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CSD
Center for school development

VICTOR HARBOR HIGH SCHOOL

Proceeding

INTERNATIONAL SEMINAR ON EDUCATION

Road to World-Class School

Auditorium UDIKLAT PT. PLN Pasuruan
Jln. Raya Surabaya - Malang KM. 50 Pandaan
January 17, 2011

PROCEEDING
INTERNATIONAL SEMINAR ON EDUCATION
"ROAD TO WORLD-CLASS SCHOOL"

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PREFACE

This proceeding compiles all paper from the keynote speaker and call for paper in The International Seminar on Education "Road to World-Class School" held by the Center for School Development in cooperation with Victor Harbor High School, Education Department of Pasuruan Regency, SMP N 1 Pandaan, SMP N 2 Pandaan, and SMP N 1 Pasuruan on January 17, 2011.

The committee would like to thank everyone involved, and those who have given contribution for the success of this seminar.

Klaten, January 17, 2010

Editor

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TOWARDS IMPROVED IMPLEMENTATION OF WORLD CLASS SCHOOL (INDONESIAN PERSPECTIVES)

Keynote Address by

Prof. Slamet PH, MA, MEd, MA, MLHR, Ph.D
Professor and Consultant of Policy, Management, and Leadership in Education

at the
International Seminar on Education
"Road to World-Class School"
Pasuruan, East Java, Indonesia, January 17, 2011

Distinguished Participants,
Ladies and Gentlemen,

First of all, I would like to express my appreciation for having invited to be keynote speaker at this timely seminar. This seminar is timely indeed because I think it fits very well in our national drive to develop and implement World Class School (WCS). I am also pleased to share some ideas with you pertaining to improved implementation of WCS and challenges that lie ahead and how to overcome them. It has been several years that we have already entered an era of globalization where distances are shrinking, change of information is very instant, and competitiveness is very tight. As we are all aware that WCS is a conditio-sine-quo-non for creating high quality of human resources required for global competitiveness and cooperation which we are all now experiencing.

For the seminar participants who are from WCS, your schools have been tightly selected as WCS (0.12% of all Primary Schools, 0.99% of all Junior Secondary Schools, 2.74% of all General Senior Secondary Schools, and 3.22% of all Senior Secondary Vocational Schools, see Attachment 1). But, morally it is also a burden for you because most of the schools around your schools have considered yours as centers of excellence, centers of gravity or centers of nerve, and they give you no choice except to be excellent schools and best examples. In addition, for those who teach in WCS, you have to be able to answer 12 questions of teaching tips as written in Attachment 2. For those who are WCS school principals, you have to be able to answer 9 most important questions as seen in

Attachment 3. And for all of the seminar participants in general, the targeted districts (in percent) to have WCS can be seen in Attachment 4.

In many occasions, I said that expressing of what objectives to be accomplished is the easier part, but the harder part is in developing and implementing WCS policy that, in effect, will produce the necessary change in the system, entity, and individual. My observations clearly indicate that it is at the implementation level that lack of attention from stakeholders involved in implementing WCS policy. Clarity of objectives, decision making, education regulations, learning materials, communication, resources required to implementing WCS policy in the forms of (human, financial, material, information), money spent, clarity of implementation guidelines, eagerness to change, and bureaucratic structures are such examples of factors aiding or even hindering the implementation of WCS policy. These are challenges that lie ahead, and thus I consider them as the devil because at this level WCS implementation we are lacking in the clear detail of implementation. For this reason, I would like to restrict my remarks on improved implementation of WCS or factors influencing the WCS policy implementation if you wish.

Ladies and Gentlemen,

As a consultant who advise the Ministry of National Education to initiate the formula or the concept of WCS for Indonesia (WCS = NES + X) where NES is National Education Standard and X is an addition to NES in the forms of broadening and/or deepening to the NES done by international benchmarking , I realized that at least there are two big parts to be considered in developing WCS: (1) policy formulation or the objectives to be achieved, and (2) policy implementation consisting of many factors operating and interacting simultaneously with each other to aid or hinder WCS policy implementation. WCS development involves many factors/actors and thus requiring a concerted effort and negotiated strategy of change.

Recognizing these complexities, it is therefore realized that developing WCS is not one short and quick fix and it will take long time to be successful. It is necessary to recognize that "the Mekkah Mosque or the Rome or the Prambanan Temple was not built in one day". In fact, I must say that educational reform such as "the policy shift" from National Standard School (NSS) to World Class School is likely to take at least 6 years to plan, to implement, to test and to disseminate due to the aforementioned factors and also due to changes in management and leadership at all levels of bureaucracy particularly at the school and district levels i.e. frequent changes of school principals and heads of district education offices may create problems of sustainability, innovation, and progressive development of WCS.

As I said at the earlier outset, there are numerous factors influencing the development of WCS, among others, are the completeness of the WCS concept, clarity of objective, decision making, education regulation, learning materials, communication, availability of resources required to enable the WCS implementation process to take place (human, financial, material, informational, school facilities), money spent, clarity of operational guidelines, feasibility of SDP, eagerness of schools to change (including incentive) and bureaucratic support.

Although the concept/formula of WCS is written clearly, it still requires further action to complete it. As formulated earlier, WCS = NES + X, where NES the National Education Standards and X is an addition to NES (deepening and/or broadening to NES) which should be sought through benchmarking so that the X is clear. But, up to now, benchmarking is not yet done by the Ministry of National Education, and therefore, it is not yet clear of what is meant by X. Due to unclear X, WCS itself initiates to search/benchmark with other schools abroad. Hence, X varies from WCS to WCS. If the X variation is perpetuating, then Indonesia does not have a solid concept/formula of WCS, and it is very difficult to assure and to control the quality of WCS.

The objective of WCS must be clarified and agreed upon by all school members. The objective to be achieved by the WCS must be understood by all school members

including school committee. Moreover, the objective must be used by WCS as reference to the preparation and development of all the necessary inputs required to enable the teaching learning process to take place.

Decision making, be it at the central, provincial, district, or school level will affect the way to implement WCS. The right decision making will obviously support the achievement of the objective, but the wrong decision making will create many negative things such as low quality, un-innovative, ineffectiveness, inefficiency and low productivity of resources used particularly school teachers.

Education regulations as legal aspects to be enacted for WCS must assure that they are useful to facilitate and to support the WCS to develop creativity, innovation, divergent perspectives, stay abreast of WCS development in an ever changing world, in support of outward-looking rather than inward-looking, in an effort to achieve the school objective. Conversely, it is unwise to enact education regulations that hinder them. For this reason, it is important to involve the WCS in developing regulations.

Learning material is another factor deemed to be important to achieve the objective of WCS. What to teach must be prioritized i.e. which one must be taught, should be taught, and/or could be taught to students must be selected on the basis of objective to be achieved. Thus, competency based learning material is probably the most appropriate content to develop and teach to students.

The degree of communication will aid or hinder the development of WCS. Clear, accurate, consistent, and well-distributed communication regarding the understanding of policy to be implemented (what to implement), why to implement, who are responsible to implement, and how to implement WCS policy is very important. In addition to that, operational implementation guidelines which are simple, clear, directive, measurable, achievable, realistic, and time bound is a precondition for successful WCS implementation.

The availability of resources required to enable the WCS implementation process to take place (human, financial, material, informational, school facilities) is a precondition. Resources can be extensive and very costly but they can also be minimal. The key point is that appropriate resources must be provided in accordance with the real needs of teaching learning process to take place.

The money that WCS spend will affect the success of WCS policy implementation. It is suggested that budget triangle be used as a reference in developing school budget. Budget triangle consists of three elements, namely education plan (desired WCS outcomes), spending plan (financial resource needed to fuel the activities and materials that bring about the desired outcomes), and revenue plan (ways to obtain financial resources). Therefore, unless WCS have good budget structure and spend them for the right things and at the right time, money does not have any value to developing WCS. A well-developed and accurate School Development Plan (SDP) is therefore a must.

Eagerness of the WCS to change particularly school personnel (teachers, school principals and other school personnel, students, and school committee) is another important factor enabling the WCS to make change. WCS is living in an era marked by global great changes and therefore, WCS should be eager to change and search for excellent school standards around the world to be electively incorporated into WCS schools through benchmarking with them. However, it is recognized that the existing school system, obviously not all, is inertia albeit the pace of changes is faster and faster, particularly in hard sciences and technologies.

The key to change is in the hands of school personnel particularly and other related higher personnel such as the heads of district education offices, school committee, local parliament members, to mention just a view. Fundamental changes in mind set, heart set, and action set of those involved in WCS is a must because the old ways of running the schools are not longer valid, and WCS requires new ways of thinking (creativity, innovation, initiative, divergent thinking, alternative thinking, probabilistic thinking, reflective thinking, etc.), new feeling of heart (responsibility, dedication, conscience, self-

discipline, self-control, strong will, excellent habit, risk taking, commitment, etc.), and new action (skillful, quick/fast, proactive behavior, entrepreneurship, etc.).

Last but not least, another factor influencing WCS is the bureaucratic structure in education. It is widely known that, in the state of transition from centralized to decentralized education system, there have been uncertainties with regard to two things, educational organization structure and education personnel assignment at the local and school levels. Current educational structures inhibit strong coordination among layers of bureaucracy in education and in fact, there have exhibited loose coupling and even missing link between Ministry of National Education, Provincial Education Offices, and District/Municipal Education Offices. Consequently, it is difficult to have a good fidelity of WCS policy implementation and policy incompliance is spread out everywhere. This is certainly hinders WCS policy implementation. Education administrators assigned as school principals and heads of district education offices are in the hands of head of district or head of municipal.

Ladies and Gentlemen,

In my keynote speech today I have attempted to provide you with a number of factors influencing WCS policy implementation. In doing so, I am encouraged by my expectation that WCS must be successful in preparing our future young generation being able to contribute to, compete with and work world widely and cooperatively with other people in the world. Therefore, WCS and other related stakeholders must be able to overcome all factors deemed to aid or hinder WCS policy implementation. I am sure that we can do it and it is my hope that my keynote remarks have provided an input to stimulate discussions in this timely seminar. Finally, with the spirit of togetherness, I am sure that our concerted efforts will go a long way towards successful World Class School.

Thank you very much.

Attachment 1: The Number and Percentage of World Class School

Year and School (WCS)	2006		2007		2008		2009		Total		Total WCS	Total School	Percent-age (%)
	Pub	Priv	Pub	Priv	Pub	Priv	Pub	Priv	Pub	Priv			
PS	21	4	38	--	62	4	62	4	183	12	195	146,455	0,13%
JSS	--	--	100	2	100	3	69	25	269	30	299	30,290	0,99%
GSSS	80	20	89	11	--	--	108	13	277	44	321	11,700	2,74%
VSSS	--	--	174	5	62	12	32	10	268	27	295	9,161	3,22%
Total	**101**	**24**	**401**	**18**	**224**	**19**	**271**	**52**	**997**	**113**	**1,110**	**197,606**	

Note: Pub = Public School
Priv = Private School
PS = Primary School
JSS = Junior Secondary School
GSSS = General Senior Secondary School
VSSS = Vocational Senior Secondary School

Attachment 2: Twelve most important questions of teaching tips to be Answered by WCS Teachers

1. Teaching for what, dealing with the objective of learning
2. What to teach, dealing with curriculum (teaching materials);
3. Teaching for whom, dealing with student characteristics;
4. What types of teaching-learning process, dealing with types and forms of teaching;
5. Who will teach, dealing with the qualification and competency of teachers;
6. How to teach effectively and efficiently, dealing with strategies and methods of teaching;
7. How to manage the classroom and laboratory, dealing with class room and laboratory management;
8. With what to teach, dealing with teaching-learning media;
9. Where to teach, dealing with the setting/contexts;
10. How to evaluate, dealing with student evaluation;
11. How long to teach, dealing duration of teaching; and
12. How to use time effectively, dealing with time on task.

Attachment 3: Nine most important questions to be answered by WCS Principal

1. Do you have clear direction (values, vision, and mission) of your WCS?
2. Do you have appropriate School Development Plan (SDP) to achieve the agreed upon values, vision, and mission of your WCS?
3. Do you provide clear guidance on how to achieve the agreed upon values, vision, and mission?
4. How do you regulate your WCS in order to effectively achieve the agreed upon values, vision, and mission?
5. Do you have sufficient capable staff to develop your WCS?
6. How do you conduct continuing professional development (CPD) of your staff?
7. Do you have sufficient resources (human, financial, and material) to support your staff to do their job?
8. Do you provide additional incentives to your staff who work for WCS?
9. How do you know (monitor and evaluate) that the agreed upon values, vision, and mission have been achieved?

Attachment 4: Percentage of targeted districts to have WCS

Year Level of school	2009	2010	2011	2012	2013	2014
PS	28,0 %	39,4 %	50,8 %	62,2 %	73,6 %	85,0 %
JSS	47,7 %	50,0 %	56,2 %	62,5 %	68,7 %	75,0 %
GSSS	18,0 %	28,4 %	38,8 %	49,2 %	59,6 %	70,0 %
VSSS	60,0 %	62,0 %	64,0 %	66,0 %	68,0 %	70,0 %

Note: School abbreviations are the same as in Attachment 1

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The Road to a World Class School

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Bambang Harianto

Victor Harbor High School

South Australia

International Seminar on Education
Pandaan, Pasuruan, East Java
January 17th 2011

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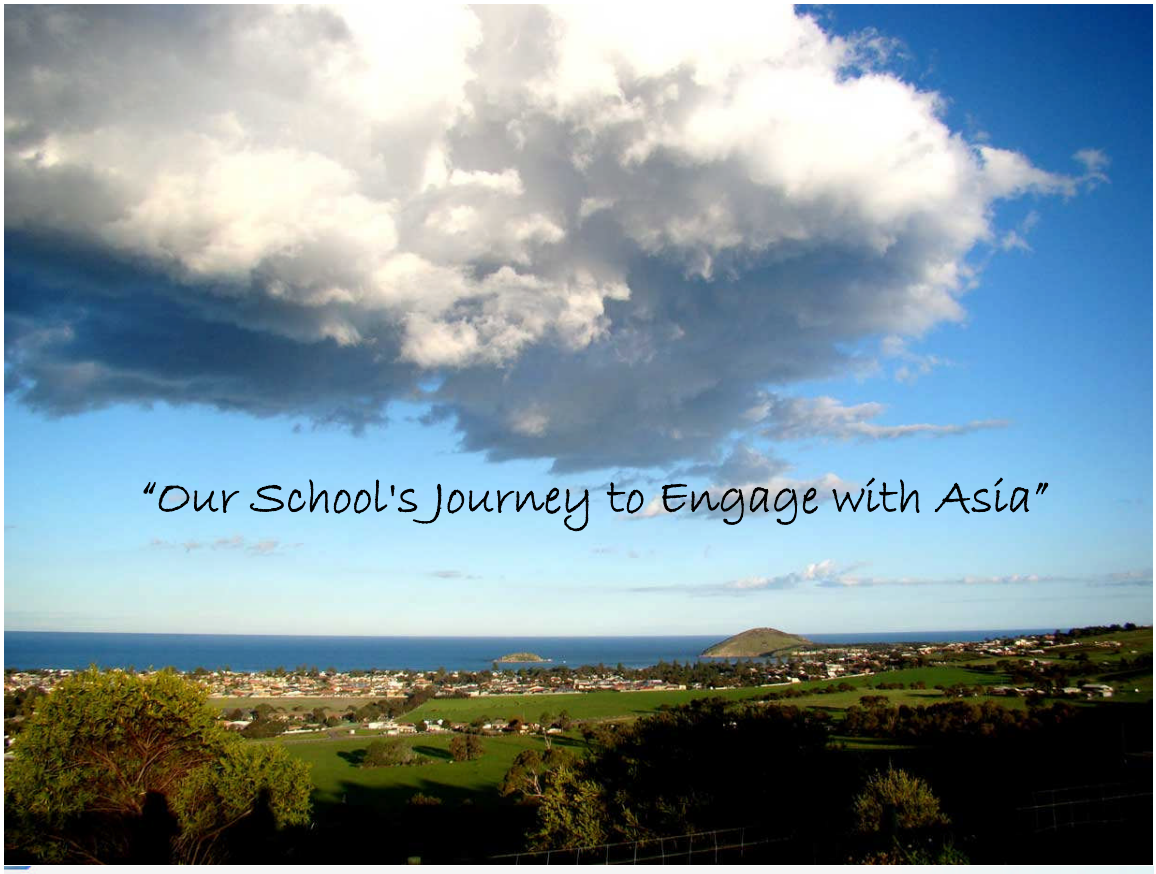

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Victor Harbor facts

- regional town on the coast
- 80kms from Adelaide - the capital of South Australia
- High School has 760 students
- Victor Harbor is a tourist destination for local, Australian and International visitors.

Victor Harbor facts

- main business activities are agriculture, small business, food and hospitality
- main recreational activities are water sports – surfing, beaches, boating and fishing - as well as golf, tennis, football
- the town has many restaurants and eating places.
- it is a retirement place for many people due to the mild climate, scenery and its many recreational activities.

Victor Harbor facts

- the town is very monoculture.
- it has few citizens of Asian descent.
- after graduation VHHS students mainly go to Adelaide
  - for University
  - for work

Victor Harbor High School

- teaches Bahasa Indonesia from Year 8 to 12
- 363 students:

  Year 8 – 160, Year 9 – 155, Year 10 – 25, Year 11 – 11, Year 12 – 12
- 3 Bahasa Indonesia teachers: Pak Tim, Ibu Reena & Ibu Emma
- The school is involved with the following programs:
  - Leading 21st Century Schools Engage with Asia Project
  - The BRIDGE Project – Australia-Indonesia

    (**B**uilding **R**elationships through **I**ntercultural **D**ialogue and **G**rowing **E**ngagement)

Why this involvement?

- learning about other countries & cultures
- cultural awareness & sensitivity
- appreciation of diversity
- learning a language – Bahasa Indonesia

Australia needs to change from

Eurocentric Education

Global Education

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- Victor Harbor High School has started this journey
- Our school wants to engage with our closest Asian neighbour - Indonesia
- To do this we have partnered with two sister schools

Questions?

