

# Value for Money: is Money Correlate to Education Quality?

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**Abstract-** This article aims to find out the relationship between the budget of education function and quality of education. The research approach is quantitative descriptive using statistical analysis with percentage and Pearson correlation. The data used are secondary data of education budget to describe the quality of the education quality measure with of teacher's competency test results, the rate of literacy, and rate of school participation. The results show that there is no positive and significant relationship between the budget of education function and quality of education.

**Index Terms-** education budget; quality of learning outcomes; teacher quality; the rate of literacy; and rate of school participation.

## I. INTRODUCTION

The Government of Indonesia strictly stipulates the education budget through the Law of Republic of Indonesia No. 20 of 2003 on National Education System. It is stated in Article 49 (1) that education funds including educators' salaries and official education are allocated at least 20% of the State Budget (*Anggaran Pendapatan dan Belanja Negara*, APBN) in the education sector and at least 20% of the Regional Revenue and Expenditure Budget (*Anggaran Pendapatan dan Belanja Daerah*, APBD).

Until 2006, the central government has not been able to fulfill the mandate of the law of education system in educational financing. It can be seen that the allocation of education budget from State Budget that has not reached 20%. In that year the education budget reaches 17%, this is lower than Thailand and Malaysia which has reached 27% [1]. For the first time, the government can fulfill the mandate in 2009, when the education budget from State Budget reaches 20% [2].

Governance systems in Indonesia have shifted from centralized to decentralized, so educational management has also shifted from central government towards decentralization to local governments. Local government law mandates that primary and secondary education responsibilities are in district, city and provincial governments. The Act of the Republic of Indonesia No. 22 of 1999, updated Law No. 32 of 2004, and renewed again through Law No. 23 the year 2014. The latest regional government law is the distribution of educational affairs, namely basic education becomes the authority of the district or city government and secondary education becomes the responsibility of the provincial government.

The local governance law in Indonesia has changed the management of the national education system from centralized to decentralized. Decentralization of education management is

intended to improve the quality of education services. Decentralization of education can improve the quality of education services, this can be proven in more than 50% of districts and cities in Indonesia that have improved educational outcomes[3].

It is inevitable that the amount of money for the education budget can affect the quality of education services. However, it is important to realize that too much of the education budget can harm the development other sectors. So the most important thing is how to use education budget efficiently and effectively.

Is the greater the education budget influence the better quality of education? Based on some research results there are contradictions, some say about the relationship or positive influence but there is also a saying there is no relationship or no influence.

Research in China shows that there is a significant influence between private expenditure on mathematics learning outcomes of primary school students but has no significant effect on Chinese learning outcomes [4]. In Japan, it shows that public expenditure on public education has the influence on student learning outcomes, while the family environment does not affect student learning outcomes [5]. Research conducted on secondary education students shows that a comprehensive program that provides financial, academic, and social support to students from low socioeconomic levels shows positive results on improving student performance in the first year, drop-out rates, and student learning outcomes at the last level [6]. In Indonesia, public spending has no positive effect on access to education in areas with high levels of corruption but has a positive and significant impact in areas with low corruption. Public spending also has no significant effect on school performance [7].

Thus this article aims to determine the relationship between education budget to the quality of education. The detail objectives are to know: (a) the relationship between the budget of educational function to the student's learning outcomes, (b) the relationship between the budget of education function to teacher quality, (c) the relationship between the budget of educational function to the literacy rate, and (d) the relationship between the budget of educational function to school participation rate.

## II. RESEARCH METHOD

The research was conducted in 2016 in Central Java Province consisting of 35 districts and municipalities. This research was quantitative descriptive approach using secondary data. Statistical analysis of percentage and Pearson correlation. The data of the regional budget of education function was obtained from the Ministry of Finance in 2016 for the period of nine years

2007-2015. The budget of the educational function in this article includes salaries and benefits of teachers and education personnel. The quality of education was viewed from the results of the national exam of junior secondary school students in 2015, the results of teacher competency test in 2015, the rate of literacy in 2015, and the rate of school participation in 2015. Teacher quality data was obtained from teacher competency test results

(*Uji Kompetensi Guru*, UKG) in 2015 based on Ministry of Education and Culture report. Student learning outcomes data obtained from the results of the national exam (Ujian Nasional, UN) of junior secondary school in 2015 from the Ministry of Education and Culture. Literacy rate and school participation rates were obtained from Bureau of Statistics of Central Java Province in 2015.

