Analyzing Patterns Of Qualiified Teachers And The Impact Of Teacher Education Requirements In Small Island Developing States

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Introduction and Research Questions

The United Nations' Millennium Development Goal #2 had moderate success in achieving universal primary education, increasing primary school net enrollment in the developing world from 83% in 2000 to 91% in 2015 (MDG Monitor, 2017). Nodding to the progress of the previous 15 years, 2015's Sustainable Development Goal (SDG) #4 set forward to achieve further progress in education with targets to ensure inclusive and equitable quality education. The aim of target 4.C is to substantially increase the supply of qualified primary school teachers through international cooperation for teacher training in developing countries, especially the least developed countries and Small Island Developing States. In 2019, the U.N. reported that there has been little progress globally in increasing the percentage of primary school teachers who are trained, stagnating at about 85% since 2015 (U.N. Sustainable Development Goals Platform, 2019).

We chose to use SDG target 4.C to frame our research focus. Thus, we narrowed our focal countries to Small Island Developing States (SIDS) because of the indicated need by target 4.C for qualified primary teachers in these countries. Additionally, there is some variation amongst SIDS in variables such as teacher education requirements, income group, and geographical location, and we felt that such variation would allow us to further analyze existing patterns among and correlations between teacher education requirements, percentage of qualified teachers, and selected outputs. We also were interested in how SIDS' teacher qualification requirements compare to other countries globally. Small island countries share unique challenges impacting the supply of teachers, such as small populations, limited resources, remoteness, susceptibility to natural disasters, and little opportunity to create economies of scale (UN-OHRLLS, 2019). In this study, we are not attempting to establish causality in the relationship between national teacher education requirements and GDP per capita and literacy rates. We also acknowledge that any association between variables may be bidirectional such that cultural or economic context impacts the supply of qualified teachers and vice versa. We seek to answer the following research questions in our analysis:

1) What are the patterns of teacher qualifications in Small Island Developing States? Additionally, is there any variation in the percentage of teachers who are qualified in SIDS based on country income level?
2) Are stricter education requirements for primary school teachers in SIDS related to national outcomes for literacy of people ages 15-24 and GDP per capita?

Literature Review

Qualified teacher status as a measure of teacher quality

One of the most important factors in raising student achievement is a highly qualified teacher (U.S. Department of Ed, 2006). What is elusive, however, is how "highly qualified" teaching is conceptualized. In the United States, primary school teachers specifically are denoted as "highly qualified" when they hold a Bachelor's degree and have passed a rigorous state test, demonstrating subject knowledge and teaching skills in reading, writing, mathematics, and other areas of the basic elementary school curriculum (No Child Left Behind Act, 2001). UNESCO (2018) defines a highly qualified teacher as a teacher who has at least the minimum academic

qualifications required for teaching subjects at the relevant level in each country. However, this definition does not include the notion of trained teachers, which refers to teachers who have received at least the minimum organized pedagogical training, both pre-service and in-service, required for teaching at the relevant level. This results in teachers sometimes having the academic qualifications required to teach but not the pedagogical training, as well as teachers who lack both types of qualifications. Michelli (2004) states that a highly-qualified teacher is contested because "the legal definition of highly qualified is considered in the abstract and is not derived from how we conceptualize high-quality teaching" (p. 66) and posits that in the U.S. and other western countries, public purposes of education, such as preparing students to participate in political and social democracy, must be considered in determining what is high-quality teaching. These dimensions are not easily operationalizable in research and analysis, especially in less developed countries, which leads us generally to use other measures that are more tangible, including teacher certification and degrees obtained.

Previous studies present mixed findings when analyzing the impact of qualified teachers. In a study by Darling-Hammond (2000), investment in teacher quality, measured in qualifications, is shown to have a positive effect on student achievement, and teacher preparation programs and certifications have the highest correlation with student achievement in reading and mathematics. However, a study by Xin et al. (2004), finds that a teacher's level of education, certification status, and major do not have an effect on student math and science achievement scores and that the lack of positive association between credentials and performance can be explained by the inconsistent definition and measurement of "teacher quality." Notably, these two studies differ in context. The Darling-Hammond study focuses on the effect of teacher qualifications on student achievement across U.S. states while the Xin et al. study spans across four different countries (the United States, Korea, the Netherlands, and Japan).

