Understanding the Correlation between Institutional Characteristics and Academic Performance: A case of Undergraduate Medical Students at University of Zambia

by

Harrison Daka
The University of Zambia

Abstract

This article investigated the institutional characteristics of the School of Medicine of the University of Zambia and how the characteristics has contributed to academic performance. A mixed methods approach involving qualitative and quantitative methods was employed to investigate the correlation between institutional characteristics and academic performance. An explanatory sequential research design was used. Data were captured using an evaluation survey instrument, students' Focus Group Discussion (FDG) schedule and an in - depth interview schedule for key informants regarding the Grade Point Average (GPA) and examination attritions. Quantitative data was collected first and analysed using descriptive and inferential statistics while qualitative data was collected second and was analysed using themes and a constant comparative method was used to understand the correlation. The results reveal that the good governance and administration of the school with well qualified staff contributed positively to good academic performance of the students. However, the results also reveal that the school should enroll students according to the capacity of infrastructure and that there was great need of improving on providing educational resources to students. In view of this, the study recommends that the school should from improve on lecture rooms, libraries and access to internet and use of MOODLE in the provision of online educational resources.

Key Words: Institutional Characteristics, Academic Performance, Educational Resources

1. Introduction

From inception, the University of Zambia, School of Medicine remained a premier academic institution that prided itself with exceptionally high outcomes and graduates of high caliber. Within Zambia, as well as internationally, the University of Zambia, School of Medicine has maintained exceptionally high standards across a range of factors. The factors include maintaining quality instructional design, and producing competent graduates who have excelled locally and abroad. In this regard, it has been a premier institution of choice. The school had graduated by the time of the study (2015), 1, 441 doctors (School of Medicine Strategic Plan, 2012 - 2016). The number of graduating students in the School of Medicine of the University of Zambia has since been increasing. In 2017, the University of Zambia transformed the Medical School into four new schools, namely, School of Public Health, School of Health Sciences, School of Nursing Sciences and School of Medicine.

The University of Zambia, medical school's mission statement is, "To provide excellent tertiary education and training in health sciences in order to address current and emerging health needs" and its vision is to be, "A leader in Tertiary Health, Education, Care and Research in the Region by 2030". The goal of the Medical School is, "To train Doctors and nurses, Biomedical scientists, Physiotherapists, Environmental Health Scientists, Pharmacists and other health care professionals at the undergraduate level, provide quality patient care and carry out quality research to address the health priorities of our country Zambia" (School of Medicine, 2010).

This study aimed at investigating the correlation between institutional characteristics and academic performance. The institutional characteristics evaluated included: assessments, awareness about school mission and objectives, students' welfare, school governance and administration, qualification of academic staff and educational resources. This was done through the evaluation of the different variables of institutional characteristics. There has been an increase in the number of graduates at the University of Zambia medical school as evidenced from Table1 below from 2015 and 2016.

Table 1: 2015 and 2016 Graduating Students in the School of Medicine

Programme	Number 2015	Number 2016
Bachelor of Science in Human Biology	37	120
Bachelor of Science in Physiotherapy	29	34
Bachelor of Science in Pharmacy	69	83
Bachelor of Medicine and Surgery	70	113
Bachelor of Science in Environmental Health	30	38
Bachelor of Nursing Sciences	143	146
Total	378	534

Source: (Daka, 2019)

In order to monitor and evaluate the quality of teaching and learning, the Department of Medical Education and Development has been mandated to train all staff in pedagogy and to conduct evaluation.

