

Teacher Futures: Global Reaction to Teacher Shortages and Variations in Education Labour

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Abstract

Upcoming changes in the teacher labour supply will most certainly have an impact on those nations that provide government-based education for their youths. Faced with a significant global shortfall of educators, many nations have taken steps to incentivize teaching as a profession and ensure that qualified teachers are available to students in all locations particularly in rural environments. To highlight these initiatives, a review of the efforts three nations (Australia, the United States of America and Zambia) have undertaken to ensure a viable teacher workforce have been presented. While each nation has specific factors that contribute to current and projected shortages, each also provides unique solutions to assist in resolving this emerging issue.

Keywords: Teacher labour, rural education, teacher shortages, human resource

1.0 Introduction

It has been made clear that the primary factor, if not the most important component, of effective learning for students is directly related to the effectiveness of the teacher's classroom instruction and the community of educators that interact with individual students (Carroll & Foster, 2010., Mambwe et al., 2019). Teachers' perspectives and views are also important in the successful implementation of any education policy (Mambwe, 2019). Without a qualified and effective teacher, student achievement is limited leading to potential limited student success. The role of the teacher is, therefore, essential in the development of strong learning opportunities in the classroom. Yet, there is growing concern about the viability of providing teachers and educators in schools around the world (Sutcher, Darling-Hammond & Carver-Thomas, 2016).

During the last forty-years, there has been a discernable shift in the educator labour market as, in many instances and locations, fewer individuals have elected to pursue careers in classroom teaching. The challenges facing schools and governmental organizations in relation to locating, developing and retaining qualified educators continues to be difficult in many parts of the world. The United Nations has estimated that 69 million new teachers will need to be developed in the next decade (UNESCO, 2016). In many countries, teacher shortages are impacting student instruction already – particularly in hard-to-staff content areas such as secondary science and secondary math (Cross, 2017).

This study looks at three specific nations and their ongoing efforts to attract new individuals into the education profession, particularly in more difficult-to-

staff positions in rural regions. Rural regions are a particular focus as these schools are typically the first institutions impacted by educator shortages – particularly those schools in remote regions. In this framework, the shortages existing in rural schools can be seen as a potential precursor to emerging teacher labour shortage issues that will impact urban and suburban schools. By examining three specific regions around the world (Australia, Zambia and the United States of America), a greater understanding of the global magnitude of this problem has been explored, including the emerging solutions for this international concern.

2.0 Australia

Most of the Australia's population lives and attend schools in major urban centers (and the proximal suburban spaces) that are situated on the coastlines. Major metropolitan areas such as Sydney, Melbourne and, to a lesser extent, Perth comprise more than 80% of the total Australian population. Accordingly, the vast majority of Australia's primary and secondary (ages 5-17) student populations, as well as the majority of universities that prepare educators, are also located within these metropolitan areas. In total, there are more than 320,000 classroom teachers in Australian schools (Australian Bureau of Statistics, 2018a) with the majority living within 100 kilometers/62 miles of the coastline.

As a nation, however, Australia has large expanses of rural regions that encompasses the majority of the interior of the continent. Within these remote and rural regions, more than 74,000 students attend schools (Australian Bureau of Statistics, 2018b). Finding classroom teachers for these remote schools, however, has been a difficult undertaking (Mitchell et al., 2019; Kline, White, & Lock, 2013). Emerging and newly prepared educators have historically been hesitant to apply to the most remote and rural schools due to individual perceptions regarding social opportunities and professional limitations (Cuervo & Acquaro, 2018).

In response, various Australian states and territories have developed incentives, primarily monetary, to bolster the educator pipelines into more rural and remote regions. These incentives primarily focus on financial benefits, but several regions have also included other incentives related to enhanced professional development opportunities and additional off-time for teachers during the academic year. A table listing a sample of these incentives to entice teachers to rural schools is listed below:

Table 1: Australian Rural Teaching Incentives

<i>State/Territory</i>	<i>Salary Incentives</i>	<i>Development Incentives</i>	<i>Other Incentives</i>
New South Wales	Up to \$25,000 (AUD) salary adjustment; up to \$10,000 recruitment bonus	4 additional professional development days	Up to five additional personal leave days; potential subsidies for rental accommodation
Western Australia	Up to \$24,901 salary adjustment	Professional development offered through web-based platforms.	Additional leave for teachers in remote regions; free or subsidized accommodation; relocation costs provided; subsidized vehicle lease/purchase
Northern Territory	Up to \$23,952 salary adjustment	Specialized training (e.g., 4WD driver training)	Free or subsidized accommodation; up to four free flights to neighboring urban centers.