Our sister schools are:

1. **SMP Negeri #1 Pandaan East Java -** a middle school
   - Principal Bapak Hisyam, Pak Bambang and 12 students visited Victor Harbor in May 2010
2. **SMAK Kesuma Mataram Lombok** - a senior secondary school

Sister School Agreement with SMP Negeri #1 Pandaan – East Java is formalised

Pandaan in Victor Harbor

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Pandaan Students at the front of VHHS

Pandaan teachers teach our students

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Pandaan students teach our students

Pandaan students in an assembly

Indonesian teachers in our classrooms

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Indonesian teachers teach Art

and our Staff

We learn about your culture

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Traditionaldr ess

Primary school involvement (SD)

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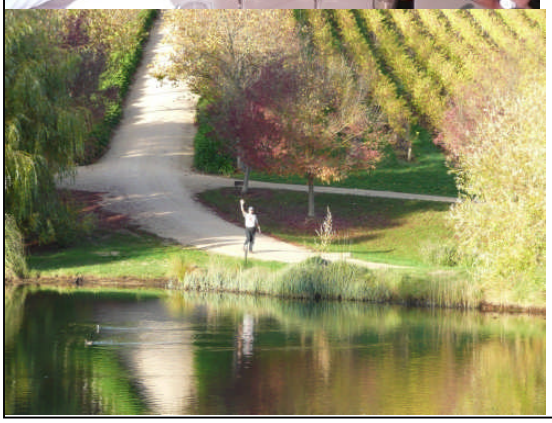
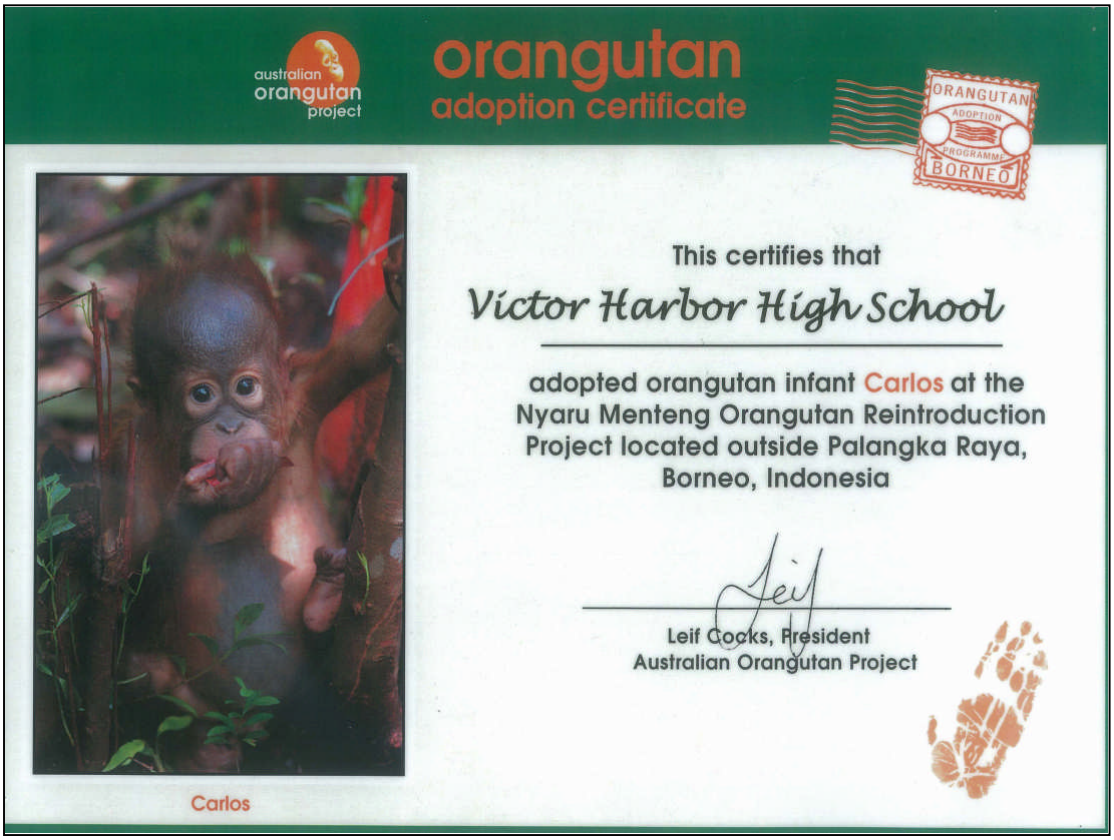
Pak Bambang in Victor Harbor



A Bridge between two countries – two cultures

H.E. Primo Alui Joelianto
The Indonesian
Ambassador

Nikki with Bella and Put Put from Pandaan



australian orangutan project

orangutan adoption certificate

ORANGUTAN ADOPTION PROGRAMME BORNEO

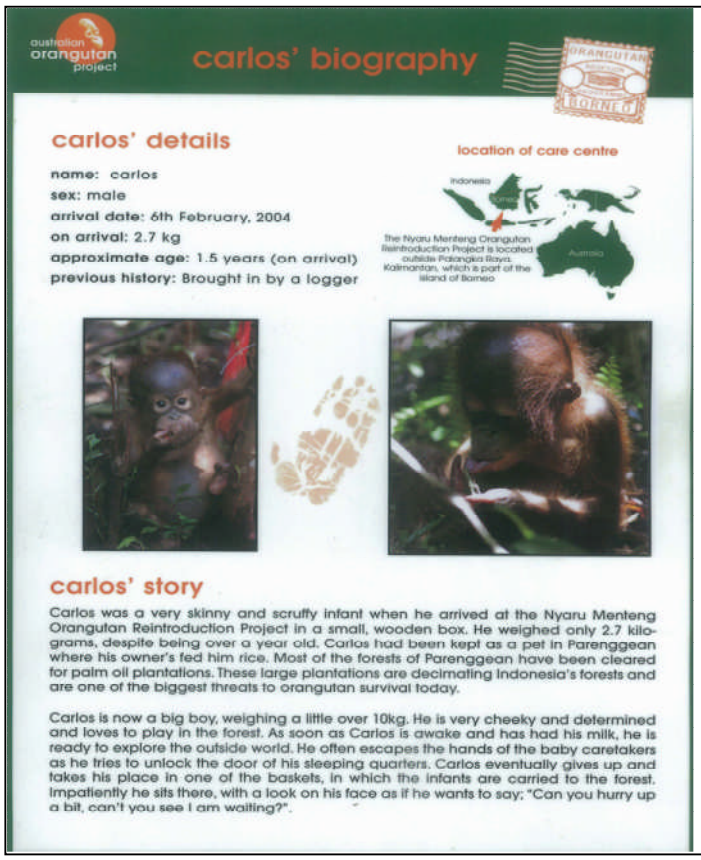
This certifies that

Victor Harbor High School

adopted orangutan infant Carlos at the Nyaru Menteng Orangutan Reintroduction Project located outside Palangka Raya, Borneo, Indonesia

Leif Cocks, President
Australian Orangutan Project

Carlos



australian orangutan project

carlos' biography

ORANGUTAN ADOPTION PROGRAMME BORNEO

carlos' details

name: carlos
sex: male
arrival date: 6th February, 2004
on arrival: 2.7 kg
approximate age: 1.5 years (on arrival)
previous history: Brought in by a logger

location of care centre

Indonesia
Australia
The Nyaru Menteng Orangutan Reintroduction Project is located outside Palangka Raya, Kalimantan, which is part of the island of Borneo

carlos' story

Carlos was a very skinny and scruffy infant when he arrived at the Nyaru Menteng Orangutan Reintroduction Project in a small, wooden box. He weighed only 2.7 kilograms, despite being over a year old. Carlos had been kept as a pet in Parenggean where his owner's fed him rice. Most of the forests of Parenggean have been cleared for palm oil plantations. These large plantations are decimating Indonesia's forests and are one of the biggest threats to orangutan survival today.

Carlos is now a big boy, weighing a little over 10kg. He is very cheeky and determined and loves to play in the forest. As soon as Carlos is awake and has had his milk, he is ready to explore the outside world. He often escapes the hands of the baby caretakers as he tries to unlock the door of his sleeping quarters. Carlos eventually gives up and takes his place in one of the baskets, in which the infants are carried to the forest. Impatiently he sits there, with a look on his face as if he wants to say; "Can you hurry up a bit, can't you see I am waiting?".

Carlos has been adopted by the school and the Student Action Committee raises funds to sponsor Carlos on an annual basis.
The "orange" day and bring your own orang-utan to school initiatives help in this quest.
Students from VHHS have visited the sanctuary in Palanga Raya Borneo Indonesia.
Carlos is the subject of a Year 12 Research Project as part of the New South Australian Certificate of Education (SACE) for one of our Year 12 students.

Questions?

Bonny and Emily
SMAK Kesuma
visit
to VHHS 2010

Our School Year

- 4 terms and 2 semesters
- each term is 10 weeks long
- two week holiday between each term
- Christmas holidays of 4 weeks

The school day

- Times
- School starts at 8.45am

• Lesson 1	8.50am
• Lesson 2	9.35
• Recess	10.30am – 20 mins
• Mentoring	10.50am
• Lesson 3	11:15am
• Lesson 4	12:05pm
• Lunch	12:55pm
• Lesson 5	1:35pm
• Lesson 6	2:30pm
• Home	3:15pm

The school day

- Students do homework after school or at night.
- Many students have jobs after school to earn money
- Each lesson is 50 mins long
- Teachers teach 5 classes and 5 lessons a day.
- Teachers have one lesson a day free to prepare and mark students work

Classes sizes

- In the Middle school maximum 29 students
- In the Senior school maximum 25 students
- VHHS tries to have smaller classes in the Middle school with 22 maximum.

Assessment

- Students gain A,B,C, D or E
- Major reporting occurs at the end of each semester.
- Assessment includes: tests, assignments, projects, oral presentations, practical tasks

The Road to a World Class School

Buildings and classrooms need to be redesigned to assist and promote learning


VOLVO
VOLVO


SOUTH COAST SAND AND CIVIL

New School Buildings

Lawn Play Space

Courtyard

SeniorC lassroom

Art Room

Library

Principals Office

The road to the future

Education needs to change

from

Teacher centred

Student centred

The road to the future

- The way the classroom works needs to change.
- This is the most important change occurring in Australian schools especially Victor Harbor High School

Student centred education

This will need

- Principals to lead the learning in schools
- Teacher training
- Training of the students
- Resources
- A redesign of the classroom
- Patience, understanding and time
- Persistence
- Celebration of both success and failure

What is Student Centred Education?

Teaching

The old way

Teaching is telling

The new way

Teaching is creating the conditions for learning

Knowledge

The old way

Knowledge is facts

The new way

Knowledge is understanding and using facts

Learning

The old way

Learning is listening

The new way

Students learn by doing

Assessment

The old way

Assessment is repeating facts and information to the teacher

The new way

Assessment is demonstrating what you understand and how can use your knowledge

Aids to learning

- Information Communication Technologies
  - Computers, mobile phones, the internet, Skype, digital photography
- Problem solving
- Inquiry based learning
- Students being teachers
- Learning in groups of different sizes
- Feedback about learning and progress is given to students regularly

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Create the conditions to learn

In conclusion

- Education is now Global.
- Change in education is and will occur rapidly
- Principals and teachers need to be aware of these changes and lead their schools into the future.
- It is an exciting challenge as a school leader

Thank you for listening

Terima Kasih

Selamat Jalan for your school

Questions?

WEB-BASED COLLABORATIVE LEARNING AND VIRTUAL SCHOOL TO SUPPORT WORLD-CLASS SCHOOL LEARNING PROCESS

Hendra Jaya

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Makassar State University (UNM)
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Abstract

The Web is an excellent tool to deliver on-line courses in the context of distance education. There are three main modules in our proposed framework such as learning management, content management, and knowledge management modules. Our framework is proposed to support web-based learning with several scheme of learning through virtual laboratory including adaptive, autonomous, and collaborative learning. Web-Based Learning facilitates the use of instructional methods or enhancements that might otherwise be impossible or impractical, and WBL can certainly enhance learning to the extent that it enables more effective instructional designs. The use of the Web as an educational tool has provided learners and educators with a wider range of new and interesting learning experiences and teaching environments, distance learning, distributed or online learning, interactive learning, and collaborative learning.

Key Words : Web based Learning, Collaborative learning, virtual school

INTRODUCTION

Advances in computer technology are transforming the methods of instruction and their effectiveness for the learners provides a new paradigm of research. Web-based instruction is an emerging such medium which remains largely unexplored in terms of online learning (Mitchell, 2001). Learning and problem-solving transfer in physics is facilitated through skill builders and self tutoring problems, which also are pedagogically superior to end-of-chapter problems (Warnakulasooriya, 2003:1).

The growth of the Internet, and in particular the World Wide Web, is already influencing the way science is taught and will undoubtedly do so to greater extent in the future. One important facet of this is the development of web-based assessment and testing systems (Bonham, 2000:1).

As an increasingly powerful, interactive, and dynamic medium for delivering information, the World Wide Web (Web) in combination with information technology (e.g., LAN, WAN, Internet, etc.) has found many applications. One popular application has been for educational use, such as Web-based, distance, distributed or online learning,

interactive learning, and collaborative learning. The use of the Web as an educational tool has provided learners and educators with a wider range of new and interesting learning experiences and teaching environments, not possible in traditional inclass education (Khan, 1997).

WEB-BASED LEARNING

Web-based learning encompasses all educational interventions that make use of the internet (or a local intranet). There are currently three broad classifications or configurations within WBL: tutorials, online discussion groups, and virtual patients. The distinctions between these configurations are often blurred, and in fact a given WBL intervention might use a combination of two or three, but the implications for teaching warrant a conceptual, albeit at times arbitrary, separation (Cook, 2007).

Any advantages and disadvantages of WBL are contingent upon at least two conditions: the nature of the WBL intervention, and the intended setting including the prospective learners. People expect Web technology to facilitate learning. A key issue involves the factors motivating the adoption of the Web for learning (Hung-Pin Shih, 2006). Using Web technology in education can influence learning behavior by providing an effective learning environment that encourages more active participation, offering opportunities for responsive feedback and individual involvement and promoting teamwork through collaborative learning (Gilver, 1998). The transformation from traditional classrooms to web-based learning environments has changed learning styles and interactions between instructors and students (Agres, 1998). Web technology can enable students to communicate electronically and attend courses online. Further,
trainers can work in cyberspace to improve educational inputs, process and outcomes (Wachter,2000). The growth of Web applications has made the Web an important educational medium (Siau, 2002).

From a pedagogical perspective, WBL provides an added value to the learning of languages. It supports the shift from the traditional teacher-centered classroom to a learner-centered environment. Learners are encouraged to learn by themselves and are motivated to continue in the growth of their own learning when connected to others. WBL provides benefits in the accessibility and availability of authentic materials, too.

Maddux (1996) has stated that some unique characteristics of the Web include: (a) information on the WWW can be made interactive in nature; and (b) it often makes use of multimedia, including graphics, sound, and animation. The Web provides more effective and efficient searching tools than traditional searches in libraries, and the pages retrieved from the web are more attractive and appealing than traditional printed media. Moreover, multimedia capabilities probably make the Web more attractive to many people. In terms of pedagogical features of the Web, WBL facilitates communication, enhances interactions, provides student-centered, self-paced, and collaborative learning, disseminates shared information, and reaches out to global communities (Downing & Rath, 1997; Maddux, 1996; Chellappa, et al, 1997).

Research studies also indicate that the long-term effects of learning via computers encourages student interaction and involvement in the whole learning process (Owston, 1997). McCarthy and Grabowski (1999) have also stated that incorporating Web-based lessons and activities is a new way for teachers to utilize computer technology to enhance learning. So, it seems that the Web encourages another new way that students prefer to use to learn. Therefore, more and more educators have experimented with the WWW sites for learning in order to make their teaching more attractive to and more interactive with students.

COLLABORATIVE LEARNING

In the web-based collaborative learning environment, the actions/reactions of participating students are inherently different from their behavior in the real world. Students in the physically constrained learning space can speak with each other by means of face-to-face, feel/recognize activities, occurring from the discussions of students, directly by various sensitive receptors and find out some new events/facts indirectly. Although these are not always implemented adaptively in the web-based virtual learning space, it is necessary to organize a collaborative learning environment in which the logical activities for support of interaction, discussion and comprehension can be implemented successfully and effectively (Kojiri, 2000:228-229).

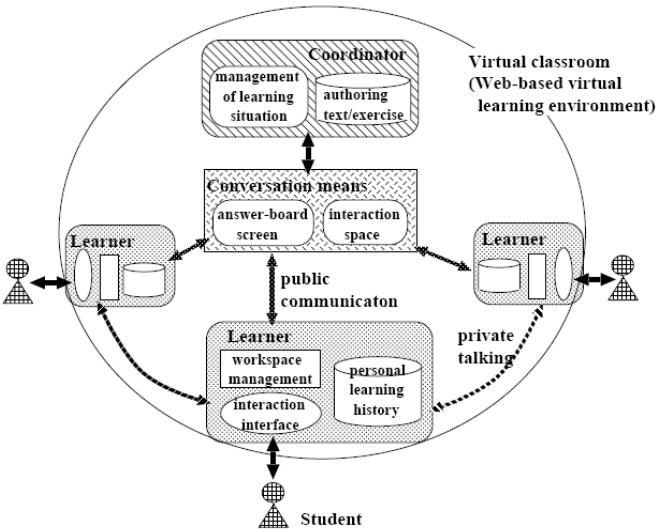

Figure 1: Collaborative learning environment
(Kojiri, 2000)

The group-based collaborative tasks were employed to facilitate individuals to communicate and tutor each other, and thus the tasks can be finished in a collaborative way. The project process were collaborative project work, record learning progress, self/peer assessment, peer feedback and modify project product. Self-assessment of the learning progress helped learners monitor the learning progress, notice about necessary modifications for the project, and be guided toward the learning goals. Peer assessment accompanied peer feedback helped learners clarify misconception and develop critical thinking. Through the modification of project outcomes learners were facilitated to develop meta cognitive skills and apply suitable learning strategies for completing the project.

VIRTUAL SCHOOL

The terms “virtual high school” or “virtual school” are generally applied to any educational organization that offers an American elementary and secondary (K-12) courses through Internet- or Web-based methods (Clark, 2001). Virtual Schooling can be seen as part of a larger phenomenon, eLearning, a concept that is increasingly used in the K-12 environment to describe not only distance teaching and learning, but also the general use of educational and information technology in support of teaching and learning.

Clark (2000, 2001) identifies nine key components or factors to consider in building or operating virtual schools. The planners of several virtual school efforts have found this general framework to be a useful frame of reference or starting point for their planning work. Examples of questions a virtual school planner might ask are provided for each component.

1. Technology. Does our technology infrastructure have the hardware, software and connectivity needed to support a virtual school? How do we choose an appropriate learning management system? Do our intended students have the needed technology and skills?
2. Funding. Is a virtual school the most cost-effective way to meet our needs? Is there a clear funding mechanism or combination of funding sources? Is funding reliable and sustainable for the purposes of the program as we envision it? Does our funding approach align well with policies?
3. Curriculum and instruction. Is a virtual school an appropriate way to meet curricular needs indicated for school improvement? What instructional models and methods will work best?
4. Student services. Do we have adequate staffing to provide comprehensive services to students participating in a virtual school? How will we provide library and instructional resources? What levels and kinds of services do students in our schools need to be successful in online courses?
5. Professional development. How can we prepare and support virtual school instructors and staff? Do we have a “critical mass” of teachers certified in content areas and ready to participate?
6. Access/equity. This is a factor that should run through all virtual school planning. Can we plan proactively to ensure equitable access? How will underserved students be recruited and supported in their virtual school courses? Are special strategies needed to ensure these learners succeed?
7. Assessment. How will we assess the quality of online instruction and student outcomes in the virtual school program? How will we engage in continuous improvement of our efforts?

