

# Reflections on the 2010 National Form Four Examinations in Tanzania: Debunking the Myths

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## **Abstract**

*This is a documentary review-based study that has analysed five major assumptions that characterised the discussions on the National Form Four Examination results. These assumptions were: (i) the 2010 National Form Four Examination results were peculiar and caught the nation by surprise; (ii) candidates performed more poorly in Science and Mathematics than in Arts and Social Science subjects; (iii) private schools performed better than public schools; (iv) adequately-resourced schools performed better than poorly resourced schools; and (v) schools with highly qualified teachers performed better than those with poorly qualified teachers. This analysis confirmed only one of these assumptions, and demystified the others—that adequately-resourced schools perform better than poorly-resourced ones. This study has also established that the 2010 National Form Four Examination results were not so peculiar with respect to the gravity of poor performance as initially thought as the failure rates have been increasing over the past five years, with only a handful of candidates scoring Divisions I-III, and the overwhelming majority scoring divisions IV and 0.*

## **Introduction and Background to the Study**

There has been a consistent public outcry over what many see as falling standards in the quality of education in Tanzania from the government, parents and other key stakeholders in the education sector. What remains uncertain, however, are the criteria being used to draw these conclusions on the drastic fall in the country's education standards. Therefore, there is a need to establish what benchmarks are used to assess the quality of Tanzania's education system are as well as the extent to which the claims regarding the falling standards in the country's education are valid.

Several criteria can be used to assess the performance of an education system. Three of these are critical and mostly used in many countries. The first one looks at students' performance in the basic skills of reading, writing and arithmetic. A recent report (Uwezo, 2010) reveals that, although there have been notable achievements in terms of enrolment, the construction of schools and teacher training, children learn very little in

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Tanzania. In fact, by their final year of primary education, many children do not have basic numeracy and literacy skills. Because of this, there has been an inevitable and justifiable public outcry over the falling standard of education.

The second criterion focuses on performance in public examinations. For Tanzania, these are national examinations organised and administered by the National Examinations Council of Tanzania (NECTA). Public examinations serve many purposes. According to Kellaghan and Greaney (2003), they provide a framework for setting and evaluating educational objectives. Public examinations are also useful for assessing the progress of learners in an education system in addition to serving as a benchmark in planning for the next educational steps (Kellaghan, 2004). As observed by Mansel, James and the Assessment Reform Group (2009), public examinations constitute a powerful indicator of educational standards used to judge individuals and institutions, as well the extent to which children have learned. In many countries, public examinations are the only tools used to select students for successive levels in the education system (Kellaghan & Greaney, 2003). Examinations, therefore, are essential instruments for assessing the quality of education and the acquisition of knowledge at various levels (Aas et al, 2009).

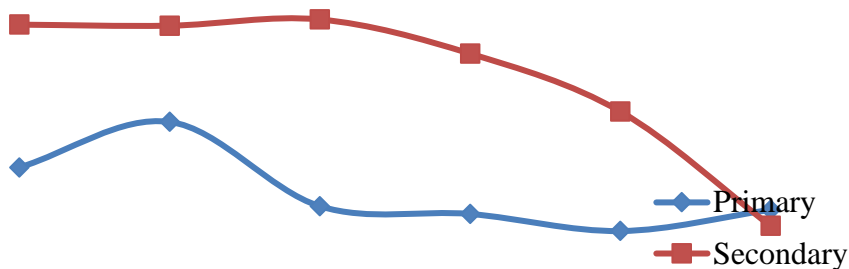
Certainly, there are inherent weaknesses in using public examinations for assessing the quality of education. As Kellaghan and Greaney (2009) observed, examinations are limited in terms of the knowledge and skills they assess. Moreover, examinations cannot be used to assess the knowledge and skills that students need in their everyday lives outside school. Studies also show that examinations do not measure achievements at a high taxonomic level, such as application, analysis and synthesis (Kellaghan, 2004).

Thus, using performance in examination as a measure of educational standards in Tanzania does not necessarily meet stakeholders' expectations. Indeed, statistics show that the proportion of primary school leavers passing Standard VII has been fluctuating, but with a falling trend. The pass rate fell from 70.5 percent in 2006 to 49.4 percent in 2009. The rate went up slightly again in 2010 when 53.1 percent passed (Ministry of Education and Vocational Training [MOEVT, 2010]).

