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Complementing lecturing as teaching pedagogy and students' learning styles in universities in Tanzania: State of issues

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Lecturing remains a popular and predominant teaching pedagogy in Higher Education Institutions and Tanzanian universities are no exception. However, due to increase in enrollments, lecturing encounters serious challenges as burgeoning diverse nature of students' learning needs associated with physiological, psychological, professional and biographic factors. This study employed cross-sectional survey to investigate on undergraduate students' learning styles and extent lecture pedagogy complements students' learning needs in inclusive classes during lecture sessions. The study involved 206 undergraduate students to whom semi-structured questionnaires were administered. The quantitative data were analyzed by SPSS, while qualitative data were subjected to content analysis. The results show majority of undergraduate students were accommodators, preferring more to experiment with their concrete experiences. Furthermore, results show that there is significant difference across their academic year, subject major, working experience and students' exceptionality. The study concludes that lecturing is but a part of teaching pedagogy which has to be flexible to suit the prevailing contexts of inclusive teaching and learning to entail students' differences including academic year, subject major, work experience and exceptionality characteristics of students in lecture halls. The study recommends more studies on lecturing and learning styles to augment theory and practice of inclusive teaching in universities.

Key words: Experiential learning, inclusive class, Kolb's theory, learning style, lecture.

INTRODUCTION

One fundamental characteristic from which knowledge originates is that of being an experience depicted from phronesis or techné (Mbalamula, 2016a; Ulvik and Smith, 2011; Ishumi, 2004; Hunt, 2003). Lecturing is conceptualized from Medieval Latin as "read aloud" where traditionally lecturer as a facilitator of knowledge

gives an oral presentation on particular learning experience and learners take notes (Kaur, 2011). To date, lecturing in its different types (Table 1) remains the predominant pedagogical approach used in Higher Education Institutions (HEIs), and universities in Tanzania are no exception (Kaur, 2011; Stephenson et

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Table 1. Major types of lectures (Kaur, 2011).

Types of lecture	Descriptions
Formal oral essay	Lecturer reviews and selects particular information from theories, research, and arguments to support the conclusion written out and read to stimulate emotional and intellectual interests of student.
Expository lecture	Lecturer mostly talks and occasionally responds to interrupted questions from students. These lectures are less elaborate compared to oral essay
Provocative lecture	Lecturer usually provokes and challenges students' understanding of theoretical knowledge, values and provide scaffold to help them merge and forge more complex and integrated perspective.
Lecture discussion	Lecturer opts to encourage students to comment or express concerns rather than simply raise questions. In this case, lecturer becomes a note speaker for few minutes discussing and clarify on key points and thereafter students take full control of the talking.
Lecture-recitation	Lecturer provides students with questions so that they can share what they know or have prepared. Strictly lecturer does not ask questions or point students to talk.
Lecture laboratory	Lecturer talk and students listen and make their own observations, conduct experiment or rather independent work. These are mostly common in science as well as studio art and writing classes.
Lecture discussion	Lecturer focuses on encouraging students to reflect on subject matter presented by enhancing their involvement in the lecture proceedings.

al., 2008). The popularity of lectures inclines to its cost effective value, flexibility, and ease to integrate with other pedagogies (Manolis et al., 2013; Mosha, 2012; Kaur, 2011). The popularity is equally significant since universities play a critical role in generating qualified human capital which has significant impact on national development (Ndalyi, 2016; Percy, 2012). Cognizant, Tanzania through various policies including Education Training Policy in 1995 and 2014, and National Higher Education Policy in 1999 has emphasized inter alia on increasing access to higher education which has in turn dramatically increased enrollments in universities (UDOM, 2017; Mohamedbhai, 2014; Ishengoma, 2011; Materu, 2007; URT, 1999, 1995). The data from enrolments in HEIs in Tanzania showed substantial increase by 190.2% from 40993 in 2005/2006 to 118951 in 2009/2010 (URT, 2010). Typically, the largest university in Tanzania, the University of Dodoma (UDOM) observed an increase of 1.558% of undergraduate student enrolled from 1,041 in 2007/2008 to 16,226 in 2011/2012, and by 2015 has reached 18,453 students (UDOM, 2017, 2015, 2012). Despite such quantitative success, the massive enrolments have led to a menacing phenomenon of large classes which not only overwhelms but also challenges universities to serve diverse nature of students' learning needs which are different in terms of how they perceive, process, integrate and express information, expressed in this paper as learning styles (Mosha, 2012; Abidin et al., 2011; Kazu, 2009; Penger

