AN EXPLORATION OF THE UNIVERSITY OF BOTSWANA LEARNING ENVIRONMENT

Omaze Anthony Afemikhe (Principal Investigator)
Department of Educational Foundations,
Faculty of Education,
University of Botswana,
Gaborone, Botswana

Oseyemi Justina Adeyinka
Department of Science and Mathematics Education,
Faculty of Education,
University of Botswana,
Gaborone, Botswana

Selinah Peters
Department of Home Economics Education,
Faculty of Education,
University of Botswana,
Gaborone, Botswana

A report under the Study Programme on Higher Education Management in Africa submitted to the Association of African Universities

December 2001
Acknowledgement and Disclaimer

This report is based on research funded under the Study Programme on Higher Education Management in Africa, a special project of the Association of African Universities. The Ministry of Foreign Affairs of the Government of the Netherlands and the Swedish International Development Cooperation Agency (SIDA/SAREC) provided financial Support for the Study Programme. Neither the Association nor the donor agencies are responsible for any views expressed in this report.

We are very grateful to the Association of African Universities for this singular opportunity to be involved in its’ Study Programme. We are particularly grateful to Professor Akilagpa Sawyerr, Director of Research at the AAU and Co-ordinator of the Study Programme and other staffers of the Association for their support while this study lasted. We also want to put on record our appreciation to Professor Per Olaf AAMODT of the Norwegian Institute for Studies in Research and Higher Education for his generous and incisive and valuable comments that have helped to give direction to this study.

Our appreciation and thanks to all the participants at the training workshops organised by the AAU under the Study programme for their frank and useful comments on our project. We thank all participants and research assistants used in the study for their valuable time and effort without which the report presented here would not have seen the light of day. Many colleagues at the University of Botswana have also contributed to the success of this study. To them we say a big thank you.
Last but not the least we thank Professor Sharon Siverts, the Vice-Chancellor of the University of Botswana for granting us the required institutional support that saw us through the project. Without this all our efforts would have been an exercise in futility.
The learning environment is an important factor in students’ decisions to attend any university. The quality of the learning environment is reflected in how well learners are enabled to absorb, analyse and articulate ideas within it. This study focuses on the University of Botswana learning environment, from the perspective of current and past students. It explores the learning environment as perceived by past and current students of the university. It further examines the learning strategies utilised by current students and relates its’ components to their perception of components of the learning environment.

A survey approach, which utilised both qualitative and quantitative paradigms, was adopted in this study. The population was made up of students registered for degree and sub degree programmes at the university during the 2000/2001 academic session. Another part of the population was made up of past students who graduated between 1990 and 1995.

Four research instruments were used for this study. These included perceptual mapping instrument that focused on perception of locations within the university and an interview schedule for current students. Other instruments were the learning environment questionnaires I and II for past and current students respectively. The reliability of measures on learning environment questionnaire I using Crombach was 0.74. Learning environment questionnaire II was made of three sections dealing with demographic information, learning environment proper and learning strategies. The reliability of scores on learning environment proper and learning strategies were 0.77 and 0.85 using Crombach alpha. The instruments were administered to students from fourteen departments across all faculties in the university. The achieved response rate for the instruments ranged from 53.5 percent for perceptual mapping instrument, to 80 percent for interview schedule for current students.
The analyses of information from the questionnaires were executed using means, percentages, interpretative norms and an exploratory factor analysis with Varimax rotation. This allowed us to identify components of the learning environment and learning strategies. The relationship between components of each of learning environment and learning strategies were computed using Pearson product moment correlation coefficient.

The factor analysis of the questionnaire for current students yielded seven factors/components, which we labelled university values, academic support, health support, accommodation, counselling support, lecturing behaviour and media/demonstrator support. The learning strategies analysis yielded components, which we labelled deep cognitive, planning, surface cognitive, focusing, surface cognitive and diversification strategies.

Factor analysis of the questionnaire for past students yielded six factors namely, values/academic support, counselling/demonstrator support, lecturer behaviour, preparation for life/work, and health support. The emergence of the preparation for life/work factor was not unexpected, as we had included items dealing with how university education prepared them for work/life.

The correlation between components of the learning environment and components of learning strategies for current students were not very large, though many reached significance level. For example the relationship between each of focusing and meta cognitive and each of university values and academic support were significant.

Based on the results from this study we concluded that there was student cohesiveness, cooperation among students, equity in the way students are treated by lecturers, and
personalisation were part of the culture of the University of Botswana. It was also concluded that diverse approaches are utilised for study and opportunities that facilitate learning are provided. There was however a mismatch between student intake and resources generally.

Consequently, we recommended that more emphasis should be placed on self study or self regulated course activities that may raise students’ awareness of planning, self testing and adjustment strategies. We also saw the desirability of a well-organised and articulated orientation programme, which should be mandatory for all new students, as a way to getting students familiarised with locations on campus.
List of Tables

Table                                                                 Page

3.1: Planned and Achieved Sample for instruments Administered

4.1: Frequency distribution of current students by programme,           
       Faculty, gender and year of study

4.2: Frequency distribution of past students by programme,              
       faculty, gender and attendance at another university

4.3: Percentages of response and mean for university value items

4.4: Percentages of response and mean for academic support items

4.5: Percentages of response and mean for health care support items

4.6: Percentages of response and mean for accommodation and recreation items

4.7: Percentages of response and mean for counselling services

4.8: Percentages of response and mean for lecturer- related items

4.9: Percentages of response and mean for media and demonstrator support items

4.10: Mean values for learning environment factors per faculty

4.11: Percentages of past students’ response and mean for academic support items

4.12: Percentages of past students’ response and mean for counselling and
       demonstrator support items

4.13: Percentages of past students’ response and mean for lecturer support items

4.14: Percentages of past students’ response and mean for preparation for life/work
       items

4.15: Percentages of past students’ response and mean for accommodation/recreation
       items

4.16: Percentages of past students’ response and mean for health support items

4.17: Respondents’ use of deep cognitive strategies (percentages and means)
4.18: Respondents’ use of focusing strategies (percentages and means)

4.19: Respondents’ use of meta cognitive strategies (percentages and means)

4.20: Respondents’ use of planning strategies (percentages and means)

4.21: Respondents’ use of surface cognitive strategies (percentages and means)

4.22: Respondents’ use of diversification strategies (percentages and means)

4.23: Relationship between learning environment and study strategies
<table>
<thead>
<tr>
<th>List of Figures</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: The learning environment model</td>
<td></td>
</tr>
</tbody>
</table>
## TABLE OF CONTENT

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title Page</td>
<td>i</td>
</tr>
<tr>
<td>Acknowledgement and Disclaimer</td>
<td>ii</td>
</tr>
<tr>
<td>Executive Summary</td>
<td></td>
</tr>
<tr>
<td>List of Tables</td>
<td></td>
</tr>
<tr>
<td>List of Figures</td>
<td></td>
</tr>
<tr>
<td>Table of Contents</td>
<td></td>
</tr>
</tbody>
</table>