8. Policy and administration. What internal and external policies impact or are relevant to our proposed virtual school program? How well does our approach align with policies regulating state aid? Who will operate the school, and how? How will we develop policies and procedures?
9. Marketing and public relations. Who are the key internal and external stakeholders in the success of our virtual school program? How do we bring them on board and keep them informed over time? How will we inform internal and external audiences about the program?

DISCUSSION

The Web is an excellent tool to deliver on-line courses in the context of distance education. There are three main modules in our proposed framework (as shown in Fig. 2), learning management, content management, and knowledge management modules. Our framework is proposed to support web-based learning with several scheme of learning including adaptive, autonomous, and collaborative learning.

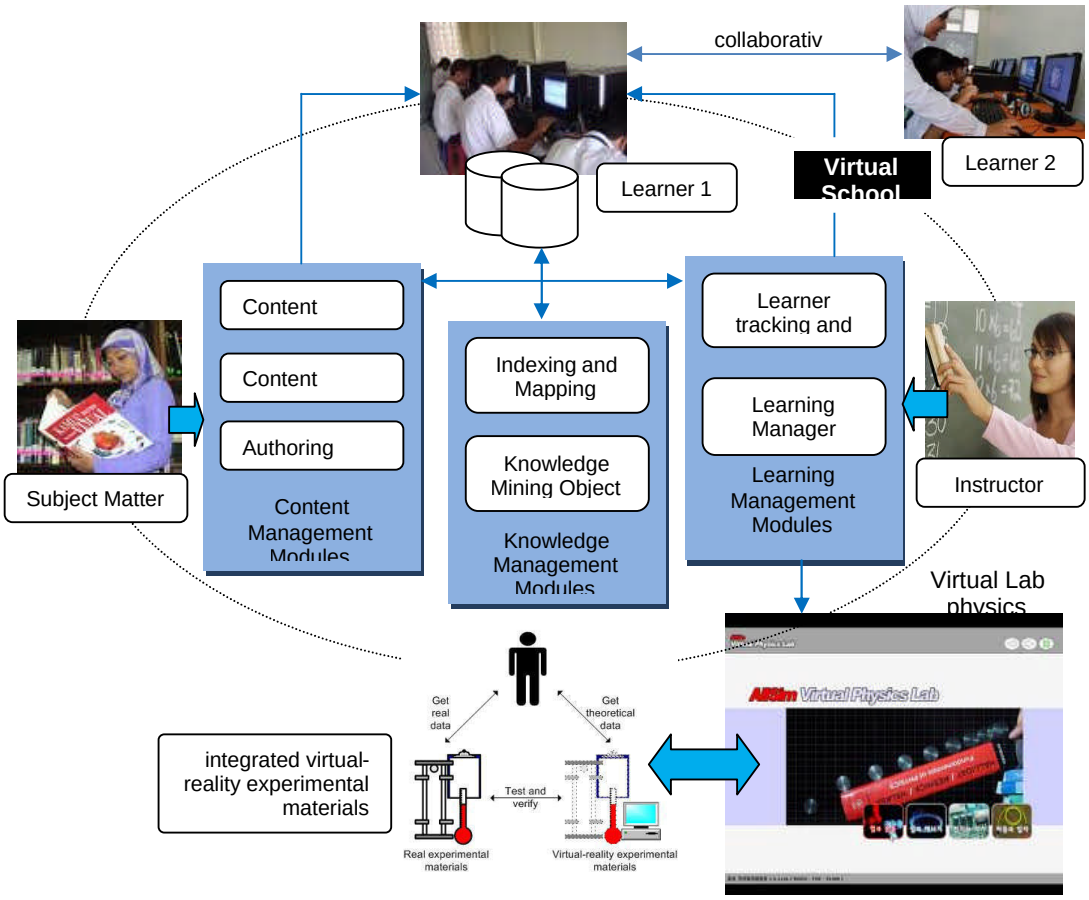

Figure 2. A framework of a web-based learning environment with virtual laboratory

A Proposed Learning management modules: provide the following capabilities (Kerdprasop, 2008): 1) support instructors to post syllabi, class schedules, assignments, lecture notes, slides and other supplemental materials for learners to access via Web browsing tool. 2) support instructors to conduct assessments in various forms such as online tests, surveys, quizzes using a variety of standard question formats, e.g. multiple choice, true/false, essay, short-answer, matching, etc., 3) support learners to submit assignments remotely either as file upload or interactive through Web interface., 4) provide profiling tool to collect personal data of learner and tracking tool to observe learners' actions including like and dislike information. 5) provide matchmaking tool to compare the created profile with the available content. 6) support instructors and learners in collaborative discussion on assignments and course content.

Content management modules: provide the following capabilities: 1) support the content developers in importing and exporting content through the authoring tools. 2) support the content manager in individualize the presented content. 3) support the content manager in archiving and versioning the content. 4) interface with learning management modules in getting desired form for delivered content. 5) interface with data repository containing learners' personal information and other metadata including knowledge assets created by knowledge management modules and apply these data in creating personalized sequence of content material suitable for each learner.

Knowledge management modules: provide the following capabilities: 1) discover valuable knowledge assets from the data repository containing learners' personal data, tracked data of learners' performance and behavior, and data related to content sequences that were presented in the past with the evaluation results according to that content sequence. 3) support the indexing and mapping of knowledge assets that are discovered by the knowledge mining engine. For the knowledge management modules, knowledge mining engine is responsible for the synchronizing process. Indexing and mapping is a component for storing and searching knowledge assets to be used in the learning process

For distributed learning, learning activities are focused on content interaction or social communication. In additional, asynchronous and synchronous communication both are available for learning activities. Instructional content can be designed for individuals or group interaction with instructional files or databases that based on the purpose of

instructional goals. In the distributed WBL, based on nonlinear and interactive communication, encourages learners to explore related knowledge to promote learning activities and to enhance instructional databases.

In consideration of server-based learning, social communication based on asynchronous or synchronous communication is the major part for learning activities. Instructional content can be designed for group communications with instructional files or databases. Thus, the instructional files or databases are changed or improved by group learning activities. In other words, instructional content can be revised or modified through online learning activities. From social constructivist viewpoint, learners are more interested in activities that engaged them with others. In hypermedia collaborative learning, learners have opportunities to develop complex cognitive skills.

Is web-based learning better than face-to-face?

It is natural, when faced with a new technology, to ask, 'Is this better than what we had before?' Thus, researchers have compared WBL to written course materials, practice guidelines, face-to-face lectures, workshops, self-guided slideshows, and small group sessions. Unfortunately, it is impossible to derive meaningful interpretations from these studies, which are collectively termed media-comparative research. While many media-comparative studies are limited by methodological flaws, even the best-designed studies are invariably confounded or open to multiple interpretations. The problem is that the term 'web-based learning' does not refer to a single entity any more than do the terms 'lecture' or 'textbook'.

In face-to-face lectures there is wide variation not only in the quality, but also in the specific instructional methods (analysis of patient cases, audience discussion, etc) and course enhancements (slides, photographs, video clips, etc) used. Likewise, WBL interventions vary in the instructional methods (self assessment questions, simulated patients, etc.) and course enhancements (colour, sound, video, etc) see Figure 3. These variations make it impossible, in a media-comparative study, to know whether it was the medium (eg WBL versus face-to-face) or some other component of the course, or some combination thereof, that produced the observed results – regardless of effect size or statistical significance. Thus, as much as we might like to answer the question, 'Is WBL

better than face-to-face?', it is unfortunately impossible to collect the required evidence. This is true regardless of whether one defines the criterion 'better' as higher test scores, higher efficiency (test score per time), satisfaction, motivation, or some other way.

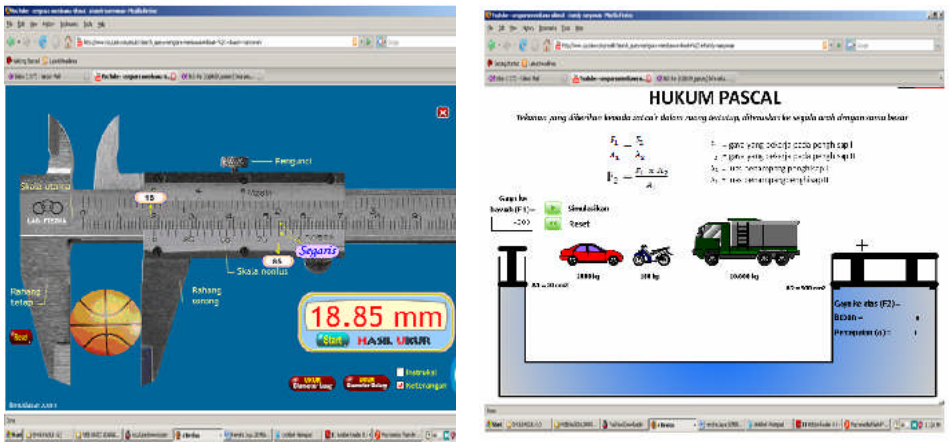

Figure 3. Virtual laboratory on Web

Furthermore, it is quite likely that the appropriateness of WBL as a learning tool will vary upon the instructional context and objectives. WBL may be a great way to teach neuro anatomy, but only moderately effective for teaching examination of the cranial nerves, and entirely ineffective for teaching a student how to tell a patient that he has cancer. The bottom line is that it is not possible to make a global statement comparing WBL to face-to-face, or any other instructional medium. Some point to media-comparative studies showing improved learning outcomes with WBL, but in each case the differences can be attributed to simultaneous changes in instructional methods and/or course enhancements such as multimedia. Results suggesting enhanced motivation in WBL settings can likely be attributed to infatuation with new technologies (similar claims were made with the advent of other instructional technologies such as television, filmstrips, and video) or improvements in instructional design. It is interesting to note a recent study in which learners actually found WBL less motivating than other formats.

CONCLUSSION

The conclusion of this paper is Web-Based Learning facilitates the use of instructional methods or enhancements that might otherwise be impossible or impractical, and WBL can certainly enhance learning to the extent that it enables more effective instructional designs. The use of the Web as an educational tool has provided learners and

educators with a wider range of new and interesting learning experiences and teaching environments, distance learning, distributed or online learning, interactive learning, and collaborative learning.

REFERENCES

International Society for Technology in Education (ISTE).(2007). National educational technology standards for students. Retrieved October 5, , from http://cnets.iste.org/students/pdf/NETS_for _Students_ 2007.pdf. 2007

Christiansson. ICT Supported Learning Prospects. ITcon. 2004. 9:175-195.

Berge, Z. L. (2001). Sustaining Distance Training: Integrating Learning Technologies into the Fabric of the Enterprise (pp. 1-12). San Francisco: Jossey-Bass.

Bonham, Scott W., Aaron Titus, Robert J. Beichner and Larry Martin. (2000). Education research using web-based assessment systems.Journal of Research on Computing in Education

Clark, T. (2005).Virtual Schools and eLearning: Planning for Success. 19th Annual Conference on Distance Teaching and Learning.University of Maryland Baltimore County.

Clark, T. (2001). Virtual schools: status and trends. Phoenix, AZ: WestEd/Distance Learning Resource Network. Retrieved June 1, 2003, from: http://www.wested.org/online_pubs/virtualschools.pdf

Cook, David A. (2007). Web-based learning: pros, cons and controversies. Clinical Medicine Vol 7 No 1.

Warnakulasooriya, Rasil. (2003). Learning and Problem-solving Transfer between Physics Problems using Web-based Homework Tutor. Department of Physics & Research Laboratory of Electronics Massachusetts Institute of Technology.

Rosenstock. Nathan . (2005). Development of A Web Based Multimedia Physics Lesson. Doane College Department of Physics

Hung-Pin Shih, (2006). Using a cognition motivation control view to assess the adoption intention for Web-based learning. Computer. Educ., 50: 327-337.

Agres, C., D. Edberg and M. Igbaria, (1998). Transformation to virtual societies: Forces and issues. The Inform. Soc., 14: 71-82.

Gilliver, R.S., B. Randall and Y.M. Pok, 1998. Learning in cyberspace: Shaping the future. J. Computer. Assisted Learning, 14 (3): 212-222.

Siau, K., F.F.H. Nah and L. Teng, (2002) Acceptable Internet use policy. Commun. ACM., 45 (1): 75-79.

Wachter, R.M., J.N.D. Gupta and M.A. Quaddus, (2000). IT takes a village: Virtual communities in support of education. Int. J. Inform. Manage., 20 (6): 473-489.

Maddux, C. D. (1996). The State of the art in web-based learning. Computers in the Schools. 12 (4): 63-71.

Downing, C. E. & Rath, G. (1997). The Internet as intranet: moving toward the electronic classroom. Journal of Educational Technology Systems. 25 (3): 273-291.

Owston, R. D. (1997). The World Wide Web: A Technology to enhance teaching and learning? Educational Research. 26 (2): 27-33.

Nittaya Kerdprasop. 2008. Knowledge Mining in Web-based Learning Environments. Data Engineering and Knowledge Discovery (DEKD) research unit is fully supported by Suranaree University of Technology.

Kojiri, Tomoko.(2000). Agent-oriented Support Environment in Web-based Collaborative Learning. Journal of Universal Computer Science, vol. 7, no. 3 (2001), 226-239.

SKILLS DEVELOPMENT THROUGH WORLD CLASS TECHNICAL AND VOCATIONAL EDUCATION

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Abstract

World class education became trend in Indonesia from basic education to higher education. The strong point of TVE to be the world class school is to developing skills of the students in facing the competitiveness in the world of work. The importance of skills development especially in globalization is undeniable. Globalization is one of the reason why school have to be world class. Through its orientation towards the world of work and the acquisition of skills it plays an essential role in promoting a country's economic growth and contributing to poverty reduction. TVE plays an important role in the socio-economic life of people. TVE graduates will be at the centre of a society to be transformed on sustainable development principles

Reforms of TVE in many countries has make TVE can produce successful graduates in many aspect. Global competitiveness is one of the reason to reform the system of TVE. The change of world of work especially in technology must be the first attention of TVE, in addition knowledge and skills are change along with the change of the demand of world of work. Otherwise, there has been an increasing trend for OECD countries to defer vocational specialization and more effectively integrate general education and technical and vocational education and training (TVET). That's why, we have to rethinking to adopt the system of OECD countries in order to become the world class school especially in TVE. To become the world class school, every school must have a vision about what will happen in the future after their planning has done. In this case, we have to know the impact of the planning, what kind of the outcome, what is the output, how the process will be done, and what are the inputs to support the vision to become reality.

Keyword: world class TVE, skills development, new direction of TVET

INTRODUCTION

Technical and Vocational Education (TVE) in Indonesia as one of the secondary education has effort to become world class in facing globalization. TVE is confined to preparing young people and adults for working life, a process often regarded as of a rather technical and practical nature. Snedden argue that vocational education different with general education, the foundation of both correlate with the goal so its different in learning method (Clarke & Winch, 2007).

World class education become trend in Indonesia from basic education to higher education. World class school concept in Indonesia refer to eight national standar plus some standard which adopt from organization for economics cooperation and development (OECD) countries, as mention in Permendiknas RI no. 78/2009. Eight national standards are: 1) content; 2) graduate competence; 3) process; 4) infrastructure; 5) teacher and staff; 6) management; 7) finance; and 8) assessment (Depdiknas, 2009). The strong point of TVE to be the world class school is to developing skills of the students in facing the competitiveness in the world of work.

Globalization is one of the reason why school have to be world class. Clearly, these reflect not only changing concepts but also changing relations, practices, and institutional arrangements. The implications of this educational process, especially as it becomes a public concern, go well beyond the aim of developing the individual self. As the economics of education tell us, the education of the public has costs and benefits for the society at large and therefore is not only an expenditure but also an investment (Burbules & Torres, 2000).

The importance of skills development especially in globalization is undeniable. Skills development related to human capital, labor productivity, poverty reduction, sustainable development, unemployment, and growth. Skills development considered within three pillar framework: pre-employment skills development to prepare future workers, continuous skills development to upgrade the skills of the workforce, and skills development for the unemployed and disadvantaged as a means of reintegration into the workforce (Nam, 2009).

DISCUSSION

New Direction of TVE

Reforms of Technical and Vocational Education and Trainin (TVET) in many countries has make TVET can produce successful graduates in many aspect. Global competitiveness is one of the reason to reform the system of TVET. The change of world of work especially in technology must be the first attention of TVET, in addition knowledge and skills are change along with the change of the demand of world of work. some countries in Asia, Australia, and New zealand had been reform their method in

prepare of workforce through TVET. Multi skilling, flexibility in curriculum planning, retrainability, entrepreneurship, credit transfer, and continuing education are the priorities in curriculum planning to reform TVET (UNESCO, 1992). In addition, there are many issues and challenges in skills development in Southeast Asia, some of that namely: (1) Training content to meet current and future demands, (2) Training processes, and (3) Skills standards, assessment, and recognition. (Paryono, 2010).

In Europe, TVET reform proposed four main priority areas for future action, they are: 1) implementing the tools and schemes for promoting cooperation in the field of VET at national and European levels; 2) Heightening the quality and attractiveness of VET systems; 3) improving the links between VET and the labour market; and 4) Strengthening European cooperation arrangements (Harris, Simons, and Maher, 2009).

Otherwise, Nam (2009) has a conclusion that there has been an increasing trend for OECD countries to defer vocational specialization and more effectively integrate general education and technical and vocational education and training (TVET). OECD countries have also increased the proportion of general education that is included in TVET pathways, and expanded the opportunities for general education students to take TVE courses. It means that the policy of ministry of education in encourage TVE in Indonesia to adopt some system of OECD countries to become the world class school must be rethinking because the TVE system in OECD countries different with the TVE system in Indonesia.

Skills Development Through TVET

Education for the future has become part of the principle of humanlife. The vision of education encompasses economic, social, cultural, demographic and environmental issues. Education for the sustainable development allows learners to acquire the skills, capacities, values and knowledge required to ensure sustainable development (UNESCO, 2005).

TVET has been defined as one of four priority areas of UNESCO's education programme in the coming years. It is seen as an integral part of the Education for All (EFA) initiative, especially with regards to goal 3 relating to “appropriate learning and life skills.” Through its orientation towards the world of work and the acquisition of skills

it plays an essential role in promoting a country's economic growth and contributing to poverty reduction (UNESCO-UNEVOC, 2010).

In recent years, TVET and skills development has been integrated become 'technical and vocational skills development' (TVSD). This term has much to commend, as it connects to the traditional usage of planners as well as to the new term that has been adopted in the last ten years in the agency world (King & Palmer, 2010).