Since existing literature does not concretely determine that qualified teachers, measured by education received and certification requirements, are also quality teachers, we understand the limitations of using the terms *quality* and *qualified* synonymously. Thus, for our study, we look at patterns of teacher qualifications and teacher education requirements in our countries of interest. We are not analyzing whether these patterns indicate that quality teaching is occurring, as that is beyond the scope of our study. Previous studies and definitions confirm the varied definitions of qualified teacher status globally, and the challenges of achieving universal qualified primary teachers—discussed later in the literature review—are derived from inconsistent definitions for quality teaching.

Long-term impact of quality teachers

The long-term impact of quality teachers can be difficult to measure and a child's education is cumulative in the sense that a child is exposed to several teachers, of varying quality, throughout schooling (Lee, 2018). Thus, it is imperative that students are continuously exposed to teachers of high quality, especially for students from disadvantaged backgrounds. Goldhaber et al. (2015) found inequitable distribution of high-quality teachers across classrooms, and the teacher labor market explains some of these sorting mechanisms.

Several studies, mostly in the context of American schools, have looked for trends of long-term student impact as a function of teacher quality. A study by the American Education Research Association found that teacher quality indices were found to have an overall positive relationship with students' odds of graduation (Lee, 2018). Chetty et al. (2012), in a large scale study of 2.5 million children from grades 3-8, found that students assigned to high "value-

added" teachers are more likely to attend college, earn higher salaries, live in higher SES neighborhoods, and save more for retirement. They found that replacing a teacher whose value-added falls in the bottom 5% with an average teacher would increase students' lifetime income by more than $250,000 for the average classroom in their sample.

These studies demonstrate that there is evidence of long-term impact of having quality teachers. However, the operational definitions of teacher quality vary, and few studies look at the impact of qualified teachers or teacher education requirements on long-term outputs. Thus, our study is unique in that it analyzes if there is a possible relationship between stricter teacher education requirements and the outcomes of literacy rates and GDP, both of which serve to measure the long-term impact of quality teachers in primary school.

Challenges of attaining qualified teachers

Globally, access to universal primary education has increased primary school enrollment by about 10% from 2000-2015 and created a demand for teachers. Looking at achieving universal primary school enrollment by a 2030 deadline, UNESCO's Institute for Statistics (UIS) has projected that more than 27 million teachers will need to be hired, and that at least 93 countries have an acute teacher shortage. Population growth and age distribution can also contribute to the teacher shortage. With pressure to fill vacancies, many countries are recruiting teachers without the most basic qualifications (UNESCO, 2019). Sub-Saharan Africa and South Asia are the regions with the largest teacher shortages. Some countries, such as Ghana, show that while the number of primary teachers has increased by 61% over the past decade, the percentage of trained teachers has decreased by 26% (Hodal, 2016).

It is predicted, using UIS data, that to reach the SDG target by 2030, roughly 17 million primary and secondary teachers will need to be recruited and trained in Sub-Saharan Africa alone (Hodal, 2016). Globally, the profession does not attract or retain enough teachers because of factors such as low salaries, poor working conditions, and a lack of career development options. Pitsoe & Machaisa (2012) posit that not only does teacher attrition have negative impacts on the quality of learning, but it also presents a hurdle in achieving development goals and in some regions, such as Sub-Saharan Africa, teacher recruitment and retention is deemed a policy crisis.

Additionally, the regulation of requirements for entering and remaining in the teaching profession vary greatly among countries, creating challenges for achieving a workforce of qualified teachers. In most countries, the standards and requirements that regulate the quality of teaching are determined by the government. There is a trade-off between nationally determined requirements, that leads to greater homogeneity, and decentralized control, which leads to greater variation in qualified teachers. In some developed countries, the responsibilities for determining statutory requirements are delegated to a non-governmental body that strives to be more representative of the individuals who belong in the profession. Likewise, the regulation of initial teacher education may be enacted by national, subnational, or local authorities. Regulations can assure the quality and consistency of teacher education programs, but they can also become outdated and difficult to reform or be challenging to enforce. The type and quantity of requirements can determine the extent to which the quality of teaching is monitored when entering the profession (The World Bank, 2013).

