



Mapping and analysis of supply side policies in the alignment of education with industry in Indonesia

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Abstract

The purposes of the mapping and analysis of supply side policies are to evaluate policies related to the fulfillment of workforce (supply side) related to the education system. Mapping and analysis was done by adopting the RegMAP (Regulatory Mapping) methodology and Analytical Hierarchy Process (AHP) approach. Verification is carried out at formal vocational education and non formal education (training and courses). Impact analysis was used to generate recommendation to improve the effectiveness of policies in accordance to the work force demand.

Keywords: alignment, supply side, policies, analytical hierarchy process, regulatory mapping.

1. Introduction

Indonesia's national education development aimed to achieve equitable education, quality and relevant to the needs of the community. It is because unemployment is still relatively high in Indonesia, so that the government and other interested parties have to formulate a comprehensive framework with respect to various internal and external conditions that could increase alignment between education and the world of work (Ministry of National Education, 2010).

The purposes of the mapping and analysis of supply side policies are to evaluate policies related to the fulfillment of workforce (supply side) related to the education system. The review is devoted to formal vocational education and non formal education (training and courses), since both types of education is a kind of education in direct contact with the world of work.

2. Research Method

The process of evaluation and mapping the supply side policies that contribute to the alignment of education and the world of work was done by adopt the methodology RegMAP (Regulatory Mapping) which was socialized by National Development Planning Board (2009).

Identify the value chain and consultation with stakeholders conducted to determine the condition of existing education regulations in Indonesia. Phase identification was done through the condition of existing secondary data from government documents and primary data in the form of interviews in the field. This phase is carried out in the Semarang City, as a city of education center in Indonesia. This research used the Regulatory Impact Analysis (RIA) and Analytical Hierarchy Process (AHP) using the concept of pairwise comparisons. Impact analysis was used to generate recommendation to improve the effectiveness of policies in accordance to the work force demand.

3. Results and Discussion

3.1. Inventory Policy Regarding Education in Indonesia

Collection of management policies on education through in depth interviews to education stakeholders, including government and the Institute of Education (vocational schools, Universities, and Institutions of courses and Training). The results of the inventory of the formal vocational education policy which is determined in Indonesia shows that there are 9 of the law, 16 government decree, 7 presidential regulation, 9 presidential decree, 2 instruction of president, minister of national education regulation 30, 11 minister of national education decree, and 1 local regulation. Policy for non formal education (courses and training) refers to two laws, two government regulation, and 5 the minister of national education regulation, and 2 local regulation.

3.2. Identify Problems In Alignment of The World Of Work and Education

The instrument which was used to formulate the main problems is eight national education standards, including content standards, process standards, competency standards, standards of teachers and education personnel, facilities and infrastructure standards, standards of management, financing standards and assessment standards. Problem identification process was done by using Analytical Hierarchy Process techniques to produce prioritized issues to be studied more deeply, as seen as the following figure.

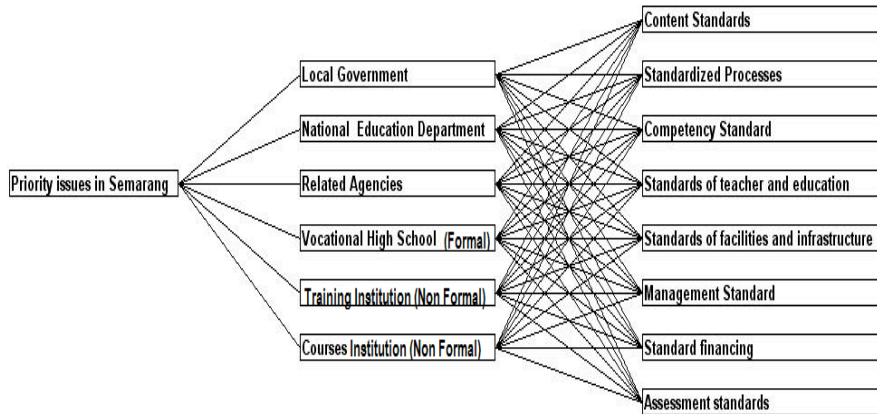


Figure 2. Hierarchical structures with AHP Education Problems

Table 1. Results of AHP in Decision Education Problems

Alternatives	Value	Decision Scorer
Management Standard	0,241	
Competency standards	0,179	
Content standards	0,148	
Standards of teachers and education	0,127	
Standardized processes	0,091	
Standards of facilities and infrastructure	0,085	
Standard financing	0,078	
Assessment standards	0,049	

Based on the AHP is known that the sequence of the priority issues in the city of Semarang is a management standard (24,1%). Standards covering management education program planning, implementation plans, monitoring and evaluation, school leadership/courses, management information systems, and special assessments. The hierarchical structure policies considered most relevant to the problem as shown in the following figure.