### III. RESULTS AND DISCUSSIONS

Before discussing the relationship between the education budget and the quality of education, it important first to analyze the budget of education function in the district and city based on budget year. For nine (9) years, the average budget for education function within 35 regencies and cities in Central Java Province was 45%.

During the nine years, the average budget of the highest education function reached 57% in Klaten District, while the lowest 32% ie in Salatiga City. This can be seen in figure 1.

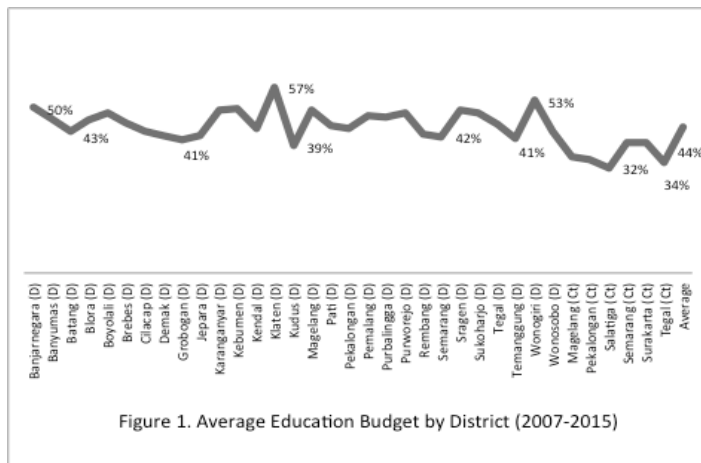


Figure 1. Average Education Budget by District (2007-2015)

Based on the budget year, the highest average budget of educational function was 50% in 2013 and 2014, while the lowest was 39% occurred in 2007. This can be seen in Figure 2.

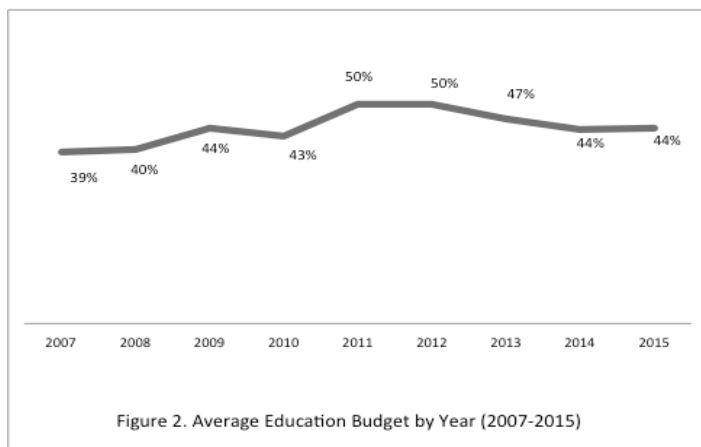


Figure 2. Average Education Budget by Year (2007-2015)

Based on figures 1 and 2 it is recognized that the average budget for education functions in districts and municipalities was relatively high (45%) and it was the highest when compared with other budgets of development function in local government. The

high education budget is expected to improve the quality of education. Based on the World Ecospac Forum report, countries with the best quality education in the world are always supported by high education budgets.

Based on evidence from countries with the 2017 human capital index that includes the world's top 10, all allocate education budgets between 5.1% to 8.6% of GDP, the highest educational budget is Denmark. Indonesia has also allocated a substantial education budget of 3.6% of GDP [8].

The average budgetary function of education from the Ministry of Finance is higher than that calculated by the World Bank [9] that the national education budget averages 28.3% including salaries, but excludes salaries of only 6.3%. As a sample in Wonosobo Regency which reached 37% if including salary and only 6.6% if not including salary. Other samples in Magelang City reached 30.6% if including salary and only 2.2% if not including salary.

