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Assessment of teaching staff adequacy in Tanzanian community secondary schools: A case of Arusha District

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The present study assessed teachers' adequacy in Tanzanian Community Secondary Schools due to massive failure of learners. The study utilized descriptive case study design and data was collected through questionnaire, interview schedules and documents. Simple random and purposive samplings were used to select a sample of 318 out of about 1049 selected school stakeholder in Arusha District. To establish validity, the instruments were given to experts for scrutiny who went through them against research questions and gave necessary recommendations for improvement before data was collected. A pilot study was conducted to schools which are not part of the sample and calculated using the SPSS. Reliability result yielded 0.871 Cronbach's Alpha which means the questionnaire was highly reliable. Researchers concluded that teachers' working load is heavier, something which hinders effective teaching and learning. Scarcity of Science Teachers is more critical as compared to Arts Teachers. Thus, teachers cannot have sufficient time to mark assignments and counsel students with difficulties in learning. Therefore, it is recommended that government and policy makers need to come up with strategies to fight inadequacy of teachers in Tanzanian Community Secondary Schools.

Key words: Adequacy, teacher-student ratio, teaching load, Arusha District.

INTRODUCTION

Secondary Education is widely believed to provide the optimum setting to prepare young people, predominantly adolescents, for healthy and productive adult lives, including participation in social, political, and economic spheres. In addition, for countries like Tanzania to compete in the global economy, a significant number of citizens need secondary education in order to acquire specific skills and aptitudes necessary for an increasingly technology driven market (Jacob and Lehner, 2011). Due to this background, global access to Secondary Education is currently growing at an increasing pace (UNESCO, 2008, 2010) which results into an increased number of secondary education learners. In the mid-1990s, the Millennium Development Goals (MDGs) and the Education For All (EFA) initiatives had driven an education reform agenda which focused on improving access to Primary Education in developing countries like Tanzania. In more recent years, proponents of post-basic

education have gained a voice and wider access to good Secondary Education as being increasingly recognized as a critical element in achieving the goals of human development, political stability, and economic competitiveness (Acedo, 2002; Alvarez et al., 2003; Holsinger and Cowell, 2000; King et al., 2007; Lewin and Caillods, 2001; Lewin 2005, 2007, 2008; UNESCO, 2001, 2008; World Bank, 2011, 2014).

As an intermediary step between Primary and Tertiary Education, Secondary Education serves as a preparatory phase for youths before they enter the workplace, helping to equip a largely adolescent population with the skills, aptitudes, and social values for a productive and healthy adult life (Jacob and Lehner, 2011). In Tanzania, Secondary Education occupies a pivotal role in the functioning of the economy and the education system itself. This is revealed by an experience which shows that, majority of the people in

both the private and public sectors are expected to be secondary education leavers. The whole Primary Education system relies on teachers who are a product of the Secondary Education system. Candidates of higher and Tertiary education and Training are products of the Secondary Education system. This is the essence of being pivotal (URT, 2010).

Since 2001, the Tanzanian Government had taken many initiatives to reform its Primary and Secondary school Education sectors to observe its pivotal role in education. These reforms include implementation of Primary Education Development Program (PEDP) from 2002 to 2006 and Secondary Education Development Plan (SEDP) starting in 2004 both focusing in the Tanzania development strategies on combating ignorance, disease and poverty in line with the National Vision 2025 (Sumra and Rajani, 2006). The PEDP 2002-2006 raised the enrolment rate in Primary education from 59 per cent in 2000 to 97 per cent in 2007 (World Bank, 2008). This created a social demand for and even an expectation of transition to secondary education (UNESCO, 2007, Wedgwood, 2007).