Many of the challenges related to rural teaching in Australia center on the remote nature of the smaller towns and villages throughout the country (Cornish, 2015). While some nations, such as the United States of America, may define remoteness as being more than two hours away from a major metropolitan area, there are regions in Australia that require driving time of more than 15 hours to reach the location of the rural school. This vast distance can be daunting to new teachers embarking on their initial teaching roles and requires them to make significant modifications to their lifestyle that they may have become familiar with during their time at university (Lavery, Cain, & Hampton, 2018). To compensate for this dramatic change in location and environment, some institutions have started shorter-term immersive experiences for pre-service teachers to experience teaching and living in these remote regions. To date, these have been beneficial as an increase in the number of students interested in teaching in remote locations has been recorded, but this process is dependent on a significant contribution of time and money on the part of the university and the university faculty to provide this opportunity (Mitchell et al., 2019).

The impact of these incentives on the long-term development and retention of rural educators is largely unknown but it is evident that student enrollment in Australian schools is projected to significantly increase to about 50% by 2035 as a result of these incentives, in nearly all states and territories. This places further demand on a limited teacher/educator labour pool (Australian Bureau of Statistics, 2013).

3.0 Zambia

Zambian education is highlighted by the unique population distribution throughout the country that shows a relatively balanced number of students in each region of the country. The 4.2 million students attending school in Zambia are dispersed throughout the country with the Copperbelt, Lusaka, Central and Southern provinces posting student enrollments of more than 500,000 students (Ministry of Education, 2018). To support these students, more than 107,000 teachers have been employed throughout the country. These teachers facilitate student learning

at the early childhood (ages 3-6), primary (7-13) and secondary (14-18) levels. According to the country's 2018 Educational Statistical Bulletin (Ministry of Education, 2018), the highest distribution of teachers in the country is within the Copperbelt province which is the mining hub of the nation. In this region, 19,761 teachers are employed, representing 18% of all teachers in the country. Other regions with significant numbers of employed teachers include Lusaka, the nation's administrative center, and the populous Southern province. In contrast, the Western province of Zambia has the fewest number of teachers employed.

Of particular concern in Zambia is the projected dramatic growth of school-attending populations within the next 15 years. According to the Zambian Central Statistical Office (2013,) there were roughly 4.2 million enrolled students at the early childhood, primary, and secondary levels. This number is projected to increase dramatically by 2035 with a projected population growth of all Zambians from ages 0-19 of approximately 40%. Based on this projection, it can be estimated that more than 5.8 million students will be enrolled by 2035 – an increase of 1.6 million students.

In Zambia, this student enrollment will, and has, increased more rapidly in urban areas than in rural areas. Yet, increasingly, most children in Zambia like in many African countries, who do not attend school are rural students (World Bank, 2005). A combination of demand-side and supply-side factors contribute to lower educational participation in rural areas, including aspects related to parental encouragement to attend school and alternative demands on their time, such as helping with agricultural tasks. Even when they attend school, rural children often find the curriculum less relevant to their lives and find less support for their learning from the home environment (World Bank, 2005). This makes children in rural areas more difficult to engage in education and often results in lower quality educational provision. It is hardly surprising then, that rural areas in Zambia show lower participation in education, and lower attainment.

Contrary to labour shortage patterns seen in other nations and regions of the world, Zambia may be uniquely prepared for an increase in total student numbers. At present, the number of trained teachers far surpasses the number of available vacant teaching positions (Phiri, 2019). This has resulted in Zambia developing agreements with regional external African governments, such as Seychelles and Madagascar, to have Zambian teachers sent to those countries to address teacher shortages (Lusaka Times, 2019a). Yet, despite the current surplus of teachers, there are also indications that Zambia continues to face teacher shortages in some circumstances. This problem centers on the nation's lack of capacity to employ teachers by the government (e.g., having teachers vetted, processed and hired), and even where this process is completed, there remains issues with deployment patterns and teacher retention particularly in rural areas.

As seen in the U.S.A and in other global locations, successful governments continue to find it more difficult to supply quality education services in rural areas (Biddle & Azano, 2016). Within the African context, three primary factors combine to weaken the quality of teaching in rural areas. First, in many African countries,

teachers have a preference to teach and live in urban areas with proximity to services and commercial/shopping enterprises. Accordingly, rural schools are often left with empty posts, or have longer delays in filling these vacancies (du Plessis & Mestry, 2019) and even when posts are filled, the number of qualified teachers seeking employment in rural schools remain low. In most cases, better qualified teachers have a greater choice of jobs and based on patterns of preference, many choose to work and live in urban areas. This can result in rural schools having less experienced teachers, as the more experienced teachers find ways to move to the more desired schools (World Bank, 2005).