This depiction of the differences in governing bodies and regulations for determining standards for quality teaching is a limitation in our study's analysis because there is not one single framework for regulation of teacher quality neither worldwide nor amongst Small Island Developing States. Thus, it is difficult to determine if the effects of stricter teacher education

requirements or more qualified teachers on academic or economic outcomes is due to variation in the training and qualification requirements. However, by understanding the present structural challenges of attaining a workforce of universal qualified teachers, we have some context to explain existing patterns, especially in those countries with a low percentage of qualified teachers. Countries that are outliers in our sample likely indicate differences in governmental control in regulating teacher training and entrance to the field, which we will discuss further in our policy recommendations.

Methods

For our study, we used existing data from the World Policy Centre, UNESCO Institute for Statistics, and The World Bank (see Figure 3). To select countries for our sample, we used the list of Small Island Developing States as defined by the Sustainable Development Goals Knowledge Platform. This list consists of 38 U.N. member countries and 20 Non-U.N. Members/Associate Members of Regional Commissions. From this list, we included all countries that had data available for the indicators in our sample. For research question 1, our sample included 23 Small Island Developing States. For research question 2, our sample consisted of 24 countries, though only 19 had data available on literacy rates and GDP to determine if there was a relationship between stricter educational requirements of teachers and national outcomes of literacy for people ages 15-24 and GDP per capita.

For the first research question, we analyzed the variables of region (Sub-Saharan Africa, Latin America & Caribbean, East Asia & Pacific, and South Asia), income level (low, middle, and high), and the percentage of qualified teachers (see Figure 1). For the second research question, we analyzed similar variables of region, income level, and percentage of qualified teachers, as well as the minimum educational requirements for primary school teachers (lower secondary education, completion of secondary, Bachelor's degree, Bachelor's with training, and Master's degree) (see Figure 2).

Results

Research question 1: Patterns in percentage of qualified teachers in SIDS

To determine patterns in the percentage of teachers that are qualified in Small Island Developing States, we utilized descriptive statistics for the variable. In our sample (n = 23), the mean percentage is 78.1% and the standard deviation is 22.5. In our sample, the country with the lowest percentage of qualified teachers is 16.2%, and the mode as well as maximum percentage is 100%. The data is also skewed left, which means that more countries have a higher percentage of qualified teachers than a lower percentage. When comparing SIDS to the 85% global average, 11 countries had a percentage higher than 85% (Bahrain, Barbados, Cape Verde, Cayman Islands, Maldives, Mauritius, Puerto Rico, Saint Kitts and Nevis, Seychelles, Suriname, Turks and Caicos) and 12 countries fell below the global average (Belize, Comoros, Dominica, Dominican Republic, Grenada, Jamaica, Saint Vincent, Sint Maarten, Solomon Islands, Vanuatu). Globally, there is public data for primarily the targeted countries of SDG 4.C (least

developed countries and Small Island Developing States), and no data is reported for the majority of large, developed countries (see Figure 5). Thus, our assumption is that the global average for percentage of qualified teachers is likely higher than 85%, which would mean that the SIDS mean of 78.1% of qualified teachers could fall significantly below the global mean.

To determine if there is any variation in the percentage of qualified teachers based on country income level, we conducted an ANOVA test. Analyzing descriptive statistics shows that high-income countries (n = 9) had a mean percentage of qualified teachers of 91.12 and a standard deviation of 11.52. Medium/low-income countries (n = 14) had a mean percentage of 69.73 and a standard deviation of 24.09. However, there was only one low-income country in our sample, so we combined low- and middle-income countries into one group for our analysis. The sample size (n = 23) was too small to conclude statistical significance.

Research question 2: Impact of stricter education requirements for teachers

To determine if stricter education requirements for primary school teachers in SIDS were related to national outcomes for literacy of ages 15-24 and GDP per capita Purchasing Power Parity (PPP), we calculated a Pearson's product-moment correlation coefficient using the variable *teacher education requirements* (ordinal variable) and the outcomes of *literacy* and *GDP per capita (PPP)* (continuous variables). However, we were unable to find any significant correlation between variables in our sample of Small Island Developing Countries, likely due to many spurious variables and a small sample size.

Descriptive statistics for the level of education required for primary teachers in SIDS, especially when contrasted with countries globally, provide the standard requirements for teachers. In our sample of SIDS (n = 24), only 29.2% of countries required a Bachelor's degree with training, 66.7% of countries required completion of secondary education, and 4.2% of countries required completion of lower secondary education to teach in primary grades (see Figure 6). By contrast, descriptive statistics for nations across the globe (n = 168) show that 6.6% of countries require lower secondary education, 39.3% of countries require completion of secondary school, 3.0% require just a Bachelor's degree, 48.8% require a Bachelor's degree with training, and 2.4% require a Master's degree (see Figure 7). Thus, when comparing SIDS to all countries globally, the percentage of countries requiring a postsecondary degree to teach primary school is significantly lower than the global percentage (29.2% compared to 54.2%).