What is the role of TVET in skills and sustainable development? As its goals, TVE produce a skilled labour force that can adapt to the requirements of the labour market and also to raise the productivity of the informal sector. TVET plays an important role in the socio-economic life of people. TVET graduates will be at the centre of a society to be transformed on sustainable development principles. This is TVET as a moral leader, emphasizing education for its own sake and the importance of appropriate values (Karmel, 2009).

Towards World Class School of TVE

The definitions of "global competence" and "international/global education" is vary, it is generally agreed to include: 1) knowledge of other world regions, cultures, economies, and international issues; 2) skills to communicate in languages other than English, to work in cross-cultural teams, and to assess information from different sources around the world; and 3) values of respect for other cultures and of civic engagement (Asia Society & CCSSO, 2011).

In order to become the world class school, every school must have a vision about what will be happen to their graduates and institution in the future after their plan has done. In this case, we have to know the impact of the planning, what kind of the outcome will be, what is the output, how the process will be done, and what are the inputs to support the vision to become reality.

1. Impact

There is no common definition of impact, but its generally known as the effect of one thing to another. In technical and vocational education, impact of TVE can be seen in 5 to 10 years after graduate leaving the school. So that, in order to planning the world class school, the government, teachers, staffs and stake holders must be

plan what will be their graduate in 5 to 10 years later. Impact of world class TVE that we suggest are:

a. Employability skills of graduate very usefull at workplace.
b. Graduate soft skills useful at any where, any time, and any when.
c. Become a leader in the workplace especially in their expert
d. Have a good achievement at higher education in the further study
e. Graduate become an entrepreneur
f. Become a training center for skills development to reduce poverty
g. ICT become a primer facilities at school
h. Developing network and communication with the stake holders in local, regional, and global area.
i. Have an International Standard Organization (ISO) in management

2. Outcome

Outcome is the effect of the education that measure in 1 to 5 years after the students are graduate from school and have a work, be an entrepreneur, studing further, or become unemployment. In this case, outcome of world class school of TVE suppose to be useful for students, people, and the country. Outcome of TVE world class that we expect are:

a. Graduate have a first job in fresh graduate
b. Graduate become a self-employee in small enterprise
c. Graduate continuing study at higher education
d. Become the training center for the graduates who have no job or people who need to upgrade their skills.

2. Output

Outputs can be defined as an individual's, school's, or nation's performance, as measured by standardised tests. A standardised test is one where the method of administering the test, including the test conditions and system of scoring, is regulated and controlled so that it is consistently applied across multiple groups. The purpose of standardised tests is to better judge achievement by relating performance

(whether it be by the student, teacher, school, or nation), to a wider population (Dowling, 2008).

Output of TVE can be seen directly after the program has done in one year, especially the quantity and the quality of their graduates. Output that we suggest are:

a. 100% of students pass the National Examination
b. Graduates grade in national examination above the average
c. Graduates have a good TOEFL or TOEIC
d. The competitiveness of students in global event

3. Process

The process at TVE include learning, networking with industry/world of work, administration, leadership, capacity building of teachers and staffs, and the assessment. The process should be done to support the output of the TVE, they are:

a. Using student centered learning
b. Bilingual learning to enhance TOEFL or TOEIC of students
c. Using ICT in learning process, administration, and assessment
d. Developing school culture to build character of school member
e. Enhance networking with industry/world of work especially in learning and access to work of the graduates
f. Enhance networking with other school and stake holder
g. Strong leadership especially of principals to bring school member to be proud in work and learning at school
h. Empowering teachers capacity in learning, administration, using ICT, and their proudly in working as "*hero without medal*"
i. Strengthened Teacher Professionalism
j. Empowering school staf capability especially in using ICT
k. Use an authentic assessment, competence based, and transparence in process.

4. Input

In order to do all planning, TVE must have a good input in some aspect, namely: teachers, staffs including principals, students, curriculum, and infrastructure. So that, the input of TVE must be:

a. Teachers have a good commitment to be a teachers and have a qualification and competencies to be a professional teacher as the national standard of teacher.
b. Principlas have a qualification and competencies to be a professional teacher as the national standard of principlas.
c. Staffs have a competence and competen in their job
d. Students who have a good achievement of their prior school
e. National curriculum standard and appropriate with the demand of world of work.
f. Provide infrastructure support and facilities to improve learning process

CONCLUSION

The importance of skills development especially in globalization is undeniable. Skills development related to human capital, labor productivity, poverty reduction, sustainable development, unemployment, and growth. The strong point of world class TVE is to developing skills of the students in facing the competitiveness in the world of work. Skills development considered within three pillar framework: *pre-employment skills development* to prepare future workers, *continuous skills development* to upgrade the skills of the workforce, and *skills development for the unemployed and disadvantaged* as a means of reintegration into the workforce. TVET plays an important role in the socio-economic life of people. TVET graduates will be at the centre of a society to be transformed on sustainable development principles. TVET as a moral leader, emphasizing education for its own sake and the importance of appropriate values.

OECD countries to defer vocational specialization and more effectively integrate general education and technical and vocational education and training (TVET). OECD countries have also increased the proportion of general education that is included in TVET pathways, and expanded the opportunities for general education students to take TVE courses. It means that the policy of ministry of education in encourage TVE in Indonesia to adopt some system of OECD countries to become the world class school must be rethinking because the TVE system in OECD countries different with the TVE system in Indonesia.

References

Asia Society & The Council or Chief State School Officer(CCSSO). (2011). *Putting the World into World-Class Education: State Innovations and Opportunities.* access on January 13th 2011 from http://asiasociety.org/files/stateinnovations.pdf

Burbules, N.C. and Torres, C.A. (eds). (2000). *Globalization and education: critical perspectives.* New York: Routledge.

Clarke, L., & Winch, C. (Eds.). (2007). *Vocational Education : International approaches development and system*. London & New York : Routledge, Taylor and Francis Group.

Depdiknas. (2009). *Permendiknas no. 78 tahun 2009 tentang penyelenggaraan sekolah bertaraf internasional pada jenjang pendidikan dasar dan menengah.* Jakarta: Depdiknas.

Dowling, A. (2008). Output measurement in Education. Access online on Januari 12th 2011 from http://www.acer.edu.au/documents/PAPE_Output_1208.pdf

Harris, R., Simons, M., and Maher, K. (2009). *New directions in European vocational education and training policy and practice: Lessons for Australia*. Australia: NCVER

Karmel, T. (2009). *TVET and Sustainable Development: A Cautionary Note*. In Fien, J.; Maclean, R.; Park, M. (Eds.) (2009). *Work, Learning and Sustainable Development: Opprtunities and Challenges.* Springer-UNEVOC-Japanese Fund in Trust

King, K. & Palmer, R. (2010). Planning for technical and vocational skills development. Paris: UNESCO-International Institute for Educational Planning.

Nam, Y. J. Y. (2009). *Pre-Employment Skills Development Strategies in the OECD.* Washington, USA: Social Protection Labor (The World Bank).

Paryono. (2010). Issues, Challenges, and Opportunities in Skills Development in Southeast Asia: SEAMEO VOCTECH's Perspectives on TVET. *Proceedings of International Seminar on Vocational Education and Training,* UNY, Jogjakarta, 18 May 2010

UNESCO. (1992). *New Direction: In Technical and Vocational Education*. Thailand: UNESCO.

_____. (2005). UNESCO and Sustainable Development. France: UNESCO.

UNESCO-UNEVOC. (2010). TVET in UNESCO. Access on Desember 13th 2010, from http://www.unevoc.unesco.org/wiki.0.html?&no_cache=1&tx_drwiki_pi1[keyword]=UNESCO%20and%20TVET.

IMPROVING STUDENTS'WRITTING SKILLS IN DISCRIPTIVE TEXT THROUGH FACEBOOK FOR TE NINTH GRADE AT SMPN 1 PASURUAN

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Abstract

The ourpose of this research is to promote students' writing skill at secondary level, especially in descriptive text, Facebook writing is a beneficial alternative teacher need to consider.This research is addressed to the ninth grade of students of SMP 1 which involve 25 students of class X A.The aim by improving students writing skill focuces on the grammar , diction and content

The researcher prefers to use the classroom action research to improve students' writing skills through Facebook with the outstanding models proposed by Kemis and Mc Taggrat , which is called by participatory research . It involves a spiral self-reflective process starting with planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, and then preplanning, acting and observing, reflecting, and these action can be extended to meet the required result.

After the second cycle , it shows that 12 of the 25 students succeeded to write the required descriptive text, 7 of them are stable and the rest achieve the minimum criteria, besides the good improvement of the teaching learning process that follows it. It works provided that the students are prepared in such away to use the language with their native speaker contacts. The more elaborate examples, exercises, and explanations on the language items to communicate on Facebook is important to help the students perform better written communication and create descriptive text

Keywords: writing skill, Facebook

BACKGROUND

The global era impacts the great changing on education affair, that also comes to the classroom teaching learning activities. The implementation of school-based curriculum gives some significant changes in English teaching in Indonesia. English teachers are expected to be able to develop classroom activities that enable students to acquire communicative skills both in oral and written ways. The oral communication is intended to meet the students' future need on the active English in speaking. Meanwhile, the ability to write is aimed to facilitate the students to express themselves in written form. The ability to communicate in the written form possibly helps the students to widen

their horizon as the coverage of language use and the intensity of students' involvement in writing is very great. Therefore, writing skills may help the students to develop their language and reasoning skill as well.

Moreover, writing skill can be extended to be more than just academic activities. Having distinctively well-developed writing skill, students may have wider opportunity for developing their future career. The ability to write effectively is becoming increasingly important in global community. Writing is considered to hold an increasing role in both second and foreign language education (Weigle, 2002). Writing has also become more important as tenets of communicative language teaching that is teaching language as a system of communication rather than as an object of study. This emphasizes the need to effectively handle writing activity in the skills-integrated process of English teaching in secondary level.

On the other hand, English teachers faces momentous predicament in dealing with students' language skills, To be more specific, Mukminatien (2003) stated that many problems arise in trying to develop EFL productive skills, especially in the area of writing. It is reasonable as writing involves the process of composing message, thinking of the language to use, taking care of diction, textual organization, and other mechanics.

Considering the focus of English teaching in secondary schools, especially writing skill which emphasizes on the way how students produce the specifically required texts, classroom activities hold a crucial point to support the students' skill improvement. Therefore, conducting the effective teaching and learning activity is a must for every teacher. As teaching involves complicated dimensions in the part of the teacher, the students, the materials, the method used, and the evaluation, a lot of problems possibly arise in every step of teaching. To keep up with these phenomena, therefore teachers are purposefully expected to be able to create their own activities suitable with their classroom need either for improving their students writing skills as well as providing their meaningful learning process in general.

In responding the phenomena above, the writer is interested to develop writing activities that help the students to achieve the competence in producing a good piece of short functional text in form of massage or letter. The activity should be effective and enjoyable. Besides it should be so functional for students' social life that keep them

motivated and interested. The writer finds that Facebook meets the criteria. So, the study is dealing with improving the students' writing skills through Facebook. In line with the background stated above, the problem of the study is stated as "how can Facebook improve students writing skill at SMPN 1 Pasuruan?"

REVIEW OF RELATED LITERATURE

The teaching of English in secondary level is developed in such a way that facilitate the students' language skills; listening, speaking, reading, and writing. For early secondary level or junior high school students, writing is not easy and often it is boring. Therefore, the writing activity should be designed in line with their daily life need. As we know that most of the teenage of big cities are so familiar with the social network called Facebook. Most of them use most of their time for having a chat on Facebook. The students of RSBI (pre – internationally standardized school) SMPN I Pasuruan also adobt the same tendency. It inspires the writer to take Facebook as a means to improve their writing skills. It is supported by the fact that National School Boards' Association says that Social Networking technologies should be adapted for use in the classroom. And 96% of students with access to the Internet build social networks. Besides, 50% of teens say they talk to their peers about schoolwork online (IM, blog or social networking sites) or via text message. While other 60% indicate that they discuss education-related topics such as college and career planning (Karl Fisch)

Regarding the importance of the teaching of writing, the discussions of approaches employed in the teaching of writing are purposefully presented. The first is to deal with product approach. A half century ago, writing teachers were mostly concerned with the final product of writing: the essay, the report, the story, and what that product should look like (Brown, 2001). It focused on the final result, the coherent and error-free text produced by the students (Nunan, 1999). The aim of writing task and its final product were the point of importance of this approach (Harmer, 2002). The writing tasks of product-oriented approach were imitating, copying, and transforming models provided by the teachers or text book. "This is what is called reproductive language work" (Nunan, 1999). Further, Nunan explained that this approach focused very much on sentence level grammar in the perspective that sentences were the building blocks of discourse, and that

discourse was created by fitting one building block to the next one. It is clear that this approach oversight the complex process of writing exercised by the students. The critics of the approach urged the development of the next approach: process-oriented writing.

During the 1970s and 1080s, writing as a process became very influential in the teaching of writing (Widiati, 1997). The process approach focuses on the stages students go through to create a text instead of focusing on the final product. White and Ardnt (1991) in Nunan (1999) viewed writing as a complex cognitive process that requires sustained intellectual effort over considerable periods of time. They suggested that producing text involves six recursive procedures, namely generating ideas, structuring, drafting, focusing, evaluation, and reviewing.

In line with this description, Tessema (2005) in Hyland (2007) outlines the basic writing processes students go through in producing a certain text. It starts with *idea generation* that entails discussing a topic in a class in pairs or groups. It includes *brainstorming* about the topic and jot down the various elements that come to mind as students reflect on the topic. The next one is *free writing* or *fast writing* when students begin to amplify their idea and build a viewpoint about an issue. What comes next is *drafting* that requires students to construct their writing and making it coherent. Then *peer editing* and *peer evaluation* that allows students to share their draft each other for gaining constructive feedback for *revision*. Eventually, the *final product* is a result of successive previous stages.

Considering the sequence of activities in the process of writing, Widiati (1997) stated that teachers play a vital supportive role in each step of these stages. Process-oriented approach has been major influence on the policy and classroom practice. However, an alternative of the teaching of writing called genre-based approach comes into the arena. Hyland (2007:150) stated that:

> "The last decade or so has seen increasing attention given to the notion of genre and its application in language teaching and learning. This is largely a response to changing views of discourse and of learning to write which incorporate better understanding of how language is structured to achieve social purposes in particular context of use. For teacher educators, genre based pedagogies offer principled ways of assisting both pre-and in-service writing teachers to provide their students with targeted, relevant, and supportive instruction".

The genre approach enable the students to use the language in line with their social need to communicate. Providing the activity to communicate through Facebook, means enhancing the students' communicative language, especially in writing.

RESEARCH METHOD

The method used in the study is classroom action research. Based on these theoretical foundations, classroom action research is represented and developed in cyclical terms. There are some models of cyclical stages proposed by experts. One of the outstanding models is proposed by Kemis and Mc Taggrat (2000) in Koshy (2006) which is called *participatory research.* It involves a spiral self-reflective process starting with planning a change, acting and observing the process and consequences of the change, reflecting on these processes and consequences, and then preplanning, acting and observing, reflecting, and these action can be extended to meet the required result.

The study conducted in 9th A class with 25 students. The text the students had to deal with was short functional text such as asking for personal information, writing letter. The minimum acceptable score for writing was 80. The scoring rubric for the writing was content (40%), structure (30%), and diction (30%). The study was initiated by developing the plan in which the teacher and collaborator sought for effective way to use Facebook. The criteria of success was set; 80. Then the students were prepared. In this phase students were required to have contact with a native speaker through Facebook. The teacher then equipped the students with language use necessary to communicate with them through Facebook.

The teacher limited the topic on culture, interest, family, weather, natural phenomenon, and other related matter. The Facebook communication was done out of class. Following meeting each students' opened their account to show what they had communicated through with their native speaker contact LCD projector as the class was online (Hard copy is needed when the class is not set online) and discussed the items they got. Then the piece of functional text discussed were used to create the descriptive text ,

then the students products were assessed based on the scoring rubric. The result was evaluated to get better improvement for the following cycle.

FINDINGS AND DISCUSSION

In the first cycle it was shown that all students were good at content. They also confessed that they enjoyed communicating with the native speakers. However their structure and diction are still poor. The sentences are not well-structurally constructed. The dictions are not suitable with the meaning they want to express, as presented on some expressions below:

S: Hi

F: Hi there

S: Hello Miguel. Where do you from?

F: Mexico, and U?

S: I'm Indonesia

F: Well. Good

S: Well I happy to chatting with you because I can know many about you and your life

F: Me too, It's interesting to have a friend from the beautiful country (Indonesia). I also want to get more information about your country for my school task

S: Ok. I like if you enjoy the chatting too. What more you want to know about my country?

F: The weather. My geography teacher your country is always hot the whole year, it is also colorful and rich of many different types of plants and animals. I watch them on TV. I wonder how it is really like ?

S: Your teacher not wrong. He tell the truth. That my country , the flora and fauna are colorful and beautiful too. We have many colorful orchid and many beautiful bird too

F: Great I want you to tell me more about the flora and fauna of your country

S: With happy heart, but my English not good. I am sorry if my sentence make confuse your feeling. And I lkie if you can check my mistakes in my English

F:No problem, Your English is good. I understand you well. I think I don't need to correct your mistakes. I enjoy having chatting with you, Come on tell me more about your country, especially the flora and fauna.

S: ***Well thank you for your kind. Here I want to tell you about the orchid. We have many colour of orchid in Kalimantan and Papua Island. Here the orchid grow fertile. There white, purple, brown, yellow, green, and black color too. But I'm sorry I don't know the names, but I promise send you the photo of that flowers. What do you think***

F: Wow ! I really love it. It's okay you don't need to provide the name. I think I 'll check them on ENCYCLOPEDY

S: BTW, ***what your hobby listening music?***

F; Yes, Justin Beiber

S: ***Are you like it***

F: *Yes. A lot*

By having a chat with his foreigner like the example above the students are able to compose the simple descriptive text with dome mistakes on grammar and diction but it good and vary in content

This is my friend. His name is Miguel. He from Mexico
He is like have a friend from Inodesia , me. He know Indonesia from his history teacher. He is good. He not correct my English. I happy to chatting with him.
He is like listening music. He is like Justin Beiber……

With this problem, there were 12 out of 25 students who failed to meet the criteria of success on writing the descriptive text , as their score were lower than 80. In fact, 5 students got only 60. Most students are good at content but poor at grammar and diction, as it is shown on the table below.

