

Innovative Research on the Implementation of the "Quality Schools" Program in Australia

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Abstract

The scores of Australian students in the International Student Assessment Project (PISA) have been decreasing year by year, and the scores of students in urban and rural or remote areas are quite different, which indicates that the fairness and quality of education have not been well guaranteed. Development and innovation are imperative. Australia has formally implemented the Federal Government's "Quality Schools" program since 2018. Its core content is to innovate school education funding models and review the challenges faced by school education, to further guarantee the fairness and quality of Australian basic education. The innovative Social Economic Status (SES) direct measurement method of the "Quality Schools" program uses the data technology that most truly reflects the income levels of students' parents and guardians, and improves the accuracy of scoring by reflecting the actual situation of the students' families at school. The SES direct measurement method uses income tax data collected once a year to quickly respond to demographic changes in the school community. The federal government will also increase funding accordingly to ensure that the school goes through difficult times and maintains educational standards.

Keywords: *Australia, Education funding system, Basic education*

1. Introduction

Although Australia has increased its educational expenditures year by year, the scores of Australian students in the International Student Assessment (PISA) continued to decline from 2000 to 2015, and the scores of students in urban and rural or remote areas are quite different. It shows that the fairness and quality of education have not been well guaranteed, and it is imperative to develop and innovate the education funding system. Therefore, the Australian Federal Parliament passed the amendment to the Australian Education Act 2013 in June 2017, stipulating that the Federal Government's "Quality Schools" program will be formally implemented from 2018. The core content is to innovate school education funding models and review school education to further ensure the fairness and quality of basic education in Australia. The plan pointed out that the federal government will increase the amount of funding for school education and innovate the funding amount algorithm for non-public schools. This article aims to analyze the above-mentioned two aspects of system innovation, analyze the education funding mechanism that meets the actual needs of students, and hope to provide a reference for the country to implement the education funding system innovation.

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Under the dual influence of human capital theory and the concept of social justice, most countries in the world will gradually provide students with fair and high-quality school education as a top priority. A large number of empirical studies have shown that reasonable education funding is of great benefit to improving the quality of education and narrowing the gap between schools. Education funding should not only focus on the improvement of the level of education funding but also pay attention to the fairness of the distribution of educational resources. First, sufficient financial resources are a necessary prerequisite for providing quality education. A study in the United Kingdom showed that when the government reduced education funding per student, the school budget was not enough to retain excellent teachers or provide quality courses, and student academic performance fell accordingly [1]. Secondly, education funding is of great significance to disadvantaged groups. It can provide compensatory education measures for the educated in a disadvantaged position, thereby reducing the negative impact of social and economic background disadvantages on their education. American scholars found through follow-up research that when the state government prefers resources to schools in poverty-stricken areas, it can reduce the gap between schools while ensuring the quality of education [2].

Parents' motivation to choose a school is determined by the economic and cultural capital they possess. Parents of the superior class have higher income levels and educational levels, have higher requirements for the quality of school education, and can afford the cost of their children attending high-quality schools. In contrast to disadvantaged families, parents are affected by their limited education and lack attention to high-quality school education, or the high tuition fees of high-quality schools discourage parents. To a certain extent, these families have passively lost part of their educational options. Given this, the government should provide additional support to disadvantaged students in the form of education subsidies, so that disadvantaged families can also choose better school education. In addition, many inferior families with religious beliefs in Australia cannot afford the expensive tuition fees of private church schools. Educational funding from the government is expected to make private church schools the choice of these families so that their children have the opportunity to study in schools that fully reflect their beliefs and values.

2. "Quality Schools" plan to increase the amount of school education funding

2.1. Establish school education resource standards

Fair and high-quality education require fairness in educational outcomes, which means that every school can enable school students to meet specific educational quality standards. The government needs to measure the cost of schools to meet the educational quality standards and formulate education funding accordingly. The Australian Federal Government measures the above costs regarding the method of successful schools: First, 80% of the school students have reached the minimum standards of the National Assessment Program Literacy and Numeracy (NAPLAN) for three consecutive years as successful schools, and then Analyze the level of operating funds of these schools, and then draw the school education resource standard (SRS) [3]. SRS includes the base amount and 6 kinds of additional funding for both primary and secondary students. Among them, the per-student funding base of government schools is entirely borne by taxpayers; the per-student funding base of non-government schools is based on the "capacity to contribution" of the school community (parents and guardians of students) contribute adjustment shown in [Figure 1] [4].

