanding of finance materials which include theory and practice for the students. An understanding of finance theory is absolutely essential for anyone developing and/or implementing effective financial strategies. But theory alone isn't sufficient, so we should provide numerous examples in Excel spreadsheets to illustrate how theory is applied in practice. And we believe

inductive teaching and learning method could accommodate what we need to make the teaching and learning process run as necessary.

### Inductive Learning

Inductive teaching methods, including inquiry-based learning, problem-based learning, project-based learning, case-based teaching, discovery learning, and just-in-time teaching have been developed for recent years. Traditionally teaching usually taught deductively, teachers teach students relevant theory and mathematical models, then moves on to textbook exercises, and eventually maybe gets to real world applications. Kardash and Wallace (2001), in their paper argued that traditionally teaching approach shown failure to connect course content to the real world.

Prince and Felder (2007), said that a better way to motivate students is inductive teaching, in which the instructor begins by presenting students with a specific challenge, such as experimental data to interpret, a case study to analyze, or a complex real-world problem to solve. Students grappling with these challenges quickly recognize the need for facts, skills, and conceptual understanding, at which point the teacher provides instruction or helps students learn on their own. The literature also demonstrates that inductive methods encourage students to adopt a deep approach to learning (Ramsden 2003) and that the challenges provided by inductive methods serve as precursors to intellectual development (Felder and Brent 2004).

What inductive methods have in common is that students are presented with a challenge and then learn what they need to know to address the challenge. The methods differ in the nature and scope of the challenge and in the amount of guidance students receive from their instructor as they attempt to meet the challenge. Inductive teaching methods come in many forms, including discovery learning, inquiry-based learning, problem-based learning, project based learning, case-based teaching, and just-in-time teaching.

### Inquiry Based Learning

In inquiry-based learning students are presented with a challenge (such as a question to be answered, an observation or data set to be interpreted, or a hypothesis to be tested) and accomplish the desired learning in the process of responding to that challenge. As with all inductive methods, the information needed to address the challenge would not have been previously covered explicitly in lectures or readings, although it would normally build on previously known material.

Inquiry learning provides opportunities for students to experience and acquire processes through which they can gather information about the world. This requires a high level of interaction among the learner, the teacher, the area of study, available resources, and the learning environment. Questioning is the heart of inquiry learning (Doner and Grande 2011). Strategy offered by Doner and Grande described in the diagram of Inquiry Based Teaching Strategy below:

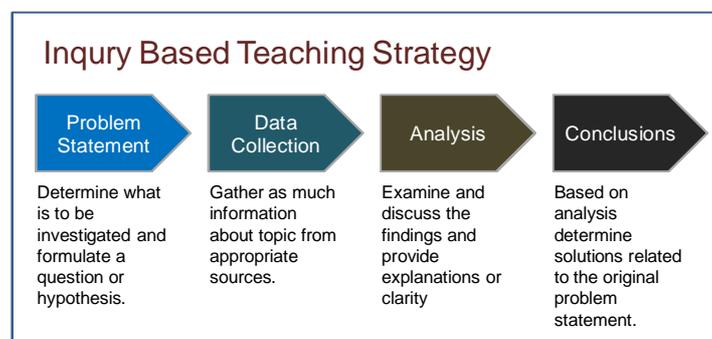


Figure 2. Inquiry Based Teaching Strategy  
Source: Doner and Grande (2011)

Any instruction that begins with a challenge for which the required knowledge has not been previously provided technically qualifies as inquiry-based learning, and the scope of the inquiry may vary from a portion of a single lecture to a major term project (Kirkman et al. 2004).

### ***Discovery Learning***

Guided Discovery Learning is based on Socratic Teaching, which is the oldest and still the most powerful teaching tactic for fostering critical thinking. Discovery Learning allows the learner to draw on his own experience and prior knowledge to discover the truths that are to be learned. Through carefully designed instruction, the student is led to discover for himself by moving from the known to the unknown, linking previous knowledge to the new learning.