Unfortunately, the high budget of education function in Indonesia has not been managed efficiently and effectively. Based on a review of education spending by the World Bank [2] shows that continuing to increase education spending is not perceived by improving the quality of education. Other evidence suggests [10] that the high increase of access in Indonesia is not accompanied by significant increase in learning outcomes. Recent international results show that between 2006-2012, the value of mathematics of Indonesian students aged 15 years has decreased, while the value of reading and natural science stagnant.

#### A. The Relationship of Education Budget with Student Learning Result

The correlation between districts and cities education budgets with student learning outcomes analyzed by Pearson Correlation. The result of the analysis shows that there is an inverse relationship of minus 0.176 between the educational budget and the outcomes of junior secondary school students. This can be seen in table 1.

Table 1. The correlation between Education Budget and Student Result of Junior Secondary School Year 2015

	Average Education Budget (%)	Score National Exam JSS
Average Education Budget (%)	1	
Score National Exam JSS	-0.176105873	1

Based on the correlation analysis means that the higher the education budget allocation, the lower the score on the national

exam. This result seems unacceptable to general logic, but the analysis shows that reality.

Klaten district has the highest average education budget for nine years, but the national exam results of junior secondary school students do not occupy the best position, just in the bottom-half level. This indicates that large education budgets when not being used efficiently and effectively will not have a positive impact on student learning outcomes. As it is commonly known that Klaten district was famous for corruption at the level of officials after the Head of Regent was caught by the Corruption Eradication Commission (*Komisi Pemberantasan Korupsi*, KPK).

Based on the results of the study [7] which states that public spending including education spending does not have a positive effect on educational access and education quality in areas with high corruption. Research results in 50 countries [11] also show that corruption in education has a negative relationship with educational outcomes. This means that the higher the level of corruption in education the worse the results of education.

Taking into account the relationship between education budgets at the district and municipal levels while the students' learning outcomes are low, is there any suspicion that the education budget in the regions was not present at the school level or specifically not present in the classroom? If the money did not come to the students, where the money was gone? It could be only up to teachers and educational personnel, in other words, the high educational budget is only enjoyed by teachers and educational personnel.

Research conducted by the World Bank [9] shows that regular expenditures on the education of district and municipal, now referred to as education operational expenditures are mostly used for teacher salaries and educational staff of 96%. Readers may imagine, for what kind of operational expenditure is only 4%? At most, it can only to pay electricity subscriptions and office stationery only. So how can teachers create innovative teaching aids and learning media if there was no money available? How can students be invited to practice in the learning process if their budgets are spent on teacher salaries and education personnel?

### B. The Relationship of Education Budget with Teacher Quality

Paying close attention to the amount of education operational expenditure for teachers and educational staff, then we will assume that the teachers are qualified. This assumption makes sense because when teachers have high salaries and benefits it will be motivated to improve their competence. Let us prove the assumption with the data in table 2.

Table 2. The correlation between Education Budget and Teacher Quality Year 2015

	Average Education Budget (%)	Teacher Competency Test
Average Education Budget (%)	1	
Teacher Competency Test	-0.498231641	1

The result of correlation analysis between educational budget and teacher quality showed the negative result, it means that

there is an inverse relationship, the higher the education budget the lower the quality of the teacher.

Then the question arises, what is the salary and allowance of teachers and educational staff for? Salary is intended to meet the needs of the life of teachers and educational personnel. But the teacher allowance also called professional allowance is meant to improve the professionalism of the teacher.

Has the professional allowance of teachers been used to improve their professionalism? The World Bank report [12] shows that teachers receiving professional allowances have not changed in the quality of teaching. Could be a professional allowance is not intended to improve their professionalism, but precisely for the needs of consumptive life. This is a conjecture and should be proven by further research.

Certification received by the teacher has no impact on the quality of learning process and student learning outcomes. This is another research result in Indonesia that teacher certification does not significantly improve the quality of the learning process [13].

Recent research results [14] suggest that teacher professional allowances increase teacher satisfaction with respect to earnings, but do not lead to improved student outcomes. This also indicates that teacher professional allowance is not used to improve the professionalism of teachers.