Lastly, we conducted a significance test of Pearson's correlation coefficients for the global sample to determine if there is any relationship between minimum educational requirements for primary teachers (ordinal variable, n = 168) and the continuous variable outputs GDP per capita (PPP) (n = 227) and literacy rate for ages 15-24 (n = 108). While this analysis deviated slightly from our original research questions, it enabled us to make policy recommendations about the value of stricter teacher education requirements to a country's income based on correlations in an international setting. There is a positive, moderate correlation that is highly significant between education requirements for teachers and GDP per capita (PPP). There is a positive, weak correlation of 0.24 between education requirements and literacy rates for people ages 15-24 that has marginal significance (see Figure 8). We cannot make any causal claims in this analysis, but we will utilize the significance of these correlation coefficients to make some policy recommendations about maintaining stricter teacher qualifications in all countries, including Small Island Developing States.

Discussion

Policy recommendations

Our policy recommendations serve to ensure that SDG target 4.C of substantially increasing the supply of qualified teachers is met. The current definition provided by the U.N. for a qualified teacher ("has at least the minimum academic required qualifications required for teaching subjects at the relevant level in each country") is vague and allows for evident inconsistencies between countries, as shown by the results of our research (UNESCO, 2019, p. 76). To reach target 4.C by 2030, the U.N. should develop a clear, universal definition that indicates the level of education and training requirements for qualified teachers. Though more specific research is needed to support the benefits of higher degrees on educational outcomes, the current U.N. definition for qualified teachers does not indicate that a Bachelor's degree is the desired minimum required qualification for teachers, which creates ambiguity in how individual countries determine their qualifications or whether tertiary education is beneficial.

As we will discuss in our limitations section, data was absent from over half of the Small Island Developing States. Thus, we recommend that countries improve practices to better collect data on teacher qualifications and teacher training requirements if such requirements exist. If the lack of data indicates that there is no standardization for teacher qualification or educational requirements for primary teachers, those countries should determine and subsequently enforce national requirements in order to produce a well-trained, qualified teaching force for maximized student outcomes. There is evidence from our study that greater educational requirements for teachers is positively correlated with GDP per capita; therefore, we recommend that SIDS enforce attainment of at least a Bachelor's degree with training for better economic outcomes.

Though our study's sample was too small to determine that stricter education requirements are correlated with higher literacy rates or GDP per capita in SIDS, the correlation between these variables in the global sample demonstrates two predicted beneficial outcomes from stricter education requirements for teachers. Requiring teachers to attain a degree and receive specialized training increases the professionalization of teaching, as shown in countries such as South Korea or Finland where teaching is a highly respected profession. In order to attract and recruit more qualified individuals who have received a Bachelor's degree with teacher training, countries should further develop programs to help teachers attain credentials. Such programs or policies could include expedited programs in teacher training for those who already hold a Bachelor's degree, student loan forgiveness programs for teachers, and teacher training tracks in upper secondary school to expedite the pipeline to the teacher workforce. These types of policy changes may not only help increase the supply of qualified teachers, but also may help reduce the teacher shortage that many countries are facing. If SIDS struggle to find the resources to take these actions—which is highly possible, as domestic expenditures in low and middle income countries cannot cover the costs of achieving SDG 4—aid from organizations such as the World Bank can make up for the shortfall. Unfortunately, aid to education has been stagnant since 2010 (Global Education Monitoring Report, 2017). Thus, it is imperative that multilateral donors such as The World Bank and Global Partnership for Education continue funding implementation grants for countries most in need.

As our literature review suggested, teacher attrition is a significant challenge impacting the supply of qualified teachers. Thus, we have provided policy recommendations to retain teachers who are already qualified in the profession. Special benefits should be provided to

reward teachers who possess the appropriate qualifications, including salary and other benefits packages. These could also motivate teachers who are not qualified or do not have a degree to attain the appropriate credentials. In the U.S., for example, many teachers earn a master's degree in order to move to a higher pay scale. In order to improve teacher's working conditions, a factor driving many teachers away, ongoing professional development, classroom support, and greater autonomy could help to retain those teachers who have the appropriate qualifications and improve teacher engagement and satisfaction.

