

Testing Different Teaching Techniques in First Year Finance Seminars

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Abstract

The author compares the relative successes of two different teaching techniques in seminars for a first year university course in Finance. This paper tests to see if there is one overriding approach that enables all students to learn effectively in seminars or whether different students benefit from different teaching techniques. An experiment will be carried out on a subset of a first year Finance group in Semester 1, 2001 for five separate fifty-minute sessions. Four groups (i.e. sixty students) will be taught using one teaching technique. The remaining four groups will face an alternative approach. The author will consider the performance of the students in these groups in the light of a personality questionnaire designed to ascertain preferred learning styles. The ultimate goal is to deliver seminars that offer the students the best possible learning environment.

Keywords: learning styles, teaching methods, small-group work.

Introduction

The aim of this paper is to highlight a challenge faced by many university teachers and to consider a practical method of dealing with the situation. Biggs (1994) summarizes the problems faced by teachers in higher education. He notes that resources are constrained and hence class sizes are on the increase with the emergence of mass methods of teaching and assessment. Restrictions also exist in the structure of the degree programs themselves and the manner with which they are delivered. The end result is that many students have little contact with their lecturer and the lecturer has limited chance to assess the course and the progress of the students. Since little can be done to change the overall picture, the lecturer must work “smarter” and use the teaching time available in the best possible way. A weekly seminar in which the large lecture group is divided into smaller groups of fifteen students or less could hold the key. This provides an opportunity for the student to learn in a less formal environment than the lecture theatre. Furthermore, the lecturer has direct contact

with the students. However, the pertinent question is, “How should the seminar be organized?”

There exists a vast literature in the area of education and while space permits the inclusion of a detailed analysis, Biggs (1994) provides an excellent summary of the competing models. He outlines the various theories of learning and notes how opinion on these has evolved over time. However, his most salient points concern the link between research and teaching. He notes the importance of a sound theory underlying the practicalities of teaching but also that the theory should be derived from the individual teaching context.

In light of this, the author compares the relative successes of two different teaching techniques in seminars for a first year university course in Finance. The aim is to deliver seminars that offer the students the best possible learning environment. This paper tests to see if there is one overriding approach that enables all students to learn effectively in the seminars of this course or whether different students benefit from different teaching techniques.

Background

The author of this paper is neither a psychologist nor theorist in the area of education. Quite simply she is on the front line of teaching and seeks practical, sensible approaches to teaching seminars in a large first year university course.

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This experiment will be carried out on a subset of the first year Finance group at Adelaide University in Semester 1, 2001. It is based on a pilot experiment run on the same course in the previous year, the results of which may be found in the proceedings of the OOICTL Business 2000 International Conference, (2000). There are 450 students registered to take this course. They come from a variety of academic backgrounds and have very different requirements of the course. For instance, some will aim to major in a completely different area and hence choose Finance as a one-year option to get a basic overview of the subject. At the other end of the spectrum there are students who wish to major in Finance. It follows that the course must be relevant for those wanting a one-year option but also for those wishing to pursue Finance in later years.

In terms of course structure, each student will face two lectures per week for the duration of the twelve-week semester. They will also be required to sign up for a weekly seminar. The students will be divided into 30 seminar groups according to their timetable commitments. The experiment will then be carried out on eight such groups for five separate fifty-minute sessions. Four groups (i.e. sixty students) will be taught using one teaching technique. The remaining four groups will face an alternative approach.

Experiment

Two Different Approaches to the Seminar

A frequently used technique is to treat the seminar as the opportunity for a mini lecture. The students are required to prepare a response to the task in question before the seminar time. During the seminar, the lecturer uses the whiteboard or overhead facility to supply a sample response to the task. The relative merits of this approach are discussed in Brown and Atkins (1996).

An alternative approach concerns small group activities. The benefits are well documented in the literature but are summarized particularly well in Andresen (1993). Here the same task is set and students come prepared. However, learning becomes an active rather than passive activity. The lecturer still has an important role to play in guiding the session but is no longer providing the answers. The emphasis is on engaging activity and encouraging participation.