Discovery learning, promotes a student-based philosophy in which the instructor takes on the non-traditional role of mentor or coach, leaving the students to discover solutions for themselves (Mastropeiri et. al., 2006). In discovery learning, students are confronted with a challenge and left to work out the solution on their own (French 2006). There is significant evidence for the benefits of involving undergraduate students in independent research (Seymour et al. 2004).

Mayer (2004), stated that the discovery-learning school of thought is misinterpreting the meaning of constructivism (involve cognitive activity rather than behavioral activity, instructional guidance rather than pure discovery, and curricular focus rather than unstructured exploration). Mayer states that discovery learning experts believe that the only way to encourage active learning is through active teaching and constructivist learning can be achieved in multiple manners of teaching, including traditional instruction, not just unguided inquiry. In this paper author believe that encouraging the student's behaviour is a good way to make discovery learning run successfully, but guidance from teacher is also a must.

### ***Problem Based Learning***

In problem-based learning courses, students work with classmates to solve complex and authentic problems that help develop content knowledge as well as problem-solving, reasoning, communication, and self-assessment skills. These problems also help to maintain student interest in course material because students realize that they are learning the skills needed to be successful in the field.

Dochy et al. (2003) in their research try to find out the effectiveness of problem-based learning. Their results suggest that students may acquire more knowledge in the short term when taught conventionally but are likely to retain knowledge longer when taught with problem-based learning. What Dochy said in his review quite the same as one of chinese proverb "I see and I forget, I hear and I remember, I do and I understand".

Student's intrinsic interest in the subject matter is really important in problem based learning method. The act of teachers to develop student's anthusias, emphasize learning as opposed to recall, promote groupwork, and help students become self directed learner would make this problem based learning runs as it planned.

### ***Project Based Learning and Hybrid Methods***

In project based learning students mainly apply previously acquired knowledge and the final product is the central focus of the assignment, while in problem based learning, students have not previously received formal instruction in the necessary background material and the solution process is more important than the final product.

Projects are complex tasks, based on challenging questions or problems, that involve students in design, problem-solving, decision making, or investigative activities; give students the opportunity to

work relatively autonomously over extended periods of time; and culminate in realistic products or presentations (Jones, Rasmussen, & Moffitt, 1997; Thomas, Mergendoller, & Michaelson, 1999).

Project-based learning involves assignments that call for students to produce something, such as a process or product design, a computer code or simulation, or the design of an experiment and the analysis and interpretation of the data. The challenge of project-based learning is to define projects with a scope and level of difficulty appropriate for the class (Prince and Felder, 2007).

### ***Case Based teaching***

In case based teaching, students study historical or hypothetical cases involving scenarios likely to be encountered in professional practice (Prince and Felder, 2007). In this case based teaching method students are challenged to use their existing knowledge and turn it into the cases reality. Teacher on the other hand must provide a case that is clear and realistic and encompass all the teaching points the teacher wishes to explore.

Case based teaching relatively more well structured and rich in contextual details, and students apply material that is already somewhat familiar than problem based learning (Lohman 2002). Studies have shown that realtive traditional teaching method, case based teaching significantly improves student retention, reasoning and problem solving skills (Fasko 2003) and the ability to make objective judgments (Dinan 2002)

### ***Just in Time Teaching***

In just in time teaching, students respond electronically to conceptual questions before each class, and the instructor adjusts the lesson to react to misconceptions revealed by students' responses (Prince and Felder, 2007).

Studies found that led to improved pretest posttest gains, course retention, class preparation, classroom interactivity, and student study habits. And it also improved student performance and engagement in general chemistry and organic chemistry courses Marrs and Novak (2004), Slunt and Giancarlo (2004).

### **Conclusions**

By linking what students are learning in finance classes to the real world, they better understand the problems they will be faced with when dealing with a constantly changing environment. In this paper, we described a classroom project for teaching finance that used inductive teaching and learning techniques to provide this link. This inductive teaching and learning methods is consistent with the constructivist point of view by making learning an interactive process. We believe that inductive teaching and learning methods would bring the benefits to staff and students in terms of improved feedback, performance, increased enthusiasm, and better relevance and understanding.

