The Influence of Cost of Education to the Quality of High School in Pekanbaru, Indonesia

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Abstract: This research aimed to determine the influence of education costs, which covers operating costs of personal and operating expenses of non-personal, to the quality of high school. The study was conducted on senior high schools in Pekanbaru Indonesia the academic year 2014/2015 by sample as much 36 schools. Data collected by technical documentation and checklists. Data were analysed by descriptive and multiple regression. The results showed that in partially, operating expenses of non-personnel had a positive and significant influence to the quality of high schools, while the operating expenses of personnel did not had a significant influence to the quality of high schools.

1 INTRODUCTION

Education has an important position and role in the life of the community, nation, and state because education is directly related to the development of human resources that will manage other resources for better human life. Therefore, education must be organized and are managed well. Moreover, the 21st century was the century of globalization and is the century of quality (Juran, 1999).

Education quality that is reflected in the competence of graduates, among others influenced by the financing component (Djaali, 2007). Arikunto and Yuliana (2009) also argue that the financing is a very important factor and determines the life of educational institutions. Correspondingly these argue, Sukmadinata, Jamiat, and Rahman (2008) states that the limited funds, can lead to low quality of graduates. The Importance of costs for education and school quality is supported by the results of research’s Muhroji (2012) which showed that the cost of education has positive influence on learning outcomes. Likewise, research results’ Sudarmanto (2009) which concluded that the social costs and the private cost which is used to fund education had a positive and significant impact to student achievement, either partially or simultaneously.

However, other researches have found different results, such as Hanushek (1989) who state that expenditures are not influence to student performance. Fattah (1999), which concludes his research findings that in urban areas, overall costs contribute significantly to the quality of learning output, while in rural areas the contribution is low; In well categorized schools, cost of education contribute high; In medium categorized schools, contributing low; And in sufficient categorized schools, cost of education does not contribute significantly. Moreover, Bibb and McNeal research (2012) noted that spending per pupil has no significant relationship to the achievement of high school students. ikewise, researchs’ Cerya and Irianto (2014) actually concluded that social costs did not affect to academic quality. Differences in the results of these studies indicate a need for further research on the influence of education cost on the quality of school. This is in line with McMahon, Suwaryani, and Budiono (2001), which revealed that research into schools to be able to determine cost effectiveness, needs to be done.

This research generally aims to know the influence of education costs to school quality. In detail the purpose of this research were to know: 1) The influence of personnel operating costs to school quality; 2) The influence of cost of non-personnel operating to school quality; and 3) The influences of simultaneously personnel operating costs and non-personnel operating costs to schools quality.
2 LITERATURE REVIEW

Reddy (2007) revealed that The term quality in the context of education refer to ‘a degree of excellence’ and could include two aspects a judgment of worth and a position on an implied scale of good/bad. According to Sallis (2002:15), “excellence is an aspiration” can be interpreted as an expectation or desire. It means that the quality that is defined as the level of excellence have the same meaning with the notion of quality as the suitability of customer expectations or desires (Besterfield, 2003; Goetsch & Davis, 2013). In accord with Adams (1993:7), “At least six common views of quality appear to be given by educators: quality as reputation; quality as resources and inputs; quality as process; quality as content; quality as outputs and outcomes; and quality as “value added. In addition to the six quality views, Williams (2001) added one more that quality as the selectivity.

Based on a variety of views on the quality, Adam (1993) argues that the meaning of quality may be changed according to the context. In accordance with the context of this study, that will examine the effect of education costs on school quality, the quality in this study is more appropriately assessed as output. This was in accordance with opinions Reeves and Bednar (1994) that comparative and cumulative research results about quality can be obtained only by (a) focusing upon the fundamental nature of an organization's output and (b) using a definition of quality suitable for that output. School quality was seen as output, typical measures are achievement in cognitive skills (Adam, 1993). According to Reddy (2007), the students’ cognitive achievement is most often taken as an indicator of school quality. The same thing also expressed by Williams (2001) that “substantial body of research in high and low-income countries has examined factors associated with student’s cognitive achievement”. To measure the students’ achievement is done through standardized tests (Reddy, 2007). According Tobroni (2010), in Indonesia, in general, student achievement is measured by national test grade scores.