2. Literature Reviewed

2.1 Mission and Objectives

The first institutional characteristic to understand is school missions and objectives. It should first be emphasised that upon enrolling into a higher learning institution, students enter environments that have the power to shape their behaviour and influence their success. Berger (2002) reviewed the available researches of undergraduate persistence in selected colleges and universities in the USA on the organizational effects of college on students. He grouped these studies into two categories; the first dealt with the "structural-

demographic features" of institutions, the other with "organizational behaviour dimensions". Studies in the structural-demographic category examined the influences of such institutional traits as source of support (public vs private), size, curricular mission, or admissions selectivity. The organizational behaviour category included studies based on concepts of organizational behaviour, culture, and climate. From the reviewed researches by Berger (2002), findings revealed that both structural-demographic features and organizational behaviour dimensions contribute to students' examination attrition rates at undergraduate level.

In the case of the School of Medicine of the University of Zambia, structural-demographic features do not apply as the admitted students are taken from the School of Natural Sciences. As students enter in the School of Natural Sciences, at the end of the year, the students enter into different quotas according to their choices and performances. The quotas are determined by the performance of the students. Those who fail to enter in Pharmacy, Physiotherapy, Nursing Sciences, Environmental Health and Biomedical Sciences remain in the School of Natural Sciences (Banda, 2013). Those who choose Medicine quota are expected to perform better at second year than the rest. At the end of second year, those who perform better are selected to the School of Medicine and the rest remain in the School of Natural Sciences. Due to high demand for students to go to the School of Medicine, this method has been used. From here, we can see that the School of Medicine of the University of Zambia selects the best performers. The factors which need to be taken into consideration are academic system, missions and objectives of the institution, faculty input and classroom experiences. Chart 1 demonstrates how the mission and objectives are supposed to be linked for effective educational provision.
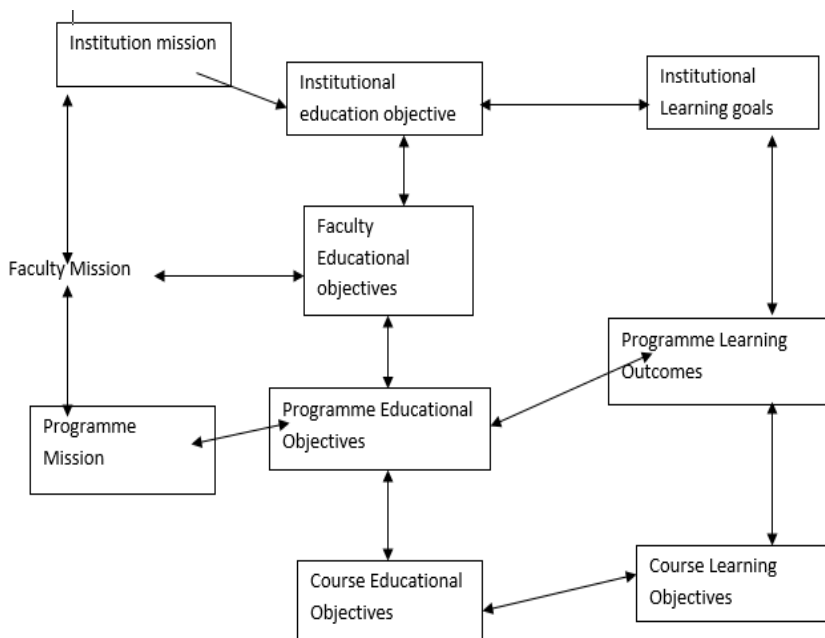
Figure 1: Flow of institutional Missions and Objectives

(Source: Adapted from Kuh et al, 2006)

The guide shows that all course educational objectives and learning objectives should be from institutional objectives through programme objectives to course learning objectives. From this study's conceptual framework, it is proposed that all students should be oriented in institutional objectives before being exposed to any course content. Apart from the institutional characteristics, course management is also discussed in the sub–section that follows. When this flow is followed, the students become aware of the institutional characteristics and are aided to work hard to in order for them to achieve the stated institutional objectives and goals.