What we recommend from this paper are: (1) we should build student motivation and enthusiasm by telling them about their future career options and attractiveness of being a financial analyst in the industry of finance; (2) we should develop an interactive situation in the calssroom in order the creation of analytical skills and attitude could be created; (3) since finance is a combination of theory and practice so we must provide a learning by doing process. Practice doing assignments using *excel spreadsheets* is one good way to introduce the students what is financial analyst do in the real world, ; (4) practicing with updated and real data is one of the way to create up-to-date knowledge and experience, and we could use the latest annual report of a listing company to be analyzed, ; (5) and at last teacher's guidelines, text and supervision is a necessary through the whole process. Without teacher being at their side students could be missguidance, and the effective and efficient teaching process could not be achieved.

## Reference

- Bennett, S. Agostinho, S., & Lockyer, L. (2005), Reusable learning designs in university education. In T.C. Montgomerie & J.R. Parker (Eds.), *Proceedings of the IASTED International Conference on Education and Technology*. Anaheim, CA: ACTA Press. pp. 102-106.
- Biktimirov, E.F., & Nilson, L. 2003. Mapping Your Course: Designing a Graphic Syllabus for Introductory Finance. *Journal of Education for Business*, 786(6), 308-312.
- Borthwick, F., Bennett, S., Lefoe, G., and E. Huber (2007), Applying authentic learning to social science: A learning design for an inter-disciplinary sociology subject, *Journal of Learning Design*, Vol. 2 , No. 1, pp. 14-24.
- Chang, S.J, 2005. A Theoretical Discussion on Financial Theory: What Should We Teach and How? *Journal Of Economics And Finance Education*, Volume 4, Number 2.
- Cohen, D. K., Raudenbush, S., & Ball, D. 2003. Resources, instruction, and research. *Educational Evaluation and Policy Analysis*, 25(2), 1-24.
- Doner., K. D and Grande., M. 2011. Instructional Strategies. Buffalo Catholic Schools Conference
- Dinan, F. 2002. Chemistry by the case. *Journal of College Science Teaching* 32 (1): 36–41.
- Fasko, D. 2003. Case studies and method in teaching and learning. Paper presented at the annual meeting of the Society of Educators and Scholars, Louisville, KY
- Felder, R.M., and R. Brent. 2004. The intellectual development of science and engineering students. Pt. 1: Models and challenges; Pt. 2: Teaching to promote growth. *Journal of Engineering Education* 93 (4): 269–77
- French, D. 2006. Don't Confuse Inquiry And Discovery. *Journal of College Science Teaching* 35 (6): 58–59.
- Jones, B. F., Rasmussen, C. M., & Moffitt, M. C. 1997. Real-life problem solving.: A collaborative approach to interdisciplinary learning. Washington, DC: American Psychological Association.
- Kardash, C., and M. Wallace. 2001. The perceptions of science classes survey: What undergraduate science reform efforts really need to address. *Journal of Educational Psychology* 93 (1): 199–210.
- Marrs, K.A., and G. Novak. 2004. Just-in-time teaching in biology: Creating an active learner classroom using the internet. *Cell Biology Education* 3: 49–61.
- Mastropieri, M. A., Scruggs, T. E. , Norland, J. J. , Berkeley, S, McDuffie, K, & Tornquist, E. H. 2006. Differentiated Curriculum Enhancement In Inclusive Middle School Science: Effects on Classroom and High-Stakes Tests. 40, 130-137.
- Mayer, R 2004. Should There Be A Three-Strikes Rule Against Pure Discovery Learning? The Case For Guided Methods Of Instruction. *American Psychologist*. 59, 14-19.
- Prince, M., and Felder, R. 2007. The Many Faces of Inductive Teaching and Learning. *Journal of College Science Teaching*, Vol. 36, No. 5, March/April 2007.
- Ramsden, P. 2003. *Learning to teach in higher Education*. 2nd ed. London: Taylor and Francis.
- Slunt, K.M., and L.C. Giancarlo. 2004. Student-centered learning: A comparison of two different methods of instruction. *Journal of Chemical Education* 81 (7): 985–88.
- Thomas, J. W., Mergendoller, J. R., and Michaelson, A. 1999. *Project-based learning: A handbook for middle and high school teachers*. Novato, CA: The Buck Institute for Education.