2.2. Increasing the funding base per student

With the development of the economy and technology, the cost for schools to train students to adapt to globalization skills and knowledge is increasing. Therefore, the "Quality Schools" plan increases the funding base per student year by year to reduce the burden on schools. In 2018, the per-student funding base for primary school students will increase by 14% in 2017, and the per-student funding base for secondary school students will be A\$14,761, an increase of 13% over 2017. In addition, to ensure that the amount of funding in different states and territories is proportional to the actual needs of students, the federal government has implemented the "Consistent Commonwealth Funding Arrangements" from 2018. The agreement stipulates that the federal government is responsible for at least 20% of the SRS of public schools and 80% of the SRS of non-public schools. By 2023, schools receiving education funding below this ratio will receive more funding, and schools receiving education funding higher than this ratio will be gradually reduced in education funding before 2029 [5].

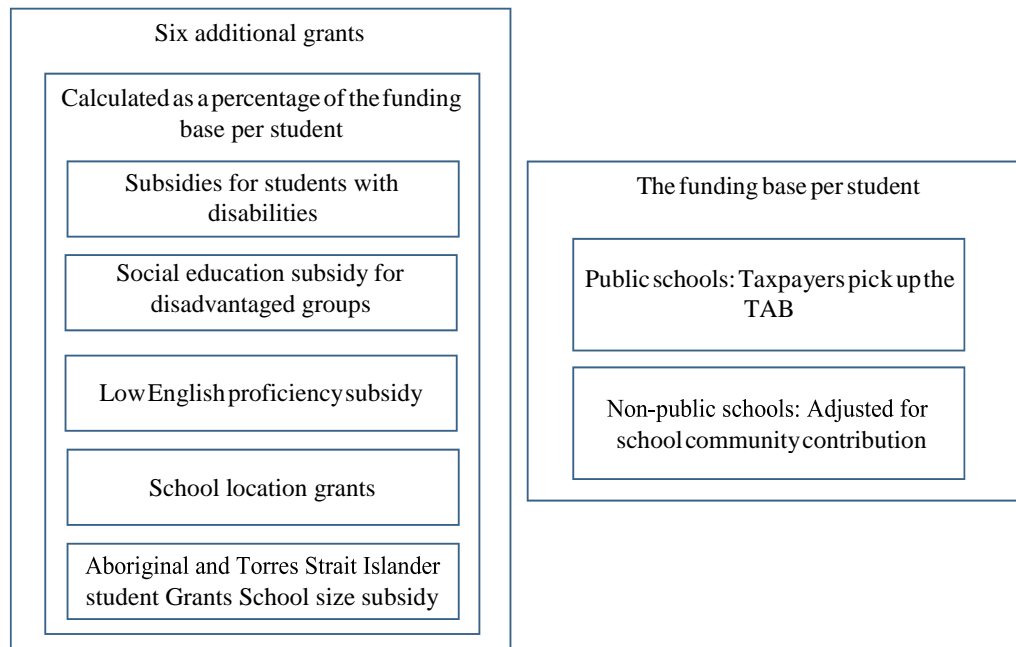


Figure 1. The composition of school education resource standards

The "Quality Schools" plan to increase the funding base per student year by year is mainly due to the following two reasons. One is that the development of schools directly affects the results of education, and the allocation of educational resources in line with actual educational needs can help schools improve teaching[6]. Sufficient education funds can provide students with sufficient and high-quality learning infrastructure, ensure high-efficiency school leaders, and hire and retain excellent teachers. Second, the school resources in different regions of Australia are very different, and different education investment is needed to ensure fairness. PISA data over the years shows that the academic performance of three types of students in Australia-students with lower socioeconomic status, students in rural and remote areas, and aboriginal students have always been lower than other peers[7].

2.3. Increase 6 kinds of additional funding to meet the educational needs of disadvantaged groups

A longitudinal study of Australian students by Dempsey and Davies found that approximately 12.3% of students have additional educational needs [8]. To institutionalize funding for disadvantaged groups, the Australian Education Act (2013) stipulates that the federal government should base on the number of Aboriginal students in schools, the number of students with disabilities, the number of students with non-English speaking backgrounds, and the number of students with low socioeconomic status. Provide additional funding for schools. The "Quality Schools" program will continue this measure and gradually increase funding for disadvantaged students.

