Learning From Lecturers' Experiences of Teaching Large Undergraduate Classes in a South African University

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ABSTRACT This paper discusses experiences of lecturers in a South African university, of teaching large undergraduate classes and lessons therefrom regarding the teaching thereof. Through individual face-to-face interviews, the researcher generated data from a convenience sample of 28 lecturers across nine departments who volunteered to participate. Data were analysed through thematic analysis. The study found that most lecturers struggled with and disliked large classes. They lacked material support, had big tutorial groups and were unable to connect with individual students. Some relied on very traditional and basic teaching approaches while others exploited richer and more modern technologies. Two perspectives about large classes emerged: they were here to stay and needed to be managed better; and class sizes needed to be reduced. The researcher concludes that depending on the approaches lecturers used, most classes seemed to be experiencing only surface learning. Deep learning is difficult but not impossible in large classes.

INTRODUCTION

Today, institutions of higher learning worldwide experience unprecedented increases in student enrolments. With the de-mystification of higher education, institutions of higher learning are being faced with increased enrolments globally (Anderson et al. 2007; Bowen 2013). Snowball and Sayigh (2007) argue that the common teaching situation in university courses is increasingly that of bigger and bigger student numbers. There is therefore an urgent need to develop teaching-learning strategies that can promote successful student learning even in the large classes (Bowen 2013; Deslauriers et al. 2011; Molborn and Hoekstra 2010). Post-apartheid South Africa is characterized by a huge demand for education as the previously severely disadvantaged majority population seeks to emancipate itself, and education being seen as the major instrument towards such. In addition, given South Africa's greater economic strength compared with its neighbouring countries, the country has become the most attractive destination for foreign university students from the region. These factors have resulted in huge student enrolments in South African universities partic-

ularly at the undergraduate level. But increasing enrolments is not the only imperative, achieving greater quality of education is another. The latter goal is only possible when, among others, there is knowledge about how the lecturer currently experiences her/his teaching. Accordingly, this paper examines and draws lessons from the experiences of lecturers in one South African university of teaching large classes. The term 'lecturer' is used in this paper in a generic sense including senior lecturer and professor. In the literature section the term 'teacher' is also used interchangeably with 'lecturer'.

What is a Large Class?

Despite that large classes have generated discussion for a while now, there has not been reached an agreement on what constitutes a large class (Burnett and Krause 2007; Middendorf 2004; University of Maryland 2005). Botha et al. (2004) report that some lecturers define a large class as simply one in which students are too many to be effectively managed and taught. As early as 1990, Buchanan and Rogers (1990) defined a large class as one with 80 students or more. Although these authors admitted that this definition was rather arbitrary, they have argued that 80 students is the threshold beyond which traditional teaching methods no longer work and new ones would have to be found. However, a large class has often included 100 students or

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even more. In some cases it could mean a class of 50-70 students and yet in others it may include 1500 students in one cohort (Burnett and Krause 2007). Benbow et al. (2007: 2) say "overcrowded or large classrooms are those where the pupil-teacher ratios (PTR) exceed 40:1". However, it would appear that a class becomes large when it becomes impossible to handle it in the same way smaller classes would be handled (Anderson et al. 2007). Visano (2003:1) had the following to say in response to the question: How large is large? "As a general rule, a class is considered large when…

- …getting to know your students by name is near impossible
- ….eye contact with each student would take more time than the allocated lesson time
- ….connecting with students is a daunting challenge
- …..grading weekly written assignments with care would leave you with no life"