Paradoxically, whereas the pass rates at primary school level have been declining, the proportion of primary school leavers selected to join secondary school has been increasing progressively. In 2005, 64.4 percent of primary school leavers were selected to join secondary school in 2005 compared with 61.7 percent of those who actually passed the Standard VII examination. In 2009, 90.4 percent were selected to join secondary school despite only about 50 percent of the candidates having passed the Standard VII examination. It is evident that the rise in the number of pupils joining secondary schools is not wholly based on their performance in the Standard VII examination, but on the availability of places in these schools. This is probably

understandable given the government's vision for attaining universal secondary education by 2025 (United Republic of Tanzania [URT], 2001).

Perhaps a gloomier picture of the education system's performance is seen when one looks at the performance in secondary education examinations. The pass rate in the national Form Four examination has been falling consistently over the past five years. For example, the pass rate dropped from about 90 percent in 2005 to just 50 percent in 2010 (see Figure 1).



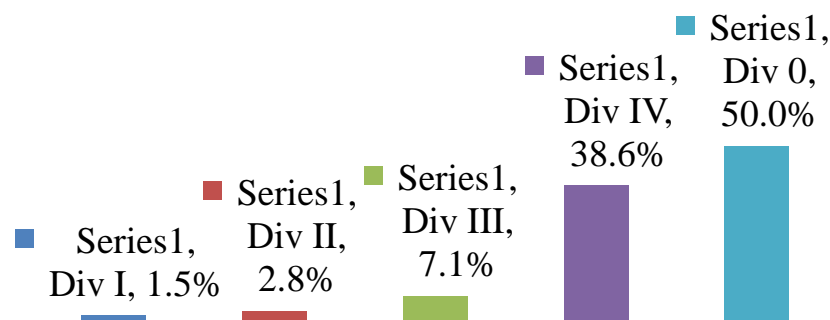
*Figure 1: Percentage of candidates who passed the national examinations at primary and secondary education levels between 2005 and 2010.*

The second measure of the performance of the education system focuses on how much it prepares learners for the world of work upon graduation. This aspect focuses on assessing the relevance of the education system with respect to how much it is producing self-employable and socially-responsible and selfless graduates, who must serve the 'people'. This is problematic since it is difficult to operationally gauge this criterion. As a result, its validity is always questionable. Nevertheless, there is widespread concern in Tanzania about the relevance of the education system in meeting post-graduation needs in the real world.

### **Context of the Present Study**

The 2010 National Form Four Examination results in particular sent shockwaves across the country following what was seen as an unprecedented massive failure. Of the 354,042 candidates who sat the National Form Four Examinations that year, 177,021 (50%)

candidates scored Division 0 and 136, 633 (38.6%) scored Division IV. Only 15,335 (4.3%) candidates scored in divisions I and II, whereas 88.6 percent of the candidates scored divisions IV and 0 (see Figure 2). Strictly speaking, 86.6 percent of the candidates had failed the 2010 National Examinations as they could hardly proceed to higher levels of education. Presumably, this group of young Tanzanians would find it hard to meet the intended goals of education of self-employment and social responsibility.



*Figure 2: Percentage of candidates performing at various grades in the 2010 National Form Four Examinations*

Because of the questions these results sparked in the nation, this analysis was conducted in response to the subsequent debates and issues raised in connection with the 2010 National Form Four Examination results. The variations in performance were seen in terms of geographical location, public and private school performance, poor and well-resourced schools, sex, and national vs. community schools. Indeed, various education researchers and practitioners, who analysed these results, came up with five common assumptions:

- i) The 2010 National Form Four examination results were peculiar and caught the nation by surprise;
- ii) Candidates performed more poorly in Science and Mathematics than in Arts and Social Science subjects;
- iii) Private schools performed better than public schools
- iv) Adequately-resourced schools performed better than poorly-resourced schools; and
- v) Schools with highly qualified teachers performed better than those with poorly qualified teachers.

This paper, therefore, examines the validity of these assumptions to separate fact from myths. The purpose is to aid an informed public discussion on the performance of Tanzania's education system as reflected in the National Form Four Examination results.

## **Results**

This study is mainly based on documentary and statistical analysis of the 2010 National Form Four Examination results. The results have been analysed to interrogate the five assumptions listed above. In this regard, the NECTA (2011) Statistics concerning the examination results in the October 2010 booklet constitute the basic unit of analysis.