The teachers who the certification allowance assume that the one-month allowance for such basic salary is their right so that it is used for consumptive needs is no problem. If that was what most teachers in Indonesia though, it indicates that teachers lack professional responsibility.

District and city governments have not prioritized the improvement of teacher professionalism, it is evident that not many local governments have clear rules and policies on continuous professional development-CPD (*Pengembangan Keprofesian Berkelanjutan*, PKB). Among the 35 districts and municipalities in Central Java Province, there are only 6 districts that have Regent Regulations on CPD namely Batang, Blora, Demak, Grobogan, Purbalingga, and Semarang. As of mid-2017 of 514 districts and cities, there are not yet 20 districts and cities that have had the rules of CPD [15].

Noting the attitudes of teachers who consider certification allowances as rights so that they can be fully utilized for consumptive needs, there are some districts that make rules for the use of teacher certification allowances. For example, Batang District [16], Demak District [17], Purbalingga District [18], and Blora District [19] make regent regulations regarding the use of teacher professional allowances to develop their professionalism. The regional head requires that the teacher use the professional allowance allocated between 4% -5% for the professionalism of the teacher. Among others are to finance further education, training, workshops, buying books, journal, buying a computer or laptop.

### C. The Relationship of Education Budget with Literacy Rate

The literacy rate is calculated by the formula of the population over 15 years to 55 years old who are able to functionally read divided by the number of people aged >15-55 years.

The greater the budget of educational function has greater opportunity o get the higher rate of literacy. Because the more

people can read, write, and count functionally then the level of literacy of a region will be higher. The assumptions need to be proven by looking at table 3.

Table 3. The correlation between Education Budget and Literacy Rate Year 2015

	Average Education Budget (%)	Literacy Rate (Age 15-55)
Average Education Budget (%)	1	
Literacy Rate (Age 15-55)	-0.40508854	1

The correlation between educational budget and literacy rate shows minus 0.405 which means there is an inverse relationship. The data shows that the greater the education budget in the regions, the lower the level of literacy of people.

If so then high education budget is also not used for the benefit of improving the quality of education in communities aged between >15-55 years. This fact is inevitable because high education budgets are mostly allocated for teachers' salaries and education personnel. Finally, local governments are unable to complete illiteracy in each district and city.

*D. The Relationship of Education Budget with School Participation Rate*

A final analysis to see if high education budgets also provide opportunities for all citizens to enjoy primary and secondary education? Let's examine the 7-12 year school participation rates in table 4, school participation rates 13-15 years in table 5, and school participation of 16-18 years in table 6.

It should be pointed out that school participation is based on the school age range. The age of 7-12 years is for the primary school children [Sekolah Dasar, SD], the age of 13-15 years is the period of children in junior secondary school (Sekolah Menengah Pertama [SMP] or Madrasah Tsanawiyah [MTs]), and the age of 16-18 years is the period of children in senior high school (Sekolah Menengah Atas [SMA], Sekolah Menengah Kejuruan [SMK], or Madrasah Aliyah [MA]). The school participation formula for 7-12 years of age is the number of 7-12 years old school children divided by the number of people aged 7-12 years, the other age groups adjusted.

Table 4 shows the relationship between district and city education budgets to school participation rates of elementary school-age children, as follows.

Table 4. The Correlation between Education Budget and School Participation Rate for 7-12 Age

	Average Education Budget (%)	School Participation Rate (Age 7-12)
Average Education Budget (%)	1	
School Participation Rate (Age 7-12)	0.098500839	1

Based on the data in table 4 it is found that there is a positive relationship between district and city education budgets with 7-

12 years school participation rate with a correlation value of 0.098. This correlation value includes very weak category because the determination rate is only 1%. This means that the education budget only affects 1% of the increase in school participation rate of elementary school age children.

What about the relationship between education budget and school participation rate of junior secondary school children? The results can be seen in table 5.

