MOTIVATION AND ACADEMIC PERFORMANCE

Adwell Mhlanga
Department of Statistics

Abstract

Purpose. Following a teaching induction workshop held on campus in August/ September 2010 and some research I changed my teaching approach. This article shares the results that followed.

Approach. This article reviews the interactions I had with students at the University of Zimbabwe before and after attending a lecturers' induction workshop and the students' corresponding response and performances.

Findings. The interest, responsiveness and performances of the students taught following the workshop were significantly better than those of the students taught before the workshop.

Conclusion. Students corporately respond positively to improved teaching methods irrespective of student personality types.

Recommendations. Teaching and learning centres in universities should hold regular induction programmes and frequent teaching and learning workshops, and lecturers should take an active interest in studying and practising effective teaching methods.

Paper Type: Viewpoint

Key Words: lecturer induction, teaching, tutoring, learning, motivation, performance.

1. Introduction

Research interest in student performance is forever expanding and deepening as researchers continue to explore and examine what really makes students perform best.

As for academic performance, researchers have in the main categorized known learning methods, personality types and environmental factors, and, to a great extent established associations among them; and they have compiled useful recommendations and tips for teaching and learning effectively. However, researchers have shied away from documenting detailed intimate interactions between a lecturer and students that result in improved student performance.

This article gives a detailed exposition of the interactions that occurred between me and two groups of students and the differing academic performance results of the two groups. The results are significant in two ways. First, a lecturer need not read copious amounts of literature on effective teaching methods to be effective. Second , the stimulus triggering a good academic performance need not be performance related.

This paper is discovery based rather than a result of hypothesis testing with clearly articulated aims and objectives. Therefore it has an ethnographic methodology some of the features of which are described by Michael Genzuk(1999).

I joined the University of Zimbabwe as an uninitiated lecturer in 2008 and taught with a high sense of commitment and dedication. In 2010 I attended a one week teaching induction workshop that exposed me to possible effective teaching methods. I read two books, one(Pastoll,1992), on running effective tutorials, and the other(Matiru et. al., 1995),on effective teaching. The results of applying the knowledge gained from reading these two books motivated this article.

2. Literature Review

There are two broad approaches to effective teaching in the literature. One approach is to categorize the students into types and study how effectively each type learns under varying factors. Kezwer, P.(1987) and Grace, C.(1998) found that extroverts learned language faster than introverts. Ellis, A. E.(2006)found that extroverts learned better in environments that offered opportunities to confer with others. De Raad and Burg, S.(1991) found that extroversion, conscientiousness and openness to experience correlated positively with meaning directed, reproduction directed and application directed learning styles. According to Cilliers C. D. and Sternberg, R. J.(2001), thinking styles affect academic performance. Chamorro,T and Fernham,A.(2008) found that conscientiousness and openness to experience were the main predictors of academic

performance. Deep learning, achieving learning and surface learning were also linked to high academic performance.

Other researchers have focused on material delivery by a lecturer without categorizing students. Sajjad, S.(2010) found that lectures and group discussions were the most popular teaching methods at the University of Karachi. According to Brown, G. and Atkins, M.(1988) effective teaching requires a teacher to know the subject thoroughly, to think, problem solve, analyze a topic, reflect on a suitable teaching approach, select key strategies and teaching materials, and organize and structure ideas, information and tasks for students. The teacher must know how students learn. Apart from covering content, a teacher needs to motivate and stimulate interest in the students and make them understand. Bligh, D.(2000, 2009), Fink, L.D.(2003) and McKeachie, W. J.(2010) point out that for effective delivery of content it is necessary to be caring, systematic and to stimulate interest in the students. Sheffield, E. F.(1974) concluded that the most important aspect of lecturing was to stimulate students to become active learners, to show care for the students and love for the subject, to prepare content properly, and to convey principles rather than details. Ausubel, D. P.(1968) and Halpern, D. F.(2003) state that students learn more easily if they are able to relate new information to what they already know. Good, T. L. and Brophy, J. E.(2000) state that lectures should be characterized by clarity of presentation, structure and interest, and lecturers should be sensitive to student values.

Tutorials are extensively covered by Pastoll G.(1992). Pastoll found that students sharpen their skills through tutorials. But this is possible only if the tutors themselves are skilled at tutoring. The tutoring skills can be imparted by experienced lecturers who often know the students' profiles and learning needs well enough to prepare the tutors to handle anticipated questions.

According to Genzuk, M.(1999), it is possible to study the behaviour of people in everyday contexts outside experimental conditions created by a researcher; in this case data are gathered from and through observation and in an unstructured manner; consequently data analysis involves the descriptions and explanations of the actions of the subjects with a minimum of statistical analysis.