and Tekavčič, 2009). The learning styles refer to variety of learners use to comprehend various learning material as stimulated in form of sight, aural and tactile enhancers (Abidin et al., 2011; Lindblom-Ylännea et al., 2006). According to the Kolb's Theory of Experiential Learning, learning occurs in four ways, and hence producing four major groups of learners, namely, the Divergers combine concrete experience with reflective observation to develop concrete situation from various viewpoints; the Assimilators reflect on abstract concepts and putting information in logical form; the Convergents, this group takes abstract ideas and actively experiment to find practical uses for the information; and the Accommodators take concrete experiences mixed with active experimentation in a hands-on experience (Kappe et al., 2009; Wang et al., 2006; Kolb and Kolb, 2005). Studies show there are concerns among researchers and educators on the extent lecturing enhances students' knowledge in respect to learners' individual differences (Manolis et al., 2013; Young et al., 2009). However, moreover, the studies show that the deficits observed in lecturing pedagogies do not relate in lecturing per se but subject to how lectures are being prepared, presented and structured (O-Saki, 2012; Kaur, 2011). For instance, empirical studies in Tanzania and other places show that it remains questionable whether faculty members are able to teach in consistence with students' variant learning styles in large inclusive classes (Mosha, 2012, 2004; O-Saki, 2012; Kaur, 2011; Stephenson et al.,

2008). In same contention, studies show that majority of faculty members teach focusing only on what rather than on how they teach and hardly on how students learn (O-Saki, 2012; Fry et al., 2003). Therefore, the study on lecturing and learning styles is imperative to comprehend teaching and learning in universities (Abidin et al., 2011; Mosha, 2004).

Purpose of the study

There is wide consensus among researchers and educators across the world on decline in quality of services in universities, and in particular of teaching and learning or to those factors relating to teaching such as staffing (UDOM, 2017; Suru, 2015; Mosha, 2012, 2004). Such assertions on the quality of universities have prompted different researchers to embark on research studies, of which same motive prompted this study whose purpose aimed to investigate the perceptions of undergraduate students on the lecturing pedagogy in Tanzanian universities particularly by examining students' learning styles, and the extent to which lecturing accommodates the students' learning styles.

MATERIALS AND METHODS

The cross sectional survey design was adopted using both quantitative and qualitative methodologies to collect and analyze data. The study included 206 respondents from eleven (11) teacher education degree programmes to questionnaires with both closed and open-ended questions were administered to capture numerical data and verbatim responses (Creswell, 2012). Also, fifteen (15) students were selected purposively for interviews including five (5) students with special needs and ten (10) students without special needs. The quantitative data were analyzed by SPSS, and the content analysis for qualitative data. The questionnaires were checked for validity and reliability (Cronbach's $\alpha=0.82$) to ensure its focus and consistency (Ott and Longnecker, 2001). Ethical considerations were observed in terms of respondents' convenience, readiness and confidentiality (Basit, 2010).

Profile of the respondents

The study involved 206 undergraduate students including 156 males (75.7%) and 50 females (24.3%) from eleven (11) degree programs majoring in ten (10) different subjects; about 45.1% (n=93) were in their first year, 23.8% (n=49) in second year, and 31.1% (n=64) were third year students. Also, 36.9% (n=76) were in-service student teachers and majority of them were in their middle years, in this case 73.3% (n=151) were between 20 and 30 years of age, 15.5% (n=32) were between 31 and 40 years, 10.2% (n=21) were between 41 and 50 years and only 1% (n=2); and only 63.1% (n=130) were not yet employed. Similarly, majority (63.6%, n=131) had no professional work experience, while 28.6% (n=59) had between 1 and 10 years of experience, 6.8% (n=14) had between 11 and 20 years of experience, and 1% (n=2) had 21 to 30 years of experience. Moreover, about 8.7% (18) were students with special needs (SwSN) including those with auditory and visual deficit, and 91.3% (n=188) were normal students (NS). In terms of previous education, about 32% (66) had diploma in teaching certificates in

basic education levels, and the rest of 68% (140) had advanced certificate of secondary education.

RESULTS AND DISCUSSION

The findings are presented hereunder as per objectives of the study using mean and standard deviations, analysis of variance, and the Tukey post hoc test.

The results from the showed that about 77.7% (n=160) of the undergraduate students preferred to learn by integrating concrete experience with active experimentation (Mean=3.96, SD=1.14). This indicates that undergraduate students would prefer practical experiences which engage them in experimenting what is being taught during lectures. However, results show that other undergraduate students preferred other types of learning styles and with averaged similar mean scores to the most preferred learning style (Table 2). This indicates that there are diverse learning styles characterizing students in inclusive class which also need not to be taken for granted during teaching and learning process.