According to Australian Universities Teaching Committee (2003), it is the interaction between several factors that determines how to judge the size of a class. This author identifies three key factors in this regard namely how many students there are in a group, the teaching and learning activities taking place therein, and the available facilities. The interaction between these factors influences both teachers' and students' perceptions of whether or not the class is "large". For example, where one seeks to deliver a didactic lecture, whether students are 25, or 100, or 600 will not change the teacher's and student's activity. If one were to deliver a traditional-type lecture, and the physical environment is a lecture theatre with a capacity to seat 500 students, if the number of students is 400, then this situation may perhaps not make up a "large class". This is because the teacher and student perform the same activity regardless of the number of students in the class. When any of these features changes, the picture of class size is in all likelihood to also change. For example, if a teacher wants to engage the 400 students in small-group interactive activities in the same lecture theatre then this class is most likely to be perceived as "large" because managing interactive activities in such a situation would be difficult. The situation would change if the setting was to change to a flat-floor room with movable chairs but man-

aging the movement of the 400 students becomes an important factor in determining the quality of such teaching and learning exercise. The argument is therefore that the crucial link is the nature of the teaching and learning activity, that is what the teacher does and what he/she wants the students to do for their learning. When this is established, then the number of students and the available facilities become important in perceiving whether or not a class is 'large'. The term 'large' class is therefore problematic and contextual.

What Do We Know About Students Learning in Large Classes?

Burnett and Krause (2007) give the following regarding what is known about students learning in large classes: (1) individuals learn better if they think about what they are learning and are actively involved in what is being learnt. (2) For students to become autonomous, critical thinkers and learners they need to be engaged in deep learning. (3) The first 20 minutes of a lecture constitutes the most crucial time for bringing about deep learning and student engagement with content. (4) There should be immediate application of what is learnt, otherwise in a few days there will be loss of retention of what was taught, and (5) lack of student participation in the lecture will lead to limited opportunity for continuous feedback to the teacher regarding student understanding.

From a 2001 study Michaelowa as cited by Mizrachi et al. (2007) concluded that an inverse relationship existed between the size of a class and learning therein. As class size increased, student learning dropped. She concluded further that 62 students per teacher was the threshold beyond which learning effectively stops or becomes so compromised that it ceases to make significant impact on the students. According to Wilson (2006) large classes can negatively influence two important and interrelated factors of teacher practice namely teaching time and the management of the classroom. Large classes negatively affect the teacher's management of time to the effect that more time may be spent on giving instructions to students than the actual teaching. Finn et al. (2003) developed a conceptual model about the influence of class size on teachers' morale and their enjoyment of teach-

ing, which in turn impacts on the levels of students' engagement in learning. They refer to "a sense of community" that arises within a classroom and suggest that smaller classes have a positive impact on teacher and student motivation. They conceptualised two forms of student engagement namely social and academic. Social engagement is to do with how a student socially interacts with other students and the teacher and academic engagement refers to a student's attitude towards learning. These authors conclude that students in smaller classes are more academically and socially engaged than those in larger ones and that with strong engagement, academic achievement increases. Mizrachi et al. (2007: 11) have the following to say:

"While the research on learning outcomes in large classes is equivocal, observational and comparative data reveal that while learning can occur in such settings, the quality and quantity of teaching and learning tends to be much lower in comparison to their peers in smaller classes."

Some Strategies and Consequences

According to Snowball and Sayigh (2007), in South African universities, the common response to large classes is the lecture method with the addition of a tutorial element to the course. In the tutorial, students are in smaller groups taught and assessed by tutors. Tutors are normally drawn from the best final year undergraduate or postgraduate students. These authors report that one of the weaknesses of this system is that many of the tutors are largely inexperienced at assessing and giving feedback. Thus the value of the tutorial as an avenue for individualized learning is usually compromised.

Australian Universities Teaching Committee (2003) found that in Australian universities, survey respondents reported that successful strategies were those that involved student interaction such as pair discussions, in class exercises, reaching diverse groups of students as well as the use of web-based course materials and other on-line resources. Use of mixed media lectures including music, videos, power point and overheads were also found to be useful.