### ***Assumption 1: The 2010 National Form Four examination results were peculiar and caught the nation by surprise***

The widespread notion regarding the Form Four National Examination results is that they were unexpected and unprecedented. Although an attempt has been made to portray the performance as the worst in the history of Form Four examinations in Tanzania, this is only true anecdotally. A close look at these results for five consecutive years reveals that the results actually started deteriorating some years back, particularly from 2008. The 2010 results were, therefore, only a culmination of a declining pattern in national Form Four examination performance, not an unexpected slump.

Statistically, over the past five years more than 60 percent of candidates have been scoring divisions IV and 0 (see Figure 3). Also, the proportion of candidates scoring divisions IV and O collectively has been increasing over the same period, peaking in 2009 and 2010, with more than 80 percent of the candidates scoring division IV and 0 (see Figure 4). This trend in national Form Four results over the past five years undermines the concept of the peculiarity of the 2010 results. In fact, on the basis of such a worrying trend, one can even go a step further and predict a continuation of the downward trend unless serious measures are taken to redress the situation.

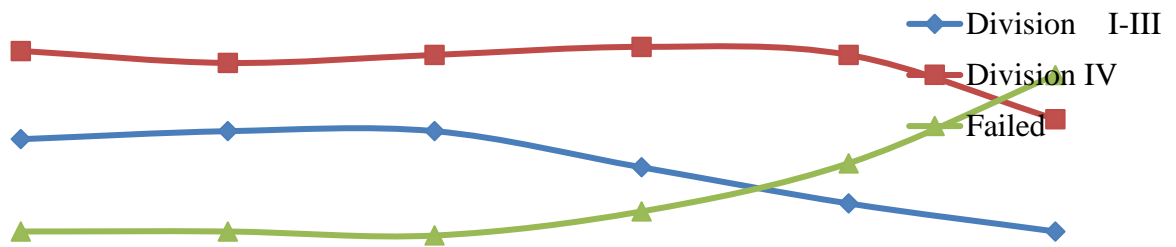


Figure 3: National Form Four Examination results, 2005 - 2010

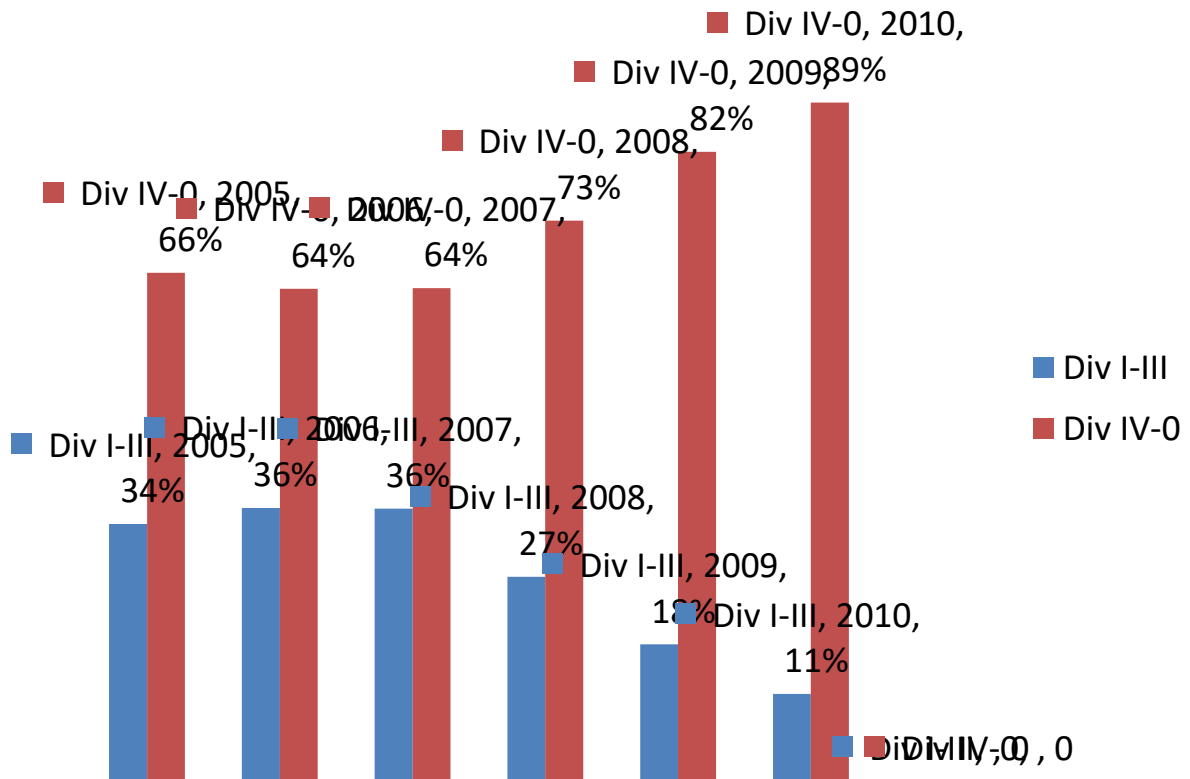
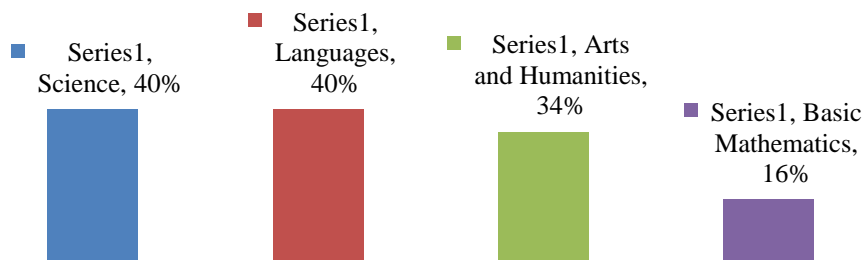


