Improving the performance of first-year Economics students by means of an innovative summer school programme – an evaluation[1]

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Abstract

The high failure rate in first-year Economics courses has become a concern at most South African universities. It is no different at Stellenbosch University. The high failure rate affects the success rates of the Department of Economics and impacts on the number of students who consider continuing with second-year Economics. Students are also affected in that their studies are extended by another year, which has financial and other implications. For these reasons, the summer school programme for the Economics 178 course was launched (as a pilot run in 2007). The main goal of the summer school programme was to improve pass rates by giving students (who obtained a predicate and gained entrance to the previous year's examinations) an opportunity to repeat the course in a very intensive four-week programme.

This paper aims to provide a detailed analysis of the workings of the Economics 178 summer school programme. Every aspect of the programme is discussed, drawing on relevant literature to enhance the discussion on the procedures that were followed in this programme.

The results achieved in the summer school (pass rate of 89%) indicate that having a more structured approach (to learning) contributes to the success of the students. Compulsory lecture and tutorial attendance, coupled with strict discipline, are some of the methods contributing to students' success. Possible improvements to the programme include the provision of administrative assistance and other logistical changes such as shortening the lecture periods.

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1) Introduction

The Economics 178 course of the Commerce Faculty has the largest enrolment of all the first year courses presented by Stellenbosch University. Over the past five years, enrolment has increased from 1 668 students to the present 2 030 students in 2007. Classes have increased from 6 to 7 groups with changes in venues from 150 seats to 350 seats over the same period of time.

The pass rate of this course is low, averaging 65% in 2006 after mark adjustments and re-evaluation examinations, compared to the faculty's average of 74%. This low pass rate of the first year Economics course is similar to what has been found at other tertiary institutions (Edwards, 2000).

The present study aims to analyse the implementation of a summer school programme for first-year Economics as well as its effect on pass rates. It provides an overview of the methods and techniques applied in the summer school to facilitate the learning process of the students. The study wants to a) identify positive contributions made by the programme and b) provide suggestions for improvements.

The study utilises a descriptive method by studying the summer school programme as a case study. Secondary sources are used to support arguments and (where appropriate) available statistics are provided.

This study is of importance to both the Department of Economics and the University, as improving the pass rates is a major concern. University authorities are especially keen to improve the performance of undergraduate students in particular. Another important implication for the Department is that low pass rates in the first year reduce the pool of students considering further studies in Economics. This has negative consequences for student numbers in the second and third year of Economics. At an institutional level, universities' financial contribution received from the government is adversely affected. Analysing the success of the summer school programme is also of importance to students. Being given the opportunity to repeat a course at the beginning of the year (which would normally have implied repeating a full year of study) gives students the opportunity to start the academic year without any remnants of the previous year of study.

2) Background

Economics 178 is a non-elective for all first-year students in the Faculty of Economic and Management Sciences. It can be an elective subject for students in most of the other faculties. It is a year course which primarily covers the two core theoretical fields in Economics, namely Microeconomics and Macroeconomics. Assessment of the course consists of four tests and a final examination. In addition, students have to complete at least eight computerised tests to gain access to the final examination. A tutorial programme offers students additional academic support.

Table 1: Enrolment and academic performance of Economics 178 course for the period 2002–2007

Year	2002	2003	2004	2005	2006	2007
Enrolment	1668	1712	1747	1719	1922	2024
Freshmen first years	1242	1261	1371	1276	1446	1627
Freshmen as % of enrolment	74	74	78	74	75	80
Repeaters	426	451	376	443	476	397
Repeaters as % of enrolment	26	26	22	26	25	20
Freshmen failures[3]	406	434	491	457	487	Not yet available
Freshmen failures as % of freshmen	33	34	36	36	34	Not yet available
Discontinued[4] students	90	80	100	90	92	Not yet available
Discontinued students as % of enrolment	5	5	6	5	5	Not yet available
Repeater failure	188	183	171	239	187	Not yet available
Repeater failures as % of repeaters	44	41	45	54	39	Not yet available
Failures	594	617	652	696	674	Not yet available
Failures as % of enrolments	36	36	37	40	35	Not yet available

Source: Student Records, Stellenbosch University, 2007

[3] Failures include students who discontinued the course, for whatever reason, after registration.