Botha et al. (2004) conducted a study that explored the how large classes influenced two issues: the way students approached learning and lecturers' teaching and assessment approaches. They studied three case studies in two faculties of a South African university. They

found that both parties (students and lecturers) were not prepared for large classes as such classes required that they adapt their teaching and learning strategies resulting in inferior teaching and learning. Of the three case studies, in two of them the lecturers adopted two main coping strategies: an examination driven approach in order to win students' attention and maintain discipline; a highly teacher focused approach characterised by an overload of information dished to the students. The authors report that in both cases the result was surface learning with students adjusting thereto. In the third case the lecturer strived to develop deep learning approaches however, the large classes caused many problems resulting in him being disillusioned and ended up following teacher focused approaches to teaching. Botha et al. (2004: 77) conclude as follows:

"Large classes have the following negative effects on the lecturer and teaching which, in turn, promotes a surface approach to learning:
·   Students are not seen as individuals in many cases the lecturer does not even know whether a student is absent or present.
·   The kind of 'teaching' that takes place in some of these large classes does not justify the effort to attend. The exam tips could just as well be provided on WebCT or in the study guide, or being obtained from a fellow student."

Objectives

In this paper the researcher seeks to achieve two objectives namely to present and discuss experiences of lecturers in a South African university, of teaching large undergraduate classes and to draw lessons therefrom regarding the teaching of such classes.

METHODOLOGY

Permission was sought and granted by the Registrar of this university. Ethical clearance was also granted by the relevant ethical committee. Given that the study sought to explore the phenomenon of large classes and how lecturers experienced and attempted to manage them in natural settings (Leedy and Ormrod 2010), the qualitative research approach was suitable. The original plan was to reach every School and Department that taught large classes in the university. The process would involve writing emails to Heads of School to seek permission then to in-

dividual lecturers therein for specific appointments. However this proved very difficult in a number of cases. Many emails were not responded to. This meant that plan B had to be crafted. This plan, which fortunately worked entailed approaching any lecturers the researcher was able to reach and making interview appointments. This process went on for an entire semester. The researchers were happy that the process reared a total of 28 lecturers from nine departments across the university: Accounting, Biochemistry, Education, Geology, Mathematics, Physics, Social Science, Sociology, and Statistics. Thus the study finally adopted convenience or opportunity sampling. A convenience sample is made up of members most easily available to the researcher. The researcher does not and should not claim such a sample as being representative of a wider population (Fogelman and Comber 2007).

Individual face- to –face open-ended interviews were the source of data. As rightly indicated by Leedy and Ormrod (2010), qualitative research often adopts open-ended interviews, addressing a few central issues and thereafter going in different routes for different participants. In this study three central issues were foregrounded: how the lecturers managed the large classes, how they experienced teaching such classes, and any suggestions they had regarding the handling of large classes. Through face-to-face interviews the researcher can establish rapport with participants thereby gaining their cooperation (Leedy and Ormrod 2010). Each participant was interviewed only once with each interview lasting for about 45 minutes. Apart from the interviews the researcher observed the teaching of one large class lesson.

Data were analysed and interpreted through themes that emerged from the interview transcripts. The themes were then examined in relation to the three focus issues identified in the preceding paragraph.

RESULTS

Out of the three focus areas indicated in the methodology section above, the data generated were grouped into nine thematic areas. These are presented and discussed below.

Enjoying Large Classes

Although it was an isolated case, it is noteworthy that one lecturer actually enjoyed teaching large classes. This participant had the following to say:

"Yes it's good; it's interesting with large classes. Now with power point and with the audio visual aids, it's no problem at all so students can hear you right at the back, you got these big projectors, and everything is clear. Then I've got a lap top here which I can write on the screen. So it's very nice, all the lecturers who are teaching first year are supposed to be using it but some of them have not adopted that approach."

Attendance

In most departments class attendance was not compulsory. Here is what some lecturer said in this regard:

"There is no attendance register. It is their own prerogative whether they want to come to class or not. There is a lecture attendance for DP (Duly Performed) and we don't take a register. The only way we can control their attendance is with the tutorials where they split into smaller groups."

On the same note many lecturers reported that it was impossible to enforce lecture attendance:

"Strictly speaking, there is no lecture attendance requirement, because it is unenforceable. The DP attendance, hmmm they are supposed to attend 80 percent of the lectures for their DP, but realistically speaking, we only start looking at DP attendance for those who got lost and could not achieve the minimum requirement of 40 percent pass. So for those who got over 40 percent, they get their DP even if they did not attend all the time."

