Modelling Quality Education Perceived from Paradigm-shift, Support-elements, Public-participation, Curriculum and Educator Configuration

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Abstract

Quality education in Indonesia perspectives for golden generation restoration and for the 21st century compulsion were investigated. It was aimed at exposing conceivable distinguished variables engaged, how and in what manners they were interdependent. The reseacrh was conducted applying exploratory-design. Qualitatively, six prognostic focusses were identified through inclusive reviews and focus-group discussions. Quantitatively, associated variables were prearranged as quality education (dependent variable); curriculum and educator (moderating variable); paradigm-shift, public-participation and support-elements (independent variables). Data was collected randomly from 1,120 respondents (teachers) by distributing 500 questionnaires related to the six variables involved; and 299 were finally accomplished. Statistically, 15 hypotheses were developed and eight of them were validated by the analysis under partial least square (PLS) procedure. It was noticed that quality education was respectively influenced by curriculum and educator. Curriculum was affected by public-participation and paradigm-shift; educator was influenced by curriculum. Public-participation and support-elements were influenced by paradigm-shift. Support-element was affected by public-participation. Neither quality education nor educator was directly influenced by independent variables; curriculum was not affected by support-elements. Besides, the most imperative attribute in educator was teacher who familiar with educational technology qualities.

Keywords: educational technology, quality education, exploratory-design, PLS

BACKGROUND

Various attempts and reports had universally been appeared over the past few years searching for identifying life, career and learning skills that outlining skills needed for success in the 21st century. Despite there were differences on how the skills are classified, there were also commonalities. In general, they really depended directly on how broadly and deeply in reaching new level of literacy, including strong academic, thinking, reasoning and teamwork skills as well as proficiency in using various latest emerging technologies. They can be further elaborated into areas such as digital age literacy (today's basic), inventive thinking (intellectual capital), interactive communication (social and personal skills) and quality (the end results); they were simply categorized into learning, literacy and life skills (Gill, 2010; Beers, 2012; AT21CS, 2014; Sembiring, 2014).

These marvels were also tightly pertinent to Indonesia context as one of emerging country being predicted having a bright economic growth by the mid of 21st century. That prediction was based on various potentials owned by the country; huge natural resources, fertile land, startegic location and great human capital (Rokhman, Hum, Syaifudin & Yuliati, 2013). To put them all into a great and promising capacity, it cannot be seperated from educational spectrum. This was actually relevant to the rise of Indonesia golden generation as

the theme of 2012 National Education Day (Dewiyani & Sagirani, 2014). In a further identifiable sense, it was referred to as the so-called quality education.

Quality education is no doubt a prime key interest for society as it gave significant impact on all dimensions of the life of person and in turn in the life of entire community (European Youth Forum, 2013). Even so, it was a complex concept and it also changes in accordance with conditions and expectations of stakeholders in which it being functioned. Therefore, no single understanding of quality education agreed upon by all related parties or supported by empirical inquiry as well.

Quality education concerned everybody in society and it was essential that everyone has a role in contributing to such quality. Investing in quality education is a long term return on investment for society, both in economical as well as social and cultural terms. Quality education, especially in Indonesia setting, is much more crucial in approching 2045 or 100 years after the independence day; it refers to golden years with golden generations. In essence, mainly in Indonesia context, principles of quality education were relatable to quality itself plus access, equity and participation. In a more specific notion, quality education was generally determined by stakeholders and some other fundamental aspects; for examples government, industries, societies, administrators, educators, students, parents, regulations, curriculum, facilities, equipments and finance (Sembiring, 2008).

In this inquiry, factors engeged within quality education framework in advancing Indonesia golden generation for the 21st century coercion were intentionally limited to paradigm-shift, public-participation, support-elements, curriculum and educator. It was aimed at exposing conceivable distinguished variables and dimensions engaged and to observe on how they were interacted; and in what manners they were interdependent one another.

To facilitate scope of the study understood, variables and dimensions involved within quality education framework were exhibitted in the following table (Table 1). The table is used as a foundation of establishing the operational framework of the study afterwards.