(1) Disabled student allowance

Disabled student subsidies help improve the school’s ability to meet the needs of disabled students. Although relevant Australian laws prohibit schools from treating students unfairly on the grounds of disability [9], most schools are unable to meet the special education needs of students with disabilities. The school does not have enough funds to make corresponding adjustments, such as improving teaching and learning methods, updating student evaluation methods, improving the school environment, providing personalized education, and providing professional learning for faculty and staff [10]. To solve the problem of insufficient funds, the "Quality Schools" program increased additional funding for students with disabilities. In 2019, the Australian Federal Government will use 9.7% of the regular school funds to subsidize students with disabilities. From 2018 to 2029, the amount of this subsidy will increase by 5.7% per year on average.

In addition to increasing funding, the "Quality Schools" program also changes funding models to ensure fairness. The federal government originally adopted a "one size fits all" funding model for students with disabilities: providing 186% of the per-student funding base for all disabled students in mainstream schools, and 223% of the per-student funding base for students studying in special schools. Under this model, students with disabilities studying in similar schools can receive the same level of funding even if they have different levels of disability, which is unfair to students with higher levels of disability. Given this, the "Quality Schools" plan uses the Australian Nationally Consistent Collection of Data on School Students with Disability (NCCD) to provide information on the level of support required for school students with disabilities to study at school. There are three levels of additional funding for students with disabilities at the secondary school level so that funding is provided differently [Table 1].

Table 1. Changes in the mode of additional funding for students with disabilities

Additional funding methods for students with disabilities	Additional funding method for students with disabilities in the "Quality Schools" Program
Disabled students in mainstream schools can get: 186% × per student funding base	Elementary School: "Supplementary" level: 42% × per student funding base "Enriched" level: 146% × per student funding base "Comprehensive" level: 312% × per student funding base
Students with disabilities in special schools can get: 223% × per student funding base	Middle School: "Supplementary" level: 33% × per student funding base "Enriched" level: 116% × per student funding base "Comprehensive" level: 248% × per student funding base

(2) Subsidies for disadvantaged groups in social education

Subsidies for disadvantaged groups in social education can help reduce the negative impact of disadvantaged backgrounds on student education outcomes. People's educational achievement is positively correlated with the education or socioeconomic status of their parents [11]. The impact of parents' educational background on children's academic work is not only reflected in innate genes (such as cognitive ability) but also acquired factors such as family structure, capital accumulation, educational investment and participation [12]. Parents with disadvantaged educational backgrounds often perform poorly in the above-mentioned factors, and their children are therefore unable to achieve excellent results in school education.

In the pursuit of educational equity, the Australian Federal Government designated the Australian Curriculum, Assessment and Reporting Authority (ACARA) to formulate the "Socio-Educational Advantage" (SEA) report. Factors such as occupation and highest education level are used to measure their occupation and education status. According to SEA, the greater the proportion of the number of students in the lowest two quartiles of the school in the total number of students in the school, the higher the amount of subsidy that can be obtained. To further reduce the impact of educational disadvantages on student performance, the 2019 "Quality Schools" plan will use up to 9.3% of the federal government's regular school expenditures to subsidize students with disadvantaged backgrounds. The subsidy amount will increase by an average of 5.5 per year from 2018 to 2029. %.

(3) Low English proficiency subsidy

Subsidies for low English proficiency can help schools provide additional language and academic courses. This subsidy applies to students from non-English-speaking countries with one or two parents who have only completed junior high school or lower-level education, and immigrant or refugee students who have settled in Australia are also eligible for this subsidy [13]. Australia is a multilingual and cultural society, and many students from non-English speaking backgrounds are not very capable of using English. These students often encounter various difficulties that native English students do not have, such as difficulty in keeping up with the teaching progress. These factors have largely contributed to their long-term poor academic performance [14].

To provide more support for students who are unable to use English proficiently, the "Quality School" program provides additional funds for schools to adjust their teaching and services through subsidies for low English proficiency. According to the "Quality Schools" program, the subsidy for low English proficiency will account for 0.3% of the federal government's regular school expenditures in 2019, and the subsidy amount will increase by an average of 3.8% annually from 2018 to 2029.