"The lectures are not compulsory to attend, they are voluntary, but you know the thing is I can definitively... Part of the reason for that is just…, I am sorry but to try to monitor 500 students with a register, it's not gonna happen."

"Anyway it is really inefficient really, nobody has the time to sit there and check who is here and who isn't, it is just pointless. And this actually comes back to the fact that if students know that lectures are important to them, you don't have to police them to attend."

One lecturer reported that there was no point enforcing lecture attendance because some students were a nuisance in lectures. This is what she had to say:

"So I do six hours of consultation per week and they are free to see me during that time. I tell them upfront that I am going to give you a lecture to the best of my ability, I will be here for you for the lecture, for any additional support that you need, you can come to my office or you can contact me by email. But if you are only interested in messing up the class, I am not interested in you being here."

But in some departments students attended lectures anyway:

"But traditionally our classes are full. I don't think of any student that I have picked up as missing the lecture quite regularly. On the other hand, the lectures move quite a lot faster because there is a lot to cover, so I don't think they can miss that, so they have to be there."

Commenting on the need for an attendance register, one lecturer said:

"I think it's important because you need to take track especially with large classes. In smaller classes most of the time I know all my students but for these large classes it's actually important to take track. Because there you have students that don't just come for lectures at all and if you track their records, those are the ones that will either fail the test or always under- perform in the test and then they blame who ever. So and so didn't teach us well but obviously you don't have proof that they were not in the lecture. I think it is important to keep a record."

Assessment

In most departments, tests and examinations were reported as the most applied means of assessment. Tests were mostly made up of multiple choice questions. A response in this regard:

"The format here is tests comprising of multiple choice questions then the exam. We used to have short answer questions as well but that was time consuming for us because you mark 270 scripts."

Explaining the reason for multiple choice type of questioning, the same participant said:

*"I think because of the large class, it's easier to mark because you don't even involve people it is just the computer doing it. So it takes out the time to mark 270 or so scripts and it makes it easier to also give the marks on time. Instead of taking two weeks, they can easily get their marks the next day. In terms of assess-*ment, they write three tests during the year and the exam. As I mentioned before, we are trying to get more theory and discussion type questions which the students don't like."*

In another department, due to large amounts of marking required, they hired markers from outside the university.

"No we don't do all the marking ourselves. We are required to mark for 600 hours' worth of scripts per year. Obviously that is no way near completion of the marking at hand…. we hire extra markers who have already passed their part one of their board exams."

Organisational Approaches

The tutorial approach where large classes are broken down into smaller groups was reported as one of the most popular strategies. Many departments relied on Honours and some final year students:

"You know a lot of our tutors tend to be Honours and some third year students. There is not much choice. Now these students are managing quite a significant course load just on top of their own studies."

But some departments did not have enough postgraduate students to address the large undergraduate classes:

"We have to call third year students. We have honours students tutoring obviously, but we don't have enough postgraduate students and more particularly honours ones during the semester because we are dealing with more than one thousand five hundred undergraduate students."

In another case someone who was not a student was employed as a tutor:

"A tutor is employed here on a full time basis. The students are aware of that and he has organised particular consultation hours and they all come to him with particular problems that they are having, things that they don't understand and so on."

But some students did not attend the tutorials despite that they were supposed to be compulsory and there was a difficulty handling such cases:

"Some of the students do prefer not to attend the tutorials for whatever reasons they may have. If we deny them DPs (Duly Performed), they generally will appeal and then they will get their DPs."

In this regard some lecturers felt they did not get the necessary support from the Faculty:

But that also, I am talking about the tutorial process, you need to have a faculty that backs you up in terms of attendance requirements because otherwise it ends up becoming a pointless exercise."

