Conference Paper

Public Policy and ICTs for Higher Education of Disabled Students in Indonesia

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Abstract

The Indonesian government's policy on inclusive education determined that students with all type of disabilities (physical, mental and social) should be mainstreamed into general schools regardless post-secondary schools/colleges/universities. As a result, those disabled graduating from vocational high school should be satisfied with non-formal occupation. By improving their scientific enquiries through ICT aid, they could pursue further education in accounting, management, architecture, design graphics, translator, etc. and enjoy formal occupations for a much better income. This paper examines to what extent the government policies have or have not effectively promoted the rights of the disabled to higher education and training via the use of information communication technology. This paper draws on a survey of five high schools for the disabled at Central Java and Yogyakarta with total of 170 students. It was found that there is no Presidential Decree or Ministerial Decree on post-secondary education /higher education of the disabled. Even the Presidential Decree No 75 of 2015 was oriented to the national action plan for the disabled (2015-2019) such as implementing the respect, protection, fulfillment, enforcement, and promotion of human rights in Indonesia.

Keywords: disabled students, ICT, inquiry scientific learning, public policy

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Received: 09 April 2017
Accepted: 17 May 2017
Published: 12 June 2017

Publishing services provided by Knowledge E

Selection and Peer-review under the responsibility of the ICoSaPS Conference Committee.

1. Background

In Indonesia, the number of disabled persons accounted for 11-13% of total population in 2015 [8], an increase of 9% from only 2.45% of the approximately 249 million population in 2012 [28]. Indonesian Minister of Social Affairs, Ms. Parawansa, said that there were several causes of the increase including social conflict, natural disaster, and alcohol abuse [9]. Among the disabled, the proportion of those physically impaired reached 39.37%, blind 29.63%, and deaf 7.89% [29].

More than 95% of disabled are unemployed. At Klaten regency, for example, out of 13,000 disabled, no one works at the government institution [10]. This figure is

worsened by the fact that in Yogyakarta there were only 10 persons out of 3,353 disabled who graduated from high school who work at both government and private institutions [11].

Beyond the government policy, the inclusive and special needs education at post-secondary school was started in 2003 at Indonesia University of Education (UPI), Bandung, West Java, with technical assistance from the University of Oslo. The program started with only 18 students sponsored by the universities [31]. After this pilot project received high appreciation from the public, universities such as University of Indonesia Jakarta, Gadjah Mada University of Yogyakarta, Yogyakarta State University, Brawijaya University Malang, and Islamic University Yogyakarta also took the initiative to admitted students with disabilities in a quota system. Among those higher institutions, however, none of them have a written protocol to assist prospective students with disabilities [25]. The auxiliary services at those universities, including the curriculum, faculty staff, and the use of ICT were not adequately provided to support students with disabilities. (`http://www.surabayapost.co.id/berita`).

Compared with Thailand, the initiative of Indonesian universities and colleges still lags behind. There are 67 universities and colleges in Thailand that provide educational and training system to the disabled such as Ratchasula College, Chulalongkong University, Srinakhariawirot University, Rajabhat Institute, Nakom Luang Polytechnic, Thammasat University, etc. [32]. At Ratchasula College, for example, all disabled students including the deaf, blind, or physically impaired are given the opportunity to study in the master programs.

The Indonesian Ministry of Social Affair's annual report also revealed that during 2012 academic year, there were 837,343 disabled who finished their Vocational School without continuing their education, and 47.8% of disabled workforce (age 15 years old and above) had no jobs. Better Work Indonesia, UNESCO Indonesia, ILO Jakarta, PROPEL Indonesia, UNPRPD, PPCI, Helen Keller International Indonesia, as well as several others organizations are among the institutions promoting the right of disabled in Indonesia including equal rights for working at both government and private offices or companies. In [26], mentions there are four reasons why companies and institutions do not hire the disabled: (1) low skill of the disabled (2) inadequate facilities for the disabled (3) ignorance of the laws regarding people with disabilities, and (4)no government control over the implementation of laws that protect the rights of people with disabilities.