Quality of schools is defined as output and is measured using the cognitive achievement of students, actually has a meaning focuses on the expectations and or desires school students as the main customer. In addition, also pay attention to the expectations and or desires more customers, both external and internal are all expected and or desired that the student or graduate school to get a good performance so that they can be accepted in the community or be able to follow education at the next level. Quality of school as well as in accordance with the wishes of parents as disclosed by Reddy (2007:16) that “Parents too, regard the chief indicator of the quality of a school to be success in academic achievement which may guarantee some sort of employability”.

Fattah (2002) divided education financing according to the party who spends it, which is budgeter education funding and non-budgeter education funding. Budgeter education funding is the cost of education that obtained and spent by the school as an institution; While non-budgeter education funding is the cost of education that spent by students, parents/family, and opportunity cost. With regard to costs, Mulyono (2010) discloses that the cost is the amount of money provided or allocated and used or spent to the execution of various activities to achieve a goal and objectives.

With regard to the use of fees or type of cost, Fattah (2002) revealed that based on cost elements approach (ingredient approach), school expenditure can be categorized into several items of expenditure are: 1) Expenditures for the learning practice, 2) Expenditures for school management, 3) Maintenance of school facilities and infrastructure, 4) Employee welfare; 5) Administration, 6) Educatice technical coaching, and 7) Data Collection.

In contrast to Fattah, according to Wylie and King (2004), school expenses include: 1) Other Learning Resources (e.g. curriculum supplies, extra-curricular, teacher development, minor equipment and repairs, library); 2) Property Management (personnel, maintenance, caretaking and cleaning, grounds, heat, light, water); 3) Administration (support staff, Board of Trustees fees and expenses, communication, consumables, audit fees); 4) Depreciation.

The difference between the two is the depreciation element according to Wylie and King. The reasons for Wylie and King include depreciation as the elements that are taken into account in school expenses are “Depreciation is the reduction in the value of a capital asset and represents the portion of the asset that is “consumed” within a financial year. A depreciation charge is included as an expenditure item in schools’ financial statements.

In more detail, Indonesian Government Regulation No. 48 of 2008 on Education Funding Article 3 Paragraph (2) states the types of tuition fees in schools consist of: a. Investment costs, consisting of: 1) The land investment cost of education, and 2) investment costs other than
education land; b. Operating costs, consisting of: 1) personnel costs, and 2) non-personnel costs; c. Education tuition aid; and d. scholarship. When looking at the cost of education in schools was according to government regulations, the cost of education including the cost of capital. Means, the cost of education in schools needs to take into account the depreciation costs as a component of expenditure.

To address differences regarding costs and expenses, we need to be focused and specific about what we are talking about and how it are calculated (Atkinson et.al. 2009). The specification of what costs are discussed and how to calculate them relates to the type of costs, which can be generated from cost objects. The cost object is defined as an item or activity whose cost is accumulated and measured (Gitman and Zutter, 2012). This means that the necessity of taking into account the investment costs or depreciation costs depending on its purpose, so as to obtain appropriate calculation results.

The purpose of calculating the cost of education here is to be able to compare the cost of education among schools in relation to the school quality. For this purpose, the costs will be calculated based on the unit costs per student. According to Fattah (2002), the unit cost per student is the average cost per student that are calculated from the total school expenditures divided by all students in the schools within a certain time. According to him, because it takes into account the number of students in each school, the unit cost per student is considered standard and can be compared between school one with other schools. School expenditures by Fattah (2002) are costs that are not investment costs. From the explanation, the unit cost per student does not take into account depreciation expense or investment cost. That is in accordance with the opinion of Saavedra (2002:13), that: “... per student expenditure (or unit costs) ... typically considers only current expenditures and not capital expenditures. It does not take into account the capital or investment costs that can be understood because the capital or investment of its use in a long time (not just certain years) so that the cost or capital expenditure for a particular year is difficult to determine or measure because in addition to depending on the age of capital, depending also on the type, and the place of capital or investment.