Table 1. Scoring Rubric of writing descriptive text

Presence Number	Grammar (0-30)	Diction (0-30)	Content (0-40)	Total Score
1	28	26	38	92
2	28	26	36	90
3	26	28	36	90
4	24	30	36	90
5	24	28	36	88

Presence Number	Grammar (0-30)	Diction (0-30)	Content (0-40)	Total Score
6	26	26	36	88
7	24	28	36	86
8	26	24	36	86
9	26	22	36	84
10	26	22	36	84
11	24	20	36	80
12	24	20	36	80
13	26	18	34	80
14	20	24	34	78
15	22	22	34	78
16	20	22	34	76
17	16	20	34	70
18	16	20	34	70
19	16	18	34	68
20	18	16	30	64
21	16	14	30	60
22	14	14	30	58
23	16	12	30	58
24	16	12	28	56
25	16	12	28	56

In responding to the findings of the first cycle in which it was clearly shown that students' structure and diction that was still under the score of criteria of success set previously, teacher and collaborator plan the following cycle. Some revisions on the steps of teaching were improved. As the problem were mainly on structure and diction, in the second cycle more portion were given to deal with those two items. More exercises and discussion were given on that area. Teacher also provided more examples of language use on those points in general use or specifically ones used on Facebook.

Then the plan was implemented. The students were ordered to have chat with their native speaker contacts again. Some of the students got new contacts, some others communicate about the same topic but deeper, and more complete.

When the result of their written communication was discussed in the class, it was known that significant improvement had been achieved. All of the students got better scores exceeding the criteria of success. Some of the students proved to develop their English. It can be seen in the sentences they constructed. For example, S:"*wow, it's amazing, I want to visit your city someday.*"

F:"Really, Would you like to come to my house? "

S: "By all means!. Well, I think your country is like in heaven during the winter, isn't it, I am glad to have a chat with you"

F: " Oh really ?Do you think so" ,I also wants to visit your country"

S: "I am happy to hear that. BTW, what do you do during the winter?

F: "Skiing, It is fun to play on the snow"

S: " Wow, I can't imagine it, Is it very cold, in winter?

F:"Yes, But it's okay. We have fun all day"

After some corrections the students are able to create better descriptive text below

I have a friend. He is Gustavo. He is from Spain. He is a students of University. He likes skiing during the winter. He likes to play on snow. I am happy to have a chat with him. He wants to visit my country, and I want to visit his country too

The more detail improvement will be presented in the following table.

Table 2. Scoring Rubric of writing descriptive text

Presence Number	Grammar (0-30)	Diction (0-30)	Content (0-40)	Total Score
01	28	30	38	98
02	28	30	38	98
03	30	30	36	96
07	30	30	36	96
09	28	30	36	94
05	28	30	36	94
12	30	28	36	94
11	30	28	36	94
15	30	28	36	94
17	30	28	36	94
18	30	28	36	94
13	30	30	34	94
21	30	28	34	92
22	30	28	34	92
20	30	28	34	92
25	28	28	34	90
04	28	28	34	90
06	26	28	34	88

Presence Number	Grammar (0-30)	Diction (0-30)	Content (0-40)	Total Score
10	26	28	34	88
24	26	30	32	88
14	26	28	30	86
16	28	26	30	86
19	28	26	30	86
23	27	26	30	85
06	27	26	30	85

Thus, it is clear that students enjoy communicating with their native speakers contact through Facebook while practicing their skills in writing short functional text. However; providing more detail exercises and example of the certain language use are important to help the students communicate effectively.

CONCLUSION

The conclusions drawn from the previous explanation are stated as follows.

1. Communicating with native speakers through Facebook improve the students writing skills.
2. Adopting Facebook writing into classroom activity motivates the students to use English in written form.
3. The use of Facebook in teaching learning activity challenge the teacher to create vary activities
4. To gain effective result of implementation of Facebook writing in teaching short functional text, more explanation, exercises, and example of the language items , grammar, and diction, to use intended communication are needed to be given in advance in order to promote students' communicative skill in writing.

REFERENCES

Fisch, Karl 2004. *Think Social Networking for Educatio.* Online Education: Study Shows Social Networking a Boon for Education

Brown, H.D. 2001. *Teaching by Principles: an Interactive Approach to Language Pedagogy.* (2nd ed). White, Plain, NY: Longman.

Derewinka, B. 1999. *Exploring How Text Works.* Newtown: Australian Print Group.

Gebhard, J.G. 1996. *Teaching English as a Foreign or Second Language.* Ann Arbor: The University of Michigan Press.

Harmer, J. 2002. *The Practice of English Language Teaching.* Essex: Pearson Education Limited.

Hyland, K. 2003. *Second Language Writing.* Cambridge: Cambridge University Press.

Hyland, K. 2007. *Genre Pedagogy: Language, Literacy, and L2 Writing Instruction*. Science Direct. Journal of Second Language Writing 16 (148-164).

Koshy, V. 2006. *Action Research for Improving Practice: A Practical Guide*. London: Paul Chapman Publishing.

Latief, M.A. 2008. *Penelitian Tindakan Kelas Pembelajaran Bahasa Inggris.* Unpublished Handout of Research Methodology Course, Postgraduate Program, State University of Malang

Mills, G.E . 2003. *Action Research: A Guide for the Teacher Researcher*. New Jersey: Pearson Education Inc.

Mukminatien, N. 2003. *Engaging EFL Students in Indonesia with Authentic Task: Possibelities Within Limitations*. In Kam, W.H. *English Language Teaching in East Asia Today.* Singapore: Time Academic Press.

Neuman, W.L. 2000.*Social Research Method: Qualitative and Quantitative Approaches.* (4th). Needham Heights: A Pearson Education Company.

Nunan, D. 1999. *Second Language Teaching and Learning*. Boston: Heinle and Heinle Publisher.

Vockell, E.L. and Asher, J.W. 1995. *Educational Research.* (2nd). New Jersey: A Simon & Schuster Company.

Weigle, S.C. 2002. *Assessing Writing.* New York: Cambridge University Press.

Widiati, U. 1997. Genre Approach and the Teaching of Writing. *English Language Education,* ELE vol. 3 number 1 July 1997

IMPLEMENTATION *PROJECT BASED LEARNING* ON THE *WEB PROGRAMMING* COURSE IN SMK SBI

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Abstract

Improved learning outcomes achieved by learners means increasing the quality of learning in the classroom because of the quality of learning is a critical role in improving the quality of education. Improving the quality of learning requires a comprehensive effort including the quality of learning in the International Standard Vocational School (Sekolah Menengah Kejuruan Bertaraf Internasional). One area that deserves attention is the learning in the field of information technology, better known by the name of Information and Communication Technology (ICT) because these fields have entered all the joints of community life. One of the efforts is the implementation of *project-based learning* is often called PBL. In this paper developed a model project-based learning or PBL in subjects doing web programming with 6-step activities, namely: (1) Students identify problems by conducting surveys and interviews in various places, (2) develop problem solving strategies will be done with the discussion each group discussed in class and conduct field studies, (3) Students do a web design according to user needs. The purpose of this design is intended for a web program that will be produced by each group to the maximum, (4) Preparation is the stage to create a web program as required by the users, (5) implementation of the programs created, and make feedback to the group of students in in class, (6) Evaluation of learning activities by conducting reflection in understanding the concept and application of knowledge in which was done by using a presentation and discussion.

Key Word: *Project Based Learning, Web, Vocational Education.*

INTRODUCTION

In the global era, all nations seek to improve the quality of education because with a quality education will produce quality human resources. By having qualified human resources is expected to increase the competitiveness of nations. The Indonesian nation has made efforts to improve the quality of education. Effort to improve the quality of education is a process that is carried out continuously and sustainably in a way to improve the quality of learning in order for the national education goals can be achieved with good. Various efforts have been made by the Government to improve the quality of

national education. The effort has, among others through the development and improvement of curriculum, improved evaluation system, improvement of educational infrastructures and the development of learning materials (Depdiknas, 2001).

There are five main elements in the paradigm of global education, namely (1) how education policy can improve the national economy by strengthening the linkage between education at school with work, the productivity of society with trade practices, (2) how the education policy to increase participation or direct involvement of society in making education decisions as well as determine the options model of education, curriculum content, educational infrastructure in accordance with market demand, (3) how education policy can control the updating of skills and updating the content of the curriculum given to each learner in the classroom, (4) how education policy can reduce the costs that must be spent by the government or the education provider, and (5) how education policy can improve learning outcomes achieved by each learner in the form of increased skill competence and capability so that it can synergize with the world of work (Bambang, 2008).

Improved learning outcomes achieved by students means increased quality of teaching in the classroom. The quality of learning is a critical role in improving the quality of education because the form of a variety of educational programs is achieving a quality learning program. Improving the quality of learning requires effort to improve the overall quality of learning programs. One area of education that concerns many people is the education of information technology. Education information technology field or who is better known as Information and Communication Technology (ICT) is considered important because ICT has entered all life aspects of society and no longer be an expensive and difficult to obtain.

According Purnawan (2007) ICT education should, in addition to providing adequate theories, also need to provide examples of solving real projects by utilizing existing theories. Thus, professional development in ICT are naturally simulated by technical problems in real situations. One way to help students to have the skills alongside the theory is the application of *project-based learning* in learning, including ICT learning in the International Standard Vocational School (SMK SBI).

Therefore, SMK SBI is an educational institution whose role is to prepare students to be middle-level manpower, the role of vocational high school in order to prepare a quality workforce is considered a very strategic. Therefore, the process of learning and teaching or learning process in vocational school should always refer to the demands of global demand in the world of work. Therefore in this paper described how the implementation of project-based education, known as project based learning can support the learning of ICT in the SMK SBI.

DISCUSSION

A. Vocational Education

Education is a human effort to produce culture for a sustainable life of every generation. Every nation in the pluralistic modern times continues to prepare its people become educated citizens for the sake of continuity of generations. As noted by Sukarjo and Ukim Komaruddin (2009: 1) humans are creatures who deals with education, so-called *animal educandum* and *animal aducandus* the man as a creature who was educated at the same time as being educational.

Entering the third millennium, many changes happen quickly. These changes are the impacts of the development of science, a very rapid population growth, and environmental changes (Purwanto, 1995:3). The rapid changes make humans must adapt to the changes. One problem faced by humans, of course, involves the issue of education in it, namely how far education can overcome the problems faced. It includes vocational education involvement in solving problems faced by mankind.

Review of vocational education much revolves around the study of the concept, the purpose of vocational education, vocational education principles, models the characteristics of vocational education. Vocational education was developed from the concept of vocational education and *occupational education* (education labour), both included in education to produce a middle-class workforce. There are many definitions or meanings conveyed by experts on vocational education. In general, these notions evolved

in line with changes in perceptions and expectations of society towards the development of vocational education.

UUSPN 1989, article 11 paragraph 3 states vocational education is education that prepares students to work in a particular field, (Act No.2 of 1989). In addition the government also has set up the Government Regulation no. 29 of 1990 article 1 paragraph 3 which describes the vocational education. Vocational education in the Government Regulation is an education at secondary level which prioritizes the development of students' ability to perform certain types of work.

In Uncle Sam's country, vocational education is considered as an education that can be directed to study the field of specialization for vocational school graduates to have specific expertise among the various areas of expertise such as: business, manufacturing, agriculture, kerumahtanggan, automotive, telecommunications, electricity, buildings, etc. (Snedden , 1917: 8). Wenrich (1974: 3) argued that vocational education is an education which was held for students who plan and develop a career in the field of specific expertise to work productively.

Develop vocational education is basically three main functions, namely: (1) talent development function, (2) the function of basic education skills and habits which lead to the world of work, and (3) coaching function (Hary, 1995). Briefly Sugiyono (1998), states that vocational education has the function of preparing learners to enter the job market. Shumer (2001) vocational education has an important role in helping young people find direction, purpose and ability in his life.

Vocational education is in charge of secondary education prepare students to work in a particular field. Vocational education has a strategic role in preparing the workforce, focus its activities is to provide stock of knowledge, skills and attitudes to students for work can be applied in the world of work, both in business and industrial world (Irwanto, 2010:18).

Thus, a vocational school education is expected to prepare learners for the future after graduation to work in accordance with their fields and have the competence to be able to work and can live with keahlianya as workers in an industry or work independently as an entrepreneur. Therefore, all forms and attempts were made in order

to improve the quality of secondary vocational school pembelajarn including what is revealed in this paper, namely the implementation of PBL in teaching ICT at secondary vocational schools.

B. Based Learning Project *(Project-Based Learning)*

Project based learning is an abbreviated PBL is one method of learning that comes from the constructivist approach in which lead to *problem-solving* efforts (Doppelt, 2003). Constructivism is a learning theory that has wide support which rests on the idea that students construct their own knowledge in the context of his own experience. PBL approach can be viewed as one approach to creating a learning environment that encourages students to construct knowledge and personal skills (Rais, 2009).

Concept-Based Learning Project is similar to Problem Based Learning model that can encourage all learners, learning strategies are ideal for heterogeneous classes that make the learners can work together to solve problems . Likewise, Project Based Learning which also brings students to solve a problem-oriented interdisciplinary.

Project-based learning typically begins with a plan for a final result or *artifact* in the mind of the learner, to produce *articact* requires certain skills or knowledge of the contents of which are specifically ask one or more problems to be solved by students. Project-based learning approach using a production model: First of all learners set a goal to manufacture the final product and identify their project. Then, they examine the topic of their choosing, designing, and project management planning. Students then begin the project, resolve problems and issues that arise, and finish their products.

C. *PBL* Scenario Events *Web Programming* On Lessons in Vocational School

In this paper developed a model project-based learning on the subjects of web programming. Web programming learning activities with the PBL approach is done by several stages (Ashar, 2010). Stages are:

1. Problem Identification (Field Study)

Identify the problem will be done on an object that will use the web as one of the medium. Identification was done by conducting surveys and interviews and see the condition of its web content needs. It started with a prototype study and know the environment and the power of what can be explored to create a web program. In addition, the study of literature is needed in order to obtain a suitable method in the manufacture of a web program.

2. Problem Solving Strategies

Problem Solving Strategies will be done with either active discussion with resource persons and experts, telecommunications and related fields. This activity was also conducted focus group discussions each of which is discussed in class and conduct field studies (eg in school, business unit, *home* industry, and other web user groups).

3. Design programs

This stage is the stage of designing a web according to user needs. The purpose of this design is intended for a web program that will be produced by each group can be maximized.

4. Preparation Program

Production stage is the stage to create a web program as required by the user. Includes insert web content desired by the user.

5. Project Implementation

This stage is used to implement programs created, and feedback on student groups.

6. Evaluation

The evaluation was done holding the reflection of learning activities in understanding the concept and application of knowledge in which was done by using a presentation and discussion. Each group presents its program with other groups and teachers.

CONCLUSION

Concept-Based Learning Project *(Project-Based Learning)* is similar to Problem Based Learning learning model that can encourage all learners, learning strategies are ideal for heterogeneous classes that make the learners can work together to solve problems . Likewise, Project Based Learning which also brings students to solve a problem-oriented interdisciplinary. *Project-based learning* typically begins with a plan for a final result or *artifact* in the mind of the learner, to produce *articact* requires certain skills or knowledge of the contents of which are specifically ask one or more problems to be solved by students.

Model-based learning or *project based learning* project in web programming subjects at secondary vocational schools was done by 6-step activities, namely: (1) Students identify the problem by conducting surveys and interviews in various places, (2) develop problem solving strategies will be conducted with discussion groups each of which is discussed in class and conduct field studies, (3) Students do a web design according to user needs. The purpose of this design is intended for a web program that will be produced by each group to the maximum, (4) Preparation is the stage to create a web program as required by the users, (5) implementation of the programs created, and make feedback to the group of students in in class, (6) Evaluation of learning activities by conducting reflection in understanding the concept and application of knowledge in which was done by using a presentation and discussion.

REFERENCES

Ashar, Pakkawaru (2009) *Pengembangan Model Pembelajaran Inovatif Dalam Menunjang Nuansa Akademik Pada Program Studi Pendidikan Teknik Informatika Dengan (Project Based Learning)* Disajikan dalam seminar Internasional Aptekindo, Peran LPTK Dalam Pengembangan Pendidikan Vokasi di Indonesia. Universitas Negeri Malang.

Bambang Dwi Argo, (2008). *Melalui Pendidikan Menjawab Tantangan Global* disajikan dalam Seminar Pendidikan Menjawab Tantangan Global. Universitas Brawijaya Malang.

Davydov, V.V. (1995). The influence of L.S. Vygotsky on education theory, research, and practice. *Educational Researcher, 24(3)*, 12—21.

Depdiknas, 1991. *Kamus Besar Bahasa Indonesia*, Jakarta. Balai Pustaka.

Dicek, Walter & Carey, Lou. 2001. *The Systematic Design of Instruction. Fifth Edition.* Longman. Addison-Wesley Educational Publisher. New York.

Doppelt, Y. 2003. Implementation and assessment of project-basd learning in flexible environment. *Instructional Journal of Technology and Design Education.* Volume 13 Page 255-272.

Gaer, S. 1998. *What is Project-Based Learning?*. http://members.aol.com.

Irwanto, 2010, *Studi Komparasi SMK yang Efektif di D.I. Yogyakarta*, Makalah Seminar, UNY. Yogyakarta.

Johnson, D.W., Johnson, R.T. & Stanne, 2000. *Cooperative Learning Methods: A Meta-Analysis*. http://www.clcrc.com/pages/cl-methods.html.

Khamdi, Waras. 2007. *Pembelajaran Berbasis Proyek: Model Potensial untuk Peningkatan Mutu Pembelajaran.* http://lubisgrafura.wordpress.com Diakses tanggal 23-7-2007

Khan, Badrul . (2005). *Managing E-Learning Strategies: Design, delivery, implementation and evaluation.* Washington : Information Science Publishing.

Kerlinger, F. N. 1990. *Asas-asas Penelitian Behavioral (Terjemahan)*. Yogyakarta: Universitas Gadjahmada Press.

Myers, R.J., & Botti, J.A. 2000. *Exploring the Environment: Problem-Based Learning in Action.* http://www.cet.edu. Diakses 10 Desember 2007

Okudan. Gul E. dan Sarah E. Rzasa. 2004. A Project-Based Approach to Entreprenurial Leadership Education. J*ournal Technovation*. Desember. Volume XX. Page 1-16.

Purnawan,Yudi. 2007. *Deskripsi Model Pembelajaran Berbasis Proyek*. http://www.yudipurnawan.wordpress.com. Diakses 5 Januari 2008.

Rais, M. 2007. *Penguatan Jiwa Entrepreneurship Mahasiswa Melalu Pembelajaran Berbasis Inkubator Industri.* Laporan Penelitian Dosen Muda. Lemlit UNM.

Saiful Sagala. 2010. *Konsep dan Makna Pembelajaran.* Bandung. Alfabeta.

Shanley, M.K. 1999. Project Unlock Students Potential. Curriculum Administration. Volume 35 (10). *EBSCOHOST Research Databases.*

Sukarjo dan Ukim Komaruddin. 2009. *Landasan pendidikan, Konsep dan Aplikasinya.*Jakarta: Rajawali Press.