2.2 Mentorship and Supervision

Apart from the missions and objectives, another institutional characteristic under teaching practices involves supervision which lecturers offer to students. The principle of supervision and

support of students suggests that faculty members are in a good position to guide students (Chickering and Gamson's (2007). Gardiner (2016) proposed that in nursing, it is important for faculty and students to recognise that the student role is transient, eventually these student nurses would be professional colleagues. With challenges of not having private time to research by most University of Zambia lecturers (Daka, 2019), this study tried to investigate whether students met their course lecturers for consultation and how that translated into good performance by the students in those courses. This is because literature demonstrates that contact with faculty plays an important role in retention (Braxton, 2008). The contact can either be formal or informal. It has been suggested by Jeffries and Rogers (2007) that students are expected to do well with guidance and support. It is a well-known fact that holding student high expectations is appropriate for all students. Setting high expectations for students and encouraging students to set personal learning goals also helps them achieve and succeed academically. It is also stated by Herman, Heritage and Goldschmict (2011) that it is important for faculty to have high aspirations for learning outcomes, clear expectations for student performance, and standards for holding students accountable. This also helps students to work hard academically and reduce the attrition rates.

Kuh (2006) argues that setting high expectations and then supporting and holding students accountable for reaching them is an effective strategy for encouraging student success. He further highlights that high expectations for student performance characterize institutions with higher than predicted student engagement and graduation rates. According to Herman et al (2011), students tend to adjust their behaviour and comply, regardless of their prior academic history, with the academic expectations of the environment. The author found that students at selective institutions promoting high academic expectations exceeded predicted performance expectations, suggesting that a self-fulfilling prophecy was at work.

The contact between students and faculty helps faculty to

play the role of primary debriefer to help direct the flow of topics for the student to understand more (Riley, 2008). Debriefing also allows for reflection-on-action and encourages the student to think broadly. Childress (2005) suggested that in Nursing, it is important for faculty to recognise that the student can become a professional colleague if he/she is well counselled. In addition, it has been stated by most scholars that creating collaboration among students in form of discussion groups helps students support each other in the acquisition of knowledge and skills (Childress, 2005). It also helps them to improve their communication skills, critical thinking skills as well as decision making skills in the health care team even after graduation (Li et al, 2006). Students also learn how to function as an interdisciplinary team.

2.3 Assessment Processes

Assessment is defined as a systematic collection, review, and use of information about educational programmes undertaken for the purpose of improving student learning and development (Coverdale, Roberts, Balon & Beresin, 2013). Assessment can either be formative evaluation as an on-going process throughout the course (this is referred to as modifying and adjusting) or summative evaluation which occurs at the end of the course and is most often the model used in academic institutions (Mukuka - Hagane, Daka, Msango, Mwelwa and Kakupa, 2019).

One important issue in assessment is feedback. Feedback process does not only drive learning, but also improves the facilitation of that learning process (Hughes, 2011). Therefore, feedback from lecturers needs to be detailed so that it allows learners to reflect on the task and do some self–assessment. In addition, feedback should be given in such a way that learners are encouraged to seek further guidance and clarification from lecturers for more understanding (Orsmond, Maw, Park, Gomez, & Crook , 2013).

Pascarella and Terenzinin (2005) in addition highlights that feedback that furthers learning provides students with on-going guidance and information about whether they are on track in a way that enables adjustment. Kuhn (2006) also adds that faculty

members provide appropriate challenge and support to students when they communicate high standards to students and provide timely and apt feedback and support to meet their students' needs. He emphasises that the best feedback is interactive and involves teachers, staff, and students in a conversation about how the student is performing. This can help raise students' academic performance. Pascarella et al (2005) summarises faculty behaviours concerning prompt feedback as follows:

- Good teachers are knowledgeable about their subject matter, are enthusiastic, encourage students to express their views through discussion, and interact with their students, both in and outside of class.

- Students learn more from courses when they are given timely feedback that is supportive, interactive and corrective.

- When students are expected to work hard, academic achievement, class attendance, and their sense of responsibility all increase.

- Because every student learns differently, individualized instruction is more effective under most circumstances.