### Chapter 1

**Introduction**

1.1 Background

1.2 The Research Problem

1.3 Objective

1.4 Higher Education in Botswana

1.5 The University of Botswana

1.6 Research Questions

1.7 Justification for the Study

1.8 Scope of the Study

1.9 Definitions of Terms

### Chapter 2

**Review of Literature**

2.1 Some Previous Studies on Learning Environment

2.2 Study strategies and Learning Environment

2.3 Conceptual Framework

### Chapter 3

**Methodology**

23
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Research Design</td>
<td>23</td>
</tr>
<tr>
<td>3.2 Population and sampling of Subjects</td>
<td>23</td>
</tr>
<tr>
<td>3.3 Research instruments</td>
<td>24</td>
</tr>
<tr>
<td>3.4 Data Collection</td>
<td>28</td>
</tr>
<tr>
<td>3.5 Response Rate</td>
<td>29</td>
</tr>
<tr>
<td>3.6 Data Analysis</td>
<td>29</td>
</tr>
<tr>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td>Results and Discussions</td>
<td>31</td>
</tr>
<tr>
<td>4.1 Findings</td>
<td>31</td>
</tr>
<tr>
<td>4.1.1 Demographic Characteristics of Respondents</td>
<td>31</td>
</tr>
<tr>
<td>4.1.2 University Learning environment as perceived by current students</td>
<td>33</td>
</tr>
<tr>
<td>4.1.3 University learning environment as perceived by past students</td>
<td>45</td>
</tr>
<tr>
<td>4.1.4 Learning strategies used by students</td>
<td>52</td>
</tr>
<tr>
<td>4.1.5 Relationship between components of learning</td>
<td>57</td>
</tr>
<tr>
<td>environment and study strategies used</td>
<td>57</td>
</tr>
<tr>
<td>4.2 Discussion</td>
<td>59</td>
</tr>
<tr>
<td>Chapter 5</td>
<td></td>
</tr>
<tr>
<td>Summary, Conclusion and Recommendations</td>
<td>67</td>
</tr>
<tr>
<td>5.1 Summary</td>
<td>67</td>
</tr>
<tr>
<td>5.2 Findings</td>
<td>69</td>
</tr>
<tr>
<td>5.2.1 Current Students’ Perspective</td>
<td>69</td>
</tr>
<tr>
<td>5.2.2 Past students’ perspective</td>
<td>71</td>
</tr>
<tr>
<td>5.3 Conclusions</td>
<td>72</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>5.4 recommendations</td>
<td>74</td>
</tr>
<tr>
<td>References</td>
<td>75</td>
</tr>
<tr>
<td>Appendices</td>
<td>79</td>
</tr>
<tr>
<td>Appendix A1: LEQ II</td>
<td>79</td>
</tr>
<tr>
<td>Appendix A2: LEQ I</td>
<td>83</td>
</tr>
<tr>
<td>Appendix A3: Campus Questionnaire</td>
<td>87</td>
</tr>
<tr>
<td>Appendix A4: Interview Schedule Guide</td>
<td>88</td>
</tr>
<tr>
<td>Appendix B1: Rotated Factor Loadings for LEQ II section B</td>
<td>90</td>
</tr>
<tr>
<td>Appendix B2: Rotated Factor Loadings for LEQ II section C</td>
<td>93</td>
</tr>
<tr>
<td>Appendix B3: Rotated Factor Loadings for LEQ I</td>
<td>98</td>
</tr>
</tbody>
</table>
Background

Botswana is a relatively small country, which has evolved since independence in 1966 from a basically agrarian economy to one of remarkable commercial and fiscal transformation of semi-industrialisation. It has however been systematic in its development pursuits as it has since independence drawn up eight development plans. The government has realised the importance of education and commits substantial proportion of her annual budget to it. Two national policies on education (1977, 1994) have been approved by parliament. In the Revised National Policy on Education, it is explicitly stated that

The role of tertiary education is to provide high level manpower and research support needed for economic development as well as cultivate the intellectual and cultural enrichment that is indispensable for the nation’s social development (1994: 10).

Tertiary education in Botswana has expanded greatly: in 1978 the enrolment in institutions of tertiary education was 1,047; this went to 4,960 by 1991 (Republic of Botswana, 1994). This increase has continued steadily. The national polytechnic has been merged with the only university in the country, the University of Botswana. The Second National Commission on Education avers that the university Campus can conveniently accommodate 10,000 Students. This target has almost been reached.

The increase in the number of students may have some implications such as reduction in the academic interactions possible within the university. As in higher education worldwide it would seem that change is gradually transforming the higher education environment. The changes as identified by Meyerson and Johnson (1994) include

- increasing operating costs, decreasing and more volatile revenue resources,
- increasing calls for accountability from government and
others, and public disillusionment with higher education are sample
(p.1).

Resources are not as abundant as hitherto and the impact of technology has never been that
great. There is therefore need to develop and manage learning environments to support higher
education.

The purpose is to provide strategies, processes and supporting information to
effectively meet the objectives of an institution. One way, in which learning
environments have been created, implemented and monitored is through the use of
learning environment culture. According to Ford et al (1996: 51) the ‘learning
environment is a community with its own culture and values providing a variety of
learn places that support student learning.’ They went on to indicate that the
environment shapes the attitudes of staff and students alike. With current changes in
technology leading to globalisation and unprecedented explosion in knowledge, such an
environment should provide support for student learning, be sensitive to students needs,
selection of learning chunks to enable clients penetrate in the labour market. On the
part of the students, they should be willing to take responsibility for their own learning,
recognise importance of study skills, and accept lifelong learning.

It may be instructive at this point to emphasise that whatever happens in an
educational endeavour is torn between two complementing environments-external and
internal. The external has to do with government, press and public while the internal focuses
on administrators, faculty and students. The learning environment which one could see as
synonymous with the internal environment of the institution directly or indirectly influences
the institutional performance. The environment is made up of variables such as common
infrastructures (Instructional Technology, Estates, Finance, etc), Learning venues (lecture
theatres, laboratory, etc), Subject dependent services (lecturer support, peer support,
demonstrator support, etc), and subject independent services (counselling, health, recreation, etc), learning chunks among others which interact in varied ways to assist in the students and other participants getting to imbibe the culture and values of the university.

The university of Botswana is presently undergoing some restructuring. The set-up is moving away from what operates in most African universities, particularly with respect to administrative positions. New units are being established to assist in the realisation of the University’s goals. The question one may therefore ask is whether the learning environment has consequently changed to reflect the structural administrative network. Are there components of the new learning environment, which could impede or enhance the performance of the university? In particular, what do the main players think could be done to improve on the quality of learning at the university?

The Research Problem

In an editorial in the Times Higher Education Supplement (1996) the need for more data on the quality of student lives was recognised. In particular, this type of information to the present researchers’ knowledge is lacking in Botswana. The increasing student population in the University of Botswana points to diversity in student population which may lead to many more students needing greater learning support. This is more so as the increased number of students will definitely lead to reduction in the time available to staff to address students’ concerns.

It is known that institutions can create and sustain educationally enabling and stimulating environments. How educationally powerful the environment in the University of Botswana is can be determined. Since there cannot be a universal learning environment, can one identify the varying environments in the different Faculties? Are the emotional perceptions of infrastructures and locations within the university positive and do they vary?
The need for a resolution of these issues is the underlying motivation for this study. It is with a view to document the learning environment from the view of past and present clienteles so that one can suggest ways forward in the University’s endeavour to achieve its strategic plans. In particular, limitations within identified learning environment need to be examined as well as the prospects for enhanced educational powerful environment.

The University of Botswana

The University of Botswana is one of the many institutions providing higher education in Botswana. The humble beginning of the University of Botswana can be traced to 1964 when the University of Basutoland, Bechunaland and Swaziland (UBBS) was started following an agreement between the High Commission Territories and the Oblate of Mary Immaculate of Pius XII Catholic University, Roma, Lesotho (University of Botswana Calendar, 2000/2001: 1). In 1966 UBBS became the University of Botswana, Lesotho and Swaziland (UBLS) and the governments of Botswana, Lesotho and Swaziland equally funded it. In its earlier years of existence it had little presence in Botswana; its earliest presence was through the Extra Mural Services and the School of Education, and a small Short-Course centre built during 1969 (University of Botswana Calendar, 2000/2001:2).

Following the acceptance of the second Alexander Report by the University and the Governments of Botswana, Lesotho and Swaziland teaching began in Gaborone in 1973. In 1975 the Government of Lesotho nationalised the assets of UBLS in Roma and constituted it as the National University of Lesotho. These developments led to the UBLS becoming the University of Botswana and Swaziland (UBS) comprising the University Colleges of Botswana and Swaziland. The University of Botswana was eventually inaugurated on 23rd October 1982 though an Act of Parliament had established it on 1st July 1982. The aim of the
university as contained in the Act establishing it is to ‘provide higher education, to undertake research, to disseminate knowledge’ (University of Botswana Calendar, 2000/2001: 520). The University operates in two campuses located in Gaborone.

**It is the vision of the University of Botswana that it will be a leading academic centre of excellence in Africa and the world. It mission is to advance the intellectual and human resource capacity of the nation and the international community** (University of Botswana, 2001: 3). To achieve the vision and fulfil its mission, the university has put in place certain values. These include creation of a holistic environment, academic freedom, academic freedom, academic integrity, cultural authenticity, equity, public accountability, social responsibility, autonomy as an institution, productivity, and internationalism (University of Botswana, 2001)

The principal officers are the Chancellor, Chairman of the University Council, the Vice-chancellor and Deputy Vice-Chancellors. The governing body of the university is the University Council while Senate is responsible for formulating and carrying out the academic policy of the university. The Vice-Chancellor is the academic and administrative head and chief disciplinary officer of the university (University of Botswana Calendar, 2000/2001: 520).