(4) School location subsidy

The school location subsidy provides additional funding for a school-based on its "Accessibility/Remoteness Index of Australia" (ARIA) score. The more remote the location, the higher the funding. It aims to reduce the number of schools in remote areas and large cities. Australia's population is unevenly distributed, and geographical distance and population density have greatly affected the opportunities for local students to obtain a quality education. In addition, there is a huge gap between schools in remote areas and urban schools in terms of teacher qualifications, teacher-student ratio, school infrastructure, teaching resources, etc. [15], which directly causes students to lag in the national literacy and calculation assessment project and PISA [16]. Therefore, the 2019 "Quality Schools" plan

will use 2.1% of the federal government's regular school expenditures for the subsidy and the subsidy amount will increase by 4.7% annually from 2018 to 2029.

(5) Aboriginal and Torres Strait Islander student grants

Aboriginal and Torres Strait Islander student grants help enhance the school's ability to educate Aboriginal students. The Prime Minister's Report released in 2018 indicated that Aboriginal and Islander students have long faced problems such as low enrollment rates and poor educational results. The reason is that they generally encounter the following problems when receiving school education in the local area: First, English is not the native language of these students, but it is the language used in textbooks and lectures, which makes it difficult for students to learn. Secondly, the western values embodied in the textbooks are different from the native cultures of the aborigines and islanders, which caused some trouble to the students. Finally, teachers in local schools are highly mobile, and most of the teachers are new teachers who lack teaching experience or have little understanding of local cultural traditions.

To solve the above problems, the "Quality Schools" program continues to use Aboriginal and Torres Strait Islander student subsidies and provides financial support based on the proportion of Aboriginal students in the school. In 2019, Aboriginal and Torres Strait Islander student grants accounted for 1.7% of the federal government's regular school expenditures. From 2018 to 2029, the grant amount will increase by an average of 3.9% per year. These funds will be used to improve the school environment, carry out multicultural activities to help students understand Western values, develop local and language courses, and improve teachers' ability to teach aboriginal and island students.

(6) School scale subsidy

School-scale subsidies help maintain the normal operation of smaller schools. Whether in large cities or remote areas in Australia, there are some medium-sized, small, and ultra-small schools. Due to the small number of students, these schools may only offer limited courses, the utilization rate of library and laboratory facilities is low, the salaries of in-service teachers are poor, and there is a lack of opportunities to communicate with peers. If this situation is not changed, students are likely to choose to transfer, resulting in a further reduction in school size and income, forming a vicious circle.

The "Quality Schools" plan fully takes into account the plight of these schools and invests additional funds into primary schools with a population of no more than 300 and secondary schools with a population of no more than 700 through school scale subsidies. In 2019, school scale subsidies account for 1.6% of the federal government's regular school expenditures. From 2018 to 2029, the subsidy amount will increase by an average of 3.5% per year.

3. The "Quality Schools" plan to innovate non-public school funding base algorithm

Given that non-public schools in Australia can raise funds from the school community (parents and guardians of students) by levying tuition and fees, the federal government considers the "contribution" of the school community to the school's daily operating costs when determining the funding base available for such schools as one of the important considerations. "Contribution" is calculated from the school's Social Economic Status (SES) score. The higher the school's SES score, the higher the "contribution" of the school community and the lower the federal government funding base that the school can receive. Therefore, the SES scoring method directly determines the amount of government funding

available to the school. However, the SES traditional scoring method used since 2001 has been questioned by non-public schools and is considered to be unable to truly reflect the "contribution" of the school community. To this end, Australia established the National School Resourcing Board in 2017 to review the SES scoring method, confirming that the method does indeed overestimate or underestimate the "contribution" of the school community, and proposes based on the income level of the school community direct calculation of the median to change the status quo.

3.1. Weighting algorithm based on the overall data of the region

The traditional school SES scoring method in Australia is also known as the "Area-based" calculation method. The score is the weighted average of the overall SES scores in the school district where the school is located. Relevant departments first obtained census data in 4 dimensions, including education background, occupation, family income, and income of families with children, and then weighted this data-education background (1/3), occupation (1/3), family Income (1/6), family income with children (1/6), and then get the weighted average SES score of the statistical area. Given that the students of most schools are scattered in multiple statistical areas, the school's SES score can be calculated by the following formula: School SES score = (statistical area 1 SES score × statistical area 1 student + statistical area 2 SES score × statistical area 2 Number of students...) ÷ total number of students in the school.