This approach is certainly not new. Indeed, small group teaching has its roots in the work of Plato's teacher, Socrates who used subtle questioning as his strategy! While

times may have changed, the principles behind small group teaching remain the same, namely the development of communication and intellectual skills plus the personal development of the students. Small group teaching did not really emerge until the late nineteenth century and the term "small group teaching" encompasses a whole host of different techniques. There are many different possibilities here. For an excellent coverage of the different small group learning methods see the Supplemental Instruction, University of Missouri-Kansas City (1995) and for a discussion of the perceived benefits of this approach see Luker (1987).

In this experiment the jigsaw learning method, also known as the "syndicate" approach, is adopted. The group is divided into smaller sub-groups and each works on some portion of the problem. At the end of an allotted time frame, they then share their results with the rest of the group. This method was chosen since it is suitable for the nature of the tasks presented to the students in this particular course. It is also widely used (Collier 1969, 1985) since it has been shown to be effective when a complex issue can be decomposed into smaller tasks.

Index of Learning Styles

Prior to the experiment, the students were asked to complete a learning styles questionnaire to ascertain their preferred methods of learning. This information would then provide a benchmark to establish whether the mode of teaching in their seminar group corresponded to their preferred mode of learning. It was stressed that this exercise was entirely voluntary and that a refusal to take part would in no way disadvantage the student in this course.

At the time of writing, there are a number of excellent tests that have been used in educational settings and also in the workplace. These include the Myers-Briggs Type Indicator based on Carl Jung's concept of psychological types. Participants are categorized into sixteen different learning style types. For further details and applications see Lawrence (1994) and McCaulley (1990). A second learning style model is that of Kolb (1984). Again participants are classified but this time into four basic types of learners. The Herrmann Brain Dominance Instrument (1990) considers learning in the context of reliance on different quadrants of the brain. Once more, there are four basic learning types. Finally, there is the Felder-Silvermann model used in this analysis. Applications of this are predominantly in the engineering field (Felder and Silvermann (1988) and Felder (1996)).

There are a number of reasons why this index was chosen above the others. Firstly, it was easy to implement. Secondly, it was straightforward from the student's point of view. Clearly it was crucial that the student be able to understand the questions and be able to interpret the results. Thirdly, it was noted (Felder, 1996) that the choice of model was immaterial since each provided the same basic information.

Felder and Silvermann classify student learning in five ways. First they consider *sensing* versus *intuitive* learners. Sensing learners are ones that are geared towards facts, procedures and problem solving. They are practical and hence good at hands-on work and pay attention to detail. The intuitive learner, by contrast, focuses on theories and their meanings while being conceptual and innovative in their approach. They are quick to understand new concepts and more likely to be able to deal with mathematical formulations than the sensing learner.

The second distinction is between the *visual* and *verbal* learner. Visual learners prefer an environment where material is presented through diagrams, pictures and charts. Verbal learners prefer the written word and spoken explanations. The third category considers *inductive* versus *deductive* learners. Inductive learners look at the specific to the general scenario. Deductive learners are more comfortable with the general to the specific.

The next classification considers whether learners are *active* or *reflective*. Active learners benefit from trying things out and working with other people to find a solution. Reflective learners prefer to think things through on their own first and to work alone. Finally, learners may be *sequential* or *global* in their approach. Sequential learners prefer to learn material in an order and in small steps. The global learner, however, is more comfortable when learning in large leaps. He/She tends to grasp the big picture before seeing the finer details and small connections.

Felder and Silverman provide an index of learning styles that is based on the testing of four out of five of these categories (omitting the inductive/deductive category). The test consists of 44 multiple-choice questions relating to simple day-to-day procedures which are answered by either (a) or (b). There are 11 questions for each category. The test itself can be carried out using the computer or with pen and paper. After the student has completed the questionnaire, the totals for each category will be summed to establish the extent to which the student prefers one mode of learning to another in each category.