Below the Vice-Chancellor, the University is divided into academic and administrative sections. The academic section is divided into faculties made up of departments; each department has a focus in teaching and research in particular subjects. At present there are the Faculties of Education, Science, Humanities, Social Science, Engineering and Technology and Business. In addition there is a School of Graduate studies. Deans coordinate the work of the faculties and graduate school.

The course offerings in the departments include single honours degrees and combined honours degrees. Available information indicates that many students are
registered for the combined honours programmes. Most departments run masters
degree programmes. Doctorate programmes have also been mounted in some few
departments.

The administrative section is divided into Academic Development, Research and
Development, Centre for Continuing Education, Library Services, Financial Services,
Human Resources, Information and Technology, Academic Services, Student Welfare,
Guidance and Counselling Services, Sports, Culture and Recreation, and Health
Services. A director heads each of these administrative sections. The academic units and
the administrative units are assigned to Deputy Vice-Chancellors for supervision of
their respective functions. There are currently three deputy vice-chancellors (Academic
Affairs, Student Affairs, and Finance and Administration).

The students are organised into a Student representative Council that represents
student opinion and provide an official channel of communication between students and
the University Administration (University of Botswana Calendar, 2000/2001:6).
Students are represented in all decision-making organs of the University right through
departmental boards, faculty boards, senate, and council. Students cultural and sport
activities are encouraged and many student organizations to promote these are
available in the university.

There is a student’s union hall, which accommodates most recreational facilities.
Some sports facilities exist for Badminton, Darts, Lawn Tennis, Netball, Table Tennis,
Basketball, Volleyball, and Boxing. Halls of residence are situated on both the main
Campus and the Faculty of Engineering and Technology Campus. A clinic manned by
part time doctors and nursing staff is also available to address students’ medical needs.

Within the context of the University of Botswana registered students are
normally exposed to a plan of study lasting over a period of time leading to the award of
a degree, diploma or certificate. Students take a major or minor component of their programme in a subject area of study. The subjects are divided into components called courses. The normal duration of diploma programmes is two years and each academic year is made up of two teaching semesters each consisting of not less than 15 weeks. Degree programmes normally last for a period of 4 years. A student’s academic programme normally entail 15 – 21 lecture hours or equivalent per week.

Performance of students is normally assessed based on continuous assessment and an end of year examination. In the first part of the course the examinations are internally moderated while in the final year the examinations are formal and externally moderated. The weighting between continuous assessment and examination is fixed at 1:1 and 1:2 depending on the programme.

All these constituent components of the university work cooperatively to achieve the aims of the university in addition to working towards the realisation of the mission and vision of the institution. These to our mind constitute the components of the University of Botswana learning environment.

Objective of the study

The broad objective of the study, of which this essay derives its data, is to explore the learning environment in selected departments across the University of Botswana and identify the needs of students with a view to improving learning outcomes within the institution’s ambit. Specifically, this essay will:

1. Explore the learning environment as perceived by current students of the University.

2. Identify aspects of the learning environment which have been explored that need to be improved upon if study success for students is to be enhanced.

3. Identify components of the students’ learning strategies.
4. Proffer recommendations on the basis of the results so as to assist the University in achieving goals set for it such as teaching, research and community service.

**Research Questions**

The following questions were addressed in this study:

1. **What is the perception of the learning environment as perceived by current students of the University of Botswana?**

2. What are the indicators of the learning environment from the viewpoint of current students?

3. To what extent do current students use different types of learning strategies?

**Review Of Literature**

The quality of student learning should be at the centre of any argument in the discussion of educational institutions (Bowden, 1995). Therefore institutions must focus on its clients – the students- and their overall improvement. An important factor that is at the core of this is the learning environment. Fraser (1991) has presented a well-articulated review of the status of students’ and teachers’ perception of classroom learning environment that shows that it is receiving an increased attention from educators. An examination of what happens in the classroom and indeed the entire context in which learning takes place shows that instruction can be broken into three components- curriculum, teaching/advising, and the living/learning environment (student life). In situations where there are options, students under normal circumstances would consider these variables in selecting an institution where they will pursue further studies. An enriched learning environment seems to be one of any university’s critical success factors.

Students can through cognitive appraisal, the individuals’ perception of the environment, indicate whether the environment is potentially harmful, beneficial, or
irrelevant. Cognitive appraisal is an essential mediating factor in issues related to student functioning and the quality of the environment is determined by the characteristics of its members (Moos, 1979). An enriched learning environment should provide a humanistic and cultural atmosphere and harmony with nature.

The educational key quality indicators include communication competencies, problem-solving competencies, computer competencies, self-directed learning competencies, team leading competencies, among others. A *sine qua non* in the realisation of these noble outcomes is to develop and sustain a good learning environment at all times. Therefore, knowledge of the prevailing environment is timely, if for nothing at all but to ensure that what exits is desirable. Brophy (1983) has emphasised that motivational climate can be improved through encouraging enthusiasm for learning, anxiety reduction and inducing curiosity. Thompson and Thompson (1989) situate better student performance in a supportive atmosphere. The attitude at entry point into learning situations seems to depend, on among other things, previous success and failure experiences. The same holds for aspiration. Antes (1972) found that a learning environment that respects individuals and provides opportunity for them to express themselves creatively and intellectually and to live and work cooperatively can promote positive aspiration.

*These results point to the fact that the learning environment is crucial and decisive; it has to be fully understood. The modern university is expected to improve learning opportunities to make lifelong learning a reality. University education is a complex process in which conceptual understanding and practical experiences combine to enable development of higher capabilities. In-depth investigations of student lives are desirable, particularly in African settings. Chickering (1972), Gaff (1976) and Warren and Rees (1975) have observed that different university environments generated differences in student development and also noted that effect of environment was most*
felt in small colleges. The university of Botswana can be seen as such small university
and it is situated in a different cultural environment from the one in which those studies
were carried out.

Berte and Upshaw (1971) have found that a study of students’ lives proved to
have a positive impact of developing awareness on campus so that students, faculty and
administrators may together understand more clearly the variables in the university-
learning environment. Potts and Bisschoff (undated) concluded from their study that
individual life experiences have an influence on how students respond to university
environment, and especially their study habits. The study by Mitchell, Sergent and
Sedlacek (1997) used perceptual mapping techniques to examine campus perceptions
and showed variations among African-Americans and White groups as regards
familiarity with aspects of the campus.

The study by Walberg, Fraser & Welch (1986) has also indicated that school
climate was an important influence on student outcomes. Other studies have indicated
that the learning environment is good predictors of the quality of learning that take
place in an institution (Fraser, 1991: Templeton & Jensen, 1993). Girls and boys have
been found to differ in their perception of the learning environment (Riah & Fraser,
1999; Suarez, Pias, Membiela & Dupia,1998), with girls perceiving their teachers in a
more positive way (Lim, 1995). This gender differences in perception of learning
environment has been noticed at all levels of education and as noted by Ferguson and
Fraser (1996) and Johnson & Johnson (1991), female students’ perceptions of the
classroom deteriorates as they moved up the educational ladder.

What seems to emerge from the literature is that the university environment is critical
to academic success. Most university learning environments studies conducted, at least to the
present researchers’ knowledge, have been conducted in the developed world. No study on
learning environment at the University of Botswana has been conducted. Therefore the need to investigate it is timely. This is as a result of present and expected changes in the near future. Information so collected can serve as baseline information for interpretation of future similar studies in the university.

All humans apply learning strategies whether in school or outside it. Learning strategies are ‘the mental processes that learners can deliberately recruit to help themselves learn and understand something new’ (Renick, cited by Somuncuoglu and Yildirim, 1999). Different taxonomies have emerged as a result of studies that used qualitative, interview-based methodology (Richardson, 1994). Learning strategies can be categorised into cognitive and metacognitive. As detailed by Somuncuoglu and Yildirim (1999) the cognitive involves rehearsal and elaboration to help students encode and retrieve information while metacognitive requires planning, monitoring and regulating to control and execute learning processes. Graham and Golan (1991), and Pintrich and Garcia (1991) further described the deep cognitive (a kind of cognitive learning strategy) as involving elaboration and organisation, which helps to process information for long term retention. They gave surface cognitive as another form of cognitive learning strategy, which involves rehearsal and it, serves the purpose of encoding information into short-term memory.