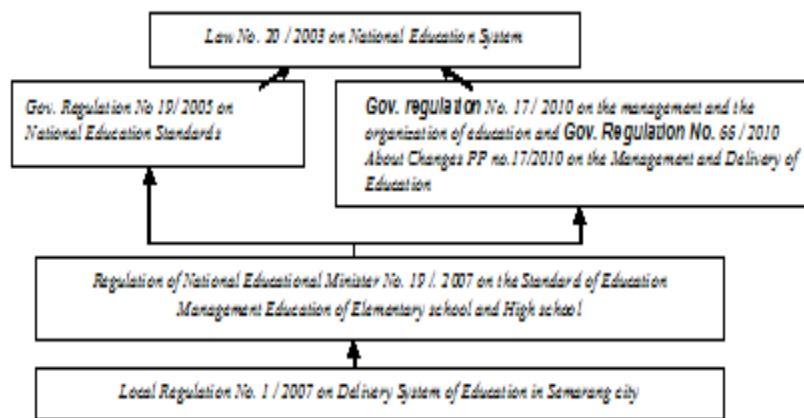


Figure 3. Hierarchy Structure Alignment Policy Contributes to Formal Vocational Education and The World of Work in Semarang City

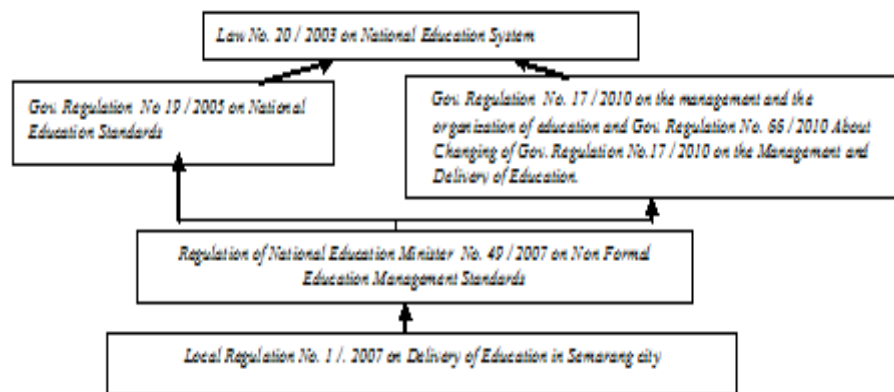


Figure 4. Hierarchy Structure Alignment Policies Contribute to Non Formal Education and The World of Work in Semarang City

3.3. Regulatory Mapping of Education Policy

RegMAP consists of seven categories namely basic statement of law, the purpose of policy interventions, policy alternatives, effective, communication, and compliance serta impact. Furthermore, the mapping indicates that the criteria are considered the most influential proponents of the alignment of education and the world of work in the city of Semarang is that the institution / institutions that will implement this rule has been stated clearly, so that the rules can be achieved with minimum burden to be borne by the target group, and does not pose an unnecessary burden (extra) for the non-target (negative externalities).

Besides, if seen from the structure of policies ranging from the center regulations to the local regulation, it is needed the synchronization of policies, especially related to education. For example, the National Education Standards discussion about formal (vocational) education and Non Formal (Course and Training), from Law No.20/2003 to the Local Regulation No. 1 / 2007, then there is some problem that has not been synchronized. Also based on an analysis of the dimensions of quality, quantity, location and time, then the policy map for each dimension can also be seen in table 2 and 3.

3.4. Impact Analysis for Education Policy Toward Alignment of Education with the World of Work

The results of in depth interviews with sources show that the impact of the implementation of the policy on the management of education in the city of Semarang is the form of the positive and negative impact on the education unit. Both positive and negative impacts are divided into two perspectives, namely the economic and social impacts. The goal of these impacts may include increased quality and quantity of graduates and education units, as can be seen in Table 4.