It is intended that the author will discuss each individual student's results with him/her confidentially before discussing with the group how different types of learners can help themselves in the university environment. Felder notes how each type of learner can benefit and it is hoped that by publicizing this within the course, students can obtain a richer understanding of how they function as learners and what they can do to help themselves.

Experimental Design

Each group will face the same set of seminar questions presented to them in the course booklet alongside their lecture notes at the outset of the course. For each group, attendance for each of the five sessions will be noted and an ice breaking exercise carried out at the start of the first session in order that the students are introduced to their colleagues. For the groups in which the mini lecture method is adopted, the tutor will then progress through the tasks set for the students and provide answers on the board at the front of the room stopping at regular intervals to ask for questions and comments. For the groups in which the jigsaw method is used, the tutor will form subgroups at the start of each session. The members in each group will be rotated on a weekly basis to ensure that students are working with different colleagues every time. Each subgroup will be asked to consider one of the seminar questions and will be given a fixed time limit to consider their response. When the time is up, each group will present its work and then an open forum will follow when questions and comments are taken from the rest of the group. This process will then be repeated for the remaining four weeks of seminars.

At the end of the final seminar, students will be presented with a questionnaire designed to discover what they liked and disliked about their seminar program. In particular, the aim is to rate the response of students who are in seminar groups not consistent with their preferred method of learning. Have the seminars helped the student to learn outside his/her preferred method of learning?

At the end of the course, the students will be assessed by written and verbal tests. These tests are only being offered to students within the experimental groups and hence they could not be made compulsory. However, the degree of participation is also useful information for the experiment. The written test comprises three short answer questions that are related to those seen in seminars. They have 25 minutes to attempt these. After a short break, the group will be divided into subgroups and each group presented

Testing Different Teaching Techniques in First Year Finance Seminars

with a problem relating to the material in the course. They will be given five minutes to discuss the subject area and give a small presentation on that area. During this period of discussion, the tutor will circulate amongst the groups assessing each student's level of participation. After presentations have been made, the experiment will be complete.

Assessment

The students will be assessed in a number of ways:

- (a) Attendance at seminars and at the final tests
- (b) Participation in seminars
- (c) Written test
- (d) Verbal test
- (e) Questionnaires
- (f) Results from Index of Learning Styles

Categories (a) to (d) will be assessed on a points basis and the results tabulated in the following subsection. At each stage, a comparison will be made between the groups using the mini-lecture method and those with the jigsaw method.

The three questions in the written tests will be graded in the same way as in the exam i.e. each one would be worth six marks. It is believed that this would be of more help to the students in their revision for the final exam. For the verbal test, each student is awarded a maximum of six marks.

Students receive a mark for attendance at each of the seminars and at the final written and verbal tests. A grade of one is awarded for each seminar attendance and zero for non-attendance. This means that the maximum grade available would be six marks.

Student participation is assessed again on a mark of 1-6 in terms of student contribution to a session and general attitude to learning. It is recognized that this is a subjective way of evaluating degree of participation and hence the results of this section should be viewed with a degree of caution.

The questionnaires are considered in the light of which group the student is from, the results from his/her learning styles index and the grades obtained in categories (a)-(d).

Evaluation of Results

This represents the crucial part of the paper. At the time of submission of this paper (March 2001), the experiment was in its preparatory stage. Nevertheless, the author provides a basic framework within which the data will be considered. The results will then be made available at the time of the conference.

Table 1 will contain the results for the students in each type of seminar and a brief description of the results will follow. The table will show the average grades for each group since space permits an examination of each of the 120 individual cases (60 in the mini lecture groups and 60 in the jigsaw groups). However, detailed information for each individual will be made available from the author (while respecting the anonymity of the student). The table will detail results from each of the categories: attendance, participation, written test and verbal test.

Secondly, the author will provide a discussion of the test results in the light of the outcomes from the index of learning styles. For each group, the number of students falling into each category within the index will be summed and

Test Type	Average Grade for Mini Lecture Groups	Average Grade for Jigsaw Groups
Written	This	data
Verbal	will	be
Attendance	presented	at
Participation	the	conference!