The results from analysis of the perceptions of undergraduate students on the extent to which lecture accommodated their learning needs are presented in Table 3. The results show, lecturing did comparatively little provide special attention to students with disability (Mean=2.83, SD=1.02). This indicates lecturing as pedagogy did not provide special attention to students with disability, which in other words reveal that lecturers did not put into consideration issue of individual students' differences during lecturing process. For instance, analysis of open-ended responses from both normal students and students with Special Needs (SwSNs) showed that SwSNs encountered significant challenges in lecturing due to lack of care from lecturers, lack of learning materials such as hand-out notes, lack of sign and other language interpreters, and lack of specialized capacity on the side of the lecturers to teach students with special needs. For example, one of the SwSN during an interview narrated; "I think lecturers lack knowledge about Special Need Education and do not care about us, and hence do not recognize that their classes have students with special needs".

The analysis of variance (ANOVA) was used to analyze the second objective by determining variations in line with respondents' variables. The results showed that there was a statistically significant difference between academic year ($F(2.203)=5.855$, $p=0.003$), major subject ($F(9.196)=4.656$, $p=0.000$), work experience ($F(3.202)=3.307$, $p=0.021$), and exceptionality ($F(2.203)=10.074$, $p=0.00$) $p=0.00$). The output of the ANOVA analysis provided only statistical significant difference between academic year, gender, degree programme, major subject, employment, age, work experience and exceptionality. Therefore, Tukey post hoc test was necessary to compute and establish difference between the groups (Creswell, 2012).

Table 2. Undergraduate students' learning styles (N=206).

Learning styles descriptor	%	Mean	SD
Divergers	66.6	3.73	1.05
Assimilators	46.6	3.66	0.99
Convergers	25.2	3.28	1.17
Accommodators	77.7	3.96	1.14

Table 3. Lecturing on students' learning in inclusive classes (N=206).

Lecturing descriptors	%	Mean	SD
Integrated appropriate teaching strategy that engages you in learning	43.1	3.06	1.10
Delivered with adequate knowledge on the type of your ability/disability	53.9	3.34	1.04
Delivered with special attention to students with disability in the class	21.4	2.83	1.02
Integrated appropriate strategies that fit the needs of your learning style	43.7	3.08	1.03
Integrates different teaching materials that engages you in learning	47.1	3.17	1.09

Academic year

The results from the Tukey post hoc test computed showed that there is statistically significance between third year students (24.0 ± 3.9 times, $p = 0.003$) compared to those in first year (20.9 ± 7.0 times). There was no statistically significant difference between either the students in first year or those in second year students ($p = 0.755$) nor between students in second year and those in third year ($p = 0.070$). This indicates that, students in their third year considered lecturing approach as mode accommodating than their first year counter partners, presumably this could be said that third year students being accustomed to lecture pedagogy for about three years. This was in line with the results from analysis of responses in open-ended questionnaires which showed that first year students emphasis on lecturers to teach and explain more deep for them to understand the concepts being taught; while on the other hand, the students in their third insisted more on project work, discussions to be integrated with lectures. Also, these results of analysis indicated significant difficulty in learning existed among both freshers and sophomores relating to extent to which lecturers are able to use various pedagogies to enable student learn more effectively. The results are contented by the responses provided by two students during interviews representing the contrasting perception given earlier;

"Lecturers are not teaching deep and also lectures are unsystematic so I fail to understand well, and there is no time to ask questions which sometime make difficult to understand certain topic" (First Year Student).

"Lecturers need to provide us reflective questions, and are supposed to teach not reading from heir books, because you know some of the lecturers are not

preparing for lecture well" (Third Year Student).

Subject major

The results from analysis of Tukey post hoc test on ten (10) subject majors showed that there is statistically significant difference between student majoring in Kiswahili (19.9 ± 7.5 times, $p = 0.034$) and those majoring in Geography (18.6 ± 7.0 times, $p = 0.001$) compared to those majoring in Mathematics (25.8 ± 4.6 times) on efficacy of lecturing in respect to their learning styles. Similarly, statistically significant difference was found between the student majoring in English (24.1 ± 1.6 times, $p = 0.011$), those majoring in History (23.4 ± 3.6 times, $p = 0.001$) and those majoring in Biology (23.8 ± 4.8 times, $p = 0.018$) compared to those majoring in Geography (18.6 ± 7.0 times). Further, the results showed no statistically significant difference between students majoring in Literature, Economics, and Physics. Firstly, the results indicate that students majoring Kiswahili and Geography had different opinions compared to those majoring in Mathematics in terms of the extent lecturers were able to device their lecturing pedagogy to cater for discipline specific needs of their subject majors. The analysis of the responses from open-ended questionnaires revealed students majoring in Mathematics suggesting that lecturing and lecturers should put emphasis on interactive pedagogies, but also should consider other contextual factors such as time at which such courses were being taught, and preferably in the morning rather than in the evening; on the other hand, those majoring in Kiswahili and Geography were concerned with issues such as lecture presentation, more explanation of the concepts being taught, provision of class activities, and opportunity to ask questions. In this case, while mathematics students seemed to be more