Limitations and Next Steps

While conducting our analysis, there were inconsistencies in the data reporting that were a source of limitation for our study. The first limitation was the quantity and quality of data that we had retrieved for SIDS. For example, when analyzing our second research question, we utilized data from the most recent year available for our desired variables (literacy rates for ages 15-24 and GDP per capita). Lack of data reporting meant that the data available was not all from the same year and the most recent data available for literacy rate in Belize was from 1991.

The lack of complete data reporting also greatly reduced our sample sizes. Of the 58 SIDS, we were only able to use 23 of 58 and 24 of 58 countries respectively for our two research questions due to incomplete or missing data sets. When calculating the correlation coefficients between minimum teacher education requirements and the outcomes of literacy rates and GDP per capita, only 19 countries had data available for all three variables.

An additional limitation in our study is the lack of consistent conceptualization for the specific requirements of "qualified teacher" and "Bachelor's with training." Without a universal definition for qualified teachers, we assume there are inconsistencies among countries in the difficulty of attaining qualified teacher status to teach primary school. Additionally, the indicator "Bachelor's with training" for the teacher educational requirement variable from the World Policy Centre does not denote what the duration or specific training requirements are in various countries. Since some countries require a Bachelor's degree, as opposed to a Bachelor's with training, we assume that the additional training is pedagogical and/or content-focused in order to prepare pre-service teachers for the role.

Lastly, we acknowledge that our study serves to portray patterns and correlations, not causality. When analyzing the relationship between teacher education requirements and literacy rate and GDP, we did not conduct regression analysis with potential covariates that would impact the relationship between the independent and dependent variables, including political and cultural factors that are not easily quantifiable in empirical analysis. Our policy recommendations stemming from our analysis, as summarized in the previous section, are intended for loose interpretation. Further research would be needed to suggest causal relationships between qualified teachers, stricter educational requirements for teachers, and national outcomes.

For future areas of study, it would be beneficial to further analyze the impact of higher levels of teacher education on student outcomes. Having further empirical studies to provide rationale for the value of enforcing stricter educational requirements for teachers could support the adoption of policies for postsecondary educational requirements for teachers globally, especially in Small Island Developing States. We also believe that more descriptive research on teacher qualification structures globally would allow for a better understanding of how countries are training and preparing qualified teachers to serve in the classroom. Research of this kind

would enable the U.N. to create a definition for qualified teachers, per our policy recommendations, that is suitable for the largest number of settings. Finally, we support the collaboration of research and policy to enhance the professionalization of teachers. We would like to see more qualitative research about the overall impacts of having a more qualified, educated workforce of teachers and what social and economic outcomes transpire from such changes.

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Appendix

Figure 1: Percentage of Primary School Teachers Who Are Qualified

Country	Region	Income Status	Percentage of primary teachers who are qualified	Year Recorded
Bahrain	Middle East & North Africa	High Income	96.28	2014
Barbados	Middle East & North Africa	High Income	100	2014
Belize	Latin America & Caribbean	Middle Income	28.82	2014
Cape Verde	Sub-Saharan Africa	Middle Income	91.23	2014
Cayman Islands	Latin America & Caribbean	High Income	88.19	2013
Comoros	Sub-Saharan Africa	Low Income	75.06	2013
Cuba	Latin America & Caribbean	Middle Income	81.39	2014
Dominica	Latin America & Caribbean	Middle Income	64.81	2014
Dominican Republic	Latin America & Caribbean	Middle Income	81.27	2014
Grenada	Latin America & Caribbean	Middle Income	48.67	2014
Jamaica	Latin America & Caribbean	Middle Income	69.76	2013
Maldives	South Asia	Middle Income	86.06	2014
Mauritius	Sub-Saharan Africa	Middle Income	100	2014
Puerto Rico	Latin America & Caribbean	High Income	100	2013
Saint Kitts and Nevis	Latin America & Caribbean	High Income	100	2014
Saint Vincent and the Grenadines	Latin America & Caribbean	Middle Income	16.24	2014
Seychelles	Sub-Saharan Africa	High Income	76.35	2014

Sint Maarten	Latin America & Caribbean	High Income	68.91	2014
Solomon Islands	East Asia & Pacific	Middle Income	68.64	2014
Suriname	Latin America & Caribbean	Middle Income	94.14	2014
Turks and Caicos Islands	Latin America & Caribbean	High Income	90.41	2015
Vanuatu	East Asia & Pacific	Middle Income	70.09	2013