Jeffries (2007) also indicates that students learn from their errors. He adds that if feedback is not provided on time or not all the student may repeat the similar error in the final examination. Rogers (2007) also adds that the timing of feedback to the students from the faculty is very vital. He stresses that prompt feedback is the best so that it is easy for the students to recall what they were asked. The feedback in assignments and tests helps serve as a corrective measure and helps the students to improve upon what they did not understand. Timely feedback refers to a situation where students are given feedback before they write their final examination and before they are assessed on some other items (Kuhn, 2006). Detailed feedback means that the lecturer comments on the students' mistakes or correct answer. Such feedback helps the students to understand the marks awarded and can enable

the student to answer the question correctly in case they failed it at first. Therefore, article also investigated how students found feedback in assessment.

2.4 Accreditation

One way in which evaluation of quality of education has been done is through the accreditation processes. The medical schools are evaluated using different standards in order to see if they are met. These standards in other literature are referred to as institutional inputs (McGaghie, Issenberg, Cohen, Barsuk & Wayne, 2011). The institutional inputs may include; academic staff, educational resources and missions and objectives of the institution. These are assessed to determine accreditation. In this study, the WFME Basic Standards were used to assess the institutional input to educational quality. Accreditation is the primary means of quality assessment and assurance used by higher education institutions in different parts of the world. Higher Education institutions are those offering post-secondary or high school advanced qualifications such as diplomas and degrees (Mkandawire and Ilon, 2018). Accrediting agencies such as the Health Professionals Council of Zambia (HPCZ) and High Qualification Authority (HEA) have experienced an increasing public concern for accountability of higher education in medical schools like the School of Medicine of the University of Zambia as pressure to focus their own processes for reviewing institutional quality on student outcomes—student progress through the institution as well as student learning.

Accreditation, by design, evaluates institutional quality. Institutional quality is determined by how well an institution fulfils its purposes. From the perspective of WFME, producing learning is one of the core purposes of an institution of higher education though the indicators used in assessing quality of learning are limited and more have been included in this article. In assessing institutional quality, accreditors are evaluating the student learning produced by the institution in the context of the institution's own mission, its stated learning objectives, and its identified means of assessing student learning.

3. Methodology

In this study, an explanatory sequential mixed method research design was used. Survey questionnaires were administered by the researcher. Census was used in in administering questionnaires. Kombo and Tromp (2006) posit that census method is used where a complete enumeration of a group of people is targeted. In this study, census method was used to reduce sampling errors and also to provide a true measure of the population. This was followed by in – depth interviews where purposive sampling was used from those the institution considered to have rich information on the data collected. Lastly, schedules for FGD and were later done. The data collection tools and the proposal were approved by the University of Zambia Biomedical Research Ethics Committee (UNZABREC). Throughout the research, ethical principles relating to issues of informed consent, non-deception and confidentiality of participants were strictly adhered to. Participation in this study was based on informed consent and on voluntary basis, with right of withdrawal at any time (Bryman, 2004).

The sample size was all students in the stated programmes, 10 lecturers from different departments and 3 Heads of Department. HODs and Lecturers were sampled after the survey questionnaires were administered so as to do some follow-up questions from the issues raised from the responses of the students. In addition, lecturers were selected across programmes so as to collect diverse views on the subject under study. The number of years teaching in the school was another consideration. In this case, the researcher chose lecturers with different number of years (0 to 30). This was done to get different views on course management, teaching approaches and assessment practices employed. Quantitative data was collected using the questionnaires while qualitative data was collected using FGDs and in – depth interviews. There were some questions from the questionnaires which contributed to some qualitative data.

To ensure both internal and external reliability of the research instruments, a pilot study was carried out. Double entry for each questionnaire was entered twice in a separate data sheet in order to make sure there were no errors. In order to ensure that qualitative

data was trustworthy, measures were put in place to ensure that data was credible, transferable, dependable and confirmable. In case of quantitative data, validity and reliability was ensured as all instruments were pre – tested, reviewed by medical education experts. Data analysis used was descriptive analysis. Direct quotations were used from the qualitative data in this article to enhance authenticity.