In 2004, the Government of Tanzania launched its Secondary Education Development Plan (SEDP) aiming to renovate the Secondary Education system throughout the country. SEDP was formulated in line with the development of ward/Community based Secondary schools. The goal was to ensure more access and equity of participation across geographical, gender, disadvantaged groups, and the marginalized among the community. Such a critical plan was to curb the substantial increased number of pupils enrolled in Primary schools, thereby creating an upward demand for increased access to Secondary Education (Kambuga, 2013). In 2005, nearly 124,884 students were enrolled in Forms 1-6 while in the year 2012 the number went up to 1,602,752. By any measures these are large enrolment increases over a short period of time (URT, 2013) which might compromise with the quality of education if the teacher-learner ratio is not balanced to meet the present demand.

While there are many factors that can affect the teaching-learning process, teacher-learner ratio is an important factor which if not addressed may lead to massive failure of students and therefore lowering the quality of education. In recent years, while the number of secondary school learners has increased, students' academic achievement has been declining, especially in the Community Secondary Schools. This decline in academic achievement has raised a number of questions about what might be the reasons for and how can it be addressed. With this regard, therefore, teacher-learner ratio becomes an emerging issue in the country, which demand serious attention. In response to this problem, this study investigates on instructional staff adequacy in Tanzanian community secondary schools: a case of Arusha district.

Review of Related Literature and Studies

The review of related literature and studies is organized into three major subheadings namely Quantity and Quality of

Teachers, Teacher-Learner Ratio and Demand and supply of Teachers in Tanzania.

Quantity and quality of teachers

Quantity and quality of teachers are important factors for consideration if school effectiveness needs to be realized. With this regard, teachers for years have been regarded as essential catalysts for school effectiveness. They are the driving force and main resource in the development and academic growth of students as they are sources of knowledge and agents of change (Wallace, 2011). They play a pivotal role in helping learners to direct their potential to achieve their destiny. Benya (2010) asserts that, noble as the objectives of any educational programme may be, central to their success is that of adequacy of qualified teachers. Indeed before taking off any educational programme, the adequate provision of manpower in terms of teacher must have been put in place. The quantity and quality of teachers in place has great influence on the kind of school products produced to the society. In this respect, Hargreaves (2000) argues that there is no any educational system that can rise above the quality of its teachers and that no nation can be elevated above the level of its teaching staff. This statement proves the key role played by teachers in any progressive society. For this reason the adequacy of qualified teachers cannot be underestimated for attainment of the objectives of any educational system. In support of this view Bregman and Karen (2003) insisted that "the success or failure of any educational system depends greatly on the quantity and quality of its teachers. The service of teachers is indispensable; they contribute immensely to lives of the nation's youth."

Education constitutes the most fundamental industry in many developing countries and it is believed to consume the largest proportion of the local vote earmarked for social services. Consequently, Kemmerer (2001) argues that the destiny of a nation is shaped in its classrooms and it is the teacher who is a very important instrument in moulding the destiny of the nation. The report by the UNESCO on thirty years of service to peace, the teacher is described as the spark that forced the whole development process (UNESCO, 2005). According to Rosenhotz et al. (2002), contemporary educational thought holds that one of the pivotal causes of unsteady developments in many countries is the inability to adequately staff schools with teachers. As pointed out by Tyke et al. (2002), schools are plagued by shortages of teachers, primarily due to recent increases in student enrolments, teacher attrition and retirements. Severe teacher shortage is believed to confront many Secondary Schools worldwide and Tanzania is not exempted. Similar situation was observed in Australia by Klaus and Dolton (2008) who argues that the nation will need to hire at least one million teachers over the next ten year and our teacher training institutions are not producing sufficient numbers of teachers to meet the demand.

Klaus and Dolton (2008) concur with MacDonald (2007) that the attrition of both new and experienced teachers is a

great challenge for schools and school administrators throughout the United States, particularly in large urban Districts. At the root of school staffing crisis, according to Chapman et al. (2010), there are two converging macro-demographic trends and increasing student enrolments. Tyke et al. (2002) observe that the resulting shortfalls of teachers forces many education systems to resort to lowering standards to fill teaching openings, inevitably resulting in high levels of under-qualified teachers and lower school performance.