Ames and Archer (1998) have indicated that learning strategies are content-specific traits. The situation demands they claim influence goal orientation, which leads to the use of learning strategies. According to Dart, Burnett, Purdie, Campbell and Smith (2000) the use of surface cognitive approach is linked to emphasis on formal achievement. In particular Schommer (1994) found that knowledge seen as organised in isolated bits and pieces leads to learning by reciting facts. This involves passive learning. Dahlgen & Maton see overloaded curriculum and methods of assessment, which emphasise the superficial properties of materials to be learned as encouraging surface cognitive approach of learning. Deep
approaches are related to learning environment having high levels of personalisation, participation and investigative learning skills (Dart, et al, 2000).

Deep learning strategy would apply in a situation where constructivist learning is encouraged. Wilkie and Kuckucks (1998) have demonstrated that freshman seminar courses can develop in students appropriate study skills and familiarity with university resources. Hays and Richardson (1995) found gender and context to have little effect on abstract approaches to learning while an earlier study by Richardson and King (1991) had indicated that approach to learning depends on the content, the context and the demands of the learning task.

Our experience indicates that outcomes of learning is determined by the approaches to student learning which to a large extent is influenced by student’ perception of the learning environment. For example, achievement goal orientation can be raised through a supportive environment. This in itself can determine learning strategies adopted by the learner (Somuncuoglu and Yildirim, 1999). This supports the findings by Trigwell, Posser and Hazel (1995).

2.3 Conceptual Framework

The learning environment as has been conceptualised contains different components. The overall goal is to assist in the development of certain cultures and values. One of such values is the production of a motivated, qualified and employable student. Other values could include support for student learning, sensitivity to students’ needs among others. The learning environment could be expected to assist in the development of values like these. How then do the components interact to address these values? A model of learning environment that seems to capture components earlier identified adapted from Ford et al (1996) is diagrammed below.
The model above is made up of components linked with arrows indicating the direction of likely influence. For example common infrastructures are precursors of subject dependent services; learning experiences are dependent on each of subject dependent services, subject independent services and common infrastructures. Each of the components is made up of variables. For purposes of this study the variables we considered for each of the components of our model include the following:

**Common Infrastructures:** Library, Classrooms, and Accommodation/Refectory

**Subject independent services:** Counselling, Recreation and Health services.

**Subject dependent services:** Laboratory, Lecturer/Demonstrator support, Peer support.

**Learning experiences:** Instruction, Assessment, choice of courses, access to information and resources.

**Learning strategies:** Cognitive and meta-cognitive approaches to academic study.

Culture and values of the university environment will also be critically examined.
The respective variables will be explored from the perspective of the students. We are not denying the fact that other players within the system are important.

**Methodology**

In this study we used the survey approach and applied a quantitative paradigm. The respondents were requested to respond to a questionnaire and the responses were subjected to statistical analyses.

The population for the study was made up of students registered for degree and sub-degree programmes at the University of Botswana during the 2000/2001 Session.

It was anticipated that at least seven hundred students would participate in the study. Preliminary investigation showed that entry into programmes was possible at years one and two levels. The design of the study was to ensure that students who responded have studied in the university for at least one year. This meant that all year one students do not meet this requirement. Because year two was also a point of entry we felt it would be difficult identifying those who entered at this level. This consequently, further reduced the current students’ population for this study.

The main instruments used in the study were:

**Perceptual mapping instrument:**

The perceptual mapping instrument contained a series of questions on the perception of locations on the campus by current students; locations of interest and those not of interest to them were examined. This was administered to freshmen. This approach was adopted, as it proved useful in previous studies by Mitchell et al (1997). The respondents were requested to indicate areas and locations within the university they were familiar with and those they would most like to get familiar with. They were also asked to indicate those locations they see as most comfortable, accessible, relaxed, ensued greatest privacy, provided greatest opportunity for socialisation and that which they found most disgusting.
Learning Environment Questionnaire (LEQ):

This learning environment questionnaire is made up of three sections. Section A requested for such information as faculty, main department, programme of study, sex, year of study, and average number of hours per week spent studying.

Section B basically looked at how current students perceive components of the learning environment. It contained items like:

‘Lecturers go out of their way to help students’

‘Resources appropriate to students’ needs are accessible in the library’

‘Classrooms are usually overcrowded’

‘Issues referred to counselling unit are as good as resolved’

In all, the items attempted to cover all aspects of the learning environment such as lecturers, classrooms, library, media, recreational facilities, university accommodation, demonstrators, class assignments, assessment types, university goals, counselling unit, and settling in information. The respondents were requested to respond on a six point scale of strongly agree, agree, no opinion, disagree, strongly disagree, and not applicable.

Section C contained items based on study strategies; a substantial part of which was adapted from a questionnaire used earlier by Somuncuoglu et al (1999). It sought to identify students’ use of cognitive and meta-cognitive learning strategies. In particular, it contained items related to students’ ability to encode, organise and retrieve new information. Behaviours exhibited by students to plan, monitor and help them control and execute their learning processes were also examined. The respondents were asked to respond on a five-point scale of never, rarely, sometimes, often and very often. Some of the items contained in this section were:

‘I ask lecturers to clarify points not understood’

‘I use different reading speeds’
‘I study in small chunks of time’
‘While reading for courses, I often underline the parts I think important’
‘While reading for courses, I go over my class notes and make an outline of important concepts and ideas’
‘I make weekly schedule to indicate lectures, lab, seminars, study time, etc’

Interview schedule for current students:

The interviews explored students’ reference group, prior experiences, motivation; career plans, learning approach, university experience, university values, familiarity with university locations and suggestions for improvement.

Validity and reliability of Scores from instruments:

Three lecturers and the resource person for this study reviewed the instruments constructed. Their comments were as much as possible incorporated into the final versions of the instruments to ensure that the information they provided were valid. A trial administration of all the instruments did not show any ambiguity.

An analysis of the reliability of the responses from the Learning Environment Questionnaire yielded a Cronbach alpha of 0.77 for Section B which dealt with the learning environment and corresponding value of 0.85 for the study strategies section.

The principal researcher, research associates and trained research assistants were involved in data collection. In selecting the students, we ensured that all faculties were represented in the sample. The departments sampled were: Management, Adult Education, Mathematics and Science Education, Nursing Education, Civil Engineering, English, History, Computer Science, Chemistry, Statistics, Social Work, Economics, and Home Economics Education.

The Learning Environment questionnaires were administered to current students pursuing degree programmes in their third and fourth years and to Diploma
students in their final year. The perceptual mapping technique questionnaire was administered on first year students in degree and diploma programmes. Trained proctors and the investigators conducted the interviews on students in their third and fourth years for degree programmes.

The response rate and planned sample for each of the instruments is as detailed in Table 1.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Planned Sample</th>
<th>Achieved Sample</th>
<th>% Sample Achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceptual mapping instrument*</td>
<td>200</td>
<td>107</td>
<td>53.5</td>
</tr>
<tr>
<td>Learning Environment Questionnaire</td>
<td>700</td>
<td>490</td>
<td>70</td>
</tr>
<tr>
<td>Interview schedule for Current Students</td>
<td>30</td>
<td>24</td>
<td>80</td>
</tr>
</tbody>
</table>

* Administration of this instrument was discontinued before target number reached on the advise of resource person but information is presented here because of incident following discontinuation.

Qualitative strategy was utilised from the students’ frame of reference to identify aspects of university learning environment discernible from the interviews. The perceptual maps that emerged served the purpose of identifying aspects of the environment students cherish and do not so cherish. Emerging themes were identified. The aspects of the learning environment needing improvement were content analysed to find prevailing trend.

The initial plan was to use the main department as a partitioning variable for cross tabulation in the quantitative analysis but it was discovered that many students
indicated two departments as part of their responses. As a result this plan had to be dropped particularly because we found many students indicating departments across faculties. To avoid this problem such students’ completed questionnaires were not analysed. To obviate the problem attendant on students indicating two departments, faculty level analysis was carried out (not reported here).

For analysing the Section B Of LEQ, the responses were scored as follows: 0=not applicable, 1=strongly disagree, 2=disagree, 3=no opinion, 4=agree, and 5=strongly agree. Section C was scored in the following way: 1=never, 2=rarely, 3=sometimes, 4=often and 5=very often. The information that emanated from the learning environment questionnaires were analysed using percentages and means which were applied as a basis for generation of interpretative norms. No opinion response was 3 and it was reasoned that items with a mean value of 3 and above which also had a percentage responses in excess of 50 in the agree and strongly agree categories would indicate that students agreed that the statement is true for the University of Botswana. The responses on study strategies were subjected to analysis using factor analysis with Varimax rotation. The information from Learning Environment Questionnaire was subjected to factor analysis with Varimax rotation. The results from the emerging factors were related to those obtained from the learning strategies questionnaire using Pearson moment product correlations for current students. Percentages were also used in analysing the learning strategies section of the questionnaire for current students.