4. Findings

The response rate was 605 (84.1%) out of 719. The majority of the participants by gender were 332 (55%) males compared to 273 (45%) females.

The quantitative data was presented first then the qualitative data.

4.1 Summary of data from the questionnaire

Participants were given a questionnaire (Appendix II) containing seven factors with different characteristics under each factor. The responses under each variable were averaged and the mean and standard deviation were calculated using SPSS.

Table 2: Institutional characteristics

Variable	Agree %	Disagree %	Uncertain %
Aware of school missions and objectives	63	16	21
Assessment being clear	71	23	06
Provides academic counselling	58	40	02
School has qualified staff	80	08	12
Enrolment based on infrastructure	25	71	04
Adequate ICT to support learning	45	34	21
Management of school	55	30	15

Source: (Daka, 2019)

Table 4: Summary from FGDs

Theme	Related Codes

Aware of school missions and objectives	Am aware about the school mission but I can't cite it.
Assessment being clear	The idea of repeating all courses when one fails one course is unjustifiable The examination results should just be posted on student personal accounts and not on the notice board
Provides academic counselling	Lecturers were not found in offices to provide academic counselling and career guidance to students
School has qualified staff	The academic staff are qualified
Enrolment based on infrastructure	The enrolment numbers do not match with existing infrastructure. There is always overcrowding in the laboratory
Adequate ICT to support learning	Not all courses are uploaded on MOODLE Internet accessibility has improved
Management of school	There is little open climate in the school. The students' representatives represent us well and our issues are responded to.

Table 2 shows that 63% of the respondents commented that the School of Medicine had the Mission and Objectives and 16% were not aware while 21% were uncertain. On the students' perception about the assessment of students, the results showed that most respondents (71%) agreed that school had clear criteria for pass/fail while only 24% of the students disagreed that the School of Medicine had a clear criteria for pass/fail. When referring to provision of adequate academic counselling to students, the results showed that 58% of the students agreed that the School of Medicine provided adequate academic counselling to students. Findings from the students' questionnaire showed that students were complaining that Most of the times there is peer counselling and guidance. Students said that the lecturers seem to be too busy for the students. They cited that Lecturers were not found in offices to provide academic counselling and career guidance to students. In most cases, instead

of helping students who might not be doing well some lecturers even gave negative comments about such students such as 'you will fail my course'. In most cases, students found their own way to improvement and career pathways.

Table 2 also shows that 56% of all the respondents agreed on the overall that most academic staff in the School were qualified. Students commented that the School enrolment numbers were based on the infrastructure and facilities capacity. Students cited that in most cases when students realised that they were late for class, they would rather miss the lesson than stand in class whilst learning. They stated that the learning environment was pathetic in the school'. They proposed that 'the school should enrol based on the capacity of the infrastructure. 45% of the students stated that the School had adequate information communication technology (ICT) to support learning while 34% disagreed with this assertion. They said that they did not fully benefit from MOODLE and not much information had been provided. They, however, noted that few lecture notes were uploaded on MOODLE platform though most students stated that they did not have access to e-Granary/MOODLE. It was also stated that internet accessibility had improved in the School as Wi-Fi was accessible around the Library, Student Centre and near some hostels. Students stated that if access to internet was improved, then students' access to information would improve also. This would help students study on their own on some topics and later improve their performance in the School of Medicine. 55% of the students stated that academic leadership provided by school was satisfactory while 32% disagreed.

5. Discussion of the findings

Institutional Characteristic is one of the things that the accreditation bodies evaluate before certifying any learning institution that can be allowed to provide the required type of services to the society. The accreditation mostly is dependent on access and learning environment. This is one of the five domains of the expected standards (Gardiner, 2016). The findings discussed below highlight whether the sub-themes mentioned above were under the standard of

access and learning environment.