[4] Discontinued students refer to students who discontinued the course after registration because of various factors, amongst others not complying with the prerequisites to qualify for exams. The same applies to discontinued repeaters.

The low pass rate over the period 2002 to 2006 resulted in an average of approximately 25% of the students repeating the course in any given year. This means that an average of 75% of the students in a given year was enrolled for Economics 178 for the first time. Of these fledging Economics 178 first years, an average failure rate of 35% per year (this includes students discontinuing the course) had been recorded (Stellenbosch University, 2007).

The large venues that are available to supply seating for Economics 178 students, given the current timetable, have a total capacity of about 1 950 seats (assuming that all venues are in perfect condition). A 4% average growth in freshmen first-year students in Economics had occurred over the past five years with a high of 13% in 2006. Freshmen first-year students that decided to discontinue the course averaged 3.5% of the new enrolments. An average of 5% of the total enrolments discontinued the course. Although this lessens the pressure on the availability of seats in venues, it cannot be seen as a spatial planning method especially with the possibility of change in the present timetable.

Successful first-year students can continue to major in Economics, which has a positive effect on the student numbers in the senior years where Economics is an elective. But with an average pass rate of 65% the flow through of students to second -year Economics is hampered.

3) The summer school programme

The Economics Department decided to implement a preliminary trial summer school in Economics 178 as a potential solution to the poor flow through rates. An improvement in the pass rate would imply that there might be less pressure on venues and potentially more students in the senior Economics courses.

The statistics available for the 2007 Economics 178 enrolment indicate an 80.3% fledgling first-year rate and a 19.66% repeat rate. The latter figure indicates a decrease of 6% in the repeat-rate enrolment, which can be attributed to the influence of the summer school. This section will explore the methods and techniques applied that contributed to its success.

3.1) Requirements for entry

To qualify for the Economics summer school, potential students had to meet certain criteria. These criteria also selected students that had a bigger chance of completing the course successfully.

The criteria were as follows:

a) Students had to have qualified for the final exams, i.e. they had to have received a predicate and completed all computer tutorial tests (a prerequisite for exam admission).
b) Students had to have written the final exam and failed this exam.
c) If students failed the first exam but qualified for a re-evaluation, they had to have made use of the second opportunity and again failed, in order to qualify for the summer school.

The Department received 183 applications out of 235 students who qualified according to the set criteria; 178 students attended the summer school.

3.2) Lecture attendance

The summer school programme consisted of seventeen three-hour sessions. Of these, nine lectures were in Microeconomics and eight in Macroeconomics. All lectures were compulsory and students were not allowed to commence late with the programme.

Lecture attendance is an aspect of the programme that can contribute to the success in academic achievement. Van Walbeeck (2004:880) showed that lecture attendance does contribute to academic performance. In a study conducted at the University of Cape Town on the impact of lecture attendance on the performance of first-year Economics students, he found that students who attended all lectures were likely to perform better than those students who attended none at all.

The first session of the summer school dealt with the registration formalities and the first lecture started immediately thereafter. Each session commenced with a one-and-a-half-hour lecture, after which students had a half-an-hour break, to be followed with another one-hour lecture. Sessions were mostly conducted in the morning five days a

week. During sessions, lecturers revised the main theory covered in the prescribed textbook. In some sessions, some applications were revised and discussed.

Lecture sessions basically utilised the same notes as used in the previous year's course, although some adjustments were made. This was done to accommodate the fact that lecture time during the normal course exceeded the time available in the summer school. Sections that were less problematic for students (such as basic definitions and concepts) were left for self-study.

3.3) Tutorial attendance

The Department employed eight tutors on the summer school programme. These students were, at the time, all honours or master's students in the Department. They were all experienced tutors since they had participated in the general tutorial programme offered during the course of the academic year. Prior to this programme, all tutors received extensive training with the assistance of the University's Centre for Teaching and Learning.