Low skill of the disabled can be seen during job fairs conducted by the Minister of Workforce and Transmigration on 18-19 September 2012, in which there were 300 positions specially provided for the disabled to work at the government offices but only 33 persons had the qualifications. Most skill and knowledge of the disabled were

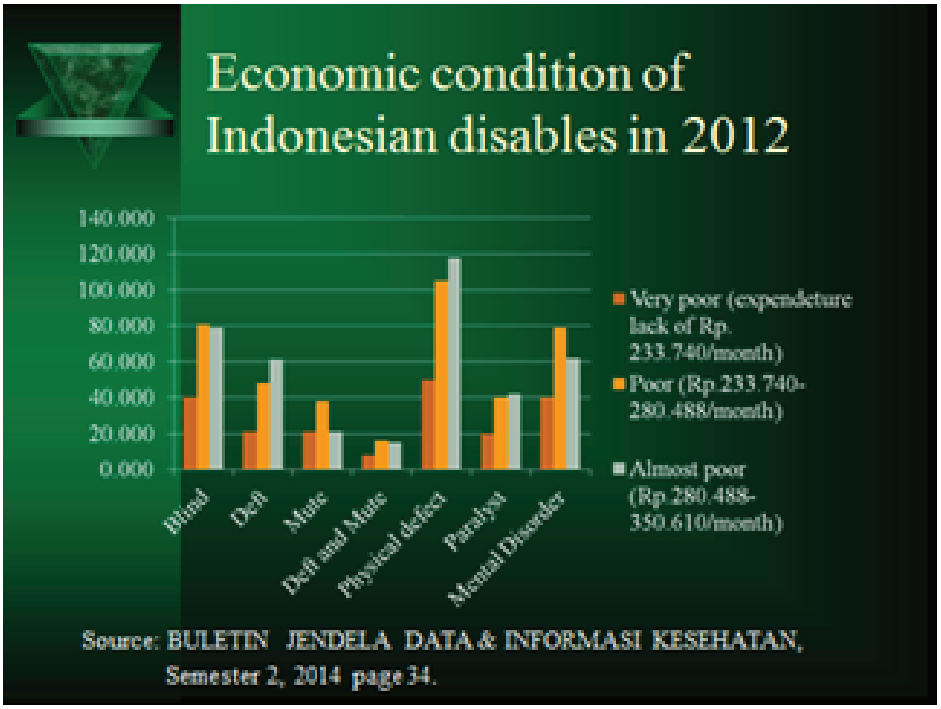

Figure 1: Economic condition of disabled workers in Indonesia.

not suitable with the job requirements so about 267 vacancies are still waiting to be filled by qualified disabled (Viva, Feb 23, 2013).

In Indonesia, there was no government policy, Presidential decree or Ministerial decree to promote higher education for the disabled students. As a result, there were 837,343 out of 845,798 disabled did not continue their education to undergraduate levels (Minister of Social Affairs, 2012).

For those disabled graduating from vocational high school, non-formal occupation like carpenter, tailor, and masseuse are not uncommon professions. Their income is less than sufficient because they earn the income of Rp.233.740– Rp.350.610/month (US $ 23-35/day). They can live only from hand to mouth.

2. Public Policy on Disabled Students in Indonesia

The Indonesian government had committed to the improvement of the well-being of disabled people since 1983. It can be traced into several policies issued in the form of Presidential Decree No. 39 of 1983 and Government Regulation No. 4 of 1997 concerning the right to obtain education, employment, and a proper standard of living, equal treatment in participating in national development, accessibility, and rehabilitation.

In 1998, another regulation was issued by the government. It was known as the Regulation No. 43 of 1998 which was supported by Ministerial Decree of the Public

Work Ministry No. 468/KPTS/1998 on technical specifications and requirements for universal accessibility to public building and another environment for the disabled.

The policy in the education sector was initiated by minister of education with its decree No. KEP-205/MEN/1999. This policy was made to promote vocational training and working placement of disabilities. It was then supported by Law No. 20 of 2003 on the National Education System and Ministerial Regulation No. 70/2009 requiring education policies and practices to include provisions for disability inclusion while Law No. 11 of 2009 put the emphasis on the responsibility of government to provide social welfare for the disabled.

The government policy in 2010 also prescribed that every level of education must accept students without discrimination, including discrimination based on physical and mental condition [7]. Finally, the Presidential Decree No 75 of 2015 postulated national action plan for disables (2015-2019), for example, implementing the respect, protection, fulfillment, enforcement, and promotion of human rights in Indonesia including the rights of the disabled.

The policies above clearly identified that there were no single policies on higher education for the disabled. The Indonesian government's policies on inclusive education determine that students with all type of disabilities (physical, mental and social) should be mainstreamed into only general schools rather than into the colleges or universities (post-secondary education).