The transcription for interviews with current students were made and studied on the basis of themes earlier speculated. These themes were presented alongside the information from the Learning Environment Questionnaire in the report.

**Results and Discussions**

The findings for this study are presented along the lines of the research questions.
Demographic Characteristics of respondents

Table 4.1 contains the demographic characteristics of current students who responded to the
learning environment questionnaire II that were analysed.

Table 2: Frequency distribution of current students by programme, faculty, gender and year of study

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>149</td>
<td>30.4</td>
</tr>
<tr>
<td>Humanities</td>
<td>127</td>
<td>25.9</td>
</tr>
<tr>
<td>Social Science</td>
<td>112</td>
<td>22.9</td>
</tr>
<tr>
<td>Science</td>
<td>40</td>
<td>8.2</td>
</tr>
<tr>
<td>Business</td>
<td>30</td>
<td>6.1</td>
</tr>
<tr>
<td>Engineering</td>
<td>32</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>490</td>
<td>100</td>
</tr>
<tr>
<td>Programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>35</td>
<td>7.1</td>
</tr>
<tr>
<td>Degree</td>
<td>453</td>
<td>92.4</td>
</tr>
<tr>
<td></td>
<td>488*</td>
<td>99.6*</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>214</td>
<td>43.7</td>
</tr>
<tr>
<td>Female</td>
<td>270</td>
<td>55.1</td>
</tr>
<tr>
<td></td>
<td>484*</td>
<td>98.8*</td>
</tr>
<tr>
<td>Year of Study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>17</td>
<td>3.5</td>
</tr>
<tr>
<td>Year 3</td>
<td>249</td>
<td>50.8</td>
</tr>
<tr>
<td>Year 4</td>
<td>210</td>
<td>42.9</td>
</tr>
<tr>
<td></td>
<td>476*</td>
<td>97.1*</td>
</tr>
</tbody>
</table>

* Shortfall due to non-response

From table 2, it is noticed that a majority of the respondents are from the faculties of
Education, humanities, and Social Sciences with each accounting for at least twenty percent.
Out of the total number of respondents, four hundred and fifty three were in degree
programmes and thirty-five in diploma programmes. There were two hundred and seventy
females and two hundred and fourteen male respondents. The distribution of the respondents
by year of study showed that there were two hundred and forty, two hundred and ten and seventeen in year 3, year 4, and year 2 respectively.

University learning environment as perceived by current students

   As indicated in the method section, items were generated based on components of the learning environment. One could have used the clusters from the rationalisation used for identification of components prior to generation of items. We however did not do this but chose to utilise exploratory factor analysis as a data reduction procedure. The initial factor analysis was executed using an eigen value of 1 as a criterion for factor generation. This analysis yielded 14 principal components and observation of the scree plot showed an elbow at component 7. Moreover, a Varimax rotation requested could not be executed as rotation failed to converge in 25 iterations.

   As a result, a further analysis was carried out requesting for 7 components followed by a Varimax rotation. The rotated component matrix is shown as Appendix B1. We examined the rotated components matrix to determine the components on which the learning environment questionnaire items loaded. All items were not factorially pure and we examined such items, which were not factorially pure to find out whether they could be grouped with items, which were factorially pure on a particular factor. The emerging factors were named:

   Factor 1  University values
   Factor 2  Academic support
   Factor 3  Health support
   Factor 4  Accommodation
   Factor 5  Counselling support
   Factor 6  Lecturing Behaviour
   Factor 7  Media and Demonstration support
University value factor deals with personalisation, further learning, holistic assessment, critical thinking and equity in assessment. Academic support involves provision of resources, cohesiveness and equal treatment given to students. Health support factor deals with provision of health facilities and attendant support. Accommodation and recreation factor focuses on adequacy of accommodation and recreational facilities for students needs. Counselling support item addresses time used and confidence in services rendered by the counselling unit. Lecturer-related factor deals with lecturer commitment. Media and demonstrator support focus on availability of demonstrators and media like overhead projectors, loudspeakers within lecture rooms and laboratory.

Using the interpretative norm specified for this study, we realise that the respondents were in agreement with the following statements:

- Different assessment procedures such as tests, projects, practical etc are used.
- University encourages further learning outside that taught in class.
- University of Botswana encourages critical thinking.
- Students are encouraged to ask questions during lectures.
- The accordance between examinations and what is taught is satisfactory.
- Any hardworking student would normally complete programme within specified time limit.
- Lecturers are very lenient with grades.
- Library programme provides an open setting that encourages interest and success in learning.
- Resources appropriate to students needs are accessible in the library.
- Library operation modes are usually explained to new students.
- It is easy to make friends in this university.
• Classrooms are usually overcrowded.
• Avenues for recreation are not available in UB.
• University accommodation is overcrowded.
• Students are encouraged to work in groups.
• Lecturers are available for consultation outside lecture hours.
• Lecturers are enthusiastic talking about their courses.
• Demonstrators are few compared to number of students they have to cater for at laboratory sessions.

It is noticed that a high percentage of the respondents ranging from 22.4% to 46.3% had no opinion on health care issues addressed in this study. Between 48.2% and 51.2% of the respondents did not have opinion on counselling services items investigated, which included too much time wasted during visits to the counselling unit, and issues referred to counselling unit are as good as resolved. Others include counselling unit staffs are quite cooperative in resolving problems referred to them and information given to counselling staffers is guaranteed for confidentiality.

The respondents were not agreed with the following statements:

• What is taught integrates knowledge and skills.
• Instructors in the university take into consideration students’ different level of competencies.
• Library reserve collections are enough to meet students’ needs.
• One can manage at practical lesions without demonstrators.

One cannot make categorical statements about other items contained in the questionnaire (See Appendix).
These results are expected as the University of Botswana sees the student as occupying a central position in its quest to achieve its mission. For example, it is stated that the university values academic integrity expressed in creativity, objective analysis, experimentation, critical appraisal, independent thought, informed debate and intellectual honesty (University of Botswana, 2000:3).

It is further stated that the university values productivity as can be inferred from the statement:

Setting and rewarding of high standards of performance underpinned by dedication to quality, efficiency and effectiveness throughout the institution (University of Botswana, 2000:3)

The results also indicated that instructors do not take into consideration students’ different level of competencies. This was again buttressed by another item which dealt with education provided not suited to individual needs. Our initial reaction to these results is the fact that within the last few years, enrolment has increased and this could have made adaptation to individual needs fairly difficult. This increase in numbers could have made the university very impersonal as found in earlier studies (see Gaff, 1976). The fact that the students did not see accordance between examinations and what was taught is worrisome. It is likely that the objectives didn’t seem clear to the respondents. Our experience indicates that the utilisation of a multiplicity of assessment procedures is to capture all expected learning outcomes.

As regards the academic support factor items, the results indicated that current students do not see lecturers as treating students equally. This item would have classified by earlier studies such as that by Nair and Fisher (1999) among equity scale. This result can again be explained through a consideration of the increase in student population. There is difficulty in explaining students viewing library collections, as not enough. What one can conjecture is that the students did not probably understand the library operation modes, which
they claimed, are usually explained to new students. Though the statement ‘enough settling in information is provided to new students’ had a mean of 3.0, it did not meet the other criterion for us to accept that students agreed with it. When the responses on the campus questionnaire which indicated that many students were not familiar with locations such as health clinic, counselling centre, recreational facilities and students’ affairs is considered along with this result, one may conclude that much needs to be done as regards giving an elaborate orientation to freshmen and fresh women admitted into the university.

On the clarity of class assignments, there was no agreement by respondents. The agreement on library programme providing an open setting that encourages interest and success in learning, library operation modes explained to new students, and maintenance of access during and beyond the instructional time is a welcome result. This shows that there is great personalisation. The fact that students can easily make friends indicates student cohesiveness in the university. This is further supported by the interview responses where students indicated that they utilise peer teaching and group discussion greatly. These characteristics of academic support factor can promote positive aspiration (Antes, 1972).

The health care support items showed a preponderance of ‘no opinion’. As indicated earlier one could conjecture that a majority of the current students have not probably used the health clinic services. This point of view may be supported by information from the campus questionnaire in which respondents indicated that they were not familiar with the health clinic. When the percentage of those respondents who indicated ‘no opinion’ is excluded from the analysis, one finds that there is an agreement on health services rendered by the university. This statement should be guarded as a respondent had indicated that

Nurses should take time to explain what is wrong with you instead of just writing prescriptions.
As we noted, excellence is paramount in education, and a motivational climate can be improved through learning, anxiety reduction and inducing curiosity (Brophy, 1983) and this is exactly what this student is saying.