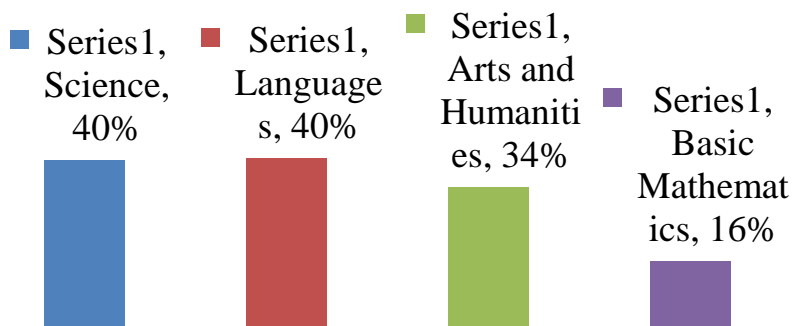
Figure 4: Percentages of candidates who scored Divisions IV and 0, 2005 - 2010.

***Assumption 2: Students performed poorer in Science and Mathematics than in Arts and Social Science Subjects***

The widespread assumption is that the performance in Science and Mathematics was and has always been the poorest. The analysis shows that this is more of a myth than a reality. A look at the 2010 results shows that the performance was generally poor in all the subjects, despite being the worst in Basic Mathematics. In fact, the performance in the Arts and Humanities was worse than in the Sciences and Languages. For example, the performance in Geography was poorer than in Physics, Chemistry, Biology and English (see Figure 5). The highest performance was in Kiswahili and Civics. As for the performance in English, it was comparable to the performance in History and Biology. On average, the performance in the Sciences and Languages was better than in the Arts and Humanities (see Figure 6). For example, 40 percent of the candidates passed in Sciences and Languages, more than in the Arts and Humanities.