5.1 Mission and Objectives

One would expect an educational institution to have a mission statement that expresses a sense of its educational vision, particularly what it expects its students to learn and how that learning can be used to benefit the social order. (Gardiner, 2016) stated that educational vision should be deeply rooted in the institution's identity and practices. The School of Medicine mission statement states, "To provide quality education in health sciences producing competent graduates who value lifelong learning and are well prepared to undertake specialist training programmes and able to provide patient care and leadership in medical research that addresses the priority needs of Zambia" as stipulated in the School of Medicine (SoM) 2012 – 2016 Strategic Plan (SoM, 2012). The first objective in the same strategic plan (2012 – 2016) states, 'To provide quality training in health care in order to develop and enhance skills and competencies of students'. Sixty three percent (63%) of the students in the School of Medicine were aware of the Mission, Objectives and Competencies of the School. It is important to engage students in institutional characteristics so as to help students make goals in line with the institutional vision for them to succeed academically.

5.2 Assessment of Students

Gardiner (2016) explained that assessment is essential not only to guide the development of individual students but also to monitor and continuously improve the quality of programmes, inform prospective students and their parents, and provide evidence of accountability to those who pay our way. Banda (2013) also added that we assess in order to see whether the educational goals and standards of the lessons are being met. The results are in agreement with what the above scholars commented it is important to assess what was in the curriculum and what had been taught. In addition, learners needed to be made aware of the assessment criteria that institutions used. This could help the learners to work in line with the assessment criteria of the institution.

5.3 Students' Welfare

Becker and Luthar (2010) state that if students are not provided with career guidance, their social and emotional turmoil overcomes their academic potential. It is important, therefore, that every learning institution like the School of Medicine should develop a deliberate academic tutorship programme for all students. Studies by Becker and Luthar (2010) show that academic achievement is highly correlated with students' sense of connection and a caring, stable school environment. The foundation for a positive school climate rests on the integration of academic and behaviour approaches that address the student as a whole person and respond to the needs of a diverse student population. Learning institutions are to provide counselling and academic guidance to students in order to help them achieve the institutional goals. This could improve the students' performance and reduce the failure rates (Moore and Shurock, 2006). Therefore, students' welfare is one of the most important areas to focus on as learning institutions. The results from the study shows that the medical school of the University of Zambia need to improve on this as participants bemoaned lack of counselling sessions with the lecturers.

5.4 Academic Staff

Academic staff quality is a key factor for higher GPA and low examination rates (Sarrico, 2016). Since most of the students were very happy and comfortable with the qualification of the academic staff in the school, it is important that the same UNZA lecturers get involved in teaching clinical courses also. This is in line with the issues raised by the students that lecturers from Ministry of Health lacked teaching methodology. It could also be proposed that the lecturers from the Ministry of Health should be trained in pedagogy.

5.5 Educational Resources

Student learning and well-being are dependent upon adequate and appropriate support. The learning institution is responsible for providing an effective range of coordinated programmes and services. These resources enhance and improve student learning and well-being and support the school's core values. Lack of the stated

resources can lead to high examination attrition rates and low GPA (Moody, 2004).

When asked about the educational resources in the school, most respondents (71%) stated that the educational resources in the School were not adequate. The study revealed that most students in the School of Medicine bemoaned inadequate teaching and learning spaces and inadequate information technology support. Students either stood or sat on the floors while in lectures. This type of learning whilst on the floor reduced concentration. The study also showed that the number of students enrolled was not based on the infrastructure and facility capacities. Some respondents proposed that the school should enroll based on the capacity of the infrastructure. It was also discovered that the library sessions were always overcrowded. The study revealed that there was need to improve the information technology and improve the internet services. The third theme on accreditation focuses on an institution having an appropriate capacity for class size where the learning areas are suitable for the class size and learning activities are undertaken. Lack of access to quality learning environment contributes to low quality education outcomes.