Mosha (2014) concurs with Chapman et al. (2010) that, in most of secondary schools in Tanzania especially community based, the number of teachers is not sufficient to be able to assist the implementation of education to the increasing number of students that are currently enrolled making the challenge even more acute. There are also reported cases by URT (2010) that teachers are in school but their classroom work (delivery, sharing and relationship with learners/students) is not effective and efficient enough. Likewise, in SEDP II (2010/2011) it was pointed out that, the reason for poor performance in Form Four Secondary School examinations is attributed to acute shortage of teachers, unequal distribution of teachers between urban and rural as well as insufficient learning infrastructure such as classrooms, laboratories and other instructional materials (URT, 2010). However, other studies such as Chapman et al. (2010), MacDonald (2007) and Klaus (2008) observed that shortage of teachers is a growing problem in many developing countries that offer free or public education like Tanzania. According to Benya (2010), the matter has been extensively studied by a variety of governments and states in order to determine how best to swell the ranks of teachers, and what factors might be eliminated in order to attract more people to the profession.

Ndalichako and Komba (2014) pointed out that there is the lack of science teachers in Tanzania which was further confirmed in the school records. Some schools did not even have a single teacher for some science subjects. Furthermore, they ascertain that in most of schools visited there were either one or two teachers for the whole school. The shortage of science teachers is a national problem. For example in 2013, the Government employed a total of 14,060 teachers in secondary schools, but only 2,014 of these (14%) were science teachers. There is a nationwide shortfall of 37,130 teachers in secondary schools and most of them (73%) are Science Teachers. The critical shortage of Science Teachers has serious implications in terms of the effectiveness of teaching of which results into poor academic achievement in the National Form Four Examinations. Quantity and quality of teachers are therefore important factors for consideration if school effectiveness needs to be realized.

Teacher- Learner Ratio

Teachers and the number of learners to be taught in a single classroom can be a very important determining factor for academic achievement of students in secondary schools in

any country, and particularly in Tanzania. Tanzania Institute of Education (URT, 2010) pointed out that teacher student ratio shall be 1:40. The number of students per class shall be 40 which will help to bring about good academic achievement of secondary school students in Tanzania.

Consequently, if the teacher-learner ratio exceeds the stated ratio, the academic achievement of the students would be negatively affected. In their study, Alderman, Orazem and Paterno (2001) concluded that higher student-teacher ratio had a consistent negative effect on student achievement. Likewise, Graddy and Stevens (2003) in their study concluded that student-teacher ratio was an important determinant of fees and parents choose schools with lower student-teacher ratio. Levacic (2005) conducted a study on Grade KS3 and found that reduction in the student-teacher ratio had statistically significant positive effect on mathematics achievement. A study by Waita (2012) on pupil-teacher ratio and its impact on academic performance in public primary schools Kenya found that, Pupil –Teacher Ratio (PTR) has statistically significant effect on pupil's performance in primary schools. The study showed that as PTR increases, average test scores in primary schools decreases. Likewise a study by David (2014) in Sumbawanga District found that one of the factors influencing students' academic performance is the low number of teachers to students' ratio especially in public schools. The teacher student ratio stands at an average of 52:1 and as high as 72:1. UNESCO (2006) as cited in Mulei et al. (2016) found the same problem existing in Mozambique where the ratio is 67.4:1.

However, a study done by Tamasha (2012) in 16 primary and 16 secondary schools in 8 Districts of Tanzania found that on average the student teacher ratio in secondary schools was 1:88 and only one school had a target ratio of 1:40 as suggested by TIE (2010). The study found that in eight out of 13 secondary schools the student –teacher ratio was higher than 50. It was higher than 100 in four out of 13 schools. A study by Tamasha (2012) also found that, in Musoma and Temeke the ratios were so high that it was difficult to comprehend how learning can take place in those schools. In Arusha, Makete, Musoma and Temeke the student teacher ratio in secondary schools was worse than in primary schools, yet in secondary schools there should be more teachers, including specialist subject teachers. That is where the problem lies in secondary schools.