Thomas, J. W. (2000). A review of research on project-based learning. Retrieved 18 July 2005 from http://www.autodesk.com/foundation

Tuckman, W. B. 1999. *Conducting Educational Research: Second Edition*. USA: Harcourt Brace Jovanovich, Publisher.

Zahide. 2004. Relationship Between Achievement Goal Orientation and Collaboration in Project-Based Learning Process. Volume 15. page 01-10.

A MAJOR ISSUE IN EDUCATIONAL EFFECTIVENESS: HOW SHOULD WE EVALUATE TEACHING EFFECTIVENESS?

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Abstract

For several decades, research on teaching effectiveness has revealed unexplainable factors. The dimensions and factors of teaching effectiveness turn out to be different among countries. Inconsistency in relation to the definitions of basic terms used has contributed to the complication. Therefore, such concepts as effective teacher, effective teaching, and teaching effectiveness must be clearly defined. Tracking the development of the systems of teaching effectiveness evaluation with distinct paradigms is necessary. Collaboration between teachers and researchers, therefore, is required to create the system of teacher evaluation that enhance student learning in terms of process and outcome, which encompass all domains of learning.

Keywords: teaching effectiveness, effective teacher, effective teaching, evaluation

INTRODUCTION

Educational effectiveness has come to be a key word in many policies related to all learning process. It is even one of the goals of all levels of education. Moreover, in the era of decentralization and deregulation, educational effectiveness is one of the aspects of educational quality as a central theme of various policies made. Therefore, school management and stakeholders are expected to regularly and continuously to assess efficiency, effectiveness, and accountability through a professional evaluation system.

As a major part of educational effectiveness, teaching effectiveness needs to be increased systematically given that empirically "the single largest factor affecting academic growth of populations of students is difference in effectiveness of individual classroom teachers" (Sanders in Kuppermintz, 2003:289).

A number of studies by Teddlie, Stringfield, and Burdet (2003), Reezigt, Creemers, & de Jong (2003), Kyriakides (2003) in relation to educational effectiveness research in the United States, UK, Cyprus, the Nederland, and China (Hong Kong) are basically useful for developing schools and teachers. Kyriakides and Campbell reveal that, from the various researches into teaching effectiveness, a number of unexplainable factors of teaching effectiveness came to be known. In fact, the dimensions and factors of teaching

effectiveness turn out to be different among countries so that international comparisons leave unanswered questions. Cultural factors have been identified to help cause the differences.

In addition to the above reasons, developing a system of evaluation in education among of which is that of teaching effectiveness refers to accountability of educational institutions to stakeholders, because effectiveness itself—in its simplest definition—is "the extent to which a set of goals is achieved and is a reflection of something being done well in an organization or by an individual" (Schooling Issues Digest, 2004/1).

However, an effort to evaluate teaching effectiveness is not without challenge. Inconsistency dealing with basic conceptual terms used in studies on the issues has contributed to the complication of the matter. Consequently, constructing a valid teacher evaluation system that leads to school improvement is challenging work to do.

DISCUSSION

There is a preponderance of theories of effective teacher, effective teaching, and teacher effectiveness used by educational theorists and researchers across countries.

Effective Teacher

Some contextual factors have inevitably precipitated different definitions of effective teacher, based on the psychological characteristics held. In other words, teacher personality, attitude, experience, aptitude and achievement are utilized as the criteria for defining good teachers and, as a consequence, employed to measure teacher behavior. The psychological characteristic definitions, however, prove to be useless for defining good teachers. As argued by Borich (2006), it is due the fact that they hold a certain intuitive appeal. Furthermore, they are not relevant to day-to-day classroom work so that they do not meaningfully contribute to a definition of a good teacher. Most notably, the performance of the students as the most significant and sound measure for determining good teaching is ignored. With a different language, Muijs and Reynolds (2005), as quoted by Jones et. al., (2006:5), come to a conclusion that an effective teacher: 1). has a positive attitude, 2). develops a pleasant social/psychological climate in the classroom, 3). has high expectations of what pupils can achieve, 4). communicates lesson clarity, 5).

practices effective time management, 6). employs strong lesson structuring, 7). uses a variety of teaching methods, 8). uses and incorporates pupil ideas, and 9). uses appropriate and varied questioning.

It stands to reason that the nature of Indonesian effective teacher is also built on a wide range of perspectives and contexts. There are many factors—the characteristics of the teacher, students, subject matter, school level, and other situational factors—that affect a teacher to be effective. In other words, teachers perceived to be effective at senior high schools is very likely to be perceived ineffective at primary schools. Even the finding of the research conducted by Sukamto et al. (1998) indicates that there are some differences in the characteristics of teacher at the lower grades and those at the upper ones.

Teacher effectiveness

Different from teacher characteristics and competencies, teacher effectiveness is not considered as a stable characteristic. In fact, teacher effectiveness is "a product of the interaction between certain teacher characteristics and other factors that vary according to the situation in which the teacher works" (Mitzel, 1982: 1894). Therefore, the behaviour of the teacher and students while the teacher is teaching is considered as the most direct and timely source of information on which teacher evaluations are based (Alkin, 1992). Further Cruickshank (1986) synthesized the findings derived from 50 process-product studies on elementary school teacher with various grade levels, content areas, student characteristics, and teaching outcomes. The studies sought to identify the relationships between teacher behaviors as process variables and student gain as product variables. Summarized as a summative profile, the findings are classified based on classroom categorization, didactic teaching, and classroom management.

First, in terms of classroom management, he finds that teachers assumed a critical role in many aspects that demand them to plan and organize, have structured curriculum, set high goals and communicate them to students, work mostly with the whole class and less often with supervised small groups, provide independent work that is interesting and worthwhile, and minimize "busy work."

Second, in terms of didactic teaching, teachers are demanded persistently to seek high goals, put the daily schedule on the blackboard, deliver extensive content coverage, deliver learning activities at an appropriate level of difficulty, differentiate instruction between students of high and low socioeconomic status, teach systematically step by step, provide adequate opportunity to learn criterion material, provide structure and structure comments, maintain brick lesson pace, deliver question suitable to the lesson's cognitive level, require public and overt student participation, provide adequate "wait time," accept and use student ideas, provide individual feedback, shape student responses so they are correct, maintain task involvement, monitor individual progress, deliver distributed and successful practice, praise judiciously, use little criticism, individualize, review, summarize, provide variety of teaching, and maintain absent of negative emotional climate. Importantly, some other related characteristics of effective teachers are involving all students, holding students responsible for their work, attending to students equitably and capitalizing on unexpected student wants.

In terms of classroom management, it is very obvious that teacher's persistence is needed in setting and maintaining clear rules and applying then using positive reinforcement, limiting student physical freedom, monitoring student behavior, holding students responsible for their behavior, directing student upon completion of their work, minimizing transition time, tackling misbehavior quickly, negotiating student compliance and demonstrating "with-it-ness," smoothness, momentum, ability to overlap, challenge, variety, and grouping alerting.

Finally, from the many research, Cruickshank also derives a conclusion that teachers "need to be well-organized, efficient, task oriented, knowledgable, verbally fluent, aware of student developmentsl level, clear, enthusiastic, self-confident, confifent of student abilities, hold high expectations, be friendly and warm, encouraging and supportive, attentive, accepting and tolerant " (1986:86).

Effective Teaching

It is no doubt to say that the concept of teacher effectiveness has a very strong linkage with those of effective teacher, effective teaching and then teaching effectiveness. In fact, they are absolutely interwoven.

Bost and Riccomini (2006) summarise 10 principles that entail effective teaching. The research-validated practices principles refers to teaching practices that been found to promote student academic gain: 1). Active Engagement, which is associated with the amount of time students and teachers are engaged in academic tasks in the classroom, 2). Providing the Experience of Success, given that students' experience of success is strongly associated with student learning outcomes, 3). Content Coverage and Opportunity to Learn, which is closely related to students' achievement, 4). Grouping for Instruction, which facilitate teachers to keep students persistenly engaged in instructional tasks, 5). Scaffolded Instruction, which has been found to make students independent and self-regulated learners, 6). Addressing Forms of Knowledge, though which a teacher maintains the balance among declarative, procedural, and conditional knowledge, 7). Organizing and Activating Knowledge, by which students' prior knowledge is carefully combined with new one, 8). Teaching Strategically, that is teaching students "how to learn" effectively is of great importance in an effort to make them successfully deal with various learning circumstances. It will be quintessential for students with disabilities often faced with learning difficulties and therein lies the significance of the strategy for them. 9). Making Instruction Explicit, that is when the teacher obviously states the goals and objectives of the lesson, structure the lesson in a clear format, and deliver content in a clear and direct fashion.

Ornstein and Lasley (2004) restates the results of analysis on process product research conducted by Rosenshine and Furst with regard to teacher processes in terms of behaviors or variables consistently and strongly linked to student products (outcomes or student achievement). The teacher processes or behaviors are: 1). Task orientation (later termed as direct instruction), and 2). Student opportunity to learn in terms of teacher's coverage of the material or content in class on which the students will be assessed (later referred to as academic time, academic engaged time, and content covered).

Gage also made an analysis on fourty nine process-product studies that yields four clusters of behaviors that have been found to indicate strong relationship to student outcomes:

> *"(1) teacher indirectness, the willingness to accept student ideas and feelings, and the ability to provide a conducive emotional climate; (2) teacher praise, support*

and encouragement, use of humor to release tension (but not the expense of others), and attention to students' needs; (3) teacher acceptance, clarifying, building, and developing students' needs; and (4) teacher criticism, reprimanding students, and justifying authority" (in Ornstein and Lasley, 2004:62).

Evaluation of Teaching Effectiveness

In an effort to develop the effectiveness of teaching, the system of evaluating is absolutely required. Therefore, tracking the development of the evaluation conducted by previous researchers is worth doing. What has been elaborated by Borich (1986) with his five paradigms of teacher effectiveness research is essential.

The five-decade research resulted in some findings and paradigms of research methodology that are important to understand the concepts of effective teacher and teaching effectiveness: 1). Process-Anecdote Paradigm, which provides teachers with feedback dealing with their performance in the classroom, without clear distinction between a good teacher and a good person who becomes a teacher, 2). Process-Systematic Paradigm, which derives from studies that systematically examine the relationship between the teacher's process behaviours and students' behaviour in general in the classroom, 3). Process-Product Paradigm, which purports to identify observable teacher behaviours that correlate with students' achievement or educational outcomes. As an improvement of the previous methods, it shows a significant progress by quantifying the behaviours of teachers and students. 4) Experimental Paradigm, which views the cause-effect relationship between teacher behaviours and student outcome (experimental process-product). 5). Process-process and Process-process-product paradigms which refer to on the process behaviours of teachers correlated with those of students to determine effective classroom practices and teaching behaviours in encouraging students' involvement in the learning process, 6). Process-Process-Product Paradigms, which combines process-process paradigm and process-product paradigm in which teacher behaviours in terms of classroom practices and activities influence students' processes, that are the time they used to learn that in turn affects their achievement.

To date, among the models in use, the value-added model seems to be the most commonly employed to assess the effects of teacher on student learning with the hope

that this model will accurately measure student's academic growth. This model has enjoyed large support because of two factors. First, it is viewed to separate the effects of teachers from non-educational factors which have powerful effects. Second, it is employed to reveal large differences in effectiveness among teachers (McCaffrey *et al.*, 2003).

In this model, however, the teaching effects are not clearly isolated from other variables such as parents' support, after-school courses, school support, students' background, etc. Importantly, the flaws cause the dramatic fluctuation of students' scores from one year to the next, which also result in the greatest injustice particularly to teachers of students with the greatest needs (Texas AFT Legislative Hotline, 2010).

Above all, the links between student outcome and teacher behavior are not very clear. In other words, it is difficult to measure the causal effects to determine the effects of teachers on student gain.

CONCLUSION

Teacher and educational researchers should go hand in hand to comprehend the major issues in educational world and find the answer to the existing problems. Collaboration is required to create the system of teacher evaluation that enhance student learning in terms of process and outcome. As most evaluation systems prioritize students' cognitive gain, ignoring the affective one, even "we have restricted ourselves to the cognitive one" (Creemers and Kyriakides, 2008:22), a new design of teacher evaluation must be continuously developed. It should be realized that policy-based evaluation system needs to be accompanied by the wisdom of the school and the belief that no single evaluation system is always appropriate for any circumstances. The various concepts of effectiveness should be studied, refined, and developed as students' needs and society's demand also develop for a better future.

REFERENCES

Alkin, M.C. (Ed). (1992). *Encyclopedia of Educational Research.* Sixth Edition. New York: Macmillan Publishing.

Borich, G.D. (2006). *Effective Teaching Methods. Sixth Edition*. New Jersey: Prentice Hall.

_____. (1986). Paradigms of Teacher Effectiveness Research, Their Relationship to the Concept of Effective Teaching [Electronic Version]. *Education and Urban Society*, Vol. 18, 2, 143-167.

Brophy, J. & Good, T. (1986). "*Naturalistic Studies of Teacher Expectation Effects*". In Martyn Hammersley (Ed.) Case Studies in Classroom Research. Milton Keynes: Open University Press.

Creemers, B.P.M. & Kyriakides, L. (2008). *The Dynamics of Educational Effectiveness.*London: Routledge

Cruickshank, D.R. (1986). *Profile of An Effective Teacher*. Educational Horizons. Vol. 64. No. 2. Pp. 80-86.

Good, T.L. (1979). Teacher Effectiveness in the Elementary School. Journal of Teacher Education. Volume XXX Number 2, 52-64.

Kupermintz, H. (2003). Teacher Effects and Teacher Effectiveness: A Validity Investigation of the Tennessee Value Added Assessment System [Electronic Version]. *Educational Evaluation and Policy Analysis*, 25, 3.

Kyriakides A. L. & Campbell, R.J. (2003). Teacher Evaluation in Cyprus: Some Conceptual and Methodological Issues [Electronic Version]. *Journal of Personnel Evaluation in Education*, 17.

McCaffrey, D.F., Lockwood, J.R., Koretz, D.M., Hamilton, L.S. (2003). *Evaluating Value-Added Models for Teacher Accountability*. Santa Monica: RAND Corporation.

Mitzel, H.E. (1982). *Encyclopedia of Educational Research* (Fifth Ed). New York : Macmillan**.**

Muijs, D. & Reynolds, D. (2005). *Effective Teaching Evidence and Practice. Second Edition.* London: SAGE.

Ornstein, A.C. & Lasley II, T.J. (2004*). Strategies for Effective Teaching Fourth Edition*. Boston: McGraw-Hill.

Praslova, L. (2010). Adaptation of Kirkpatrick's four level model of training criteria to assessment of learning outcomes and program evaluation in Higher Education. *Educational Assessment, Evaluation and Accountability*. [Electronic Version]. Vol. 22. No. 3. pp. 215-225. Springer Link. Retrieved: 1/8/2011.

Reezigt, G.J., Creemers, B.P.M. & de Jong, R. (2003). Teacher Evaluation in the Netherlands and Its Relationship to Educational Effectiveness Research [Electronic Version]. *Journal of Personnel Evaluation in Education*, 17, 1.

Reynolds, M. & Threharne. (2003). Teacher Evaluation and Teacher Effectiveness in the United Kingdom [Electronic Version]. *Journal of Personnel Evaluation in Education*, 17:1, 83-100.

Schooling Issues Digest. (2004). *School Effectiveness. Department of Education, Science and Training, Australian Government*. Part 1

Sukamto, S. Sidharto, Suyanto, et al. (1998). *Efektivitas Guru Sekolah Dasar.* Laporan Penelitian Kebijakan Kerja Sama IKIP Yogyakarta dengan Direktorat Jenderal Pendidikan Tinggi, Depdikbud. Yogyakarta: Lembaga Penelitian IKIP Yogyakarta.

Teddlie, C., Stringfield, S., & Burdet, J. (2003). International Comparisons of the Relationships among Educational Effectiveness, Evaluation and Improvement Variables: An Overview [Electronic Version]. Journal of Personnel Evaluation in Education, 17:1, 5-20.

Texas AFT Legislative Hotline. (2010). *Evaluating "Value Added" Measurement of Teacher Effectiveness: Not Just A Houston Problem.* Http://texsasaftblog.com/hotline/?p=196**.** Retrieved: January 9, 2011.

SHOPPING NEWS METHOD IN A SET LEARNING PROGRAM IN CLASS VIIA SMPN 1 SEDATI SIDOARJO

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Abstract

The action research was conducted in class VIIA SMPN 1 Sedati Sidoarjo in mathematics subjects. There were 26 students in class 7A as learning subjects of this classroom action reasearch. The main purpose of this action research is to improve the mathematic ability of the students particularly about the theories of set. The other purpose is to find the most suitable learning method for set theories.

In this study attempted using a Shopping News Learning Method to deliver the theories of set as subject matter. It used an action research model of Eliot (Hopkins, 1985) with four rounds of each round is identical to one-time face to face (2 x 40 minutes) in class. The data were collected by observation and also pencil and paper test.

This study showed positive results since the average student's grade on the final evaluation in the classroom reached 82. The average value of this have exceeded the KKM (Criterion exhaustiveness Minimal) at SMPN 1 Sedati for mathematics subjects namely 80. It means, in the average, student of class 7A has been completed in mathematics learning in subject matter of the theories of set, although there are some students who are not complete yet. Therefore, Shopping News Method of learning can recommended to be used in teaching mathematics at Junior high school in particular to the Theories of Set.

Keyword: Shopping News Learning Method , Set Learning Program

BACKGROUND

The set theory is one of the very important learning material in school mathematics because it underlies some other material. If the students didn't understand the concept of set, they will have difficulty in learning other learning material, such as the concept of relations and functions, Statistic and Probability. If the concept sets are not controlled properly by the students, then they will have difficulty when studying other mathematical concepts associated with the set. That requires a variety of alternative strategies, methods or models of learning that can make the students really completely mastered the concepts of sets.

Commonly, the students who learned set theories, they got an understanding about the concept but after they were joining the learning activities, they forgot the concept. Every year the researcher finds similar problem among different students at school. So, it is not a simple problem because it can break the student's ability of mathematic.

Vernon A Magnesen (1983) that was cited by De Poter, Reardon& Nourie (2002 : 57) and Dryden & Vos (2000 : 101), said that we learn : 10% from what did we read, 20% from what did we listen to, 30% from what did we watch, 50% from what did we watch and listen to, 70% what did we say and 90% from what did we say and do. These explanations gave idea to the researcher that the students will remember mathematic concept longer, especially set theories, if they have learn the concept by explain the concept to their friends many times. Immateriality concept of set can be broken by concept exposure many times, hopes the students are better able to absorb the learning material enter into long term memory so that it becomes a codified concept and unforgettable. According to the explaination, probably the SNM is suitable to give students a learning experiences.