3. Methodology

The methodology is somewhat ethnographic. The lecture approaches before and after the lecturer induction workshop are presented. A detailed motivation technique is described. Then a description of the immediate response of the students and the ensuing interactions with them is made. The performance of the students taught before induction is compared with that of the students taught after induction. This is followed by a brief discussion. Finally, conclusions are made and recommendations are offered.

4. Lecture approach and students' response before lecturer induction

Prior to undergoing induction my approach was to deliver correct, accurate and complete information at all times. When I taught a topic "moments" in 2008, the students simply

did not understand it. At their request I went through the topic two more times. When I announced a test, the students pleaded with me not to include moments in it. Towards examination time the students pleaded again that I omit questions on moments from the examination. The 2009 group reacted to the topic presentation in much the same way.

5. Lecture approach and students' responses after lecturer induction

In spite of the knowledge that I had recently acquired on effective teaching, I felt nervous when the time came to teach "moments" to the 2010 students intake. As I was pondering how I should approach the presentation of this topic, "motivation!" flashed brightly in my mind. When I walked into the lecture theatre later that morning to teach moments, my introduction went something like this: "Imagine that you are poor but are keen to attend university. You approach the University Registrar and offer to make arrangements for four monthly fee payments based on some anticipated cash income stream".

I drew a horizontal line graph representing a monthly income stream. Then I said, "If the proposed monthly payments are below this income line, you can be sure the Registrar will accept your proposal", while drawing the payments line graph (figure 1in appendix).

Next I drew a horizontal line graph showing proposed monthly fee payments (figure 2 in appendix). Then I drew a straight line graph showing income which originated well above the monthly fee level, sloped downwards, cut the horizontal payments line graph,

ending below it but clearly showing that the initial cash surplus was larger than the final cash deficit. "This situation should not pose any problem to the Registrar", I continued.

Next I drew a diagram in which a straight line income graph sloped upwards from slightly below the payments level and ended well above it (figure 3 in appendix). I told the students that with considerable effort they could convince the Registrar to agree to payment arrangements.

Finally I drew meaningful and meaningless curves which represented cash income streams. I told the students that as the curves became more complicated, it would be more difficult for the Registrar to understand them. Consequently the students would find it impossible to convince the Registrar to agree to payment arrangements based on these graphical representations.

I told the students that the information that is used to produce these complex graphs can be used to derive measures related to the ability to make monthly payments. I continued, "If you know how to calculate these measures, it becomes easy to convince the Registrar because the Registrar understands these measures. These measures are called moments. Now, who wants to know about moments?" An overwhelming number of the students raised their hands. I proceeded to deliver the lecture.

At the end of the lecture the students asked many questions. It was clear to me from the questions that the majority of the students had listened enthusiastically and had

understood the topic. For obvious reasons, unlike in the case of the first two groups, the students did not ask what the application of moments was. I had not imagined the extent to which motivation could influence enthusiasm, attention and understanding. That day I left the lecture theatre with amazement and a high sense of satisfaction and achievement.

6. Qualitative Results

The semester became challenging as the students developed a keen interest in learning. The number of students who asked questions during lectures, who walked me to my office asking questions and seeking clarification, and who came to my office between lectures for the same reasons surged. The enthusiasm triggered by a totally hypothetical situation became enduring. The bonding was mutual. My lecturing approach was successfully encouraging engagement and making the students keener to learn.

I had distributed course outlines at the beginning of the semester. But, unlike in the past, some students were now going to the library to read relevant material ahead of lectures. Consequently the students were asking more searching and considered questions. I gave the students equally well considered answers. To enable this, before each lecture I had to be absolutely sure of the facts surrounding the concepts I was going to cover. Often, I consulted at least two textbooks before a lecture so as to mentally augment my presentation material.

Once while considering some assignment problem, a group of students debated whether the solution to the problem required the application of the Poisson distribution or of the

exponential distribution. The majority decision was to apply the Poisson distribution. One dissenting student came to my office and related the differing arguments and what his opinion was. I explained the correct solution to him. Unfortunately, he did not inform the other group members. One other skeptical group member reluctantly went along with the group decision. But, separately he consulted a library book which tabulated cases when each of the distributions should be applied having pointed out that there was a thin line between the applications of the two distributions.

Before reviewing the assignment I made sure that I had not just the correct explanation but a convincing explanation as to why it was the exponential distribution rather than the Poisson distribution that was applicable to the problem. The day after the review the student who had researched the problem in the library came to my office and confessed that he had thought he had understood the guidelines offered by the library book, but that my explanation regarding when to apply each distribution was clearly more convincing. I was pleased to hear this confession from one of the more enquiring students.

7. Quantitative results and analysis

The pass rates of the students examined immediately prior to and immediately following my induction were 69.7 percent and 87.2 percent respectively. Further revealing comparative figures are in table 1 in the appendix.