Some departments were still quite old fashioned in their teaching approaches:

"Well we are still very old fashioned... (Laughter)... We still use and I think I can speak for my colleague too, transparencies and the overhead projector..... I think with PowerPoint you are a little bit restricted. So it is more the nature of the subject we are dealing with. I don't think it is related to the number of students. I think if we even had smaller classes we would still, you know, definitely prefer to use transparencies."

In other departments lecturers were almost forced by students to adopt certain approaches:

"You know it is funny because if you don't give class notes, they want class notes. That is the major thing. But as far as I know at university you play the game, if students want class notes, you give them class notes."

Some departments adopted specific textbooks and put these online:

"So certainly the text book is available online, fortunately for ....and I think ....[subjects named], we've got what we call Mastery in ....and Mastery in ....[book titles named]. Students can go to the website and do tutorial problems online."

The online approach was quite popular with a number of departments:

"All what we do is we will put up electronic copies of everything we use out on Moodle and for notices we tag in and if they are already there we put the notice on the notice board.

We do put up things on Moodle; I find the students generally seem to not like Moodle because they have to print things and they say costs are quite high."

In one department a class was split into two and lecturers split the course topics among themselves and taught both groups accordingly:

"We have... each lecturer will have both streams per topic so we split our lectures into topics rather than per stream, so we both lecture both streams but we split the duties between the steams."

But one lecturer was quite unhappy with the spilt arrangement reported above:

"Unfortunately I wouldn't like to teach a class like that again. I will like to teach in a set up where no one else is teaching the same material and students don't get confused, you know if students move from one class to the other, one is one week behind, it's really a disadvantage to the students."

A Sense of Inadequacy

In some scarce skills departments the university employs experts from the private sector who often would have no teaching background. Those the researcher interviewed reported that they did not feel adequately experienced and knowledgeable to teach.

"I still feel that I am very inexperienced especially coming from no educational background whatsoever. The university always has a problem with...[speciality named] lecturers because we all come here not as lecturers from somewhere else, but as ...... from industry. So we come with no educational background at all."

Another lecturer in the same department expressed similar sentiments as follows:

"And also I am thinking, coming from a non-teaching background of being an....[area of speciality named], coming into the classroom to teach and now you have this challenge of dealing with large classes that you are faced with. You feel like: 'what am I supposed to do?'"

Resource Constraints

Resource constraints were reported as one of the major difficulties in teaching large classes. One lecturer had this to say:

"We only have 40 microscopes and you have a class of 90 students. That means you will have to start doubling those practicals. So instead of running one practical a week, you run two. This means in a sense that you are doubling your contact hours and it becomes quite difficult in doing so."

"We get promises through the faculty that: "next year we are going to limit this amount of students; we are not going to have such an overwhelming number". But it never quite seems to resolve itself."

In a different department a challenge regarding field trips was reported.

"You know, it is really wrong to have such huge numbers. Take a class of fifty out on a field trip, it is chaos. 10 of them will be listening to what you are saying and the rest will just be there on their cell phones or site seeing."

Some Reported Student Behaviours

One reported behaviour related to noise. In this regard, one lecturer said:

"One issue with the large classes, I think for me and I think it should also be the experience of my colleague, there is not one lecture where I do not have to say Keep quiet!"

On the same note, one participant was of the view that the noise was not because students were necessarily unruly:

"There is a lot of talking. I think it is not because they are purposefully disruptive or they have a bad attitude but because with a crowd that size, this is bound to happen. In such a venue like…[a very big lecture theatre named] I think you need to see it. Now students in that venue when they are sitting at the back, they think that you can't see them."

Some lecturers reported that their students had adopted certain lecture approaches without which they would not be interested. One said: 'If you do not put anything on the screen, they won't listen to you'.

Another reported as follows:

"They insist on transparencies or power point so they can capture each slide on their cell phones. Meanwhile they will be playing games at the back of the lecture room."

The time of a lecture was reported as a determinant for whether or not some students attended:

"It seems like the morning sessions are much more popular. I mean the classes are bigger in morning sessions and much smaller in afternoon ones because everyone seems to find the morning sessions more convenient."