The accommodation and recreation items all leave much to be desired. For example classrooms were seen as usually overcrowded, recreational facilities not adequate, lecture rooms not adequately illuminated and recreation avenues not available. University accommodation was also seen as overcrowded. A cursory look will indicate that this is the situation because of increased enrolment. Student population in recent years has grown and has passed the 10 000 mark initially set for it. A consequence is that many a student now has to find accommodation outside the university campus, as development of physical facilities has not matched growth in student population. Situations like this where many students are not accommodated on campus drags in other factors that the university cannot really control in its bid to meet its mission statement.

With respect to lecturer-related items, issues addressed included personalisation, innovation, and cooperation. The current students were agreed that lecturers are available for consultation and were enthusiastic talking about their courses. As indicated by Biggs (1993), an understanding of what teachers and students do and think is an important consideration in enhancing students learning. We also know that the teacher is an important change agent that plays an important role in implementation of any programme; poor teachers will breed poor students. The teacher willy-nilly provides a humanistic and cultural atmosphere and to that extent helps in determining the quality of the learning environment (Moos, 1979). We have not examined gender differences in perception in this study but our results indicate that perception of lecturer related factor is positive and this is in agreement with previous studies (see Riah & Fraser, 1999).
When we consider the results for media and demonstrator support, it is noticed that though there is an agreement that demonstrators are very necessary at practical sessions, they are however few. The respondents are not agreed that appropriate media like Overhead projectors, loudspeakers are provided within the lecture rooms. This result should be interpreted with caution, as there is evidence that Overhead projectors have been mounted in most lecture rooms even though the same cannot be said for loudspeakers.

One of the things to be noted is that the factors that have emerged from the questionnaire for past students are not exactly the same as those for current students. We shall now discuss the results for past students. The first scale/factor for past students was labelled Values/academic support. This factor contained indicators/items that composed the university values and academic support items for current students. What is noticed here is that past students did not see library reserve collections as enough to meet students’ needs. Coincidentally, this same result was obtained for current students. The explanation presented for current students can again be used to explain what was observed.

The results for this scale indicated that the library programme provided a setting that encouraged interest and success in learning and operation modes were explained to new students. Further learning outside what was taught was also encouraged. One can say that the environment as it pertains to values and academic support was quite supportive and this should improve performance Thompson and Thompson, 1989). As regards the mean values for the Counsellor/demonstrator scale, percentage of ‘no opinion’ response was high. This is not unexpected as the Guidance and Counselling unit is recent entry into student support services in the university. The results, which indicated that demonstrators were not always willing to assist, is in agreement with those obtained for current students. However, when we look at the mean value for ‘demonstrators were few compared to the number of students they had to cater for at a laboratory session’ which was 2.7, one notices that the number was
adequate compared to what we obtained for current students. Again this can be explained using increased student enrolment.

With respect to lecturer support items, the results indicate the existence of personalisation, student cohesiveness and equity, which were components of tertiary environment identified by Nair and Fisher (1999). This situation to say the least indicates positive perception of the lecturers as part of the learning environment. A situation as this may not lay the causes of students’ failure at the doorsteps of lecturers as previous studies (e.g. Killen, 1994) have found.

Our content analysis of the university campus questionnaire completed by students in their first year showed that locations that they found most disgusting were the refectory, and classrooms. With respect to the refectory, we detail below some comments about it made by respondents:

- Congested, hot atmosphere and unpleasant smell.
- Dirt and garbage both inside and outside the place.
- Staff harsh and impolite.
- Small for number of students.
- Mannerism of staff disgusts, always on verge to bit off our heads.
- Food not cooked to our expectations.
- Presence of flies that can contaminate food.
- Use plastic spoons repeatedly.
- Service not pleasing, bad meals and food served.

The respondents also had the following to say about the classrooms:

- Lack of chairs and dirt all over.
- Furniture broken or not available.
- There is always a hassle of looking for chairs and tables and they are dirty and poorly furnished.
- Noisy.

These statements support results obtained earlier, which indicated that classrooms were overcrowded and illumination of classrooms leaves much to be desired. One trend noticed in the responses was that a large proportion of the respondents were not familiar with locations like health clinic, counselling centre, students’ affairs and recreational facilities available in the university. If this was the case then they may not be in a position to assess them.
Responses from the interviews with current students revealed a lot of information that support the information from the learning environment questionnaire. The resulting themes could be grouped into the influence of secondary school, enrolment at university, reference groups, career plans, approach to learning, interviewees’ role models and university values. For most students they did not see the secondary school as preparing them adequately for university education. This was particularly pronounced for those students who are offering courses that were not taught as secondary school subjects. For example one interviewee when asked whether the secondary school prepared him/her for the programme registered for simply stated:

Not really because they were not related to what I am doing here which is Business.

Another respondent indicated

I wouldn’t say yes because they were too basic and at a lower level.

A third respondent stated

Yes, I can say that. I am studying history here at UB and I studied History at O’level and studying at secondary level prepared me and that is why I have a lot of interest doing history.

What seemed to emerge is that there was no consensus on how secondary education prepared the students for university education. At the insurgence of problems whether financial, emotional, academic among others, students utilised varied support within and outside the university. The support included parents, lecturers, older siblings, and Guidance Counsellors. The role models also varied; some were direct relations like aunty, and mother and others are political personages, historical figures and religious gurus.

The reasons provided for enrolling at university varied but the central predisposing factor is acquisition of certificates, which would enhance prestige and income. One respondent has this to say
I wanted to improve a lot on my course especially that new syllabuses were designed and given new syllabus, I thought coming here will give me a lot of information and widen my scope and feel more comfortable and competent at work. … Because of this introduction of paraprofession where teachers will be promoted and people were streamlined kind of. Those with degree benefited a lot from paraprofession that those with a diploma were not, did not really benefit much even with the introduction of scarce skills. Those who benefited were those with degrees.

Also emerging from the interviews is the fact that lecturers are quite supportive. They, apart from teaching play the role of advisers on issues brought to their attention even though some students saw some lecturers as stressing them. While some respondents see them as putting too much burden on them, others saw lecturers as being no good managers of time particularly with spread of lectures for courses. As regards study approach, it is clear that group work is encouraged and students accordingly utilise peer teaching. This they believe helps to further clarify what was taught at lectures.

University values dictate what mechanisms are put in place for those in a university to benefit from its teaching, research and community service. All types of support rendered within the university further help this. We asked respondents what the university rewards. One thing that stood out clearly was academic excellence. It is doubtful if the education is however suited to individual needs. As opined by a respondent,

It doesn’t. There is a lot of theory done and in the outside world, you don’t have theory; you need the actual practice work of which we don’t have.

Though statements like this one are prevalent, it is noticed by most students that opportunities to integrate theory with practice are provided in those courses where this is available.
One thing that should be noted is that prior socialisation in secondary school has had effect on respondents. In some cases it led to students not asking questions. A respondent for example attributed this to shyness. As she indicated:

I remember after completing form five, I was admitted here to come and do social work. I didn’t know who to go to; I couldn’t go back to my teachers and ask for help. And I couldn’t even come here; I had to fight with the problem myself.

Students saw attendance at lectures as important. The experiences got opened up as a result. Critical thinking is encouraged because as many indicated, as part of learning, things have to be analysed, and problems solved all requiring thinking. Most students are aware of opportunities for extracurricular activities. They have not however availed themselves of such opportunities. Interviewees tended to indicate Student Union, Lecture rooms, library and health clinic as locations they are familiar with. Many want to know more about the Guidance and Counselling unit and recreation avenues available. Socialising in the student union is an important aspect of university life for the respondents as many saw it as the most relaxed location on campus. This they saw as an avenue where students could discuss personal problems with other students.

When asked to suggest improvements to services that the university provided, different issues were raised. An examination of the issues raised led to the conclusion that provision of more computers was very central. Some wanted more computers at departmental and faculty levels and others wanted more computer workstations in the library. The respondents also saw the lecturers and students as important in the university’s vision attainment. As one student indicated,

What could make this university really achieve its purpose and vision are the students and lecturers. They both play a very important part. If there is no working together between the two then we are going to have a problem. All of us need to put effort and work to make it happen. That is,
everyone doing their part: the lecturers lecturing effectively and the students learning very effectively.