Tutorials were compulsory and generally conducted twice a week. Groups comprised approximately 30 students. The tutorial homework consisted of exercises covering the chapters completed during the specific week. The purpose of these exercises was to a) ensure that students revise the chapters covered during lectures, b) test their understanding of the literature, and c) ensure that they participate actively during the summer school programme.

The exercises were distributed to students during lecture periods, at least two days before submission. Students were then required to submit completed assignments to the Department before the tutorial. These were collected by the tutors, who checked them before the tutorial for common problem areas.

Tutors had to take roll call of students' attendance and had to keep record of the submission of students' tutorial homework. These were used in conjunction with the lecture attendance to verify participation in the summer school.

During tutorial classes, which lasted for an hour and a half, students were given the opportunity to work in groups, ask questions they would be too hesitant to ask in class and in this way learn from their peers. Siegfried and Fels (1979:938) indicated in their study that students feel more positive about smaller classes as they can "learn to think better" this way. Tutors were not requested to mark the tutorial homework, but merely to provide explanations on the particular questions they identified as problem areas.

3.4) Assessment

The summer school assessment consisted of two tests and an examination. Their weights were similar to what they would normally be during the year course. Students wrote the first test halfway through the four-week period. This test covered all the work in the Microeconomics section. A second test was written just before the end of the programme, and covered the section on Macroeconomics.

The type of questions asked as well as the format of the tests and the examination were identical to those in the year course. These assessments were set by the first-year lecturers and internally moderated. Students had to obtain entrance to the examination by obtaining a predicate (course mark) of at least 40%. Students were also not allowed to submit any leave of absence for either of the tests or the examination. All registered students wrote both tests and the examination.

3.5) Disciplinary procedures applied during programme

To ensure full participation in the programme, strict measures were taken. Students were informed from the start that a) both the attendance of lectures and tutorials would be monitored, and b) if, for whatever reason, they did not attend one lecture, their participation and registration of the course would be cancelled.

The students' attendance was verified using student-card swiping machines. This entailed spending about 10 minutes allowing students to swipe their cards. This process was completed twice during the three-hour session. It was also done on a random basis so that students were never sure as to when the card-swiping process would be completed. This decreased the possibility of students slipping out of the classroom after the initial swiping.

In the event of students not attending a lecture or tutorial session (or part of it), the student was called in for a meeting with the lecturers the following day. The student had to provide proof of (valid) reasons for absence. This process received serious attention as the success of students in the summer school depended to a large extent on the mandatory attendance of lectures. Throughout the programme there were only a few occurrences of students being ill, but these students were all able to provide a medical certificate.

Students were given only two opportunities to gain entrance to the exam. Absence of students at any of the tests meant that the student would not be able to write the exam. No student was absent during any of these evaluations. Only 2% of students did not gain entrance to the examination, compared to 19% during 2006.

4) Lessons learnt

The first Economics summer school was regarded as an experiment. The success of the summer school would ensure a sound basis for future summer/winter schools. The summer school reported a pass rate of 89%, a resounding success if compared to the average pass rate of 65% in the Economics department for 2006. Some of the more important lessons learnt from this first experience are discussed below.

Students became more motivated to succeed as the programme evolved. Initially it seemed that some students were not really motivated to participate, given the date of commencement, namely 2 January. However, the combination of compulsory attendance of lectures and tutorials, as well as the submission of take-home assignments, contributed to students becoming actively involved in the daily activities of the school. Another factor that enhanced motivation was that students could, on passing the summer school, continue to the second year of study without having to attend first-year modules.

Compulsory attendance also meant that students were, at all times, exposed to the prescribed literature, thereby ensuring fluency in absorption of material (which may not be possible if students are absent from lectures at intermittent times). By being allowed to attend only one summer school per module, students could focus all their attention on the one module of their choice.

The enthusiasm and encouragement of the lecturers and tutors also made a contribution to the success of the school. The teaching staff were available to students for the entire period of the summer school and students had the opportunity to ask for assistance at any time during the programme. In addition, students had the freedom of discussing non-academic issues with lecturers.