5.6 Governance and Administration

A study by Ford (2013) done in the United States public schools in a district overseen by a democratically elected school board found that governance of any learning institution affects the academic performance of students. In this study, students stated that students' representatives who sit in the Deans' committee represents them well and most of their issues were addressed.

5.7 Comparing the 2003 with 2015 Self-Evaluation on institutional characteristics

Comparing the 2003 self-evaluation report findings (Banda, 2004) with this study, revealed that the School of Medicine had made a lot of strides in meeting most requirements. Using the evaluation criteria which were based on World Federation for Medical Education (WFME), the results revealed from the table below from students in all programmes that the School of Medicine met most requirements.

The only standard in which the School was still lagging behind was the area of educational resources where the enrolments did not match with the infrastructure and information technology.

Table 5: A comparison of 2003 and 2015 Self-Evaluation Findings on Institutional Characteristics

Standard	2003 findings	2015 findings	Score required to meet WFME International standards in Medical Education
1. Missions and Objectives	*	****	*****
2. Assessments of Students	**	***	*****
3. Students' welfare	**	***	*****
4. Academic Staff	*	***	*****
5. Educational Resources	**	**	*****
6. Governance and Administration	*	***	*****

Source: Daka (2019)

Key:

***** =	Meets all requirements
**** =	Meets most requirements
*** =	Satisfactory meets requirements
** =	Meets some requirements
* =	Does not meet most of the requirements

The School of Medicine of the University of Zambia from this study findings meets most of the required score areas of the WFME International Standards for Basic Medical Education as in Table 5. The area which needs more effort is Educational Resources. There

is need to balance enrolments with infrastructure and the availability of Information and Communication Technology (ICT) equipment.

6. Conclusion and Recommendation

The study has revealed that despite the School of medicine of the University of Zambia doing so well in most of the area, there was inadequate teaching and learning space and inadequate educational resources in the School of Medicine. The number of students enrolled was not based on the infrastructure and facility capacities.

The study therefore recommends that Schools and departments should assign academic counsellors to all students especially first years in order to guide them academically. The role of mentorship in the School of Medicine needs to be reinforced. This is in view of the finding that in courses where students had less or no consultation time with lecturers, there was low GPA among students. The enrolment of students should be dependent on availability of infrastructure and facility capacities.

References

Banda, S.S. (2004). The Role of Anatomy in Clinical Practice: A participant Observation Study of Anatomy in Clinical Practice. *Medical Journal of Zambia* 35: (1) 8-15.

Banda, S. S. (2013). *UNZA School of Medicine Monitoring and Evaluation Framework.* School of Medicine.

Becker, B. E. and Luthar, S. S. (2010). *Social-Emotional Factors Affecting Achievement outcomes Among Disadvantaged Students; Closing the Achievement Gap.* Educ Psychol. 37 (4): 197-214.

Berger, J. B. (2002). Understanding the organizational nature of student persistence: Empirically-based recommendations for practice. *Journal of College Student Retention*, 3, 3–21.

Braxton, J. M., (Ed.). (2008). The role of the classroom in college

student persistence. *New Directions for Teaching and Learning,* No. 115. San Francisco: Jossey-Bass.

Bryman, A. (2004). *Social Research Methods*. New York: Oxford University Press.

Chickering, A.W., & Gamson, Z.F. (2007). *Development and adaptations of the seven principles for good practice in undergraduate education.* New Directions for Teaching and Learning, 80, 75-81.

Coverdale, J. H., Roberts, L. W., Balon, R., & Beresin, E. V. (2013). *Writing for academia: getting your research into print: AMEE Guide No.* 74. Medical teacher, 35(2), 926-e934.

Daka, H. (2019). P*erspectives on Course Management, Teaching and Assessment of Undergraduate Programmes at the Medical School of the University of Zambia*, PhD Thesis. University of Zambia.

Ford, M. (2013). *Impact of School Board Governance on Academic Achievement in Diverse States,* Wisconsin, University Press.