In addition, when looking at the age of capital or investment that is long, the value of the capital is very likely to change due to price changes, so the calculation of depreciation expenses in a given year becomes less/inappropriate, as disclosed Suhardan, Riduan, and Enas (2012) that the current capital expenditure will affect the calculation of routine costs as long as the physical assets of the school continue to grow.

From the judgment of the education costs and that discussion, can be stated that the education cost of school for the purpose of cost research among schools, is the unit cost per student whose calculation is based on the cost or expenditures of school operating. School operating costs include personnel and non-personnel costs. Personnel costs consist of salaries, allowance, and beneficiaries enhancements; while the non-personnel costs are other operating costs (not personnel costs).

To achieve better quality, schools need funds to finance their activities. According to John and Murpet (Anwar, 2004:122), “when the financial support is restricted, the quantity and the quality of education are likely to be limited”. This means that the funds or costs have a positive effect on the quality of school. This was in line with the opinions Checchi (2006) that school quality is influenced by available resources, including financial resources. The quality of the school, which in this case is measured from student achievement, thus also means that the cost of education has a positive effect on student achievement. This is in accordance with the opinions Reddy (2007: 92) that “levels of cognitive achievement are significantly improved by provision of facilities and resources”. From these explanation can be stated that the cost of education, both personnel operating costs and non-personnel operating costs have a positive affect on the quality of schools.

3 METHODS

This research was conducted at Senior High School in Pekanbaru, Riau Province, Indonesia, both Public and Private High School. The unit of analysis in this study is the school in which each variable is assessed to obtain their description in the school level. The population of this study is the high school which in 2015 to take the National Examination of Natural Sciences Group and Social Sciences Group which amounted to 40 high school (Public schools as many as 14 and Private as many as 26). School sample is taken based on Krejcie & Morgan Table that is totally 36 schools (13 public school and 23 private schools), using cluster random sampling technique.

Collecting data were used documentation and checklists techniques. Documentation were used to collect data on school quality that is the score of
national examination of students and data of education operational cost as stated in Budget and School Activity Plan. The checklist technique is used to collect data on the operational costs of education for schools that were unwilling to provide their Budget and School Activity Plan. Data were analysed using multiple regression statistical techniques.

The variable of this research consists of: 1) School quality, which is the level of school output excellence based on the level of students' cognitive achievement as measured from the Average Score of Pure National Examination in 2015; 2) Personnel operating costs, which is funds obtained by schools from various sources were used for salaries and allowance of teacher and educational personnel on the academic year 2014/2015 as measured from the cost per student; and 3) Non-personnel operating costs, which is funds obtained by schools from various sources were used for school operating expenses other than salaries and allowances on the academic year 2014/2015 as measured from the cost per student.

Data were analyzed by using quantitative descriptive analysis and multiple regression analysis technique. Descriptive analysis is used to describe the research variables. Multiple regression analysis is used to explain the effect of education costs on quality of school.

4 RESULTS AND DISCUSSION

The results of this research will reveal about the variables of research that are quality of schools, personal operating cost, and non-personal operating cost. Beside that, it will reveal the influence of education costs (personal operating cost and non-personal operating cost) to quality of school. After revealing the results of the research, will continued to discuss these results. The results and discussion can be shown next.

4.1 Quality of School

School quality were measured by the average score of national examination (NE) showed the lowest score of 54.26 and the highest score of 82.85 with an average score of 70.19. When associated with the NE passing limit (i.e. 55.00), the lowest score is smaller than the NE passing limit. That means there is still a high school in Pekanbaru that has not or does not achieve quality. The average NE score achieved by schools is also still below the ideal average (77.50). This shows that in general the quality of high school in Pekanbaru is still low. The distribution of high school quality in Pekanbaru based on the NE passing limit, generally is still low as well as based on the average achievement of NE which is lower than the ideal average. The low quality generally occurs in private schools.