LITERATURE REVIEW

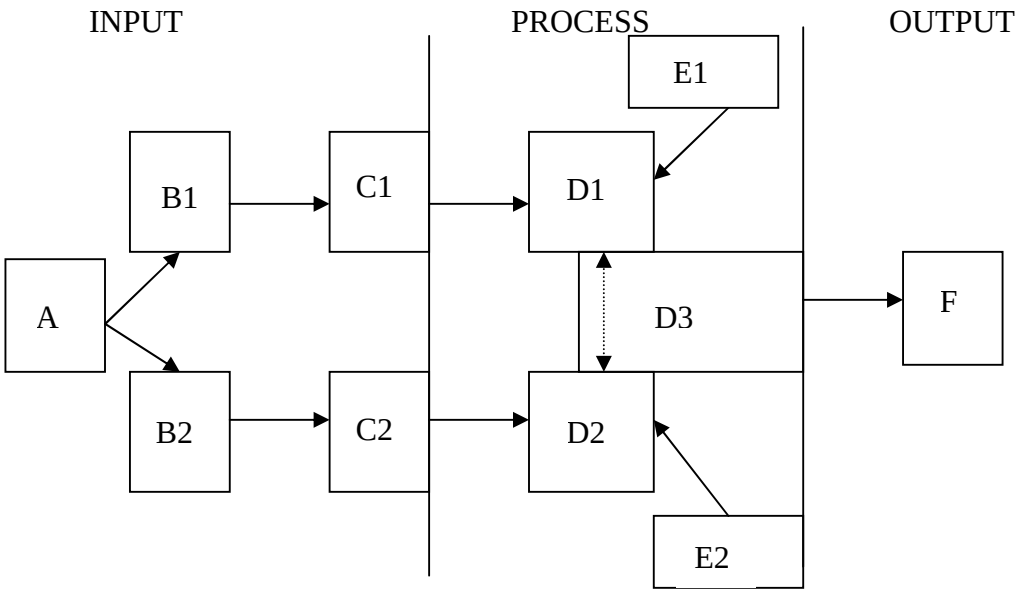
A. Information Processing

If a person receives information (input), with his mind will soon process the information to understand the information received earlier. Once he understood the understanding of the information that will represented as the result / product of understanding the information (output).

Theoretical model of information processing that occurs in someone's mind revealed by Hudoyo (2004) as follows: If the information in the form of "assignment" (as input) is given to students, the task can be a symbol / verbal or object Manipulative / images / diagrams. The symbol / verbal or object Manipulative / pictures / diagrams are encoded in the sensory register as verbal or non verbal information. After coding, information verbal or non verbal it enters the processing stage (in mind) become a shadow of verbal or non-verbal. Shadow verbal or non-verbal processed with the knowledge of verbal or non-verbal which already owned students. Between the shadow of verbal with verbal knowledge already known and among the shadows of non-verbal with non-verbal knowledge interact synergistically called transformation strategy for represented as the result / product of a task that has faced earlier.

Results / product is a student's construction of the task earlier. The flow of verbal or non-verbal information naturally sorted will support each other to show

information constructing causes resulting product. Here's an illustration in his information processing someone's mind by Hudoyo (2003):



A = Task
B1 = Symbols / Verbal
B2 = Manipulative Materials/ Figure diagram
C1 = Information verbal
C2 = non-verbal information
D1 = Shadow verbal
D2 = Shadow of non-verbal
D3 = Strategy transformation
E1 = verbal knowledge known.
E2 = knowledge non-verbal known
F =results/products

B. Mathematics and Intellectual Development

According to Soleh (1998 : 6), in teaching at schools, a concept mathematics is introduced through concrete objects, but students are encouraged to the process of abstraction is to ignore the attributes that are not important and then capture the similarities (abstraction) of objects examples and then make improvements (idealization) to sharpen understanding and ultimately capture that sense as a concept abstract (generalization). Discussion of mathematics in schools rely spatial reasoning, that is all the understanding or statement must be explained or demonstrated / substantiated by logical reasoning system. In junior high spatial reasoning is still in the form of drawing conclusion based on or inductive pattern, while in high school is only fitting with deductive.

Lev Vygotsky (1896 - 1934), quoted by Ibrahim & Nur (2000) stated that intellectual development occurs when individuals faced with new experiences and challenges and

when they trying to solve the problem posed by this experience. Social interaction with other friends and spur the formation of new ideas enrich students' intellectual development. There are two levels of development intellectual students. The first is the actual level, the functioning of intellectual current students and the ability to learn something special of its own. While the second is the level of potential, which can enable or reach that level with help from others (teachers, parents or colleagues) who has higher ability. Learning occurs through social interaction with teachers and colleagues. They are located in the area nearby development (Zone of Proximal Development). They need scaffolding or guidance which intensity gradually reduced until finally off altogether.

C. Concepts of Set in Mathematics

Much of school mathematics concepts based on concept of sets. Concept of Numbers, the concept of function or mapping, and concept of probability and Statistics are examples of school mathematics materials which are based on the concept of set. So that in this time the concept of set has become one of the main elements in the foundation of modern mathematics (Susilo, 2006 : 5). The concept of a set that is taught in middle school is the concept of Strict Set. The Strict set is a collection of similar objects whose well defined members. Therefore firmly developed by Georg Cantor (1845 - 1918) at the end of the 19th century, then the set of strict (Crisp Set) often called a Cantor set. (Susilo, 2006 : 36). Opponents of the strict set is the fuzzy set that is currently popular as one of a new concept in mathematics.

The set in the SMP can be expressed in three forms namely by Roster method, Set Builder notation and Venn Diagram. The Roster method states set by listing all its members within limits korawal parentheses and separated by commas. Example: The set of integers less than 5 is {0, 1, 2, 3, 4}. If this set is written by the form of Set Builder notation, to $\{x / x < 5, x \in A\}$ (Anonymus, 2007 : 216-217). As with numbers, the set can also be operated with the other set. There are three operations between two sets or more. They are Intersection of two sets or more, Union of two sets or more and complement of a set.

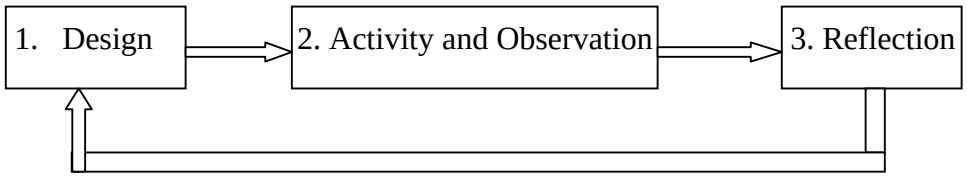
D. Shopping News Method

Shopping News Method (SNM) is a part of active learning that is introduced by Decentralized Basic Education (DBE) project just by telling each other among the partcipants teacher, but not written in the DBE's hand book. It is often used in social science or language learning, but in this research we tried to use it in learning mathematics with the aim to make students more involved in learning activities, especially for communicating mathematical concept to her friends orally.

In SNM, every student must get a term and then understand its concept, after that each student must exchange information with all of his friend so that every student get information about all concepts that day prepared to learn. After time provided for exchanging information out, the teacher tries to evaluate students' mastery of concepts with questions. After the teacher sure that the students master the concept, starting with practice problems in similar way. It is SNM also. Finally, group presentation will be conducted by the teacher for completing the students understanding about those concepts. Observation of student's participating in learning activities and pencil and paper test were done for data collecting in order to get an evaluation in this learning activities.

RESEARCH METHODS

This research will be carried out in class VIIA SMP Negeri 1 Sedati Sidoarjo East Java province in January 2011. The design used in this study followed the model of action research from Elliot (Hopkins, 1985) with 4 (four) rounds. Each round is identical to the two meeting in the one-time class VIIA learning activities during the 2 hours lesson (2 x 40 minutes). The figure below is a research design according to the Elliot's model of Classroom Action Research :



Follows are the plan implementation of the study :

Round	Research Program	Research Activities
1	A. Design	a. Preparing teaching materials: Understanding & How Expressing a set b. The learning process: Shopping News Method
	B. Activity & Observation	Sequence of Learning Activities: Brainstorming , Understanding Content 1, 2, 3 Evaluation (Exercise Problem & Competition)
	C. Reflection	Evaluation of total reflection of round 1 for repairs round 2
2	A. Design	a. Preparing teaching materials: Problems training about the definition &how to claim a set. b. The learning process: Shopping News Method
	B. Activity & Observation	Sequence of Learning Activities: Brainstorming / Apersepsi, Understanding Content 1, 2, 3, Evaluation (Exercise Problem & Competition)
	C. Reflections	Total evaluation of the round 2 activities for repair 3rd round activities
3	A. Design	a. Preparing teaching materials: Types & Relationships between sets b. The learning process: Shopping News Method
	B. Activity & Observation	Sequence of Learning Activities: Brainstorming, understanding the material 1, 2, 3, Evaluation (Exercise Problem & Competition)
	C. Reflections	Total evaluation of the round 3 activities for repair round 4 activities
4	A. Design	a. Preparing teaching materials: Problems training b. The learning process: Shopping News Method
	B. Activity & The observation	sequence of learning activities: Brainstorming, Training Task 1, 2, 3. Final evaluation.
	C. Reflections	Evaluation of total reflection for all activities learning set with shopping News Method. Results and Discussion

RESULTS AND DISCUSSION

Shopping news methods in learning mathematics particular in theories of set as main subject has been going well with the results as follows :

Round 1 :

1. **Design:** The learning material taken from Math Module (Anonymous, 2007) page 207 s.d 230 and used to perfection in this time by learning students with teacher guidance. To the shopping news has been prepared Mathematics Information Exchange (MIE) that will be used by students in understanding the subject matter being studied today.
2. **Learning Activity & Observations:** Activity Learning begins with pray together and then the teacher conducts a brainstorming activity about the set, then the students are divided into 4 groups. Each group consist of 6 - 7 students. Each student is given a sheet of MIE. After filling in your name, class and the topic today, each group was given two terms to their learned from teaching materials to master the concepts in the past 10 minutes. Then each group should choose two of its members as ambassadors to explain the last two terms to another group performance 2 minutes for each group. This is called a shopping news method. This activity is repeated with different students ambassadors. There are Found some students do not fill their MEI because they have not understood the meaning from this activity. After completion of exchange of information, problems were presented by the teacher for students. It will be discussed by the students with the group, then class discussion.
3. **Reflection:** Before the lesson ended, the teachers guide students to reflect all the activities that day as well as summarizing the material has been studied and equip students with homework for exercise. Results of reflection states that the ambassadors 2 students into other groups has not been served with perfect, because there are explanations do by one of the ambassadors alone, others just looking. So on the next lesson should be that both of these ambassadors should explain their own.

Round 2 :

1. **Design** : Teaching materials to be studied is the practice questions of Math Module (Anonymous, 2007) Task 6.1, 6.2, 6.3, 6.4a and 6.4b. Certainly will not be discussed fully, but it will be conducted by shopping news, every 2 students got one question for assignment studied and then explained to the other.
2. **Learning Activity & Observations:** Brainstorming made to recall the material they have learned there the previous meeting. Students were given sheets of MEI to do the problems set by teachers. When do the problems just 5 minutes and then started shopping news in 20 minutes. After that four students' presentation of his work then discussed in class.
3. **Reflection:** After the presentation, teachers guide students to reflect all day's activities and concluded that the student ambassador has been running well, but some students feel less time to solve problems which is a part.

Round 3 :

1. **Design :** Teaching materials used are from the Math module page 234-240 (Anonymous, 2007) plus teaching materials from the teacher to complete. MEI be prepared to exchange information through the shopping news method.
2. **Learning Activity & Observations :** Brainstorming for a variety of set topics and relations between sets for about 10 minutes. After all students were separated into 4 groups, each student was given MEI and 2 terms to be sought and understood the concept. The time for this is 10 minutes. Then start shopping news for 30 minutes. Last aired problem sets were discussed by the students with the group later discussed in class.
3. **Reflections :** Reflections on this day lead to a time that felt by some students still less to learn and convey concepts to his friends. Teachers respond to this as an exercise for familiarize themselves work and think fast. It is usual, before ending the learning activity, the teachers equip students with homework.

Round 4 :

1. **Design :** Teaching materials today is the practice questions that have been plus homework informed about the evaluation of individual to measure student success in learning the concept of the set for 4 this round.
2. **Learning Activity & Observations :** After brainstorming for about 10 minutes, teacher asked several students to present the results of his work to be discussed in class. A total of 6 students who successfully present the results of its work and then it was discussed by the teacher. Lessons end with a written evaluation form for 30 minutes. In this round there are 2 students who do not attend because of illness, so that the participants of the evaluation only 24 students from a total of 26 students.
3. **Reflection :** Today is the reflection carried out briefly because of time many drawn to the written test until the end of the lesson. Results daily tests were encouraging because the average value 82 means that on average, 7A-grade students have studied thoroughly, although there are 10 students who have not completed because the gain value replications under the KKM. Details of the value obtained is follow :

Score	100	93	90	85	84	82	80	79	76	68	65
Freq.	1	1	2	2	1	7	6	1	1	1	1

CONCLUSION

Learning set in class SMPN1 Sedati VIIA can be said succeed because the evaluation ultimately produce an average value of the class 82 airplane that has exceeded KKM mathematics at SMPN1 Sedati is 80, so that 7A graders concluded that on average have been completed in learning mathematic subject in the main matter sets, although there are still ten students are not yet complete as it gets under KKM replay value. Therefore, the shopping news learning method recommended for use in mathematics at SMP particularly for basic materials of set..

REFERENCES

Anonymous. 2007. *Math Module for Junior High School Years 7* - International Standard School. Department of National Education, Management General Directorate of

Primary and Secondary Education, Directorate of Junior High School Development

Bobbi DePotter, Mark Reardon and Sarah Singer Nourie. 2002. *Quantum Teaching*. Translater : Ary Nilandari. PT Mizan Pustaka Publisher. Bandung.

David Hopkins. 1985. *A Teacher's Guide to Classroom Action Research*. Open University Press: Philadelphia

Gordon Dryden & Jeanette Vos. 2000. *Revolusi Cara Belajar*. Translater : Word + Translation Service. Kaifa Publisher. Bandung.

Herman Hudoyo. 2005. *Pemrosesan Informasi dalam Belajar Matematika*. An article that was presented in National Seminar of Mathematic and Mathematic Education at State University of Surabaya, 28th Februari 2005.

Max A Sobel & Evan M Maletsky. 2001. *Mengajar Matematika*. Translation : Suyono, Editor Darmanto Muji. Third Edition. Publisher: Jakarta.

Mohamad Nur & Prima R Wikandari. 2004. *Pengajaran Berpusat pada Siswa dan Pendekatan Konstruktivis dalam Pengajaran.* 4th Edition. Center for Science and Mathematics School. State University Surabaya.

Mohammad Soleh. 1998. *Pokok-pokok Pengajaran Matematika*. Department Education and Culture Republic of Indonesia: Jakarta.

Mohammad Nur & Prima Retno Wikandari. 2003. *Pengajaran Berpusat pada Siswa dan Pendekatan Konstruktivis dalam Pengajaran*. PSMS Unesa: Surabaya

Muslimin Ibrahim & Mohammad Nur. 2000. *Pembelajaran Berdasarkan Masalah.*. PSMS - PPS Unesa. Publisher University Press: Surabaya

Negoro ST & B. Harahap. 1985. *Ensiklopedia Matematika*. Publisher Ghalia Indonesia Jakarta.

Susilo, Frans. 2006. *Himpunan & Logika Kabur serta Aplikasinya*. Yogyakarta: Graha Science Publisher.

IMPLEMENTATION OF THE INTEGRATED NATURAL SCIENCES ON THE TOPIC OF SMOKING AND HEALTHY BY USING COOPERATIVE LEARNING MODEL TO MEASURE THE PRODUCT OF COGNITIVE LEARNING AND STUDENT RESPONSES AT SMPN 5 PROBOLINGGO (RSBI)

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Abstract

This research is an applied research which applies integrated natural sciences by cooperative learning model on the topic of cigarettes and healthy, which intended to describe learning results and student responses.

The applied method is by implementing the integrated natural sciences learning by using cooperative model to students on the central topic of smoking materials and healthy and then it was analyzed on the learning results and the students responses.

The learning results which applied the integrated natural science learning has mean in the value of 60, this value indicates that the learning results is not optimal because it was not suitable with maximal attainment criterion which is 70. On the other side, the students respond was good dealing with the applying.

The Conclusion of this research is the learning results by using integrated natural sciences on the topic of smoking and healthy is not good because it was the first time using only one teacher in the learning process, and the analysis on learning results indicated that the students have weakness on the applied problems, so then it needs to be continued on the other topics. The student responses indicated fully positive dealing to the learning by using integrated natural sciences.

Keywords: integrated natural science, Cooperative Learning, cigarettes and medical materials

BACKGROUND

Natural science is a collection of systematically and continuously structured knowledge in order to find the phenomenon of nature. Natural Sciences is considered not only on the facts (scientific product), but also on the scientific method and scientific attitude, and attitude to love and appreciate the power of God Almighty.

The function on learning of natural sciences is to provide knowledge on the natural environment, to develop skills, opinion, and awareness of technology which related to daily life, and as the prerequisite in order to continue to the secondary school, and also to raise awareness to the greatness and power of God Almighty.

The purposes on learning of natural sciences for students are: (a) to increase the awareness of environmental sustainability, national pride, and the greatness and power of God Almighty, (b) to understand natural sciences concepts and its connection to other sciences, (c) to develop logical ability in solving of daily life problems, (d) to develop process of skills in order to obtain natural sciences concepts and develop the attitudes and values of sciences, (e) to apply the concepts and principles of science in order to produce works of simple technologies which related to human needs, (f) to provide basic concepts of knowledge as a tool to continue to secondary school.

The subject of natural sciences in junior high school is an expansion and exploration of natural sciences in elementary school and teach the components of interaction patterns that exist in nature and human efforts to preserve its existence on earth, the behavior of objects and energy and the connection between the concept and its application in real life.

Integrated natural sciences learning needs the existence of real connection between concepts on a basic interest and concepts on another basic interests in the same subjects, which is can be provided by off the cuff or by preceding plans. For instance, on integrated natural sciences is make connection among on the central topic of light to the sense of eyesight, wave of light, and the changing of energy because all of the four topics are on the subject of natural sciences.

This research will apply by implementing integrated natural sciences with cooperative learning model, because on the cooperative learning model, there will be interaction and discussion among the students, which can make them to became easy in finding and understanding the difficult concepts. Based on the preceding explanation on background of, the problem of this research is focused on "How to Implement Integrated Natural Sciences By Using Cooperative Learning Model On The Topic of Smoking and Healthy?" Based on the focused problem, this research proposes questions as follows:

1. How do the students' learning results after being applied by flow chart and skill process approach on the concept of speed reaction?
2. How do students' responses through the using of flow chart and skill process approach on the concept of speed reaction?