The complete comparative performances of the two groups of students, one prior to and the other following lecturer induction are graphed in figures 4 and 5. Figure 4 shows the

percentage of students who scored the indicated percentage marks. From this figure we observe that prior to induction, the highest percentage of students (21%) scored around 58 percent, and the percentage of students scoring from 27 to 87 percent is more or less evenly spread, disregarding the peak. But following induction the highest percentage (21%) of the students scored around 68 percent, with most students scoring above 68%.

Figure 5 shows the cumulative percentage of students scoring above indicated percentages. The percentages of students scoring above 24 percent prior to and following lecturer induction were 93 and 100, respectively; and those of students scoring above 70 percent were 23 and 47, respectively.

The respective achievements of the bottom 25 percent of the students prior to and following induction ranged from 4 to 43 percent and from 24 to 62 percent. The corresponding middle 50 percent of the students scored from 43 to 69 percent and from 62 to 81 percent. The corresponding top 25 percent of the students scored above 69 and above 81 percent. Finally, the respective median marks were 58 and 69 percent. These figures are condensed into the two box and whisker displays shown in figure 6 in the appendix. In each display the bottom whisker (extending to double rings) indicates the bottom 25 percent of the marks achieved, the box indicates the middle 50 percent of the marks achieved, and the top whisker indicates the top 25 percent of the marks achieved. The horizontal line across each box indicates the level of the median mark. The box on the right is shorter and occurs somewhat higher than the box on the left. This shows that the middle 50 percent of the marks achieved following lecturer induction are closer to

their median and are concentrated way above the middle 50 percent marks achieved prior to induction which are more spread about their median.

Statistically, under the normality and other usual assumptions, the hypothesis that the students' performance in terms of percentage of students and level of achievement before and after lecturer induction was the same was tested and rejected at a 2.5 percent significance level. In other words, the hypothesis test showed with 97.5 percent confidence that the group taught following lecturer induction performed better than that taught prior to lecturer induction.

8. Discussion

The differing performances of the two groups of students are consistent with the positive value of the above described interactions which I had with them. First I realized from the induction that there was a gap I needed to fill in my teaching approach and practice. The workshop motivated me to get more informed about effective teaching. I selected and read two well researched books. I developed a better understanding of the students' learning psychology, made a conscious effort to motivate the students and introduced flexibility in my lecturing approach. I observed the students take a keen interest in the subject. The students' interest translated into a high group performance.

The results are also consistent with findings in the reviewed literature. They confirm that motivated students learn better. It should be clarified that these are not results of an experiment conducted on students. Rather they are results of lecturer-students

interactions which originated in the students' response triggered by anxiety on the lecturer's part to make students understand the topic "moments". No formal hypothesis was proposed prior to the start of the exercise. Rather it is the students' performance results which motivated the writing of this paper. In this respect this paper differs from other research papers.

The results tentatively suggest that the treatment of an issue of vital concern to the students makes them attentive. The students' anxiety about fees made them listen attentively to a lecture. The attentiveness developed into an enduring learning interest and impressive performance results.

9. Conclusion

In order to practise effective teaching methods it is not necessary to read copious amounts of relevant literature. It is sufficient to read a well researched book on effective teaching and put into practice what is learned. Incidentally, for purposes of producing this paper I have had to read a considerably large body of literature on teaching effectively. However, I have found essentially the same ideas confirmed repeatedly in all the publications.

In order to excite the students' interest in a topic and to capture the students' attention it is sufficient to convince them that the content of the topic that you are about to cover satisfies a current or a future need, even if that need may not be to pass a coming test or examination. The year 2010 was largely financially challenging to students in Zimbabwe. Anything that was likely to ease that challenge was worth mastering.

Perceived care for students by a lecturer produces bonding and a lasting positive reaction from the students. The students compulsively make all out efforts to learn, particularly outside the classroom. The positive interest, response and motivated enquiries by the students push a lecturer to a higher level of sustained adequate preparation of material to deliver and to seek to continually improve the delivery approach, process and skills.

10. Recommendations

Every institution of higher education should either have on its establishment or outsource the services of a teaching and learning centre. Frequent workshops on effective teaching and tutoring practices should be held.

Lecturers should be encouraged to treat lecturing as a subject of study. They should read well researched books or articles on teaching methods and practice and apply them. Lecturers should also train tutors to be effective in helping students learn.

Often tutors are postgraduate students who have not received any tutoring instruction. Therefore tutors should undergo induction and participate in relevant workshops.

Students who fail to cope with the demands of their chosen programme of study should be advised of alternatives; and students who show no prospect of improvement in their academic pursuit should be deregistered. Lecturers tend to be more motivated when the students' corporate performance is good.

More research should be conducted to identify non-performance related motivators of students' academic performance and determine their effectiveness.

References

Ausubel, D.P. (1968). *Educational psychology, A cognitive view*. New York, Holt:

Rinehart & Winston.