In their study, Shah and Inamullah (2012) state that overcrowded classes could have a direct impact on students' learning. They do not only affect students' performance but the teachers had to face different problems such as discipline, behavioural problems, poor health and poor performance of students, stress on teachers and increased in drop-out rate of students. A survey conducted in Kenya by UNESCO (Daily Nation, May 15th 2005 p19) in Bakari et al. (2012) shows that the average ratio in 162 sampled schools is 58:1, against the requirement of 40:1. Such class sizes in public secondary schools make it difficult for the teachers to teach lessons effectively as compared to their counterparts in private schools who handle a smaller number of pupils.

Therefore, teacher-learner ratio is a significant factor that can influence effective performance of schools in Tanzania just like in any other country.

Demand and Supply of Teachers in Tanzania

Teachers in Tanzania are officially described as individuals that are trained and then registered to perform instructional duties in schools and other related institutions. The Ministry of Education has the responsibility to train and develop teachers to meet the big demand that exists in Tanzania's expanding education at basic education levels of Pre-primary, Primary Schools as well as Lower Secondary. Teachers are trained at Universities where they qualify with a minimum of a bachelor's degree (Education and Training Policy 1999, 2005).

Training of secondary school teachers either Pre-service or In-service is done at Teacher Training Colleges (TTCs) and Universities which offer education courses. Normally, TTCs offer both Pre-service and In-service teacher education. The Pre-service programme includes Grade "A" Teaching Certificate and Diploma in Education courses. Currently, Grade 'A' Certificate Course consist of one year Residential Course and one year Teaching Practice in a primary school. The Diploma course consists of a two year Residential Course followed by Teaching Practice which lasts for 6–8 weeks each year. The In-service courses at the TTCs consist of 3–9 month training of teachers at various levels of education (Nordstrum, 2014).

According to the Basic Education Statistics in Tanzania (BEST) (2010) there are 74 Government TTCs which educate teacher-students at certificate and diploma level with a total number of 18,500 students. There are 1,804 tutors in TTCs whereby 827 are graduates with degrees, 651 with Diploma, and 326 with Special Certificates. There are presently 36 private TTCs with about 950 students. Both Government and private Teacher Colleges award certificate and diplomas.

Some studies such as Chapman et al. (2010), MacDonald (2007) and Klaus (2008) observe that shortage of teachers is a growing problem in many developing countries that offer free or public education like Tanzania. According to Benya (2010), the matter has been extensively studied by a variety of governments and states in order to determine how best to swell the ranks of teachers, and what factors might be eliminated in order to attract more people to the profession. URT (2013) asserts that, there is shortage of school-qualified teachers in Tanzanian Secondary Schools especially in science subjects; in some schools the situation is disgusting as number is too small. A total of 28,100 teachers have been posted to government schools between 2005 and 2008. Despite of these government effort there is a still a big shortage of teachers and the teacher pupil ratio in ward/community secondary schools has risen from 1:26 in 2005, to 1:49 in 2009. Therefore, the study investigated on adequacy of physical facilities such as classrooms, desks, libraries and laboratories in relation to students' academic achievement in Community Secondary Schools in Tanzania.

RESEARCH METHODOLOGY

Research Design

The present study utilized a descriptive case study research design. This design deals with an in-depth multi-faceted investigation using both quantitative and qualitative methodologies in the examination of the single social phenomenon (Scheerens, 2000). Orodho (2012) asserts that, descriptive design is used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret for the purpose of clarification. It also involved an extensive review of literature in order to identify the context, structure and process through which implementation of Secondary School Curriculum is provided. Particularly, the study was conducted in Arusha District.

Population and Sampling

Simple random and purposive sampling types were used to select research respondents. In this study 26 out of 41 community secondary schools were randomly sampled. Arusha District Council had a population of 1049 teachers who were sampled to get a representative to the study. However, to get heads of schools and District Educational Officer purposive sampling was employed. The sample size for teachers was based on the guideline proposed by Krejcie and Morgan (1970). The sample size of 318 respondents from the earlier stated population was determined. Of these, 291 were teachers, 26 were Heads of Schools and 1 was District Educational Officer.