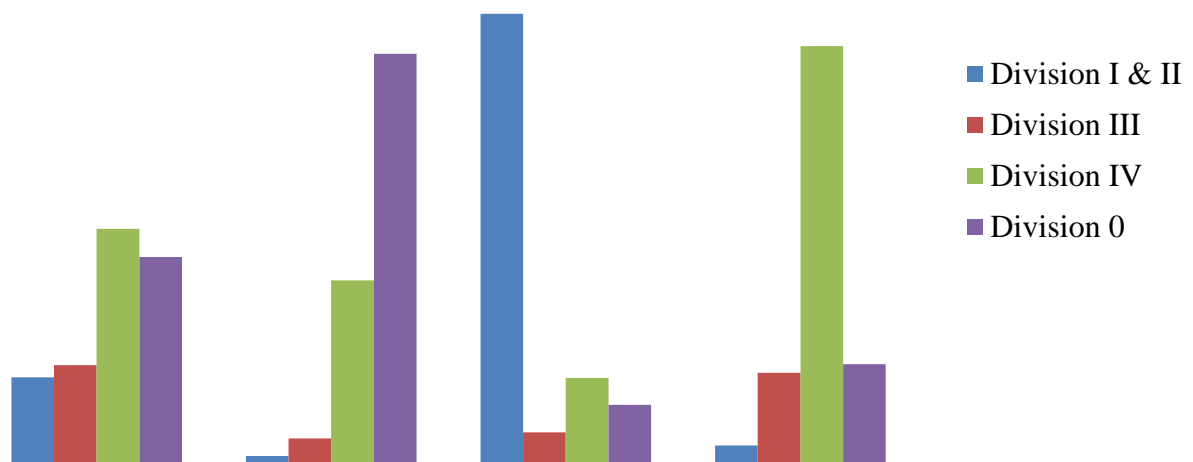
**Figure 5:** *Percentage of candidates who passed in various subjects in the 2010 National Examinations*



**Figure 6:** *National Form Four Examination results in Science, Languages, Arts and Humanities and Basic Mathematics*

***Assumption 3: Private secondary schools performed better than public secondary schools***

The general assumption is that private secondary schools perform better than public secondary schools. As the results are not presented according to the type of school, it is generally difficult to do a meaningful analysis of private and public schools. Thus, to do this analysis, we used a sample of 36 private and public schools from six randomly selected regions, namely Singida, Dodoma, Mbeya, Kigoma, Mtwara and Coast. When the results were analysed by ownership category, they showed that private schools owned by Christian organisations out-performed by far those owned by other institutions. Again, as one would expect, overall the public community-based schools were the worst performers in the 2010 National Form Four Examinations. For example, as Figure 7 shows, 65.5 percent of the candidates from public community-based schools scored Division 0, 29.3 percent Division IV and only 5.2 percent scored divisions I, II and III.

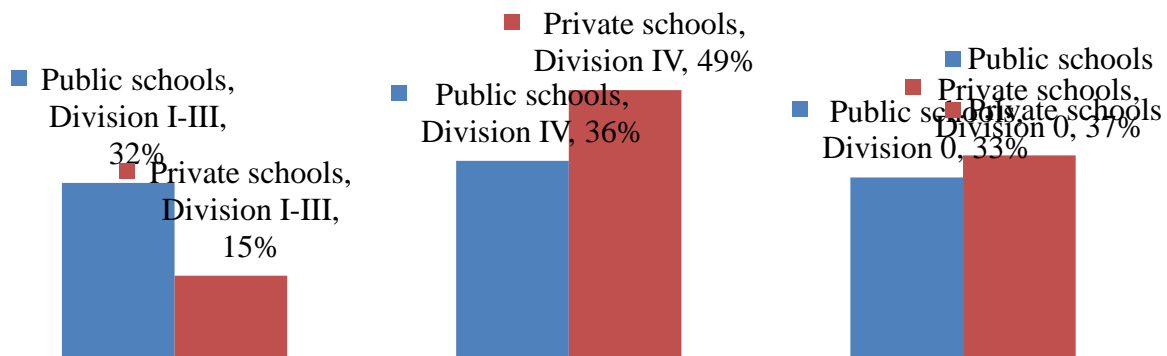


**Figure 7: School performance by ownership<sup>2</sup>**

<sup>2</sup> Schools owned by Islamic organisations were removed from this analysis due to these schools having a very small sample. Only one school qualified to be included in the final analysis



Nevertheless, on average, when the Christian-owned schools are excluded from the analysis, public secondary schools performed relatively better than other private secondary schools. For example, the results from the 36 schools mentioned above show that 32 percent of candidates in public schools scored Divisions I-III compared with only 15 percent of candidates in private secondary schools. Furthermore, the proportion of candidates who scored Division IV and failed was relatively higher for private schools than for public schools (see Figure 8).