Table 2. Dimensional Analysis To Supply Side Policy of Formal Vocational Educational

Education Standards Policy	Law No. 20 / 2003	Government Regulation No. 19 / 2005	Government Regulation No. 17 / 2010	Ministerial Regulation No. 19 / 2007	Local Regulation Semarang City No. 1 / 2007	Dimension Affected
Contents	Article 18 of secondary education Article 36 of the curriculum	Articles 5 to 18	Article 60, Article 76 to 83	Appendix A point 3; Appendix B Point 1	Article 31	Quality
Process	Article 1 point 1 to 3, 10, 17, 23 Implementation of Article 4 of Principles of Education	Articles 19 to 24 Articles 78 to 90 on evaluation	not found *	Appendix A Point 4; Appendix B point 5	Article 6	Quality, Time
Competence Graduates	not found *	Articles 25 to 27 Article 72 Article 91 and 93 of the Quality Assurance	Article 114 of education equality, Articles 134 to 136, 138; Articles 143 to 154 units of international education; Articles 155 to 159 of the local unit based educational excellence	not found *	Article 63	Quality
Teachers and Education Personnel	Articles 39 to 44	Articles 28 to 41	Articles 170 to 181	Appendix B point 6	Article 40 and 41; Article 46 to 51; Article 56	Quality
Facilities and Infrastructure	Article 45	Article 42 to 59	Article 164 cooperative education management	Appendix B point 7	Article 37 Articles 52 to 54	Quality
Management	Articles 49 to 52	Article 60 and 61	Article 2 to Article 59, Article 164 of the management of educational cooperation	not found *	Articles 5 to 8	Quality Quantity Location, Time
Financing	Article 46 to 47	Article 62	not found *	Appendix B Point 5	Article 33 Article 66 and 67	Quality and Quantity
Educational Assessment	Articles 57 to 61	Article 63 to 71	Article 188 on public participation component	Appendix B point 10 Appendix C point 1 to 5	Articles 11 to 14; Article 39 Articles 57 to 61; Article 68 to 70	Quality

Table 3. Dimensional Analysis To Supply Side Policy of Non Formal Education

Education Standards Policy	Law no. 20 of 2003	Government Regulation no. 19 of 2005	Government Regulation no. 17 in 2010	Ministerial Regulation No. 49 in 2007	Local Regulation No. Semarang City. 1 in 2007	Dimension Affected
Contents	Article 36 of the curriculum	Article 5, Article 6 paragraph 3	Article 1 point 27	Appendix B points a, b, c	Article 28	Quality
Process	Implementation of Article 4 of Principles of Education	Articles 19 to 24	Articles 100, 102 and 104	Appendix A points 3, 4 attachment points 3 B	Article 6	Quality Time
Competence Graduates	not found *	Article 25	Article 114 of education equality	nothing	Article 63	Quality
Teachers and Education Personnel	Articles 39 to 44	Article 28, Article 33, Article 35 point g, Article 37	Articles 170 to 181	Appendix B points 6	Article 47 points 1, 2 and 5	Quality
Facilities and Infrastructure	Article 45	Articles 42 to 44, Article 46, 47 and 48	Article 164	Appendix B points 7	Chapter XIV chapters 52 and 53	Quality
Management	Article 50 to 52	Article 60	Article 2 to Article 59	Appendix E points 1 a	Articles 5 to 8	Quality, Quantity Location, Time
Financing	Article 46 and 49	Article 62	Article 3 points g	Appendix B points 8	Article 66 and 67	Quality and Quantity
Education Assessment and Evaluation	Article 57-61	Article 69 paragraph 1 Articles 78 to 85	Article 6 points 2d, Article 7; Article 19, Article 30; Article 188	Appendix B points 5d Appendix C points 1 to 4	Article 11-14, Article 39, Article 54 -61, Section 68-10	Quality

Based on the mapping and in depth interview about the impact of the implementation of educational management standards, it was needed policies's improvement from local level to national policy, such as coordination and confirmation of implementing the policy, i.e. the position and role of institutions and agencies related to the implementation of educational policy, especially to sectoral education (manufacturing industry, agriculture and trade services, tourism and hospitality), especially for courses and training institution. In order to streamline the implementation of education policy in Semarang city, it is needed the synchronization of the national policy and local policy. For example Regulation of Domestic Affairs Minister on autonomy of the educational affairs Regulation of National Education Minister was not in sync with the standards of education funding. In Regulation of Domestic Affairs Minister mention of local autonomy in matters concerning education, but does not touch Regulation of National Education Minister, so that there is no clarity on the implementation of education funding, such as the development of the curriculum.