Table 1: Variables and Dimensions Involved

No	Variables	Dimensions	No	Variables	Dimensions	Notes
1	Quality education for Indonesian golden generation $Y_{(1-7)}$	Y_1 : Smart Y_2 : Integrity Y_3 : Professional Y_4 : Accessible Y_5 : Affordable Y_6 : Relevance Y_7 : Flexible	2	Paradigm Shift X_1	X_{11} : Globalization X_{12} : IT development X_{13} : Population X_{14} : Value change	Each dimension within **X** (independent variables) is measured by asking two items to respondent (8 questions per variable). While for **Y** (dependent variable) consists of 7 items (47 items in total)
3	Public participation X_2	X_{21} : Parliament X_{22} : Government X_{23} : Civic society X_{24} : Users	4	Support elements X_3	X_{31} : Regulation X_{32} : Governance X_{33} : Infrastructures X_{34} : Budgeting	
5	Curriculum X_4	X_{41} : Substance X_{42} : Facilitation X_{43} : Socialization X_{44} : Implementation	6	Educator X_5	X_{51} : Qualification X_{52} : Ratio X_{53} : IT literacy X_{54} : Educational tech	

DESIGN AND METHODOLOGY

As an effort to ensure Indonesia golden generation entering and ready for the year of 2045, quality education is presumably the main answer. To assure expectation on teaching and learning process in the classroom level operated as presumed to be, quality education presence is therefore the prime answer. This approach is chosen to discover ways of

attempting quality education in the operational level is meaningful so students and educators are both survived within the era of 21st Century through effective teaching and learning processes in the classroom level (Sembiring, 2016). Quality education, as the dependent variable in this inquest, is operationally observed through dimensions on how students become dependapble citizens (smart, integrity and professional) in one hand and education itself is accessible, affordable, relevance and flexible to all nations on the other hands.

Paradigm shift, as the first independent variable, is operationally measured by observing on four dimensions, such as how the globalization, information technology (IT), population growth and value change in the society influencing public-participation, support-elements, curriculum, educator and finally quality education itself in developing golden generation. Public-participation, as the second independent variable, is strictly measured by observing on four dimensions, such as how parliament, government, civic society and users influencing support-elements, curriculum, educator and finally quality education. Support-elements, as the third independent variable, is precisely measured by observing on four dimensions, such as how regulation, governance, infrastructures and finacial aspects influencing curriculum, educator and quality education.

Curriculum, as the first moderating variable, is exactly measured by observing on four dimensions, such as substance, facilitation, socialization and the implementation that might affect educator and quality education. At the same time, it is evaluated on how curriculum is affected by the dependent variables. Educator, as the second moderating variable, is officially measured by observing on four dimensions, such as qualification, ratio, IT literacy and educational technology qualities of teachers that would influence quality education. Additionally, it is evaluated on how educator is affected by the dependent variables.

Referring to Table 1 and the design elaborated above, it is now appropriate to establish operational model that will be used and investigated with the help of quantitative procedure. This operational model is used as a foundation of withdrawing conclusion inferentially later; the model is exhibited in Figure 1.
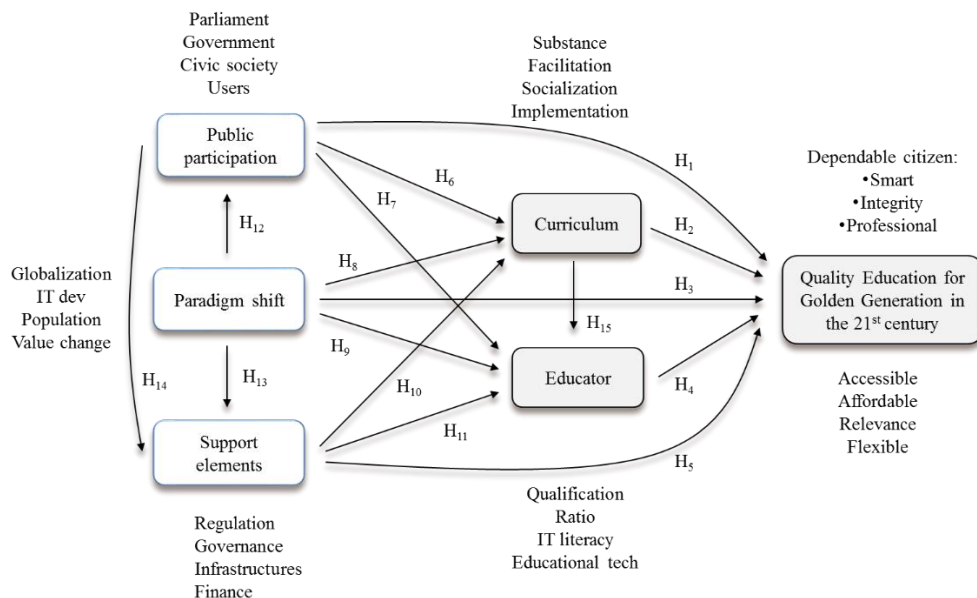