Considering the examination results of the summer school, it is of importance to note that two students passed with distinction (above 75%) and that 38% of this self-selected group (all failures from the 2006 academic year) had attained a final mark of 60% or higher. It is thus clear that for these students the discipline and mandatory attendance had lead to positive results. The methods used in the learning and teaching processes of the summer school appeared to have gained success with this specific group of students.

Lecturers were exposed to more than the normal everyday lecturing stress as the success (or lack thereof) mainly became the responsibility of the lecturers. The teaching staff had to accept the added burden of ensuring all students' participation in the programme. Admonishing students who missed classes or tutorials was part of the duties of the lecturers. Furthermore, the administrative and disciplinary roles of the participating lecturers increased their workload.

Although the same lecture notes were used as during the previous academic year, new tutorial questions had to be set. Contributions to the tests were restricted to the lecturers involved in the course, which meant that the burden of the setting of papers was heavier than during the semester, where the task was divided among six lecturers.

The 2007 programme only allowed for one lecture group. This was manageable as the size of the summer school group (178 students) is about the same size as a normal small first-year lecturing group. However, the concentration expected from students as well as the burden on the lecturing staff to keep students' attention for three hours, were extremely exhaustive for all concerned.

Students were given the opportunity to evaluate lecturers with the view on how the summer school can further be improved. Snowball and Wilson (2006) state that

students often assess lecturers according to the criteria of their own performance. The general view of students was that the lecturers were more than adequate in their presentation. With reference to the pass rate of the summer school and the study done by Snowball and Wilson (2006), the objectivity of this assessment might be open to some criticism.

5) Suggestions and possible improvements

The opportunity cost for the lecturers of the Economics 178 summer school was much higher than initially expected. Lecturers had not anticipated handling all the administrative tasks as well as disciplinary action to ensure the success of this endeavour. The remuneration offered to lecturing staff was determined so that lecturers participated in the programme on a voluntary basis. This meant that lecturing staff responded to the incentives of additional remuneration. The success of the students was also a very positive experience for all the role players, and contributed to the fulfilment enjoyed by the staff.

For the summer school programme to continue being successful, the utilisation of experienced lecturing staff must continue. It would be detrimental to appoint inexperienced lecturers or even master's students in these lecturing positions. The environment of the summer school requires lecturers who have dealt with first-year students for some years and who are familiar with the teaching techniques employed at this level.

A positive suggestion would be the employment of an administrative assistant. This will lessen the administrative burden of lecturers and release them for their main duty: successful lecturing. It was felt that if this did not occur, experienced lecturers would not be available to maintain the initial success.

A minimum of four lecturers should be appointed to ensure that the burden of work is more evenly distributed. In addition it provides the opportunity for each lecturer to offer the sections of the work they are more specialised in, and implies that the disciplinary burden is shared by the participating lecturers.

Lectures should be broken up into shorter sessions. The suggestion is that instead of one three-hour session with a 30 minute break, three sessions of 50 minutes each should be held, with 10 to 15 minute breaks between sessions. These sessions should occur in the morning, when students are still rested.

6) Conclusion

The high failure rate in Economics, as experienced at most South African universities, has become an increasing concern. It increases the number of repeaters and has financial implications for universities and students. In addition, it affects the number of students who continue with senior courses in Economics.

The Economics Department at Stellenbosch University introduced an intensive four-week summer school programme in an effort to address these concerns. The success of the first Economics 178 summer school cannot be disputed. The 89% pass rate attests to this. An analysis of the methods and techniques followed during the summer school made it apparent that strict discipline, mandatory class attendance, motivated students, and repetition of work still relatively fresh in the minds of students contributed to the success of this summer school.

There are some areas where improvements can be made. Some of these include lessening the burden on lecturers by appointing an administrative assistant, utilising experienced lecturers, shortening the lecture periods and some other logistical issues.

The future success of the Economics 178 summer school will be determined by the quality and motivation of the lecturers involved, the availability of supporting resources and motivating the students participating in the programme.

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