Figure 2: Teacher Education Requirements, Literacy Rate, and GDP Per Capita (PPP)

Country	Region	Income Status	Teacher Education Requirements	Literacy Rate (%)	Year Recorded	GDP per Capita (PPP)
Bahrain	Middle East & North Africa	High income	Bachelor's with training	100	2018	47,219.80
Barbados	Latin America & Caribbean	High income	Completion of secondary	100	2014	18,526.00
Belize	Latin America & Caribbean	Middle income	Completion of secondary	78	1991	8,786.50
Cape Verde	Sub-Saharan Africa	Middle income	Bachelor’s with training	.	.	.
Comoros	Sub-Saharan Africa	Low income	Completion of secondary	78	2018	2,827.90
Cuba	Latin America & Caribbean	Middle income	Bachelor's with training	100	2012	.
Dominica	Latin America & Caribbean	Middle income	Completion of secondary	.	.	.
Dominican Republic	Latin America & Caribbean	Middle income	Bachelor's with training	99	2016	17,798.80
Fiji	East Asia & Pacific	Middle income	Completion of secondary	100	2017	11,003.70

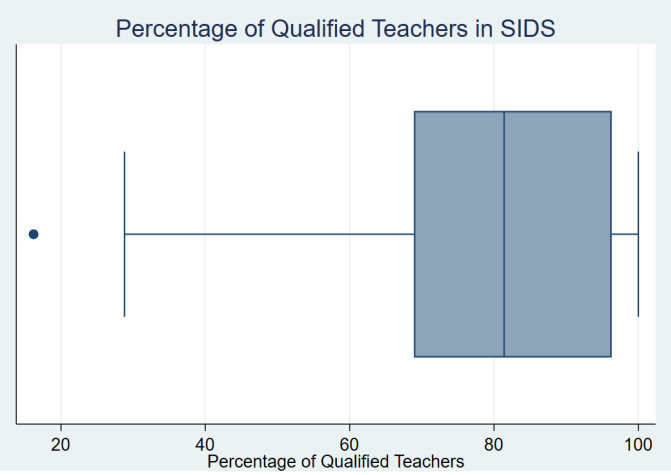
Grenada	Latin America & Caribbean	Middle income	Completion of secondary	99	2014	15,716.80
Guyana	Latin America & Caribbean	Middle income	Completion of secondary	97	2014	8,568.80
Haiti	Latin America & Caribbean	Low income	Bachelor's with training	83	2016	1,863.30
Jamaica	Latin America & Caribbean	Middle income	Completion of secondary	96	2014	9,298.80
Maldives	South Asia	Middle income	Lower secondary education	99	2016	15,312.30
Mauritius	Sub-Saharan Africa	Middle income	Completion of secondary	99	2018	23,709.10
Papua New Guinea	East Asia & Pacific	Middle income	Bachelor's with training	68	2010	4,298.70
Samoa	East Asia & Pacific	Middle income	Completion of secondary	99	2018	No data
Singapore	East Asia & Pacific	High income	Completion of secondary	100	2018	101,352.60
St. Kitts and Nevis	Latin America & Caribbean	High income	Completion of secondary	.	.	.
St. Lucia	Latin America & Caribbean	Middle income	Completion of secondary	.	.	.
St. Vincent & the Grenadines	Latin America & Caribbean	Middle income	Completion of secondary	.	.	.
Suriname	Latin America & Caribbean	Middle income	Completion of secondary	99	2018	15,497.90
Trinidad and Tobago	Latin America & Caribbean	High income	Bachelor's with training	100	2010	32,227.80
Vanuatu	East Asia & Pacific	Middle income	Completion of secondary	96	2018	3,201.80

*period denotes missing data

Figure 3: Data Sources and Indicators

Name of Source	Indicator(s) Used	Indicator Information	Use in this study
World Policy Centre	How much education must primary-school teachers complete?	Accessed at https://www.worldpolicycenter.org/	Research question 2
	UN Region		Research questions 1 and 2
	World Bank Country Income Group		Research questions 1 and 2
UNESCO Institute for Statistics	Percentage of teachers in primary education who are qualified, both sexes	Accessed from https://sdg-tracker.org/quality-education	Research question 1
The World Bank: World Development Indicators	GDP per capita (PPP) (current international $)	Accessed from https://databank.worldbank.org/home.aspx	Research question 2
	Literacy rate, youth total (% of people ages 15-24)		Research question 2

Figure 4: Boxplot of Percentage of Qualified Teachers in SIDS



This boxplot shows that the country with a percentage of 16.2 qualified teachers is an outlier.