**Figure 8:** *Performance in the 2010 National Form Four Results for public and private secondary schools*

***Assumption 4: Adequately-resourced schools performed better than poorly-resourced schools***

Two major teaching and learning facilities were considered in this regard, namely school laboratories and libraries. According to the national policy, every secondary school should have three laboratories, one for physics, one for chemistry, and one for biology. However, only a few secondary schools had all three laboratories. As such, the benchmark for analysis and comparison purposes was the availability of at least one laboratory and a library. As Figure 9 shows, of the 36 schools sampled for analysis, only public-national and private schools owned by Christian-based organisations had at least a laboratory and a library. There was a statistically significant variation in students' academic performance between schools that had laboratories:  $X^2 (N =24, 4) =18.80, p=.001$ , and libraries:  $X^2 (N=24, 8) =21.38, p=.006$ , and those that did not, the

implication being that these two items were significant determinants of students' performance in the 2010 National Form Four Examinations.

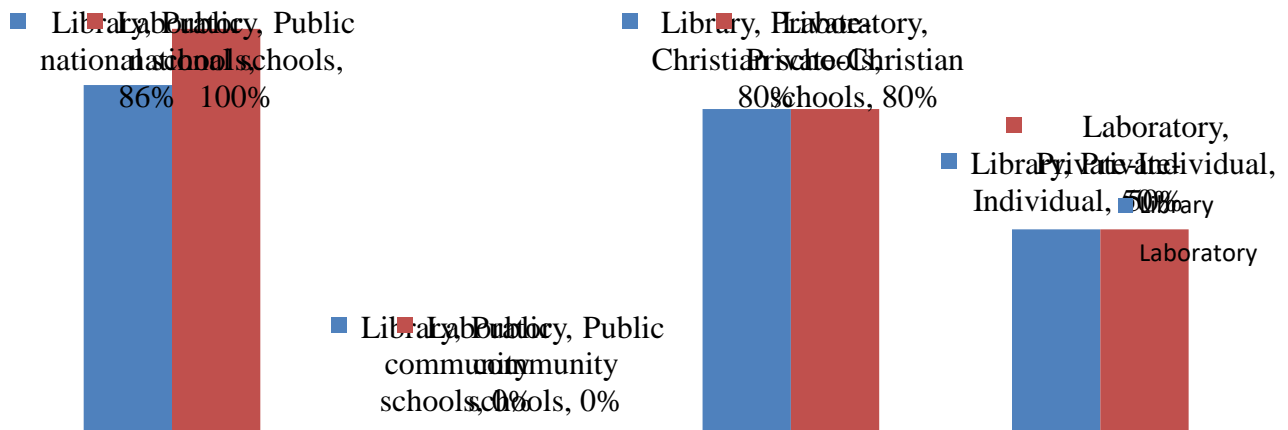


Figure 9: Proportion of schools with libraries and laboratories by school ownership category<sup>3</sup>

**Assumption 5: Schools with highly qualified teachers performed better than those with poorly qualified teachers**

To test the validity of this assumption, the qualifications of the teachers in the sampled 36 schools were assessed at four levels. A school with between 80-100 percent of graduate teachers was rated 'highly qualified', whereas a school with 50-79 percent of graduate teachers was rated 'qualified'. A school with between 40-49 percent of graduate teachers was rated 'average'. Finally, a school with less than 40 percent of graduate teachers was rated 'poor'.

Figure 10 shows that the public-national schools had the highest number of qualified teachers, followed by private schools owned by Christian-based institutions. Private schools owned by Islamic and individual organisations had the least proportion of qualified teachers. For example, 85.7 percent of teachers in public-national schools and 40 percent of teachers in private schools owned by Christian-based organisations were graduate teachers; however, none of the teachers were graduate teachers in the surveyed private schools owned by Islamic and privately based organisations. Nevertheless, it should be noted that, of the 303 teachers surveyed, only 11 (3.6%), 21 (6.9%) and 39 (12.9%) came from schools owned by Islamic, Christian and individual

<sup>3</sup> Schools owned by Islamic organizations were removed from this analysis due to these schools having a very small sample. Only one school qualified to be included in the final analysis.

organisations, respectively. The majority of the teachers came from public-national schools (116) and public community-based schools (116).

Despite having the highest number of qualified teachers, public-national schools were not the best performers in the 2010 National Form Four Examination. Chi-Square tests were conducted to examine the variation in performance by teachers' qualifications. The outcome shows that there was no statistically significant variation in performance between schools with highly qualified teachers and those with poorly qualified teachers:  $X^2 (N =23, 12) =7.88, p=.79$ . This implies that teachers' qualifications alone do not determine the good performance of students in examinations.