Table 5. The Correlation between Education Budget and School Participation Rate for 13-15 Age

	Average Education Budget (%)	School Participation Rate (Age 13-15)
Average Education Budget (%)	1	
School Participation Rate (Age 13-15)	-0.090737417	1

Based on the Pearson correlation results in table 5, the relationship between educational budget and school enrollment rate of children aged 13-15 years shows a negative association of 0.090 or an inverse relationship between education budget and school participation rate of junior secondary school children. This suggests that the greater the education budget incurred by district and city governments, the school participation rate of 13-15 years actually declines.

Table 6 below will show the correlation between the education budget incurred by district and city governments to the participation rate of school children of senior high school age.

Table 6. The Correlation between Education Budget and School Participation Rate for 16-18 Age

	Average Education Budget (%)	School Participation Rate (Age 16-18)
Average Education Budget (%)	1	
School Participation Rate (Age 16-18)	-0.033241425	1

Based on the results of Pearson correlation analysis in table 6 it is known that the relationship between the education budget issued by the district and municipal governments with school participation rate of 16-18 years showed a negative result of 0.033. This means that there is an inverse relationship between the two, namely the greater the education budget issued by the district and municipal governments, the school participation rate of children of high school age decreases.

This is in line with the findings of research conducted in Germany which states that there is a negative influence on the cost of education with the enrollment of students to school [20]. The study took the time frame of 2002-2008 to determine the effect of determining the cost of education on the possibility of student enrollment in educational institutions.

The results of the analysis of the budget of education function and the quality of education above support the signal that the use of educational resources has no effect on the effectiveness of

education [21]. External factors such as the level of financial resources do not determine whether a school is effective or not, on the contrary, the way schools use resources will determine whether the school is effective or not. Taking note of the recommendations of the OECD and ADB [22] that the increased budget for education in Indonesia should be used efficiently and effectively in order to have a positive impact on student learning outcomes or the quality of education in general.

#### IV. CONCLUSION

The budget of education function in each regency and city in Central Java Province was relatively high with the average for nine years reaches 45%. The high education budget is mostly used for teachers' salaries and education personnel.

The high of the education budget has not been positively related to the quality of education in terms of student learning outcomes, teacher quality, literacy rate, and school participation rates. Thus it can be concluded that the budget of education function has not been used efficiently and effectively.

With regard to teacher professional allowances that have not been used to improve the professionalism of teachers, the government and local governments need to make policies to allow certification allowances to be allocated to improve teacher competence.

District and city governments need to make a policy regarding the use of education budgets by determining the formula for the use of it. Budgets for non-personnel education operational expenditure should be determined in a reasonable percentage so that the learning process can be qualified. With this budget use formula, teachers' salaries will be limited, for example up to a maximum of 60% so that the other 40% can be used for investment spending and non-personnel operating expenditures.

#### APPENDIX

*Anggaran Pendapatan dan Belanja Negara* (APBN) means the revenues and expenditures of the Government of the Republic of Indonesia determined annually by virtue of the Act.

*Anggaran Pendapatan dan Belanja Daerah* (APBD) means revenue and expenditure of Regency and City Government in Central Java Province which is determined every year based on the Regional Regulation.

*Komisi Pemberantasan Korupsi* (KPK) is an independent commission established to prevent and combat corruption in Indonesia based on Law Number 30 Year 202 on Eradication of Corruption.

*Pengembangan Keprofesian Berkelanjutan* (PKB) is a government program to improve the professionalism of teachers and education personnel continuously and sustainably.

*Sekolah Dasar* (SD) is the education given to students aged 7-12 years after they finish the right kindergarten education (*Taman Kanak-Kanak*, TK).

*Sekolah Menengah Pertama* (SMP) is the education given to students aged 13-15 years after they complete elementary school (*Sekolah Dasar*, SD). The equivalent of junior high school is

*Madrasah Tsanawiyah* (MTs) which is equal education junior secondary school which is under the responsibility of Ministry of Religion Affairs.

*Sekolah Menengah Atas* (SMA) is the education given to students aged 16-18 years after they finish junior secondary school (*Sekolah Menengah Pertama*, SMP). The equivalent of SMA is Vocational High School (*Sekolah Menengah Kejuruan*, SMK) that provides vocational education. The equivalent of SMA and SMK is the *Aliah Madrasah* (MA) which is under the responsibility of the Ministry of Religious Affairs.

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