Validity and Reliability

Validity can be described as the extent to which the instrument measures what it purports to measure. Cohen et al. (2000) defines validity as the degree to which a measuring instrument satisfies the purpose for which it was constructed. Validity is that quality of a data-gathering instrument or procedure that enables it to determine what it was designed to determine. Likewise, Healy and Perry (2000) pointed that, validity determines whether the research truly measures that which it was intended to measure. To establish validity, the instruments were given to experts for scrutiny who went through them against research questions and gave necessary recommendations for improvement before data was collected.

According to Fraenkel and Norman (2006) reliability is a statistical concept and relates to consistency and dependability consistency of obtaining similar answers when measuring phenomena that have not changed. A reliable measuring instrument is one that, if repeated under similar conditions, would present the same result or a near approximation of the initial result. To establish acceptable reliability of the questionnaire, a pilot study was conducted to schools which are not part of the sample and calculated using the Statistical Package for Social Sciences. Cronbach's

Table 1. Teachers Ratings of Adequacy of Teaching Staff

Teachers' Response	Frequency	Percentage
Adequate	94	36.6
Not adequate	160	62.3
Neutral	3	1.2
TOTAL	257	100.0

Alpha (α) was used to measure internal consistency strength whereby $\alpha > .9$ = excellent, $\alpha > .8$ = good, $\alpha > .7$ = acceptable, $\alpha > .6$ = questionable, $\alpha > .5$ = poor and $\alpha < .5$ = unacceptable. Reliability result was .871 which falls between good and excellent which means the instrument was highly reliable.

Statistical Treatment of Data

Descriptive statistics in terms of frequency and percentage was employed to analyze and present crossed-ended data from the questionnaire. The open-ended in the questionnaire and interview schedules was analyzed through thematic approach together with literature review to enhance the discussion of findings in order to come up with proper interpretation of results.

Presentation, Analysis and Interpretation

Analysis of data was based on one key research question which guided this study namely: *How adequate is the staffing status in Community Secondary Schools in Arusha District Council?*

This question based on the fact that importance of the adequacy of instructional staff cannot be over emphasized. In order to answer this research question, it was necessary to ask respondents to rate the adequacy of teaching staff in their respective schools, the average teacher-student-ratio, and the average teaching load for teachers per week. Table 1 indicates teachers' ratings of the adequacy of teaching staff in secondary schools under investigation.

In particular, Table 1 shows that a total number of 160 teachers (62.3%) perceived that teachers are not adequate in their respective schools while only 94 teachers (36.6%) considered teachers to be adequate and 3 teachers (1.2%) were neutral. This implies that majority of teachers in schools under investigation perceived that the number of teachers is not adequate. This situation concurs with the findings of Masha (2014) and Chapman et al. (2010) who found that, in most of the secondary schools in Tanzania, especially community based schools; there is inadequacy of teaching staffs to be able to assist the implementation of education to the increasing number of students that are currently enrolled making the challenge even more acute. The findings also confirm the findings of URT (2013) that, the reason for poor performance in form four secondary school examinations is attributed by acute shortage of teachers and unequal distribution of teachers. Thus, poor academic achievement of Community Secondary Schools in

Arusha District could be attributed to inadequacy of teaching staff. In view of this, some studies such as Chapman et al. (2010), MacDonald (2007) and Klaus (2008) further observed that shortage of teachers is a growing problem in many developing countries that offer free education like Tanzania. Therefore, while it is good deal to offer free education, the government and policy makers, particularly, need to come up with strategies to fight detrimental effects of free education, such as inadequacy of teachers in Community Secondary Schools.

During interview guide, one of the interviewees had these to say in regard to adequacy of teachers: "Yes, for Arts subjects but science subject not enough although we have at least good number of them compare to my neighbouring schools" (Interviewee 5). This suggests that the school had sufficient number of teachers in Arts but not in Sciences. The interviewee was furthermore aware of the scarcity of teachers in surrounding/ neighbouring schools. This is in harmony with the findings in a recent study of Magoti (2016) who investigated whether Tanzania has achieved the second Millennium development goal and came to a conclusion that, Tanzania has made very promising steps towards achieving the goal in Primary Education. But one of notable challenges was shortage of teaching staff to cater for the need of rapid increase of learners in schools, which is a result of free education.