Some Lecturers' Feelings about Large Classes

Some reported the absence of engagement with individual students: In this regard one said:

"You stand there and you deliver a lecture and with such large numbers I think it is particularly unreal. The issue around how to engage with everyone in the class, you can't actually engage with everybody because you will always have a portion of the class which is not interested in being there and which is usually distractive, you know."

In the same vein, another lecturer said:

"That is a bit disappointing [issue of large classes] because there is no relationship. For example if I know five students' names that is quite a lot and I don't even know everybody's faces. I know the faces of the students that always sit at the front or who come and see me on a one- on- one basis, but the students that sit at the back and don't come and see me, you know if I pass by them on campus, I won't even know that they are my students and this is quite sad."

Again on a similar note, another participant reported:

"The feedback we are giving is very broad. We can't ever say to one student 'look this is what you did here, and that is what the problem was.' We can't do that at all and it is not a pleasant situation."

Some participants reported that large classes had given them a lot of administrative work:

"I don't think the university is aware of the amount of administration that I put in. There is no single day that I am not doing it. The administration that we have to do for 1600 students is huge. So every time we think about new initiatives, at the back of our minds we always have to think: But how much extra work load is this going to be?"

Lecturers' Suggestions about Large Classes

One suggestion related to the need to reduce the sizes of tutorial groups:

"Ok, large classes are here to stay. I mean look at our venues I am always expecting to have large classes. I think my main wish will be that we try to have smaller tutorial groups. If we could have smaller groups of let's say 20 or 30, I know 10 is unrealistic. If we could have 'tut' (tutorial) groups of 30 students, I think it will be possible to build relationships. Some students are currently intimidated to be in 'tut' group of over 40 students."

Emphasising the importance of the tutorial approach, one lecturer said: "I will definitely say that it comes down to the support of the tutorial system". Still on tutorials but this time on tutors specifically, one participant was of the view that the system did not work quite well because of poor remuneration of tutors. He said: 'But also, our tutors are paid very badly. Because of that, it is very difficult to attract tutors'. Another view regarding tutors related to the hiring of non-student tutors:

"Our tutors are also studying. And their main focus as much as I want to believe is not the tutorial. You feel it when the exam time comes and they have to mind their own business. So I would suggest definitely that the university employs more people you know, dedicated to tutorials."

This same view was echoed by another participant as follows:

"...And I know the way [name of a university in the country cited] works. They have big classes as well but they have a bigger staff compliment, and in terms of tutors, the way we work currently is, our tutors are Honours students. If we manage our system well we should be able to employ academic trainees alongside the tutors."

On the same matter and citing the example of the same sister university as above, yet another lecturer said:

"I think one of the successes of the University of ..... is that they hire more academic trainees than we do. We have one currently here, at University of ... they have 17. So you have them doing the tutorial and they definitively do a better job than the tutors. So the academic trainee is available all the time for the students, and the tutors are also available for consultation, it's not just the lecturer that is available for consultation."

The need for basic equipment to be available in all lecture venues was raised. One participant said the following in relation to their Department's needs:

"At least if all the lecture venues should have a periodic table, should have a laboratory bench, not so sophisticated, you need sufficient work space to demonstrate an experiment, taps available with sinks."

Regarding teaching approach, one participant suggested that Moodle was the way forward:

"So I think we got the responsibility to work more efficiently and I think Moodle can help there. So that is our responsibility, it is not the university's. They have already paved the way and made it available. But just if really we could have more tutorial groups and make them smaller."

But some felt that the university should scale down on student numbers. One said: "You know, to be very honest with you, I am of the strong opinion that we have to go for smaller classes". Another participant also said:

"I think we now do not have a filter any more, which is a burden to all of us. I think we just let students in who shouldn't be here. I think we are wrong you know, we set them up for a lifestyle of disappointments and disillusionment when they fail."