It is noteworthy that the government policy for the disabled post-secondary education is very necessary as through higher education they can gain employment in meaningful occupations and get opportunities for career development or for quality of life. Furthermore, education is even more significant for people with physical and sensory disabilities, whose range of employment is limited to jobs requiring less physical abilities and skills. It can be said that accessibility to higher education is especially important for the people with disabilities. Chapter 31 of the amended Indonesian 1945 Constitution has clearly stated that every citizen has equal rights for having high-quality education. All educational needs of human being including young, old, and disables persons should be fulfilled and oriented to appropriate life skill (Daccar Declaration, 2000), and Chapter 5 of National Law No. 4 year 1997 regarding the disabled's rights and equal chance for all professions and activities can be applied to the society if only the government issues higher education policies for the disabled and provides technology provision as well.

3. ICT for the Disabled

Although the use of ICTs in education had been integrated into the school syllabus since 2000 ([2]: 89), its application to teaching-learning activities was still prevalent for the

disabled. ICT has not been able to foster the improvement of learning and teaching process.

Some teachers of science education at the disabled school have initiated the use of3D Braille comic in teaching molecular structure, land texture, and plant leaf structure. The results show that the students' understanding on the Biology lesson given through 3D Braille comic has improved, as indicated with their mean score of 18 on pre-test increasing to 87,33 on post-test. During the pre-test only 2 out of 18 students got the passing score while on the post-test there were 17 students did so. A 3D Braille learning module was developed by for elementary school students (standard V). The results indicate that the disabled students have made significant progress in learning science with three-D Braille aid.

With the technology of computer, most handicapped students, including learning disabled, mentally retarded, hearing impaired, emotionally disturbed, and language disordered, should achieve the higher levels of their capabilities those with conventional instruction alone. Previous studies conducted with learning disabled, mentally retarded, hearing impaired, emotionally disturbed, and language disordered students indicated that their achievement levels are greater with computer than with conventional instruction alone. Some studies found that handicapped students with ICT aid even outperformed the non-handicapped ones [5].

With higher-order learning skill or inquiry learning, the disabled students can study the natural world and propose explanations based on evidence derived from their work because inquiry requires the identification of assumptions, the use of critical and logical thinking, and the consideration of alternative explanations [12]. It means that inquiry skills include scientific process skills (such as observing and hypothesizing), general inquiry skills (such as thinking critically and solving problems) and practical how-to skills (such as reducing error as much as possible).The goal of inquiry is to help students gain a better understanding on the world surrounding through active engagement in real-life experiences [34]. Another study indicated that scientific inquiry method of teaching for Physics subject is statistically more significant than lecture method for teaching Physics [14].

The inquiry learning for disable students in this research is being set up by using a toolkit for building multimodal applications based on the XHTML+Voice language called X+V. It is configured as a set of X+V documents, some of which are stored in the document server, while others are dynamically created using PHP programs that take the user's features and preferences (e.g. gender and preferred interaction language) into account. The data, extracted from the databases. X+V documents, are comprised of forms with the spaces filled in by the user via speech, text or mouse clicks. To visualize these documents and to interact with them orally, users run a multimodal browser (e.g. Google) in their communication devices, which supports multimodal interaction (voice,

text and graphics).The documents are provided in such format as PDF Digital, Text to Speech, Video with Sign Language for the deaf, and etc, and the disabled students can access the lesson with multimodal interactions.

4. Conclusion

No single government policy, either Presidential Decree or Ministerial Decree on post-secondary education /higher education of disabled or even the Presidential Degree No 75 of 2015, is oriented to the national action plan for the disabled (2015-2019) such as implementing the respect, protection, fulfillment, enforcement, and promotion of human rights in Indonesia. Generally, the Indonesian government's policy on inclusive education determines that students with all type of disabilities (physical, mental and social) should be mainstreamed into general schools regardless post-secondary schools/colleges/universities. As a result, those disabled graduating from vocational high school should be satisfied with non-formal occupation as they have no pertinent qualifications for formal occupation.

By improving public policy on the disabled persons and providing ICT provision along with the implementation of scientific enquiries, the disabled students will be able to take part in many learning activities such as evidence gathering, constructing and testing hypotheses, manipulating variables, and the like. Through ICT aid, they can practice their scientific enquiry skill at higher level of education. It helps them deepen their skill in accounting, management, architecture, design graphics, etc. Finally, with their skill and higher education, they can enjoy formal occupations for a much better income.

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