Figure 5: Global Percentage of Qualified Teachers (The World Bank, 2015)

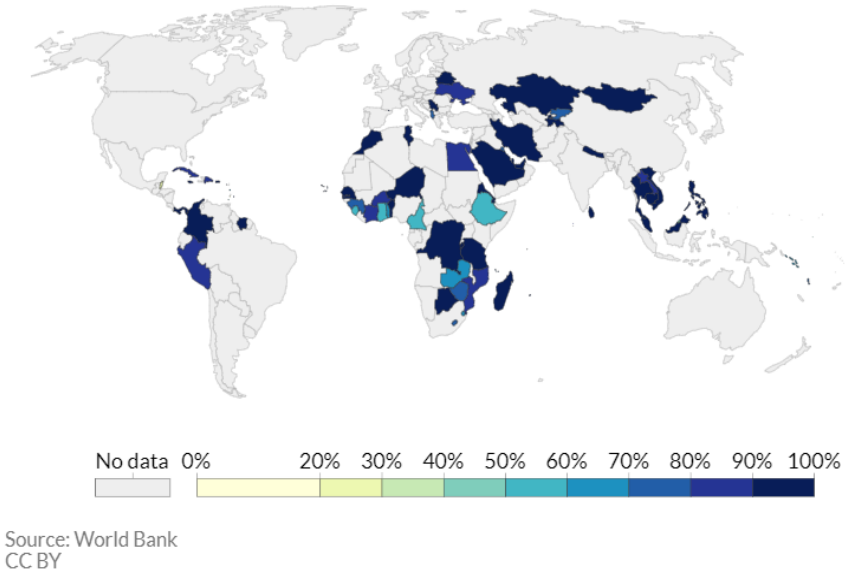


Figure 6: How Much Education Primary School Teachers Must Complete in SIDS

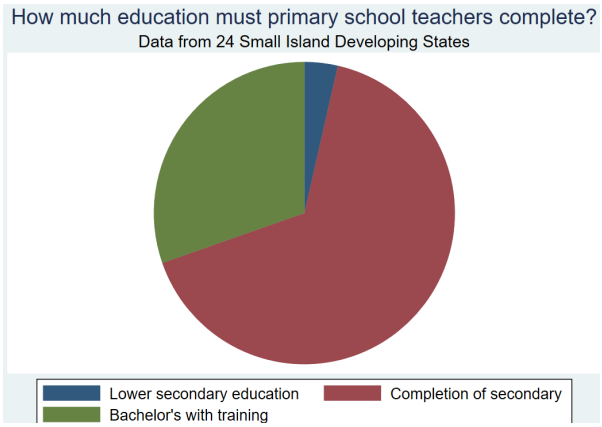


Figure 7: How Much Education Primary School Teachers Must Complete Globally

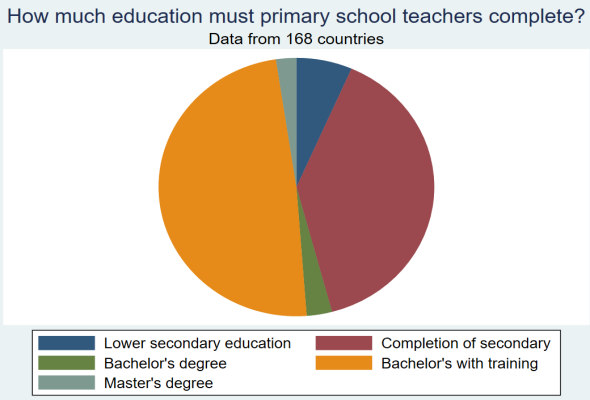


Figure 8: Pearson Correlation Coefficients Between Literacy Rate (15-24), GDP Per Capita (PPP) and Teacher Education Requirements

	GDP Per Capita (PPP)	Literacy Rate	Minimum Teacher Educational Level for Primary
GDP Per Capita (PPP)	1		
Literacy Rate	0.31**	1	
Minimum Teacher Educational Level for Primary	0.47***	0.24*	1

*** P < .001
** P < .05
* P < .1