Still on the quality of the student being enrolled at university, one participant called for greater dialogue between the university and schools:

"You know it is strange because I think between high schools and here, we are obviously not engaging a lot. I mean the university has its own ideas and schools have their own. We are not meeting or having any kind of dialogue between the two where we can say ok we need to do this for our students, you need to do that for those students."

DISCUSSION

Findings show that in the majority of cases lecturers did not and seemingly were unable to enforce lecture attendance due to the large student numbers. The literature suggests that large classes pose management difficulties on the part of the teachers. However, some lecturers reported that their classes were always full. This suggests that even without enforcement students can attend large class lectures. What is not abundantly evident are the circumstances under which students decide to attend or not to attend lectures. Two scenarios are likely, one relates to Botha et al.'s (2004) finding where teaching becomes heavily examination-oriented so as to win students' attention. What goes on in such classes is typical of what can be referred to as surface learning. The other scenario relates to deep learning where students are actively involved and academically engaged. Thus where a lecturer succeeds in engaging students in deep learning it is likely that student lecture attendance will be sustainable. Student behaviours reported in this study suggest that there was not much deep learning occurring in many of the large classes concerned. One example relates to students demanding certain teaching approaches through which they could simply capture the content without processing any of it. A second example relates to the type of assessment that occurred in most cases namely multiple choice questions.

Consistent with evidence in literature, findings in this study show that the tutorial approach was a popular strategy for teaching large classes. However, literature such as Snowball and Sayigh (2007) suggests that tutorial groups need to be small in size. This would allow for both social and academic integration (Fin et al. 2003) on the part of the student. The tutorials in the present study were mostly large comprising of 40 or more students each. Considering what Michaelowa as cited by Mizrachi et al. (2007) concluded namely that there exists an inverse relationship between the size of a class and learning outcomes, that is, as class sizes increased, student learning decreased and compounded by the fact that the tutors in the university studied were largely themselves students who would at some point in the semester focus on their own studies, it seems that the tutorial system in this institution did not provide a sound opportunity for student deep learning.

Lecturers' teaching approaches ranged from the most basic which some of them called "old fashioned" such as use of the overhead projector, to online systems such as Moodle. Among the lecturers were also some who did not have any teaching background and who felt quite inadequate in the way they taught. The researcher is of the view that the amount and quality of students' social and academic engagement arising out of these different capacities and practices of the lecturers is likely to differ markedly. Literature suggests that the more varied, creative and student-involving teaching approaches are the more successful such teaching is likely to be. Findings suggest that most lecturers consulted strived to meet only the basic minimum in terms of teaching approaches. This state of affairs is likely to be a threat to opportunities for deep learning.

Findings show that lecturers needed far greater support than they currently experienced. Such support would include increased supply of equipment and other resources as well as more tutors to achieve reduced student numbers per tutorial group. The levels of support are likely to have an impact on the two variables Botha et al. (2004) studied how students approached learning and lecturers' approaches to teaching and assessment. While the need for such support cannot be under-estimated, the researcher is of the view that many lecturers in the study tended to under-estimate the amount of support they could generate for themselves. The deeper the learning they can provide for, the better their large classes can be. The more the lecturers see themselves as assets towards the teaching of large classes, as opposed to liabilities, the better the situation is likely to be. Talking about lecturers seeing assets in themselves, two perspectives emerged regarding the way forward about large classes: (1) large classes are here to stay so the focus should be on how to cope with them better; (2) large classes are impossible so the university must down-scale on student numbers. The researcher is of the view that the first perspective is more representative of the situation not only in South Africa but in most parts of the developing world. This makes investing in how to teach and manage large classes better, such as forging greater links and synergies between high schools' and universities' work crucial (Bowen 2013; Deslauriers et al. 2011; Molborn and Hoekstra 2010; Moravec et al. 2010). This of course is not to under-estimate the need for an institution to be realistic about how big classes can possibly be.