Figure 1: Operational Model of the Study

Having described the context in the view of variables involved, 15 hypotheses are constructed and then later analyzed under quantitative approach utilizing PLS (Gozali, 2012). The established hypotheses are: quality education is influenced by public-participation (H_1), curriculum (H_2), paradigm-shifts (H_3), educator (H_4) and support-elements (H_5). Besides,

curriculum is influenced by public-participation (H_6), paradigm-shift (H_7) and support-elements (H_8); educator is influenced by public-participation (H_9), paradigm-shift (H_{10}), support-element (H_{11}) and curriculum (H_{15}); public-participation is influenced by paradigm-shift (H_2). Finally, support-element is infleunced by paradigm-shift (H_{13}) and public-participation (H_{14}).

The study was implemented at Universitas Terbuka (Indonesia Open University) milieu. The population is those teachers who were studying to complete their degree and graduated from the Faculty of Education and Teacher Training in 2015. The respondents, as the sample of the population, are 1,100 teachers who attending graduation ceremony in the second semester of 2015.

In addition, this research utilized a quantitative approach from surveys that collected data from graduates (following Fowler, 2014). Instruments in the form of questionnaires were developed by incorporating five variables involved. Each variable was subdivided into dimensions; there are 24 them. Firdaus and Affendi (2008) suggested minimum respondents for such design ranges from 5-15 with respect to the dimensions. This implies that number of respondents based on this rule of thumb should be in the range of 120–370. For this study, minimum number of respondents is determined to 220.

As previously mentioned, there was set of questionnaires developed for this research as summarized in Table 1. The questionnaires were developed and inspired by Bird (2009). In order to be considered valid, all statements should be answered properly by respondents. Finally, PLS (part of SEM approach) was used to statistically draw conclusions and illustrate the end results (Gozali, 2012).

FINDINGS AND ARGUMENTS

Before presenting the end upshots, it is esteemed to show the qualities of respondents (Table 2). This will amplify our insights related to qualitative and quantitative procedures utilized sequentially. The results of analyses are detailed in the following interpretation in accordance with relevant figure and tables.

Table 2: Respondents Characteristics

Number of Provinces: 32 Regional Offices: 38	Population: 1,120 Respondents: 299 (26,69%)	Female: 81.93%	Male: 18.04%

		%		%		%
Teaching at	Early Childhood	33.11	Primary School	63.21	High School	3.67
Status	Public School	22.74	Private School	23.41	Others	53.84
Experience (Year)	$1-5$	27.09	$6-10$	45.15	$11-15$	17.39
	$16-20$	3.01	$21-25$	2.67	26^{++}	4.68
GPA	$2.00-2.49$	9.36	$2.50-2.99$	24.08	$3.00-3.49$	53.84
	$3.50-3.99$	12.70	4.00	0.00		
Age (Year)	< 25	13.04	$26-30$	30.76	$31-35$	24.08
	$36-40$	9.36	$41-45$	12.70	46^{++}	10.03
Study Length (Year)	< 4	10.36	5	77.92	6	7.35
	7	1.33	8	0.66	8^{++}	2.34

Having considered respondents qualities (Table 2), we are now in position of showing hypothesis results and the loading factors analysis (Figure 2) with inclusive explanation.

Here, there were three prime properties need to be elaborated further with respect to the results obtained under quantitative procedure.

The *first* upshot is related to the hypothesis assessment. Figure 2 exposed that *not* all hypotheses were validated by the analysis. Seven out of 15 hypotheses were not authenticated by the analyses as the required t_{values} are not fulfilled. In this case, quality education is not infleunced by public-participation (H_1), paradigm-shift (H_3) and support-elements (H_5). In addition, educator is not influenced by public-participation (H_7), paradigm-shift (H_9) and support-elements (H_{11}); curriculum is also not influenced by support-elements (H_{10}).