This was also supported by the second interviewee who had this to say: "Actually, we don't have enough teachers especially for science subjects. Art subjects at least have teachers not like science subjects." Further, the interviewee added: "Before free education, we used to hire science teachers from surrounding schools and we depended on financial contributions from parents but now, no any kind of contributions, so we can't do anything rather than waiting for the government to supply teachers." The third interviewee also indicated a similar concern that insufficiency of teaching staff is one of the key issues that face secondary education in Tanzania. Particularly, the interviewee had this to say: "we depend on the students who are coming for the field attachments from different Colleges and Universities. This supports the motion that shortage of teaching staff is a possible determining factor for poor or limited academic achievement of learners in Tanzanian Public Secondary Schools and particularly in Arusha District Council.

Furthermore, Ndalichako and Komba (2014) in their study found this in the Focus Group Discussion (FGD) with students: "I don't like science subject because in our school

Table 2. Teacher-Learner Ratio as Rated by Teachers

Teachers' Response	Frequency	Percentage
1:20	54	21.0
1:30	34	13.2
1:40	40	15.6
1:50 and Above	124	48.2
Neutral	5	1.9
TOTAL	257	100.0

we have a shortage of science teachers. For instance we have only one Chemistry teacher who teaches all the classes from Form I to Form IV. So the teacher cannot teach effectively." The interview with District Education Officer (DEO) when asked: Do you have sufficient teachers in your District? Had this to say: "we don't have enough teachers especially science teachers. And this is due the increase in the enrolment rate from primary to secondary schools whereby the number of students enrolled to secondary schools is not propositional to number of teachers."

To further ascertain the intensity of teacher's adequacy in schools under investigation, Table 2 shows teachers-student ratio as rated by teachers under investigation. Particularly, the Table indicates that 54 (21%) teachers rated teacher-student ratio to be 1:20 while 34 (13.2%) considered the same to be 1:30 and 15.6% regarded the ratio to be 1:40. It was also worth noting that 124 (48.2%) teachers perceived the ratio to be greater than or equal to 50 while 5 respondents were neutral.

This implies that almost a half of teachers in schools under investigation considered the teacher-student ratio to be greater than or equal to 50, which is greater than the recommended/ normal teacher-student ratio for secondary schools in Tanzania which is 1:40. This finding is in harmony with data from the interview guide which indicated variation of perceived teacher-student ratio from one school to the other. One of interviewed school heads, for instance, explained that "teacher-student ratio in my school is 1:100, one teacher attending 100 students of which this number is too big indeed" (Interviewee 9). Another Head of School head revealed that "teacher-student ratio in my school is about 1:80; one teacher attending 80 students (Interviewee 11). Another one revealed that "in my school, one teacher attends 50 students, and this is because we have no enough teachers. ... The condition is even worse to science subjects in that, in some schools you may find no teachers at all."

A similar view was also given by interviewee No. 3: "Teacher student ratio in my school is like this, one teacher attends more than 60 students of which this number is bigger for a teacher to work with an individual student." The Head of School No. 4 also expressed serious scarcity of teachers in schools by maintaining that "teacher student ratio in my school is 1:56 one teacher attending more than 56 students, which is a big number for a teacher to attend."

When teachers were asked to comment on how the student teacher ratio affect students' academic achievement,

it was commonly held that, when the teacher-student ratio is higher than the normal, teachers cannot have sufficient time to mark students' assignments, return them on time and even counsel students with difficulties in learning. Other teachers contended that, when the teacher-student ratio is too big, teachers cannot identify and actually solve individual weaknesses of students and manage the classrooms. Particularly, one teacher, for instance, contended that "when the ratio is very high, it affects student-teacher interaction, hence, poor performance."