To support these rural regions in Zambia, governmental incentives and decentralized recruitment strategies have been developed and implemented, resulting in increased compensation for teachers in remote and rural areas. While there is some evidence that these efforts have proven to be beneficial in supporting academic achievement for rural students (Chelwa, Pellicer & Maboshe, 2019), it is unclear as to how these efforts align with the current issue of over-supply of teachers within Zambia. Government, however, is on the right track by allocating a greater number of teacher vacancies during teacher recruitment to rural regions and decentralizing teacher recruits to district level. This will help address the problem of teacher imbalance between urban and rural schools and will help in ameliorating the problem of quality education disparity between urban and rural schools. However, to sustain these efforts, government should also address the various demand-side factors that cause teachers not to stay in rural areas despite the incentives such as rural and remote hardship allowances currently in place. It would appear that teachers in rural areas do not just need monetary incentives, because the disadvantages of teaching in rural areas (such as limited access to services, technology and other modern conveniences) far outweigh these salary-based incentives. It is, therefore, not surprising that most teachers prefer to work in urban areas, because the incentives for teachers in remote rural areas are clearly not sufficient to compensate for the various hardships (Pugatch & Schroeder, 2014; World Bank, 2006).

3.1 The High Teacher Annual Attrition Rate in Zambia

Further compounding this issue of shortage of teachers in Zambia and especially in rural areas, is a higher-than-projected teacher annual attrition rate across Zambia. While a standard attrition figure of 5,000 teachers is projected by the Ministry of Education, recent years have seen more than 7,000 teachers elect to leave their classroom positions (Ministry of Education, 2018). A reduction in the number of teachers when the pupil enrolment is increasing will likely have an adverse impact on education quality within the country. Various factors currently contribute to the high rate of teacher attrition in Zambia particularly in the rural areas (Das, Dercon, Habyarimana, & Krishnan, 2007). Firstly, once the teacher has been deployed and assigned a teaching location, they are able to request transfers to other areas after serving for a minimum number of four years. Many times, however, newly recruited teachers are able to beat the system because these transfers are often

requested on the basis of marriage, as it is logical that a teacher would want to live in the same area as his/her spouse. Hence, it is rare to find female teachers in rural areas, unless they are with their husbands (e.g., both are teachers). Male teachers are also able to transfer based on their need to complete further academic study, necessitating access to electricity which may not be available in some remote locations (Haanyika, 2008). Lastly, teacher illness is another major justification for movement, particularly from rural areas to more urban schools.

Student-teacher ratios may also be a contributing factor to this level of attrition as the nation averages 61.9 students for every early childhood and primary teacher and 37 students for every secondary teacher (Ministry of Education, 2018). With additional students, educator workloads tend to rise and job satisfaction declines. These elements frequently have a direct impact on teacher retention (He, Cooper & Tangredi, 2015).

3.2 Teacher Qualifications in Zambia

In addition, Zambia also possesses a unique characteristic related to teacher qualifications. In Zambia, roughly 25% of all teachers possess university degrees, far surpassing regional comparative nations such as the Democratic Republic of Congo (3.6%) and Senegal (4.8%) (Bashir, Lockheed, Ninan & Tan, 2018). The connection between teacher qualifications and student achievement has been extensively researched (Bietenbeck, Piopiunik & Wiederhold, 2018; Coenen, Cornelisz, Groot, Maassen van den Brink & Van Klaveren, 2018).

Recent political actions, however, will likely have a long-term impact in regard to teacher labour force development within Zambia. The operationalization of the Higher Education Authority (HEA) in 2015, as established under the Higher Education Act No. 4 of 2013, and the establishment of the Teaching Council of Zambia (TCZ), and the National Action for Quality Education in Zambia (NAQEZ) have largely been well-received, as these organizations seek to provide mechanisms related to quality assurance and quality promotion in higher education, through enhancing governmental policy related to educator preparation and teacher labour supply in Zambia (Mwalimu, 2014). What is also important to note is that this pattern of simultaneous surplus and shortage of qualified teachers is not just unique to Zambia, as it is also seen in other nations in Africa (Irving, 2012). Moreover the challenges related to teacher deployment, the lack of funds by governments to employ teachers, as well as the supply factors that make rural areas unattractive to teachers are commonplace throughout the African continent. However, compared to current teacher labour supply limitations found throughout most of the world, the case of Zambia makes it a nation worthy of future study regarding teacher labour supply and policy.