CONCLUSION

Literature suggests that there is no one meaning of a 'large class'. However, it can be safely argued that a class is large when it becomes difficult to manage and effectively teach. Deep learning, achieved through active involvement of the students and having them to think and apply what they are learning, enabling students to be socially and academically engaged, is often very difficult to achieve with large classes. Most lecturers in the study reported multiple difficulties in teaching and managing large classes and seemingly could only do the minimum. As a result, it did seem there was not much deep learning occurring in most classes. While the lecturers need a lot of additional support, there seems to be great potential for them to draw from their own assets as well. Thus a shift in their thinking regarding possibilities around them is necessary.

RECOMMENDATIONS

Given that large classes are most likely here to stay particularly in the developing world and given the apparent lack of support lecturers get in teaching and managing them, there is need

for research into the nature of lecturer support required. While deep learning is not easy to achieve in large classes, it is not impossible. More research on how such learning can be achieved is required.

REFERENCES

Anderson G, Eyitayo OT, Garg D, Lee MB 2007. Successful strategies in teaching large classes. *Botswana Institute of Administration and Commerce,* 4(2): 4-21.

Australian Universities Teaching Committee 2003. *Teaching Large Classes Project 2001 Final Report.* Melbourne: Teaching and Educational Development Institute.

Botha L, Fourie N, Geyser H 2004. Teaching, learning and assessment in large classes- a reality of educational change? *Education as Change,* 9(1): 60-79.

Benbow J, Mizrachi A, Oliver D, Said-Moshir L 2007. *Large Class Sizes in the Developing World: What Do We Know and What Can We Do?* New York: American Institute for Research under the EQUIP1 LWA.

Bowen WG 2013. *Higher Education in a Digital Age.* Princeton: Princeton University Press.

Buchanan RW, Rogers M 1990. Innovative assessment in large classes. *Teaching,* 38(2): 69-74.

Burnett L, Krause K 2007. Teaching Large Classes: Challenges and Strategies. From <http://www.griffith.edu.au/gihe> (Retrieved on 13 March 2014).

Deslauriers L, Schelew E, Wieman C 2011. Improved learning in a large-enrollment physics class. *Science,* 332(6031): 862-864.

Finn JD, Pannozzo GM, Achilles CM 2003. The "why's" of class size: Student behavior in small classes. *Review of Educational Research*, 73(3): 321-368.

Fogelman K, Comber C 2007. Surveys and sampling. In: ARJ Briggs, M Coleman (Eds.): *Research Methods in Educational Leadership and Management.* London: Sage Publications, pp. 125-143.

Leedy PD, Ormrod JE 2010. *Practical Research: Planning and Design.* London: Pearson Educational International.

Middendorf J 2004. FAQS about Teaching Large Classes. From <http://www.iub.edu/~teaching/faqlarge. shtml.> (Retrieved on 13 March 2014).

Mizrachi A, Oliver D, Said- Moshir L 2007. *Large Class Sizes in the Developing World: What Do We Know and What Can We Do?* New York: USAID.

Molborn S, Hoekstra A 2010. 'A Meeting of Minds': Using clickers for critical thinking and discussions in large sociology classes. *Teaching Sociology,* 38(1): 18-27.

Moravec M, Williams A, Aguilar-Roca N, O'Dowd K 2010. Learn before lecture: A strategy that improves learning outcomes in a large introductory biology class. *CBE Life Sci Educ,* 9(4): 473-481.

Snowball J, Sayigh LE 2007. Using the tutorial system to improve the quality of feedback to students in large class teaching. *South African Journal of Higher Education,* 21(2): 321-333.

University of Maryland Center for Teaching Excellence 2005. Large Classes: A Teaching Guide. From <http://www.cte.umd.edu/library/teaching LargeClass/ guide/index.html> (Retrieved on 10 March 2014).

Visano BS 2003. Teaching large classes. *CORE,* 13(1): 1-4.

Wilson V 2006. Does Small Really Make a Difference? An Update: A Review of the Literature on the Effects of Class Size on Teaching Practice and Pupils' Behaviour and Attainment. *SCRE Research Report* No. 123. Glasgow: SCRE Centre, University of Glasgow.