Equally noted was the issue of furniture and small lecture rooms that they claimed needed attention more so that the university enrolment was constantly on the increase.

Learning Strategies used by Students

Information presented here was obtained from the study strategies section administered on the current students. A Kaiser-Meyer-Olkin measure of sampling adequacy of 0.876 was obtained and this according to Kaiser and Rice (1974) cited by Sharma (1996) indicates that the data set is appropriate to be subjected to factor analysis. Factor analysis was conducted using an eigen value of 1 as criterion for components generation and this yielded six component factors. These were subjected to a Varimix rotation. The rotated component matrix is shown in Appendix B2. An examination of the items constituting each factor led to their being labelled as follows:

Factor 1  Deep Cognitive
Factor 2  Focusing
Factor 3  Meta cognitive
Factor 4  Planning strategies
Factor 5  Surface Cognitive
Factor 6  Diversification

The naming of the factors was done taking a cue and through further refinement of past taxonomies (Dansereau et al., 1983, Pintrich, 1988).

Table 3: Respondents’ use of Deep Cognitive strategies (percentages and means)

<table>
<thead>
<tr>
<th>Scale score (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>43</td>
<td></td>
</tr>
</tbody>
</table>
While reading for courses, I often underline the parts I think important. 5.5 6.7 27.1 29.0 30.2 2.6 482

While reading for courses, I try to make connections between the readings and the concepts from the lectures in order to comprehend the course content as a whole. 1.8 5.1 16.3 43.5 31.6 3.9 482

While reading for courses, I outline the material to help me organise my thoughts. 4.5 6.7 20.2 41.2 23.9 3.8 473

While reading for courses, I try to distinguish main and supporting ideas. 1.8 5.7 24.1 38.4 28.0 3.9 480

While studying for courses, I go over my class notes and make an outline of important concepts and ideas. 2.7 3.9 16.9 38.2 36.5 4.0 481

While studying for courses, If I become confused about something I read, I go back to my previous notes and sort it out. 1.8 6.1 21.2 40.2 28.0 3.9 478

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.

The responses presented in table 3 pertain to deep cognitive strategy. Students used highlighting technique sometimes, and used all others often. These included making connections between the readings and concepts from lectures, outlining the material to assist in the organisation of thoughts, distinguishing main and supporting ideas and making an outline of important concepts and ideas.

The next factor labelled focusing has the responses contained in table 4. From

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>( \bar{x} )</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>While reading for courses, I often underline the parts I think important.</td>
<td>5.5</td>
<td>6.7</td>
<td>27.1</td>
<td>29.0</td>
<td>30.2</td>
<td>2.6</td>
<td>482</td>
</tr>
<tr>
<td>While reading for courses, I try to make connections between the readings and the concepts from the lectures in order to comprehend the course content as a whole.</td>
<td>1.8</td>
<td>5.1</td>
<td>16.3</td>
<td>43.5</td>
<td>31.6</td>
<td>3.9</td>
<td>482</td>
</tr>
<tr>
<td>While reading for courses, I outline the material to help me organise my thoughts.</td>
<td>4.5</td>
<td>6.7</td>
<td>20.2</td>
<td>41.2</td>
<td>23.9</td>
<td>3.8</td>
<td>473</td>
</tr>
<tr>
<td>While reading for courses, I try to distinguish main and supporting ideas.</td>
<td>1.8</td>
<td>5.7</td>
<td>24.1</td>
<td>38.4</td>
<td>28.0</td>
<td>3.9</td>
<td>480</td>
</tr>
<tr>
<td>While studying for courses, I go over my class notes and make an outline of important concepts and ideas.</td>
<td>2.7</td>
<td>3.9</td>
<td>16.9</td>
<td>38.2</td>
<td>36.5</td>
<td>4.0</td>
<td>481</td>
</tr>
<tr>
<td>While studying for courses, If I become confused about something I read, I go back to my previous notes and sort it out.</td>
<td>1.8</td>
<td>6.1</td>
<td>21.2</td>
<td>40.2</td>
<td>28.0</td>
<td>3.9</td>
<td>478</td>
</tr>
</tbody>
</table>

Table 4: Respondents’ use of focusing strategies (percentages and means)
I ask lecturers to clarify points not understood.  

I make weekly schedule to indicate lectures, lab, seminars, study time, etc.  

I normally have assigned readings done before each lecture.  

I normally see the lecturers to discuss where I went wrong in assignments.  

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.

the table we notice that for items on the factor of focusing that students ask lecturers to clarify points not understood, make weekly schedule to indicate activities, complete assigned readings before lectures and discuss with lecturers where they went wrong in assignments sometimes.

Table 5: Respondents’ use of Meta cognitive strategies (percentages and means)

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>(\bar{x})</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>In courses, if I can’t take notes in class, I make sure I learn the bit I missed from other sources or from my classmates</td>
<td>1.8</td>
<td>6.9</td>
<td>15.9</td>
<td>39.2</td>
<td>34.1</td>
<td>4.0</td>
<td>480</td>
</tr>
<tr>
<td>While reading for courses, I ask myself questions to make sure I understand the material.</td>
<td>2.7</td>
<td>11.0</td>
<td>28.8</td>
<td>31.4</td>
<td>23.9</td>
<td>3.6</td>
<td>479</td>
</tr>
<tr>
<td>Before starting to read for courses, I come up with questions about the topics to focus my reading.</td>
<td>15.5</td>
<td>25.3</td>
<td>33.5</td>
<td>15.7</td>
<td>7.1</td>
<td>2.7</td>
<td>476</td>
</tr>
<tr>
<td>While reading for courses, I try to think through a topic and decide what I am supposed to learn from it, rather than just reading it over.</td>
<td>8.2</td>
<td>14.3</td>
<td>26.1</td>
<td>34.9</td>
<td>14.3</td>
<td>3.3</td>
<td>479</td>
</tr>
</tbody>
</table>

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.
The results in table 5 for Meta cognitive indicate that respondents come up with questions before starting to read and try to think through the topic to decide what is to be learnt sometimes. They however, learn the bit they missed while writing notes at lectures from other sources and conduct self-questioning as part of reading for courses often.

Table 6: Respondents’ use of planning strategies (percentages and means)

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>x</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>I plan time for leisure/recreation, school needs.</td>
<td>0.2</td>
<td>7.3</td>
<td>11.6</td>
<td>26.7</td>
<td>28.6</td>
<td>3.3</td>
<td>479</td>
</tr>
<tr>
<td>I set realistic academic and personal goals.</td>
<td>0.2</td>
<td>3.7</td>
<td>6.7</td>
<td>19.8</td>
<td>38.8</td>
<td>3.8</td>
<td>467</td>
</tr>
</tbody>
</table>

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.

Two items loaded appropriately on the factor called planning strategies. The strategy item ‘I plan for leisure/recreation and school needs’ was used sometimes while ‘setting realistic academic and personal goals’ was used often.

Table 7: Respondents’ use of surface cognitive strategies (percentages and means)

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>x</th>
<th>n</th>
</tr>
</thead>
</table>

46
While reading for courses, I practice saying the class notes and the reading to myself over and over, so I will remember them.

While reading for courses, I copy information directly from my readings to my notebooks, so I learn everything as it is.

While reading for courses, I try to memorise everything that might be asked in the examination.

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.

The results presented in table 7 indicated that rereading and memorising, copying information from reading and memorisation were used by the respondents sometimes.

Table 8: Respondents’ use of diversification strategies (percentages and means)

| Scale score (%) |
|-----------------|---|---|---|---|---|---|
| Statement       | 1 | 2 | 3 | 4 | 5 | x |
| I use different reading speeds. | 15.9 | 14.7 | 32.7 | 21.8 | 8.2 | 2.9 | 457 |
| I think of questions to answer as I read through any material. | 6.7 | 11.6 | 31.0 | 31.0 | 16.3 | 3.4 | 474 |
| I summarise whatever I read. | 0.2 | 6.5 | 8.6 | 29.4 | 31.2 | 3.5 | 474 |
| I study in small chunks of time. | 7.3 | 17.8 | 28.6 | 29.4 | 10.6 | 3.2 | 459 |

Note: Mean scores were based on a 5-point likert-type scale in which 1=never, 2=rarely, 3=sometimes, 4=often, 5=very often. Ns for each item varied because of missing responses.