Other teachers expressed concerns that the higher the ratio, the limited the time for teachers to deal with individual needs of the learners and to monitor the progress of each student in the classroom, thus it is quite difficult to prepare students to achieve intended goals and objectives in the teaching-learning transactions and therefore make them not to pass the National Examinations. It is also worth noting what was indicated by one teacher through the questionnaire: "ineffective follow-up, which is a result of higher student-teacher ratio, leads to mass failure in the Form four National Examinations."

Likewise, a study by Waita (2012) on pupil-teacher ratio and its impact on academic performance in public primary schools Kenya support this finding that, Pupil -Teacher Ratio have statistically significant effect on pupil's performance in primary schools. The study showed that as PTR increases, average test scores in primary schools decreases. Similarly, David (2014) stipulated that one of the factors influencing students' academic performance is the low number of teachers to students' ratio especially in public schools. The finding is also in line with Mulei et al. (2016) who found the same problem existing in Mozambique where there is teacher shortages with the STR of 67.4:1. The findings further is in harmony with that of Tamasha (2012) who did a study in 16 primary and 16 secondary schools in 8 Districts of Tanzania and found that, on average the student teacher ratio in secondary schools was 1:88 and only one school had a target ratio of 1:40 as suggested by URT (2010). The study found that in eight out of 13 secondary schools the student -teacher ratio was higher than 50. It was higher than 100 in four out of 13 schools. Similarly, the finding can be linked with the study by Bakari et al. (2012) who found the average ratio in 162 schools sampled was 58:1, against the required 40:1. They concluded that such class sizes in public secondary schools make it difficult for the teachers to teach lessons effectively

Table 3. Analysis of How Teachers Rate Teaching Workload

Teachers' Response	Frequency	Percentage
Heavy	59	23.0
Moderate	174	67.7
Light	19	7.4
Neutral	5	1.9
TOTAL	257	100.0

as compared to their counterparts in private schools who handle a smaller number of pupils.

Table 3 further indicates how teachers under investigation rated teachers' workload in their particular schools. The Table reveals that only 19 (7.4%) teachers considered their teaching loads light while 174 (67.7%) regarded the load to be moderate and 59 (23.0%) considered it to be heavy. This implies that about a quarter of teachers in schools under investigation consider their teaching loads to be heavy. Heavy teaching loads, therefore, could be one among possible causatives for mass failure of students at Form Four National Examinations which has been a major problem in schools under investigation. The finding may suggest that shortage of secondary school teachers was among the determinants of poor academic achievement in Arusha District Council in Tanzania. Shortage of teachers resulted into heavy work- loads to teachers and higher students-teacher- ratio which hinders effective teaching and learning. This was supported by all the heads of schools, teachers and the District Education.

Conclusions and Recommendations

Based on presented, analyzed and discussed data, it is concluded that:

1. Teachers' working load is heavier, something which hinders effective teaching and learning.
2. There is a critical shortage of teachers to cater for the need of rapid increase of learners in secondary schools.
3. Scarcity of Science Teachers is critical as compared to Arts Teachers. Particularly, some schools have some teachers of Arts without a single Science Teacher.
4. Teacher-Learner ratio is greater than or equal to 50, and in some schools, the ratio is at least 1:80 which is far greater than the recommended ratio (1:40).
5. When the teacher-student ratio is higher than the normal, teachers cannot have sufficient time to mark assignments, return them on time and even counsel students with difficulties in learning.

Based on conclusions derived from the findings, the researchers give the following recommendations to tackle the issue of student-teacher ratio in Community based secondary schools:

1. While it is good deal to offer free education, the government and policy makers need to come up banwith

strategies to fight detrimental effects of free education, such as inadequacy of teachers in Community Secondary Schools.

2. Particularly, the government of Tanzania should allocate more teachers in Community based secondary schools. This will enable teachers to have time to effectively mark students' assignments and meet needs of individual learners, something which will improve academic achievement of students.

Conflict of interests

The authors declare that they have no conflict of interests

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