4.2 Personnel Operating Cost

The operating cost of personnel per student ranges from Rp1,044,372,- to Rp8,538,930,- (approximately US$ 78.524 to US$ 642.025) with an average of Rp4,032,229,- (US$ 303.175). This shows that the cost incurred by senior high school in Pekanbaru to pay salary and allowance of teachers and other education personnel in Academic Year 2014/2015 has a considerable range among schools that is Rp7,494,558,- with standard deviation of Rp2,000,776,- (approximately US$ 563.501 and US$ 150.434). These disparities occur between private and public schools, of which private schools rely solely on sources of funding from their students while public schools are subsidized by the government. An average indicates that the cost of operating personnel per student per year is generally still quite low.

If the personnel operating cost per student is categorized based on the amount of cost by high school in Pekanbaru, the distribution of its category the majority of schools (44.44%) are low, and there are 13.89% of schools where the cost of personnel operating is very low. This is in accordance with the average in which the cost of operating personnel per high school students in Pekanbaru is still relatively low.

4.3 Non-Personnel Operating Cost

Non-personnel operating costs per high school student in Pekanbaru, ranges from Rp1,303,540.- to Rp5,757,282.- with an average of Rp2,676,157.- (approximately US$ 98.011 to US$ 432.878 and US$ 201.215). Viewed from the smallest cost, it appears that the amount of funds that schools spend on school operating costs in addition to salaries and allowances of teachers and other education personnel, are greater than the operating costs of personnel. However, seen from the average cost and the largest expenditure were smaller. Likewise views from a range of expenditure (Rp4,453,742.- or US$ 334.868), it is less than the cost of operating personnel. This means that the proportion of non-personnel operating costs for senior high schools in
Pekanbaru is smaller, at only 39.89%, than 60.11% of personal operating costs.

When non-personnel operating costs per student are categorized based on the amount of costs by senior high school in Pekanbaru, the distribution of the frequency of categories shows that most high schools in Pekanbaru have non-personnel operating costs very low, as many as 58.33% of schools. This is in accordance with the average in which the cost of operating non-personnel per high school students in Pekanbaru is lower than its personnel operating costs.

4.4 The Influence of Operating Cost To School Quality

Based on the results of multiple regression calculations, the cost of education consisting of personnel operating costs and non-personnel operating costs simultaneously have a significant positive influences to school quality. This is indicated by the significance coefficient of 0.008 which is smaller than 0.050. The variable of personnel operating costs and non-personnel operating costs simultaneously can explain the school quality variable of 20.9%, as indicated by Adjusted R square of 0.209.

But partially, the variable operating cost of personnel did not significantly affect the quality of school which were the significance coefficient shows as 0.857 is much greater than 0.05. As well as the regression coefficients which is very small, that is only 0.028. However, for non-personnel operating cost variable has a significance coefficient of 0.003 less than 0.05. This means that non-personnel operating costs have a significant positive effect to school quality. Regression coefficient of variable non-personal operational costs is 0.495. This means that any changes to the score of the variable non-personal operating costs influence to school quality variables change positively of 0.495. The result of multiple regression calculation is shown in the table 1 below.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Standardized Beta Coefficient</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Personnel Operating Cost</td>
<td>.495</td>
<td>.003</td>
</tr>
<tr>
<td>Personnel Operating Cost</td>
<td>.028</td>
<td>.857</td>
</tr>
</tbody>
</table>

4.5 Discussion

The cost of education were consisting of personnel operating costs and non-personnel operating costs simultaneously has a positive influence on school quality. It can be understood because to run educational activities at school required the funds will be the cost. The availability of funds to support the implementation of education activities in schools will be able to facilitate the activities and achievement of educational objectives effectively as revealed Mulyasa (2011) that the financial components and financing of schools is a component that determines the implementation of educational activities. So did John and Murpet who revealed that “when the financial support is restricted, the quantity and the quality of education are likely to be limited” (Anwar, 2004). The achievement of educational goals in schools, among others, cognitive achievement of students, will eventually be able to achieve and or improve the quality of schools, as disclosed by Reddy (2007) that “level of cognitive achievement is improved by provision of facilities and resources”. Similarly, Checchi (2006) points out that school quality is influenced by available resources including financial resources.