practical and experimental, the students majoring in Kiswahili and Geography seem to be more pro-conceptual. Secondly, similar inference can be drawn on the observed difference between students majoring in English and History, and those majoring in Biology indicating that those students majoring in arts subjects would require different pedagogy compared to those majoring science subjects.

Teaching work experience

The results from the Tukey post hoc test showed there was statistically significant difference between students with eleven to twenty teaching experience (26.6 ± 2.6 times, $p = 0.040$) compared to those with one (1) to ten (10) teaching experience (22.1 ± 4.9 times). Also, there was statistically significant difference between the student with no teaching experience (21.7 ± 6.2 times, $p = 0.012$) compared to those with eleven (11) to twenty (20) teaching experience (26.6 ± 2.6 times). Moreover, no statistically significant difference between students with more than twenty (21-30) teaching experiences with those with either ten years ($p=0.954$) or those with twenty years ($p=0.412$) nor with those without work experience ($p=0.976$).

Exceptionality

The results from Tukey post hoc test computed between students with special needs (SwSN) and Normal Students (NSs), showed that there was statistically significant difference between students with visual/blindness impairment (SwVIs) (19.4 ± 8.9 times, $p = 0.008$) and normal students (22.5 ± 5.1 times, $p = 0.000$) compared to the students hearing impairment (SwHI) (7.0 ± 0.0 times). Otherwise, there was no statistically significant difference between normal students and SwVIs ($p=0.075$). The difference between normal students to rather students with visual problems students than those students with hearing problems indicates that more or less conditions which influence effective learning required by NSs, SwHIs and SwVIs are similar; but on the contrary, much of the difference was between SwVIs and SwHI. The results from the analysis of the open-ended questions of the questionnaires showed that all of them (NSs, SHIs and SwVIs) pointed out to general aspects for improvement of lecture pedagogy by articulating effective teaching and learning strategies; fair and friendly attitude from lecturers, and lack special knowledge by lecturers on their students' ability/disability. In similar argumentation, the results from the analysis showed that while SwVIs emphasized for more improvement on the provision of reading lens, Braille machines, and elaborate examples during lecture; the SwHIs alternatively reiterated on the need for availability of sign language interpreters during lecture.

DISCUSSION

Learning as product of experience that an individual encounters which hence learning style preferred by an individual or group of students can be unique but also in aggregate similar. Hence, lecturing must adapt to pedagogy that accommodate a range of existent learning styles in terms of its design (Ren, 2013; Kaur, 2011; Kazu, 2009). Therefore, a feasible pedagogy need rather to be flexible than fixed to match up with students' learning styles and ensure significant learning occur (Penger and Tekavčič, 2009; Garcí'a et al., 2007). Also, customized lecture approach is vital to suit the teaching and learning contexts when students with diverse educational characteristics are taught at once (Abidin et al., 2011; Lindblom-Ylännea et al., 2006). Moreover, reforms in HEIs responding to decline of quality of teaching and learning processes incline towards balancing educational settings and instructional designs that will provide comfort and satisfaction for positive learning can occur (UDOM, 2017; Suru, 2015; McCarthy, 2010). Therefore, a balanced lecturing instruction is imperative, to conform the students' learning styles in such a way that not only suits characteristics of few, but adapting to style of each and all students (Franzoni and Assar, 2009; Litzinger et al., 2007).

As adopted in this paper, academic year represents time period that students have interacted with different teaching and university's learning environment including lecturing process; *Ceteris paribus*, the longer the time students have been exposed to lecturing, the more they are able to acclimatize to lecturing. Typically, the results have shown sophomores being more adapted to lecturing compared to freshers. One explanation for such observation would be freshers having low experience to lecture as a teaching pedagogy and also it being hardly used in their previous education. A study by Lesmes-Anel et al. (2001) revealed that individual learners react very differently to identical learning experiences generated in respect to the year in practice, and hence experience with particular teaching approach. However, their results show both freshers and sophomores encounter similar challenges as they demanded that lecturers need to provide elaborate examples and detailed explanation as what they teach is rather superficial and recitation of other books lacking contextualization and comprehensive description. The contention to possibility of lecturing as teaching pedagogy only enabling for surface learning rather than deep learning leaving students with partial if not amorphous and abstract understanding the concepts taught in class (Offir et al., 2008).