However, the academic community has quite criticized the effect of this scoring method, believing that it cannot truly reflect the student's family situation, resulting in education funding that cannot effectively meet the actual needs of students and schools.

First of all, from the family level, the traditional SES scoring method gives the same scores to different families attending the same school and living in the same statistical area, so there are situations where the SES scores of the families of students at school are overestimated or underestimated. In addition, families living in the same area also include families with no children or children under the age of school. The data of these families are not related to calculating the "contribution" of the school community, but it has become one of the variables that affect the SES score. Reduce the effectiveness of SES traditional scoring methods.

From the school level, the weighted average SES scores based on regions may not accurately reflect the true SES levels of different schools in a certain region. Schools with a concentration of families in the superior class and schools with families in the disadvantaged class will be given the same SES scores, and therefore obtain the same level of education funding, which in turn leads to over-funding or under-funding. For example, compared to independent schools, most of the students in Catholic schools come from families with lower income levels, and the actual demand for education funding is greater. But when the two types of schools are in the same statistical area, the area-based weighted average SES scoring method will give the two the same score, and the government will therefore provide the same level of funding. In the long run, wealthy independent schools have more adequate funding, and church schools have less funding. The gap between schools has become larger and larger, which has deviated from the original intention of using education funding to promote education equity.

Finally, with the advancement of technology, the available databases and calculation methods are being updated, but the traditional SES scoring method has not been adjusted accordingly. The census data updated once every five years is still used, which cannot reflect the changes in the school community in time. It is difficult to flexibly adjust the funding

amount to meet the changing actual needs of the school. In addition, because the regional SES scoring process is too complicated to explain, it hinders public supervision.

3.2. The direct calculation method of the median income level of CKH's guardians

In response to the fact that the traditional SES scoring method cannot truly reflect the actual situation of the school and family, the "Quality School" plan directly calculates the school's SES score based on the median income level of parents and guardians to ensure that funds flow to schools with high demand and to ensure the fairness of education.

Starting in 2019, the federal government has connected the school residential address set with the Australian Bureau of Statistics' address register through a multi-agency data integration project, matched census data and income tax records, and accurately calculated the income level of a single-family and the median income of the school community. On this basis, the SES score of the school and the contribution of the school community are calculated. At the same time, the federal government has established a strict appeal procedure to ensure the fair and transparent application of the SES direct measurement algorithm. Since this method requires the school to spend time recollecting the student's address information, the school can choose to start using the SES direct measurement algorithm in 2020, 2021, or 2022 according to its situation.

The innovative SES direct measurement method of the "Quality School" program uses the data technology that most truly reflects the income level of students' parents and guardians, and improves the accuracy of the scoring by reflecting the actual situation of the students' families; because the families of non-school students in the area are excluded or data information for families without children, the needs of the school will be more accurate. The National School Resources Board's comparative study of the two SES score algorithms shows that the SES scores obtained by most Catholic church schools through direct measurement are lower than their original scores, which means that these schools will be able to receive higher than previous levels of federal funding; The situation with some independent schools is just the opposite, and the federal government will gradually reduce the amount of funding for these schools.

In addition, the SES direct measurement method uses income tax data collected once a year, which can quickly respond to demographic changes in the school community. Assuming that the economy of a school's source of students has undergone huge changes since the last SES score, annual data collection can reflect these changes in the SES score relatively quickly-the school's SES score will be reduced, and the federal government will accordingly. Increase funding to ensure that the school survives the difficult times and maintains educational standards.

4. Conclusion

The Australian Federal Government launched the "Quality Schools" program, to promote the reform of the fairness and quality of basic education through the innovation of the education funding system. This article studies the plan. The plan increases the federal government's educational investment in public schools and non-public schools, and directly assesses the socioeconomic status of the school through the median income level of the parents and guardians of students, and provides financial assistance to the school based on this. The "Quality School" program has made great breakthroughs in assessing the "contribution" of students' families and assessing students' actual educational needs and has played a demonstrative role in ensuring the fairness and quality of education.

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