Bligh, D (2000). *Whats the Use of Lectures?* San Francisco: Jessey - Bass.

Bligh, D. (2009) *Improve your teaching*. British Journal of Hospital Medicine,70(8).

Brown, G. and Atkins, M. (1988). *Effective teaching in higher education.* U.K: Methuen.

Fink,L.D. (2003). *Creating significant learning experiences.* San Francisco: Jessey -

Bass.

Halpern, D.F. (2003). *Thought and knowledge. An introduction to critical thinking.*

(4th ed.), Mahwah, N. J.: Lawrence Erbaum Associates.

Matiru, B, Mwangi, A. & Schlette,R (eds.). (1995). *Teaching your best. A handbook for*

university lecturers. Bonn: German Foundation for International Development (DSE),

Education, Science and Documentation Centre.

McKeachie, W and Gibbs, G. (2010). *Teaching tips: Strategies, research and theory for college and university teachers.*

Pastoll, G. (1992). *Tutorials that work, a guide to running effective tutorials*. Cape Town: Arrow Publishers.

Sheffield, E.F. (1974). Teaching in the universities. No one way. Montreal: Queens University Press.

Appendix

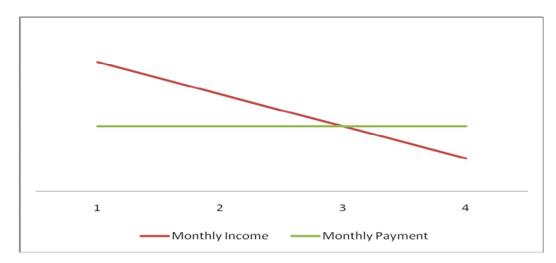**Figure 1. Horizontal income and proposed payment line graphs**.

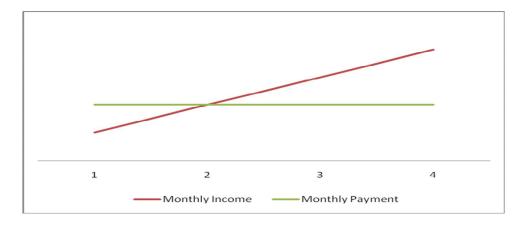**Figure 2. Declining income and horizontal proposed payment line graphs**.

Figure 3. Ascending income and horizontal proposed payment line graphs.

Figure 4. Percentage of students achieving mark percent before and after induction.
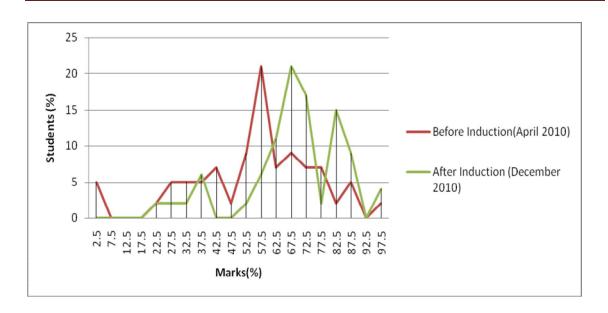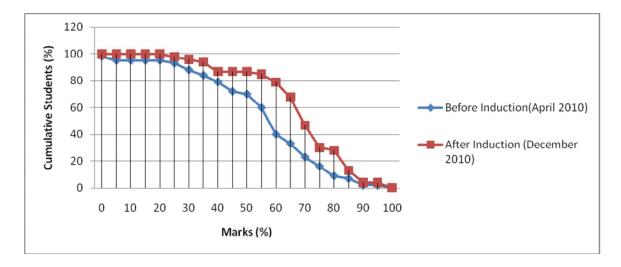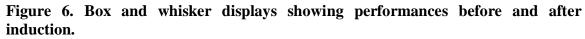
Figure 5. Percentage of students achieving more than the indicated mark.

Figure 6. Box and whisker displays showing performances before and after induction.
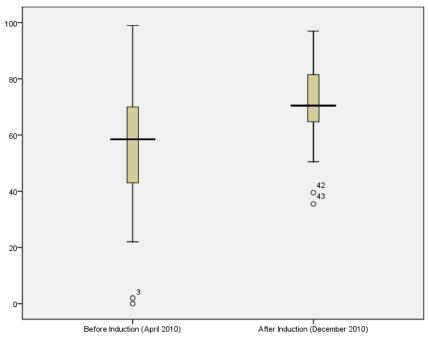

Table 1. Comparative percentages of students scoring indicated percentage marks prior to and following lecturer induction.

Percentage of students getting	Comparative examination results	
	April 2010	December 2010
Below 24 percent	7.0	0.0
25 percent or more	93.0	100.0
60 percent or more	46.5	70.2
70 percent or more	25.5	51.1
80 percent or more	9.3	27.7