Policies of education in the city of Semarang (Local Regulation No. 1 / 2007) should be revised in accordance with the policies in force at the central level (Gov. Regulation No. 17 / 2010 concerning the management and delivery of education, as well as Gov. Regulation No. 60 / 2010 regarding changes in Gov. Regulation No. 17 / 2010), due in part to the policy / legal basis was not applicable (Gov. Regulation No. 29 / 1990 on High School), Gov. Regulation No. 39 / 1992 on Community Participation in Education, Gov. Regulation No 73/ 1991 of Informal Education, Gov. Regulation No. 38 / 1992 on Educational Personnel.

Another recommendation based on impact analysis is studied more deeply about policies regarding cooperation between education and the world of work units in terms of the

absorption of graduates, the provision of facilities and infrastructure, as well as the transfer of information and technology transfer are up to date, so that graduates established harmony between the world of work.

Table 4. Policy Implementation Impact

Standards implementation	Target	Type of Benefit	Type of Cost
The content (curriculum, learning load, academic calendar)	Graduate	National competency standards that are easily absorbed by the world of work.	The increase in unit operating cost of education so that students are higher
	Education Unit	Improving the Quality of Education. And support the funding aspect (eg. grants, financial aid, etc.)	Increased education units operational
Process (syllabus, learning objectives, teaching materials, teaching methods, learning resources, assessment)	Graduate	Graduates have mastered the basic competencies, independence according talents, interests, and physical and psychological development.	Increased investment and operational costs of education so that the unit cost of a higher student
	Education Unit	The efficiency of the students because it was well planned.	Increased investment and operational costs of the educational unit
Graduates Competencies (competencies across subjects or groups of subjects and subjects or groups of subjects)	Graduate	Improve intelligence, knowledge, personality, noble character, and the skills to live independently.	Need to increase the soft skills that require self-development costs.
	Education Unit	Enhance brand image and competitiveness of education units for a particular competency	Requires continuous improvement and the need to perform tracer study
Teachers and Education Personnel	Graduate	Graduates get education with academic and pedagogical qualifications, personality, professional, and social.	Cost of improving the quality of teachers and sometimes charged to the unit cost of education that affect student learning.
	Education Unit	The process of increasing the quality and quantity of graduates become easier	Cost of education teachers and education
Infrastructure (land, classrooms, laboratories, practice rooms, a library the ratio of the means of the number of students and others) management arrangements	Graduate	Increased competence as the existing conditions of the world of work (up to date)	Increased educational unit investment cost implications for the cost of student learning.
	Education Unit	Develop capabilities of graduates to meet the needs of industries	Increased investment education units
	Graduate	Allows distribution of graduates into the world of work	Admission more competitive
	Education Unit	Education units have the independence, partnership, participation, transparency and accountability so that the education system to be more effective	Requires setting unit level education curriculum and syllabus, organizational structure, a clear division of labor, academic regulations, codes of conduct, codes of ethics, and operational costs of the educational unit
Financing (investment costs, operating costs, personnel costs)	Graduate	Available standard facilities which is support the quality of education	The increase in the cost of learning
	Education Unit	Improved facilities and infrastructure standards	The increase in the cost of investment, operation, and personal
Assessment (assessment of learning outcomes by educators, educational units, and government)	Graduate	More graduation certificate recognized by the world of work	Certificates of completion must be reflected in the competence
	Education Unit	Mapping the quality education unit and the basis of external funding.	Education units must follow the assessment mechanism

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5. Conclusions

- (1) The process of inventory of supply side policies that contribute to the alignment of education and the world of work suggests that vocational education, training and courses institution refer to national and local policies.
- (2) Identification of supply side policies are based on the National Education Standards. The priority for educational in Semarang city is about management standards, with the weighting of 24,1%.
- (3) The mapping process of educational management policy were based on seven criteria in the assessment of policy, i.e. the legal criteria, the goal of policy interventions criteria, policy alternatives criteria, accuracy criteria, communication criteria, compliance criteria, and impact criteria. Two priorities that deserve further study for the improvement of educational policy in order alignment of education and the world of work both at the national and local policy policy is compliance criteria (24%) and accuracy criteria (20%).
- (4) The mapping indicates that the criteria are considered the most influential proponents of the alignment of education and the world of work in the Semarang city, that is statement

about the institution that would implement the rules, so that the rules can be achieved with minimum burden to be borne by the target group, and does not pose an unnecessary burden (extra) for the non-target (negative externalities).

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