This means the other eight hypotheses were positively substantiated by the analyses. They are: quality education is influenced by curriculum (H_2) and educator (H_4). Additionally, curriculum is influenced by public-participation (H_6) and paradigm-shift (H_8); it also had an effect to educator (H_{15}). Paradigm-shift has effect to public-participation (H_{12}) and support-element (H_{13}). Finally, support-element is influenced by public-participation (H_{14}).
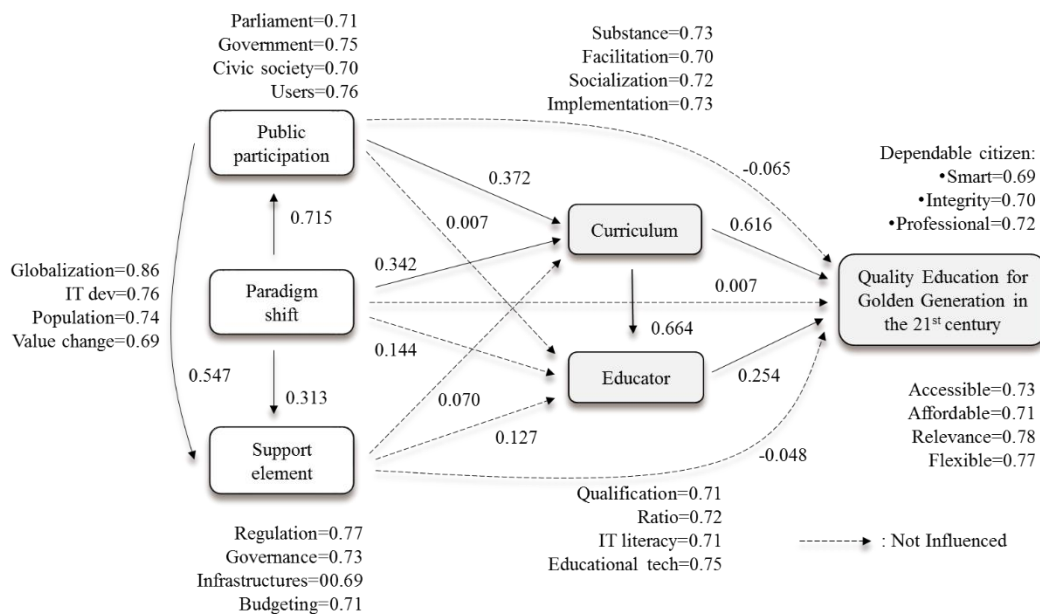

Figure 2: Hypothesis and Loading Factors Results

The *second* effect is related to the result of the loading factors of the model. It was quantitatively obvious the most influential factor affecting quality education is curriculum (0.616) and then followed by educator (0.254). Furthermore, curriculum is mostly influenced by public-participation (0.372) and then followed by paradigm-shift (0.342); paradigm-shift gave effects mostly to public-participation (0.715) and then followed by support-element (0.313). Public-participation then gave an effect to support-element (0.547).

Referring to dimensions in quality education; respondents stongly believed that quality education will educate and prepare citizens bocome dependable persons; in more specific terms, quality education will bring Indonesians being professional (0.72) with high integrity (0.70) and smart attitude (0.69). This is valid on condition that substance and implementation of curriculum are outstanding with adequate socialization and facilitation. Correspondingly, educator should have educational technology qualities and given the ratio of teacher versus student is ideal; they also hold a minimum qualification and literate in IT.

The *third* consequence is related to the goodness of fit of the model. Reliability and validity of the model for each construct is categorized good. For reliability assessment, all values from Cronbach Alpha and Composite Reliability were equal or greater than 0.8; this is a requirement for reliability assesment. At the same time, Average Varianece Extracted

(AVE) and Roots of AVE were also accepted since all values for variables engaged showed the Root of AVE is gretaer than AVE. This implies that discriminant validity of the model is acceptable. Moreover, the R Square showed that more than half of the variance can be objectively explained by investigated model (paradigm-shift is excluded as it was the origin). They are all exhibited in Table 3.