The results in table 8 indicate that respondents’ use different reading speeds and think of questions to answer as they read through any material sometimes. In addition they summarise whatever is read and study in small chunks of time sometimes.
Our results indicated that current students used deep cognitive, meta cognitive and surface cognitive strategies in addition to focussing, planning and diversification. The high mean values for items on the deep cognitive strategies indicate that it is used most often than the others. This result is in agreement with results by Somuncuoglu and Yildirim (1999) who interpreted the outcome as due to students’ realisation of the importance of meaning processing and well-developed thinking skills. The utilisation of focusing, planning and diversification are indicative that the group of respondents realise that studies should be addressed using a well-articulated plan. In particular the use of diversification strategy points to the fact that the respondents realise that all reading content cannot be studied in the same way. The approach will vary depending on the difficulty of what is being studied, which is a good study practice.

Conclusions

Within the limitations of this study certain conclusions can be drawn:

i. There is student cohesiveness as evidenced by the ease with which friends are made in classrooms and in the university generally.

ii. There is great cooperation encouraged within the university among students through peer teaching and group work.

iii. There is equity particularly with respect to the way in which students are treated by lecturers

iv. Personalisation is highly valued as lecturers are available outside lecture hours for consultation

v. There is utilisation of diverse approaches to study and opportunities that facilitate learning are provided.
iii. It seems that learning bits and pieces of information is not very much encouraged because of the weighting of items on meta cognitive learning strategy.

iv. Varied assessment processes are utilised in an effort to fully capture the complexity of learning outcomes expected.

v. There is lack of an attempt to match intake to available spaces.

vi. A well articulated programme of familiarising students with campus facilities is not available or advantage is not taken of it if available.

vii. Recreation does not seem to be taken seriously.

viii. There is no commensurate growth in human support compared to growth in student population.

ix. Students do not use support services rendered by the health clinic and Guidance and counselling unit.

**Recommendations**

Based on the results and the conclusions emanating from this study, the following recommendations can be made:

- The existence of student cohesiveness, cooperation, personalisation and equity are good in themselves and they can also enhance learning outcomes. To that extent their sustenance and propagation should be encouraged.

- The results on the learning strategies use imply that there is need to elevate the metacognitive strategies to a higher level. There should therefore be a greater emphasis on self study or self regulated course activities. This should also involve raising students’ awareness of planning, self-testing and adjustment of strategies, which have been noted as part of the results in this study.
• There should be a well-organised and articulated orientation programme that should be mandatory for all new students. Such an orientation programme should focus on getting students familiar with locations on campus, services available in the locations. The expectation is that students may then utilise the services like those provided by the health clinic and Counselling centre.

• As they say it, ‘all work and no play make Jack a dull child’. Therefore more emphasis should be given to recreation and students encouraged to utilise recreation opportunities that are available on campus.

• We realise that a lot of physical development programmes are in place but in the interim, the centralisation of large classrooms for university-wide usage should be encouraged. This can be assigned for large classes to obviate problem attendant on overcrowded classrooms.

REFERENCES


NASPA Journal 9, 1, 77-80.


Killen, R. (1994). Differences between Students’ and Lecturers’ Perception of Factors Influencing Students’ Academic Success at University. *Higher Education Research and Development*, 13(2), 199-211.


University of Botswana (2001). **2001/2002 University Calendar** Gaborone:

University of Botswana


APPENDIX

LEARNING ENVIRONMENT QUESTIONNAIRE

This questionnaire is designed to explore aspects of the context within the University of Botswana in which students are educated. There is no right or wrong answer; only your candid responses about your impressions on issues raised are requested. All responses provided will only be utilised in analysis for this study. You are NOT expected to indicate your identity anywhere on this questionnaire. Please supply required information or tick (✓) information provided which applies to you.

SECTION A

Your Faculty: _________________________________________________
Your main department: __________________________________________
Programme of study: Diploma [ ] Degree [ ]
Sex: Male [ ] Female [ ]
Year of study: _______________
Average number of hours per week spent studying: ________________

SECTION B

Below are statements about certain locations, behaviours and opportunities within the University if Botswana. Indicate the extent to which you agree with each statement with a tick (✓). If the issue indicated does not apply to you tick (✓) not applicable.

SA=Strongly Agree A=Agree NO=No opinion
D=Disagree SD=Strongly Disagree AN=Not Applicable

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>NO</th>
<th>D</th>
<th>SD</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers go out of their way to help students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturers often utilise innovative activities while teaching.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is very easy to make friends within the classroom.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are encouraged to work in groups.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturers treat students equally.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturers are available for consultation outside lecture hours.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturers are enthusiastic talking about their courses.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library programme provides an open setting that encourages interest and success in learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources appropriate to students’ needs are accessible in the library.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library reserve collections are enough to meet students’ needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library operation modes are usually explained to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New students.</td>
<td>Library maintains access during and beyond the instructional time.</td>
<td>Classrooms are usually overcrowded.</td>
<td>Appropriate media like Overhead Projectors, Loudspeakers are provided within the lecture rooms.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation facilities are not adequate in this university.</td>
<td>The illumination of lecture rooms leaves much to be desired.</td>
<td>Avenues for recreation are not available in UB.</td>
<td>There is no time for recreation activities in UB.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University accommodation is overcrowded.</td>
<td>Provisions are not made for individual study within university hostels.</td>
<td>There is no privacy within university hostels.</td>
<td>Too much time is wasted during visits to Counselling unit.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issues referred to Counselling unit are as good as resolved.</td>
<td>Counselling staff unit staff s are quite cooperative in resolving problems referred to them.</td>
<td>Class assignments are usually clear.</td>
<td>It is easy to make friends easily in UB.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrators are always willing to assist during practical lessons.</td>
<td>Demonstrators are few compared to number of students they have to cater for lab sessions.</td>
<td>One can manage at practical sessions without demonstrators.</td>
<td>Students are attended to within a reasonable time at the health clinic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staffers of the health clinic are always willing to assist during emergencies.</td>
<td>A good referral system is available at the health centre.</td>
<td>Health counselling is available in the health clinic.</td>
<td>Instructors in the university take into consideration students’ different level of competencies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Different assessment procedures such as tests, projects, practical etc are utilised.</td>
<td>There is too much rigidity in choice of courses.</td>
<td>Assessments are related to course objectives.</td>
<td>Course load per year for each student is quite heavy.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resources for accessing information outside class are available.</td>
<td>Resources to enhance what is taught are available within the university.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
University encourages further learning outside that taught in class.

Education provided in UB is suited to individual needs.

UB encourages critical thinking.

Lecturers are very lenient with grades in UB

Information given to counselling staffers is guaranteed for confidentiality.

Students are encouraged to ask questions during lectures.

The accordance between examinations and what is taught is satisfactory.

Students get sufficient information about what level of knowledge and understanding that is expected.

Enough settling in information is provided to new students.

Grades earned are in accordance with effort put into courses.

University regulations cause delay in study progress.

Any hardworking student would normally complete programme within specified time limit.

What is taught integrates knowledge and skills.

SECTION C

Tick (✓) the category of response that represents how you read and study for courses.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>While reading for courses, I often underline the parts I think important.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While reading for courses, I practice saying the class notes and the reading to myself over and over, so I will remember them</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While reading for courses, I copy information directly from my readings to my notebooks, so I learn everything as it is.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While reading for courses, I try to memorise everything that might be asked in the examination.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While reading for courses, I try to make connections between the readings and the concepts from the lectures in order to comprehend the course content as a whole.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While reading for courses, I outline the material to help me organise my thoughts.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
While reading for courses, I try to distinguish main and supporting ideas.

While studying for courses, I go over my class notes and make an outline of important concepts and ideas.

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
</table>

While studying for courses, If I become confused about something I read, I go back to my previous notes and sort it out.

In courses, if I can’t take notes in class, I make sure I learn the bit I missed from other sources or from my classmates.

While reading for courses, I ask myself questions to make sure I understand the material.

Before starting to read for courses, I come up with questions about the topics to focus my reading.

While reading for courses, I try to think through a topic and decide what I am supposed to learn from it, rather than just reading it over.

I plan time for leisure/recreation, school needs.

I set realistic academic and personal goals.

I ask lecturers to clarify points not understood.

I make weekly schedule to indicate lectures, lab, seminars, study time, etc.

I normally have assigned readings done before each lecture.

I use different reading speeds.

I think of questions to answer as I read through any material.

I summarise whatever I read.

I study in small chunks of time.

I normally see the lecturers to discuss where I went wrong in assignments.

THANK YOU FOR SPARING YOUR MOST PRECIOUS TIME TO COMPLETE THIS QUESTIONNAIRE