4.0 The United States of America

Concerns over educator shortages throughout the United States of America have been well-documented and have led to increased speculation about the viability of classroom-based careers and the retention of existing educators throughout the nation. At present, there are more than 3.5 million teachers employed throughout the United States of America (U.S.A Department of Education, 2019a), with most educators working in urban or suburban schools and school districts. One unique aspect of the American educational system is the lack of a nationalized curriculum or nationalized salary scale for teachers. Accordingly, there are more than 13,000 independent school districts that control most educational operations – including the approval of curriculum and the establishment of compensation policies for individual educators (U.S.A Department of Education, 2019b).

A projected shortfall of approximately 200,000 classroom teachers is anticipated in the United States of America by 2025 (Garcia & Weiss, 2019). Specialized teaching domains such as secondary mathematics and secondary science continue to have limited applicants to local schools in all school location types - urban, suburban and rural (Sutcher, Darling-Hammond & Carver-Thomas, 2016). Yet, there are little commonalities regarding teacher shortages based on geography. Where some states, such as Massachusetts and Ohio, continue to have applicant numbers that far exceed available teaching positions, other states such as Colorado and Alabama, frequently have vacancies in rural schools that attract zero applicants (Whaley, 2016).

To combat these challenges, both federal and state governments have developed various initiatives in an effort to promote teaching careers to potential future educators and to provide financial incentives for new educators entering the profession. With lower salary rates available for classroom educators in the United States of America as compared to other occupations requiring similar education qualifications, the number of individuals pursuing careers in education has been in decline through most of the start of the 21st century (Sutcher, et al., 2016). To remedy this shortage issue, several states have instituted financial incentives for teachers or teacher candidates – particularly for those interested in rural schools (Loewus, 2018). From a federal level, programs have been developed to help offset the high costs of university attendance – as all states require that teachers possess a four-year degree (Hegji, Heisler & Smole, 2018). In order to pay for the costly university education, many teachers are required to take out extensive loans, with the average loan debt for university graduates in the United States of America exceeding \$30,000 (Carrig, 2019).

In the U.S.A, several individual states have also taken steps to remarket the profession or make teaching more appealing to younger university graduates. Many states have examined avenues to reduce the barriers associated with teaching – particularly for those entering the classroom as a second career or those without

formal training in pedagogy or teaching methods (Lilly, 1992). Other unique efforts to increase the number of individuals into the classroom also include the established “Troops to Teachers” program that supports former military members in developing a professional pathway to becoming a classroom teacher. This specific program has been seen as significantly successful as student achievement has been accelerated in classrooms with these former members of the military (Owings et al., 2016).

Despite these initiatives, many rural schools throughout the country continue to be impacted by a scarce pool of teacher labour, and many positions remain unfilled (Hernandez & Cohen, 2019). Without significant governmental intervention that leads to resolution of many of the issues related to teaching in the United States of America, including low salaries, overwhelming workloads and school safety, it is difficult to foresee a significant increase of individuals seeking careers within government/public schools. Until these issues are resolved, American schools will continue to struggle with teacher recruitment and retention – particularly in the more rural and remote regions of the country.

5.0 Moving forward

With a developing shortfall of 69 million teachers worldwide within the next 15 years, there is need for concerted and specific efforts in the immediate future regarding the issue of teacher labour and supply. The incentives developed by various nations to support and promote teaching careers are an important and essential first step, but these cannot be the only initiatives developed in support of bolstering numbers into education careers. Specific efforts related to retaining existing educators, addressing factors that lead to teacher frustration and burn-out and developing school leaders that support classroom teachers should all be developed and implemented. Without the development of initiatives that directly impact classroom teachers, teacher shortages will continue, and likely expand, well into the mid-21st century. There is need therefore, for continuous action research meant to help governments, educators, and other education stakeholders uncover strategies to address the issue of teacher labour and supply especially the challenge of teacher attrition in rural schools. The undertaking of action research in resolving education related problems is recommended because action research will generate problem-based knowledge and interventions (Enala S. Lufungulo et al., 2021). The current shortages of qualified teachers in rural schools should be seen as a precursor to future staffing challenges in urban and suburban schools. Without proactive and intentional action, school effectiveness can be limited and academic development for students, impeded.

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