Table 1: A Comparison of Test Results Between the Two Types of Seminar.

tabulated (Table 2). The correlation between student types and their test results can then be considered.

Note that since the index classifies student learning on four counts, there will be sixteen possible combinations of

Learning Style Index (1)	No. in Mini-Lecture (2)	No. in Jigsaw Group (3)	Average Attendance (4)		Average Written Test (5)		Average Verbal Test (6)		Average Participation (7)	
			ML	J	ML	J	ML	J	ML	J
A.S.Vi.Se										
A.S.Vi.G	This	data								
A.S.Ve.Se										
A.S.Ve.G	will	be								
A.I.Vi.Se										
A.I.Vi.G	presented	at								
A.I.Ve.Se										
A.I.Ve.G	the	conference								
R.S.Vi.Se										
R.S.Vi.G										
R.S.Ve.Se										
R.S.Ve.G										
R.I.Vi.Se										
R.I.Vi.G										
R.I.Ve.Se										
R.I.Ve.G										

Table 2: Average Results for Students in Each Category of the Learning Style Index

learning style. While the table illustrates the numbers of students falling into each category, it should be noted that for an accurate assessment each individual score should be considered separately. The reasoning behind this is as follows. If a student has a slight preference for visual rather than verbal learning techniques, in terms of my analysis, he/she joins the “visual” category. However, students with a strong preference for visual learning will also join this same category. Thus, it follows that the students should be considered on a case-by-case basis since the index *does* show the extent to which students prefer one mode of learning or another.

Note that the terms in column 1 refer to the classifications of learning style: **Reflective/Active, Sensing/Intuitive, Visual/Verbal and Sequential/Global**. The terms ML and J in columns 4-7 refer to those students in the mini-lecture group or jigsaw group.

Having examined the test results, the student questionnaires will then be considered. At this point in the analysis, the author will provide a short summary of the

findings being careful to consider any link between student performance in the tests and their feelings towards the particular seminar program. The overall aim is to see if certain personality types are more suited to a particular teaching method or if the learning technique in one group is superior for all student types.

Future Research

At this stage, with no raw data, it is difficult to say with certainty what the possible lines of enquiry will be. However, it would be an interesting exercise to carry out similar approaches on second and third year university courses to see if students have learned to adapt to different teaching modes. The needs of the growing number of overseas students on this program are also a concern hence a test to establish their preferred learning styles would be valuable. See the work of Ledingham (1993) for a similar test. As a further point, it would also be interesting to establish if preferred learning style is gender-dependent since this would have serious consequences for the structure of teaching (see Philbin et al (1995)). The overall question

Testing Different Teaching Techniques in First Year Finance Seminars

that is being asked is “How can we help different groups to adapt to learning in university life?”

Conclusion

Again this section is dependent on the results obtained in the experiment. However, as a closing point, it should be noted that an ideal approach is to “teach around the cycle” so that all students’ preferred modes of learning are met to some degree. Felder stresses this point in his work and argues that if students are taught completely within their preferred learning styles, they do not then develop the necessary mental skills to achieve their full potential. Conversely, if they are taught solely outside their preferred learning mode, their discomfort level may be so high as to seriously compromise their learning. Felder argues that the optimal approach is to design a course which encompasses the students’ preferred and less-preferred styles of learning. In this way, each student gets to work in his/her preferred learning mode for some of the time but also gets the chance to develop new learning skills.

According to this theory, the optimal use of seminar time would be to “teach around the cycle” and hence adopt a number of different approaches to teaching. For example, the seminar could consist of a period of reflection where the student formulates his/her own ideas in isolation and then a further period of active learning in groups.

Clearly, there is no single solution to the problem of teaching a large first year university course where contact time is limited. However, the seminar plays an important role in bridging the gap between student and lecturer and hence a carefully structured seminar program could make a significant difference.

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Biography

Louise Allsopp is a lecturer at Adelaide University, where she teaches courses in Finance and Economics. Dr. Allsopp has authored papers on the subjects of currency crises, experimental economics and education in finance and economics.