Table 3: Goodness of Fit of the Model

Variables	Cronbach Alpha	Composite Reliability	AVE	Root of AVE	R Square
Quality education	0.857491	0.891022	0.539279	0.734356	0.572181
Curriculum	0.868863	0.897280	0.522595	0.722907	0.517141
Educator	0.876132	0.902371	0.536649	0.732563	0.581755
Paradigm shift	0.891492	0.931294	0.569362	0.754561	
Public participation	0.882434	0.906626	0.548814	0.740820	0.511857
Support elements	0.887786	0.910337	0.559700	0.748131	0.641863

Table 3 evidently exhibits that model tested and analyzed were categorically reliable. The results of PLS as one of approach in SEM firmly indicated that the model fulfilled the cut-off values as a fundamental requirement. The model is good and it can be then used as a point of reference to instigate further analysis and explanation within quantitative function.

Let us back to the *second* effect on the loading factor results. It has been identified previously that the most influential factor affecting quality education is curriculum (**0.616**). In addition, the most crucial attribute here is both substance (0.73) and implementation (0.73) of the curriculum; and then orderly followed by socialization (0.72) and facilitation (0.70). The second influential factor affecting quality education is educator (**0.254**). Moreover, the most important attribute in this dimension is educational technology expertise of educator (0.75); and then orderly followed by ratio of teacher versus student (0.72), minimum qualification (0.70) and IT literacy (0.70). Surprisingly, all independent variables (public-participation, paradigm-shift and support-element) have no direct effects on quality education. More importantly, educator was entirely not inflenued by the independent variables.

To certain extent, however, it can be statistically inferred that quality education was influenced by those three independet variables moderating by curriculum. Quality education was in fact also influenced by two independent variables (public-participation and paradigm-shift) moderating by educator indirectly as educator was influenced by curriculum (0.664) as another modertaing variable of the model.

Despite the independent variables had no direct effects on quality education, it is still worth to note that respondents put users (0.76) as the vital attribute in public-participation. The second pertinent attribute was government (0.75) and then followed by parliament (0.71) and civic society (0.70). This is impressive and imperative as respondents believed that users of educational output and outcomes were two prime entities in terms of providing quality education. Moreover, respondents considered globalization (0.86) as the most critical attribute in paradigm-shift. The second is IT development (0.76) and then followed by population (0.74) and value change (0.69). This was very positive as it was just inline with the initial model under qualitative inquiry. It was also nice to know that regulation (0.77) was the most influential attribute in support-element; and then followed orderly by governance (0.73), budgeting (0.71) in terms of financial aspects and infrastructures (0.69).

This study was using explanatory-design as an approach in mixed-methods procedure. This entails that the study was implemented under quantitative first prior to qualitative series. Having finalized the qualitative analysis, we then follow through with quantitative series (Creswell & Clark, 2011). It essentially aims at searching for further confirmation on the results obtained under qualitative series beforehands.

Under qualitative procedure, quality education were interdepended with the five main variables; public-participant, paradigm-shift and support-element; including curriculum and educator. Remarkably, only two main variables (curriculum and educator) are interconnected with quality education as the dependent variable. Besides, educator was entirely not influenced by the three independent variables. This implies qualitative versus quantitative results are considerably varies.

This result discovered somewhat significant differences between what was obtained from qualitative routines as compared to quantitative approach. Seven out of 15 hypotheses assessed are not validated by the analysis, especially the three main independent variables. This again implies that established qualitative frame was imperfectly approved by the quantitative analysis; they differ and they might be having contradictory upshots in high intent. Yet, this result is still useful to formulate critical variables and attributes that should be cautiously taken into account in advancing Indonesian golden generations through expected quality education; further comprehensive inquires is certainly needed to find how it just functions so.

CONCLUSIONS

Results in this inquiry encountered comparatively spacious distinction between what has been achieved from quantitative routines as opposed to qualitative approach obtained earlier. This implies that established qualitative model is imperfectly approved by the quantitative analysis. Further investigation is obviously important to be conducted to find the reasons behind all differences. It is also important to investigate in what level such contradiction, if any, did take place. This is vital given similar research will be conducted in the future with comparable theme as identified by Metiri Group (2011) and Gurney (2007).

Imagining this savvy is unanimously typical in a wide-ranging of any school setting in Indonesia ambiance, management in all levels and educators would then be well-advocated to musing variables along with their associated dimensions explained here earlier. It aims at offering beliefs that competent teachers grow to endeavor quality education in the classroom level (Meador, 2010). This is inline with the Partnership for 21st Century Skills (2013) with respect to accomodate students expectation for 21st century skills compulsion for the rising of Indonesia golden generations approaching the golden years of 2045. This is so as learning 21st century skills required 21st teaching (Saavedra & Opver, 2012).

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