Gardiner, F. L (2016). Redesigning Higher Education: Producing Dramatic Gains in Student Learning ; *ASHE-ERIC Higher Education Report Volume* 23, No. 7, p. 109

Herman, L. J, Heritage, M and Goldschmict P. (2011). *Guiding for Developing and selecting Assessments of student Growth for use in Teacher Evaluation System. Califonia,* CRESST Partnership.

Hughes, G. (2011). Towards a personal best: A case for introducing ipsative assessment in higher education. *Studies in Higher Education* 36(3):353–67.

Jeffries, P.R., and Rogers, K.J. (2007). Evaluating simulations. In P.R. Jeffries (Ed.), *Simulation in nursing education; from conceptualization to evaluation* (pp. 1-9). New York: National League for Nursing.

Kombo, D. K., & Tromp, D. L. (2006). *Proposal and thesis writing: An introduction.* Nairobi: Paulines Publications

Africa, 10-45.

Kuh, G. D. (2006). *What Matters to Student Success.* A Review of the Literature Indiana University Bloomington

Kuhn, T.S. (2006). The essential tension: Selected studies in scientific tradition and change. In B. R. Johnson and Onwuegbuzie, A.J. (2004). *Mixed Method Research: A Research Paradigm whose time has come. (2004). Educational Researcher* 33: (7), 14-26.

Li, S. and Kenward, K. (2006). *A national survey of nursing education and practice of newly licensed nurses. JONA's Healthcare Law, Ethics, & Regulation*, 8(4), 110-115.

McGaghie, W. C., Issenberg, S. B., Cohen, M. E. R., Barsuk, J. H., & Wayne, D. B. (2011). Does simulation-based medical education with deliberate practice yield better results than traditional clinical education? A meta-analytic comparative review of the evidence. Academic medicine: *journal of the Association of American Medical Colleges,* 86(6), 706.

Mkandawire, S. B. and Ilon, L. (2018). Higher Education Systems and Institutions, Zambia. In: Teixeira P., Shin J. (Eds) *Encyclopedia of International Higher Education Systems and Institutions*. Springer, Dordrecht. DOI: https://doi.org/10.1007/978-94-017-9553-1_478-1

Moody, J. (2004). Distance education: why are the attrition rates so high? *The quarterly Review of Distance Education*, 5(3), 205-210.

Moore C. and Shurock N. (2006) *A strengthened community college role in teacher preparation: Improving outcomes for California.* Califonia University Press, Califonia

Mukuka - Hagane, M., Daka H., Msango H. J., Mwelwa K and Kakupa p. (2019). Formative Assessment as a means of Improving Learner Achievement: Lessons from selected Primary Schools of Lusaka Zambia. *Journal of Lexicography and Terminology,* Vol. 3 (1), 33 – 54.

Orsmond, P., Maw, S.J, Park, J.R, Gomez, S., & Crook, A.C.

(2013). *Moving feedback forward: theory to practice. Assessment & Evaluation in Higher Education,* 38(2):240-252.

Pascarella, E. T., and Terenzini, P. T. (2005). *How college affects students*. Vol. 2: A third decade of research. San Francisco: Jossey-Bass.

Reason, R. D. (2003). Student variables that predict retention: Recent research and new developments. *NASPA Journal,* 40, 172–191.

Riley, R. H. (Ed.) (2008). *Manual of simulation in healthcare*. New York: Oxford University Press.

Rogers, B. (2007). *A new field of dreams: The Collegiate Learning Assessment project*. 6: 26–29. Chicago, University of Chicago press

Sarrico, S. C. (2016). *Academic staff Quality in Higher education*. 71 (2), 143-162

School of Medicine (2010). *Senate approved Curriculum for 2010.* Lusaka, UNZA.

School of Medicine (2012). *School of Medicine Strategic plan 2012 - 2016*. Lusaka, UNZA