Counting on results of this study, the distinct learning styles existing between students relate to their subject majors. The difference is between different disciplined subjects and even among similar subject majors indicating different learning styles exist between and across disciplines. Such differences may provide validity for different opinions undergraduate students may have

on lecturing as accommodating teaching strategy (Kazu, 2010; Jones et al., 2003). Empirical studies show different teaching styles are often used by lecturers for different subjects within and between science and arts disciplines (Lindblom-Ylännea et al., 2006; Healey and Jenkins, 2000). Similarly, while students majoring in subjects in humanities and social sciences may prefer a lecturing that integrates conceptual learning style tasks, while those majoring in Mathematics and Pure Sciences may opt to a more practical oriented teaching strategy (Gilakjani, 2012a; Heiman, 2006). Such differences related to subject major may emanate from the extent specific teaching style strategies are able to conform not only to sensory activation which is more preferred, but also different coping strategies employed to respond to different academic demands imposed on students (Boström and Hallin, 2013; Gilakjani, 2012b). Therefore, the extent to which lecture accommodates students' learning styles may depend on the subject being taught.

The effect of experience is incremental such that the differences exist between those with lower and higher teaching experience, which implies that those students with higher teaching experience are at more advantage to evaluate lecturing in respect to earned experiences. It is similar to those with at least a year of teaching experience over those without any experience in teaching. With no significance when considering those with the highest teaching experience (>21 years) and those with lower or without teaching experience, indicates there is equally similar effect of lecture method in their learning process. On, other hand, work experience, is of interest, representing a duration undergraduate students have interacted with teaching profession. Evidently, a quite number of students who enroll in various degree programmes in universities are in-service employees in teaching profession which means are exposed to the practice. As such, the previous experience assimilated in teaching potentially creates a professional disposition which may influence how they perceive lecturing as compatible teaching strategy in universities. Studies show that, there are pronounced differences between learners' reactions to different teaching style attributable to the experiential years spent in the practice which affects their motivation and activeness during lecturing approach (Abidin et al., 2011).

While normal students and those with special needs are different in terms of their learning needs and styles, but normal students and those with special needs may not necessarily be different in their learning styles. The finding extends definition of exceptionality to individual ability or disability to interact with particular learning environment as attributed by visual, auditory and tactile abilities. The extent to which each individual is able to learn effectively during lecturing approach is dependent on a number of factors (Katsioloudis and Fantz, 2012). Such factors not only ascribe to cognitive, physical and affective abilities but also appropriate learning

equipments and support that facilitative and enhancing individual to interact with learning material. The contention is well argued by Heiman (2006) who revealed student with learning disabilities would graduate a year later than Normal Students peers, though both may be characteristically well adjusted academically. These contentions articulate to assertion that the extent students are to comprehend during lecturing depend on how particular lecture is strategized to address the imminent learning deficit of the individual learner. Studies show that ICT integrated lectures provide reliable support and assistance to address such exceptional needs and accommodate respective students' learning needs (Mbalamula, 2016b).

CONCLUSION AND RECOMMENDATIONS

Every student has unique learning style, but a relatively more eclectic model lecturing could be feasible harmonize aggregate difference between learning styles. Noteworthy, while diversity of students challenges not only universities but also faculty members in lecture halls. This calls for pre-emptive lecturing strategies to optimize every aspect of teaching and learning process to match up students' learning needs prone to influence of duration in learning, subject discipline, work experience, and their exceptionalities.

The study recommends more research studies should be conducted to build comprehensive understanding of students' learning styles and compatible lecturing strategies and styles to enhance teaching and learning process in inclusive classes. Also, teacher in-service professional courses in universities must emphasize on both content and hands-on practical competencies reflecting on special needs education, language specific curriculum in university teaching. Also, improvement of teaching and learning infrastructure, inclusive hardwares and softwares that empower not only faculty to teach efficiently and but also capacitate students to learn effectively. In addition, emphasis should be directed to students' assessment and evaluation feedbacks to identify students' learning styles to illuminate deficits in lecturing and assessment modes of the university courses. Moreover, governments and technocrats need to consider professional etiquettes not to temper with quantity and quality standards for example double cohort admissions, lowering of entry standards, not only availability of infrastructure being major criteria for admission, but also account availability of personnel and teaching/technical capacity.

CONFLICT OF INTERESTS

The author has not declared any conflicts of interests.

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