The findings of this study reveal the influence of education costs to school quality, in line with the opinion of Djaali (2007) that the quality of national education reflected in the competence of graduates of educational units, among others influenced by the financing component. The influence of education costs on school quality indicates that the cost of education is important for the achievement and / or improvement of school quality. This is also in accordance with the opinion of Arikunto and Yuliana (2009) that financing is a very important factor and determine the life of an organization as well as educational institutions.

In addition to supporting or in accordance with these opinions, the results of this research also supports the results of research conducted Muhroji (2012) which shows that the cost of education has a positive effect on learning output. The output in Muhroji’s research is the indicator of school quality in this research. Similarly, the result of research conducted Sudarmanto (2009) which concluded that the social cost and private cost which used for the cost of education have a positive and significant impact on student achievement. The learning achievement is also a learning output which conceptually becomes an indicator of this study.

The variable of operating cost of education which can only explain the school quality variable of
20.9% (Adjusted R square of 0.209) indicates that the contribution of education operating cost variable to school quality variable is relatively small. It can be understood because the factors that influence the quality of the school were quite a lot, so that the variable of cost of education is only part of the many factors that affect the quality of school. Factors affecting the quality of schools are process, content, teachers and education personnel, facilities and infrastructure, management, financing, and educational assessment (Djaali, 2007); Individual (child) characteristics, Supporting inputs, Enabling conditions, and Teaching and learning processes (Heneveld et al. in Williams, 2001); The managerial quality of education leaders, shortage of funds, facilities and infrastructure, educational facilities, media, learning resources, training tools and materials, school climate, educational environment, and support from education-related parties (Sukmadinata, Jami’at and Ahman, 2008). Each of these factors has an influence on the quality of school so that the influence of educational cost factors on the quality of school to be small.

The cost of education in the form of personnel operating costs partially did not significantly affect the quality of schools. Such results are thought to be due to personnel operating costs not directly related to the process of educational activities in schools. This is in accordance with the opinion of Bridge, Judd, and Moock (1979) which states that the expenditure per student affects the attaining of student achievement is positively indirectly through something purchased or funded by the school. In addition, personnel operating cost are salaries and allowances paid to teachers and education personnel only on the basis of working time or the number of teaching hours so as not to be directly related to the activities of teachers or other education personnel. This means that salaries and allowance are not related to whether or not the quality of the activity process (teaching and learning process for teachers and the process of student learning service for the education personnel), so it does not affect the quality of learning output. This is according to the results of research stating that the components of salary costs have no significant affect to the quality of learning outputs or quality of education (Kadir, 2005 and Fattah, 1999).

Cost of education in the form of non-personnel operating costs partially have a positive and significant impact to the quality of schools. This is understandable as non-personnel operating costs are the expenses for teaching and learning activities and student learning services such as consumable teaching and learning facilities and tools (Mulyasa, 2011) as well as teaching materials and books (OECD, 2011). The availability of tools and materials as well as learning books that are used directly in the learning will help students in learning activities and make it easier to understand the learning materials so that the learning output to be better. This is in accordance with the opinion of Barret et al. (2007) and Reddy (2007) that the availability of textbooks and other learning materials has a very significant and positive impact on student learning outputs or cognitive achievement levels. As well as Mathias, Meyers, and Rogers (2014) who noted that the investment through teaching and practice, the stronger the relationship between investment and student performance.

5 CONCLUSIONS

Results of this research highlighted: first, the cost of education in the form of personnel operating costs partially has no significant to the quality of schools. Second, the cost of education in the form of non-personnel operating costs partially have a positive and significant influence to the quality of schools. Personnel operating cost and non-personnel operating costs as education costs simultaneously have a positive and significant influence to the quality of school.

The implications of the results of this research are the personnel operating cost in the form of allowances should be paid to teachers and education personnel based on the results and/or quality of their performance. Non-personnel operating costs are increased in its amount and/or proportion so that learning activities can be increased in quantity and quality. Total non-personnel operating costs are increased through school funding sources, both from communities and government.

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