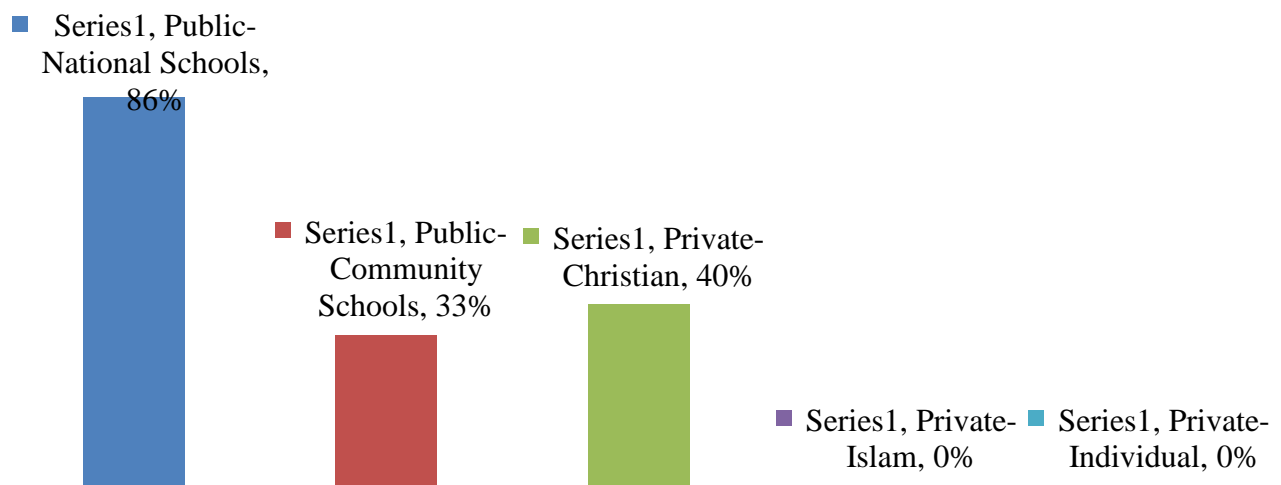


Figure 10: *Proportion of teachers with at least a degree by school ownership category*

### Conclusion

This analysis has examined the validity of the five common assumptions made on the 2010 National Examination Results. Of the five assumptions, only one assumption has been validated with certainty, the other four being simply myths. The analysis has shown that the 2010 National Form Four Examination results were not peculiar and that the massive failure that became a source of national consternation was predictable on the basis of the trend established by previous results leading up to that infamous year in terms of performance. Indeed, the analysis shows that there has been a consistent trend in poor performance in the past five years and the 2010 National Form Four Examination results were no exception but were actually the culmination of the steady decline in performance. As no pertinent remedial measures have been taken, future National Form Four results will predictably be as bad as, if not worse than, the 2010

results. Although the performance in Basic Mathematics was the worst of all the subjects, with only 16 percent of the candidates passing, the analysis has systematically debunked the myth that performance in the Sciences was worse than in the Arts and Humanities. Indeed, the performance in the Arts and Humanities was poorer than in the Sciences and Languages. Again, the widespread assumption that private schools always perform better than public schools has been systematically undermined by this analysis. With the exception of a few secondary schools affiliated to Christian organisations, public schools generally perform better than private secondary schools, especially when community-based schools—with a different operational dynamics and unique challenges—are excluded from the equation. On the whole, the analysis has confirmed that teaching and learning resources are important determinants of students' performance. In this case, secondary schools with better resources, such as a functioning laboratory and library, performed better than those without these facilities. Thus, teaching and learning facilities are significantly correlated with students' performance in national Form Four examinations.

Finally, the analysis shows that, although teachers' qualifications are important for enhancing students' learning, they are not sufficient in themselves. Alongside employing teachers with good teaching qualifications and credentials, there is a need to focus on improving their teaching commitment and continuous professional development. As a word of caution, the results of this analysis should be interpreted with care considering that they were mainly based on documentary review, and did not take into account the analysis of schools' teaching and learning conditions. As such, the results arrived at in this analysis are not conclusive but indicative of what could have affected students' performance in the 2010 National Form Four examinations. A more comprehensive study focusing on school teaching and learning conditions as well as classroom teaching practice is needed to establish with greater certainty the factors behind the massive poor performance in the Tanzanian secondary education system.

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