LIETRATURE REVIEW

A. Learning Models

Several learning models that is often applied are direct instruction (DI), cooperative learning model and problem based instruction (PBI). Learning model is a design or a pattern which using as a guidance in making planning for classroom learning or tutorial learning, and to determine the supplement for learning which including books, film, computer, curriculum, etc. (Joyce, 1992). Moreover, Joyce said that each learning model directing teacher in making design of learning in order to help students as well as it can be to achieve the purpose of learning.

The term of learning model has a wide meaning comparing to strategies, methods or procedures. Learning model has four special characteristics which not exist in strategies, methods or procedures. Those characteristics are: (1) rationality of logical theory which constructed by the creator or the developer; (2) basic thinking on what and how students learning; (3) requiring attitude in learning in order to make models can be succeeded in its operation; (4) requiring for suitable learning environment in order to achieve the learning purpose (Kardi and Nur, 2000).

1) Cooperative Learning Models

Cooperative learning is the learning which consciously and systematically develops mutual intelligent, love, and tolerance among fellow students as an exercise to live in real communities. Characterized by the structure of cooperative learning tasks, goals, and reward cooperative. Students work in cooperative learning situations that require cooperation to achieve common goals. In the implementation of cooperative learning, two or more interdependent individuals to achieve an award together. Cooperative learning model was developed to achieve at least three important learning objectives, namely academic ability, acceptance of individual differences, and social skills development. Cooperative learning model is presented in 6 phases, as shown in table 1 below.

Table 1. Syntax Cooperative Teaching Model

Phase	Teacher Role
Phase-1 Delivering objective and motivate students	Teachers deliver all the learning objectives to be achieved on these lessons and motivate students to learn.
Phase-2 Presenting information	The teacher presents information to students by way of demonstration, or through the reading material
Phase-3 Organize students into study groups	The teacher explained to students how to form study groups and help each group to make the transition efficiently
Phase-4 Working groups and study guides	Teachers guide the study groups when they do their job
Phase-5 Evaluation	Teachers evaluate the results of learning about the material that has been learned or each group to present their work
Phase-6 Reward	Teachers looking for ways to appreciate both the effort and learning outcomes of individuals and groups

Some types of cooperative learning are: (a) STAD (Student Team Achievement Division), (b) TGT (Team Game Tournament), (c) Jigsaw, (d) Investigation Group, and (e) structural approach such as NHT (Numbered Head Together), TPS (Think Pair Share).

2) Integrated Sciences

Fogarty (1991) suggests that there are 10 types of integrated learning. However, by considering a variety of technical implementation, science study in East Java (1999 s / d 2002) selected three types of integrated science teaching to be applied, namely (a) learning the type of connectivity (connected), (b) the learning type spider web (webbed), and (c) type of learning integration (integrated).

Learning of the type of connection is the type of integrated science learning that intentionally attempted to connect one concept to another concept, a topic with other topics, one skill with another skill in one discipline. For example, teachers intentionally integrate the concept of change and solar energy in the form of physical discipline.

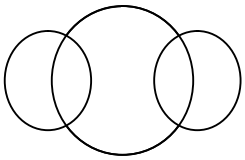

Figure 1. Learning diagram type of connection (connected)

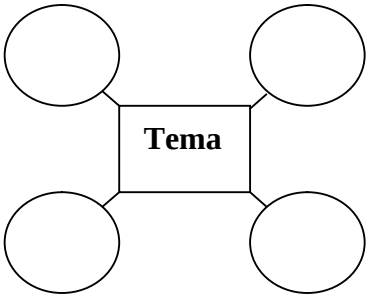

Figure 2. Learning diagram type spider web (webbed)

Learning type spider web is a type of integrated science lesson that uses a thematic approach. With this learning, the development of an integrated science lesson starts with determining a specific theme, such as interaction. Themes can be set by agreement between teachers and students, but can also be by way of discussion among science teachers. Once the theme is agreed upon, developed a sub-sub-theme was developed learning activities to be undertaken by students.

Learning the type of integration is an integrated science learning using interdisciplinary approaches. Learning is sought by way of integrating the disciplines by establishing curricular priorities and find the skills, concepts, and attitudes that overlap in several disciplines. Unlike the spider webs of learning which requires the selection of the theme and its development as a first step, then the integration of learning themes related and overlap are the last thing you want to search and selected teachers in the planning stages of the program.

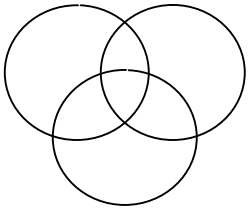

Figure 3. Diagram of the integrated model (integrated)

The first time science teachers to analyze the concepts, skills and attitudes which will dibelajarkan in one semester from several disciplines in science. Furthermore, selected some of the concepts, skills and attitudes which have strong links and overlaps between several disciplines.

RESEARCH METHOD

Research Design

The design of this study pre-experimental research design using the One-Shot Case Study (Tuckman, 1978) with the following pattern:

X O

Description:

X: The treatment-oriented integrated science learning with cooperative learning model

O: Observation that aims to measure students' learning abilities after learning progress

Integrated Natural Science learning devices which have been prepared and developed immediately implemented in the classroom and also to analyze its success by looking at student achievement and students' response to implementation of the PBM. This research is conducted at the School of International Level Stubs junior high school 5 Probolinggo. The subject of research carried out in the eighth grade students who are 20 students.

Research Instruments

The instrument used to collect data in this study are as follows:

1. Inquiry Sheet

   Questionnaire responses of students, used to measure students' opinions and responses to the device and learning activities. Analyzed through percentage calculation, namely:

$$\frac{\text{the frequency of each item response}}{\text{opinion of the selected students divided the number of students}} x100\%$$

2. Tests Learning Outcomes

   The tests that are used in the form of a description because it can record the thought processes which indicate a higher level of understanding. Problem is effective is a matter that is answered correctly by more students after the process of learning and teaching rather than before the process took place (Kardi, 2002).

Data Collection

1. The test, used to determine students' understanding of the content being discussed and done at the end of learning.
2. Questionnaire, used to capture information about students' response to learning. Questionnaires distributed after learning by applying the completion of integrated science and filled for 30 minutes.

Data Analysis Technique

The data are analyzed: the results of students' response to learning, mastery learning objectives achieved during the learning process took place with the use of integrated natural science learning.

1. Student questionnaire responses

   Data obtained on the basis of responses to a questionnaire about the learning tools and learning activities were analyzed using descriptive statistics, which calculates the percentage of a given statement. The data obtained was used to follow up learning activities.

2. Students Learning Outcomes

   To analyze the mastery learning of each student to use descriptive statistics are calculated using the formula:

$$K = \frac{T}{T1} x100\%$$

Description:

K: Percentage completeness of each student learning

T: Total score of each student

T1: Total maximum score

Mastery learning of each student based on assessment of the prevailing system of minimum completeness criteria (KKM) IPA of 70.

RESULTS AND DISCUSSION

Research Results

1. Achievement test

Table 2. Matrix Analysis of Student Cognitive learning completeness Products

No	Student Name	indicator/ number of exercise n score							Sum	Proporsi	completeness criteria (70%)
		1	2	3	4	5	6	7	8	9	10
		1	10	10	20	20	10	15	86		
1	Rendy	1	10	4	5	5	5	15	45.0	0.5	TT
2	Dinda Anisa	1	10	6	2	5	10	15	49.0	0.6	TT
3	Lukvia Nur	1	10	4	2	2	10	15	44.0	0.5	TT
4	Hulul Nuril	1	10	8	2	5	10	15	51.0	0.6	TT
5	Nabella Ayu	1	10	8	2	5	10	15	51.0	0.6	TT
6	Safiyra	1	10	8	20	5	5	2	51.0	0.6	TT
7	Siti Agustya N	1	10	3	5	2	5	15	41.0	0.5	TT
8	Maysaroh	1	10	8	20	8	8	5	60.0	0.7	T
9	Gincha	1	10	8	20	8	8	5	60.0	0.7	T
10	M. Faris Tri	1	10	6	5	2	5	15	44.0	0.5	TT
11	Rizky Yuwono	1	10	8	20	5	5	15	64.0	0.7	T
12	Adetya R.	1	10	8	5	20	5	15	64.0	0.7	T
13	Dhamis	1	10	1	5	20	5	15	57.0	0.7	T
14	M. Iwan A.	1	10	8	5	5	5	15	49.0	0.6	TT
15	Fahmi	1	10	8	20	8	10	15	72.0	0.8	T
16	Rahmad M	1	10	3	2	2	2	15	35.0	0.4	TT
17	Igo Irawan	1	10	3	2	2	2	15	35.0	0.4	TT
18	Indra Tri	1	10	3	5	5	5	15	44.0	0.5	TT
19	Reky	1	10	8	20	5	10	15	69.0	0.8	T
20	Ravi	1	10	8	20	8	5	15	67.0	0.8	T

T: Completed; TT: Not Completed

Achievement test that was developed is a product of cognitive achievement test consisting of 7 questions descriptions each have a different score. The score obtained will be converted into value. Standards are determined to achieve exhaustiveness is if the student gets a minimum value of 70. Students who become research subjects as much as 20, which can reach the standard rating of 8 students (20), so it can be said that student learning outcomes are poor.

2. Student Response

Table 3. Response of Integrated Science Student Learning with Cooperative Learning Model

Description	Responses	
	Like	Dislike
1. How do you feel during follow this activity?	12	0
2. How do you feel about:		
a. The subject matter?		
b. Worksheet?	12	0
c. Evaluation?	12	0
d. The atmosphere of learning in the classroom?	12	0
e. How to present the material by the teacher?	10	2
	12	0
	New	Not new
3. What do you think during follow this learning activity?	11	1
4. What do you think of:		
a. The subject matter?		
b. Worksheet?	12	0
c. Evaluation?	12	0
d. The atmosphere of learning in the classroom?	12	0
e. How to present the material by the teacher?	11	1
	12	0
	Agree	Disagree
5. How do you responses if the subject subsequently taught with learning like this?	12	0
6. What do you think if all subjects are taught with learning like this?	11	1
7. What do you think if another lesson taught by using cooperetif learning?	12	0
8. Give comments / opinions of others about other learning have you follow?	12	0

Description	Responses	
	Like	Dislike
	New	Not new
9 What is your assessment of thinking skills?		
a. Formulate problem		
b. Formulate hypothesis	11	1
c. Plan your experiment	11	1
d. Make a flow chart	11	1
e. Testing the hypothesis (experiment)	10	2
f. Making conclusions	11	1
	11	1
	Like	Dislike
10. What do you think about thinking skills:		
a. Formulate problem		
b. Formulate hypothesis	10	2
c. Make a flow chart	11	1
d. Analyzing data	11	1
e. Testing the hypothesis	11	1
f. Making conclusions	11	1
	10	2
	New	Not new
11. Opinions about social skills:		
a. Respecting others' opinions		
b. Taking turns and sharing tasks	11	1
c. Provoke others to speak	11	1
d. Dare to ask	10	2
e. Expresses disagreement in a way that is acceptable	11	1
f. Checking accuracy	11	1
	11	1

Table 2 above shows the students' response to the application of integrated science in the learning. They expressed love, new, and agree to the implementation of the integrated natural science on learning, while some students who claimed not new, do not agree, and are not happy with the reasons vary

Discussion

1. Tests Learning Outcomes

Based on the results of analysis of test results showed that the lessons learned with the implementation of the integrated natural science 60 student learning outcomes is not yet optimal. This suggests that in teaching science students still require assistance. The low student learning outcomes due to the less skilled students in working on issues related to the reasoning in everyday life and knowledge of process skills such as formulating the problem, hypothesis formulation, and identification of the

manipulated variable, response, control almost nothing because the students have never been skills taught the previous process.

2. Student Response

   Based on the results of analysis of responses showed that in general students are pleased with the teaching and learning tools integrated science in the classroom, students are pleased with the implementation of Integrated Science in learning, from 20 students to 100% stating happy following IPA integrated learning, because learning activities is relatively new for them. Students' response to the skills and new thinking are very pleased that the response indicated almost 100%, whereas in the implementation of student learning difficulties to make the formulation of the problem, formulate hypotheses, and identification of variables, while the students' response to social skills also showed nearly 100% in just less than 2% students are still difficult to lure other students to speak.

CONCLUSION

On the basis of these findings, it can be concluded that the implementation of integrated natural science learning with cooperative learning model is not optimal for the cognitive learning because students are less product in the settlement about the form of reasoning, the implementation of integrated natural science learning is still new at school and research methods used by one shot case also effect on the cognitive learning products.

Based on the results of research that has been done, it is suggested that necessary preparation and management of teaching time carefully because it requires a relatively long time, the material chosen should be related to laboratory experiments for the process of learning to walk with attractive, integrated science teaching needs to be taught on an ongoing basis will be adjusted with the material that students learned. This research was conducted on smoking and health materials, so hopefully there are similar studies in other study materials.

REFERENCES

Arends, R.I. 1997. Classroom Instruction and Management. New York: McGraw-Hill, Inc.

Ministry of Education. 2005. Curriculum 2006, Competency Standards Lesson NATURAL SCIENCE. HIGH SCHOOL FIRST and Madrasah Tsanawiyah. Jakarta: Directorate General of Primary and Secondary Education.

Fogarty, R. 1991. How To integrate the Curricula. Illinois: IRI / Skylight Publishing, Inc..

Hadisubroto, T. 1998. Integrated Learning: Material PGSD. New York: Open University.

Kardi, S. 2002a. Develop Test Learning Outcomes. Surabaya: PPS Unesa.

Tuckman B W. 1978. Conducting Educational Research. Second Edition. Harcourt Brace Jovanovich, Inc.: United States of America

IMPROVING EFFICIENCY OF CUBE ROOT OPERATION THROUGH APPLYING THE CUBE ROOT TABLE

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Abstract

This research aims to improve the efficiency of cube root operation through applying the cube root table. The definition of efficiency in this research is in terms of time, and enhancing the ability to solve cube root problems.

This Classroom Action Research (CAR) applies the model developed by the subjects of the study is VII-G students of SMPN 1 Pandaan Academic Year 2010 – 2011. The step of each cycle begins with planning, action observation and reflection. Methods of data collection are questionnaire, interview and test. Those are to determine the ability of completing a number of test within a certain time. Furthermore data were analyzed by descriptively on percentage (%).

The results showed that application of the cube root table increases 46,15% of the learners' ability, 38,46% of them are constant, 15,38% of them even decreased. Viewing from a more efficient use of time was that 57,67% of learners solve the problems faster than the time provided, 30,79% completed the questions in accordance with the time provided, while 11,54% of them solve the problems slower from the time provided. Another outcome of this research indicated that the motivation of students increased and the difficulties faced by learners can be solved.

Keywords : Improved efficiency, the cube root operation, the implementation of the cube root table.

BACKGROUND

On the last four years of National Math Exam, students will have passed if they have got score at least 5,50 from 40 questions in about 120 minutes. It means that the available of time to do each question is 3 minutes. And the students have to finish at least 22 questions with correct answers. There are 4 to 6 items of the National Math Exam related to the various kinds of cube root operation. The kinds of cube root operation are the integer operation (Grade VII/the first semester), the cube volume (Grade VIII/the second semester), the cone volume and sphere volume (Grade 9/the first semester).

From the test results showed that learners have not been able to solve the cube root operation within 3 minutes, in accordance with the available time in the National Math Exam. This is due to the problems of the learners to solve questions by applying the prime factor tree, which takes a long time to use operating division repeatedly. It is about 73% or 19 students who were not able to conduct the division operation,so they could not

use the time efficiently. To overcome these problems, the students involved to analyze the cube root table and how to apply the cube root operation. Based on the problem, the researchers found following questions:

- Can the students solve the problem by applying the cube root table?
- Can the students increase their ability by applying the cube root table?
- Can the students use the time efficiently by applying the cube root table?
- Can the students increase their motivation of learning by applying the cube root table?

LITERATURE REVIEW

Math Lesson

The aims of Math subjects are the students that will able to:

1. Understanding mathematical concepts, explain the link between concept apply the concept or algorithm flexibly, accurately, efficiently and precisely in solving problems.
2. Using possible patterns and nature, mathematical manipulation in making generalizations, compile evidence, or explain mathematical ideas and statements.
3. Solving problems include the ability to understand the problem, designing a mathematical model, complete model and interpret the solutions obtained.
4. Communicating ideas with symbols, tables, diagrams or other media to explain the situation or problem.
5. Having respect for mathematics in life, which has a curiosity, concern and interest in studying mathematics, as well as tenacious attitude and confidence in solving problem. (Ministry of Education: 2006)

Cube Root

Cube root has a high complexity, because every level would be faced by each student since the difference of each basic competency, as table below:

Table 1: Standard Competency and Basic Competency

Standard Competency	Basic Competency	Indicators	Class/Semester
1. Understanding the properties of numbers and use arithmatic operations in solving problems	1.1 Perform integer arithmatic operations and floating	1.1.4 Calculating square roots and cube roots of integer	VII/1
5.Understanding the properties of the cube, rod, prism, pyramid, and its parts, and determine its size.	5.3 Working out the surface area and volume of cube, rod, prism and pyramid.	5.3.3 Calculating the volume of cubes, blocks, prism, pyramid.	VIII/2
2.Understanding the properties of tubes, cones and spheres, and determine its size and its use in solving problems.	2.2 Calculating area and volume of the blanket cylinders, cones and spheres. 2.3 Solving problems related to tube, cone and sphere.	2.3.1 Use the blanket area and volume formulas to solve problems related to the tube, cone and sphere. 2.2.3 Compute the elements of tubes, cones and spheres if the volume is known.	IX/1
5.Understanding the properties of the rank number and shape of roots and using in simple problem solving.	5.3 Solving simple problems related to the number and rank of the root form.	5.3.1 Using the properties of arithmatic operations on the rank numbers and shapes to solve the root problem.	IX/2

Given the high complexity of the cube root operation, and it is necessary to control the cube root operation early. However, because of low mastery of the division operation of the learners, there is a need for more efficient solution in solving problem of cube root questions.

This opinion was supported by the following results: the fact that the mastery of the basic concept of integer operations was still relatively low. One disadvantage mastery of whole numbers by students was due to low mastery of multiplication and division (Soedjadi, 1991: 4). In addition it was found that absorption of elementary school children to the concept of multiplication and division was still in low level. This applied equally the same in junior high school and senior high school students, and also prospective future teachers.(Hartono 1989: 72)

Learning

Learning is defined as the process of obtaining knowledge by reading and using the experience as knowledge that guides behaviour in the future (Winataputra, 2007: 14). Psychologists view, learning behaviour as a psychological process of individuals in their interactions with the natural environment, while education experts view, learning behaviour as a psychological-pedagogical process characterized by the interaction of individuals with learning environment that deliberately created. (Learning and Learning, 2007: 15)

From the notion of learning, it is clear that learning is not only related to the amount of knowledge but also includes all individuals ability to focus on two things:

First, the study should allow for behaviour changes in self-learners. These changes were not only on knowledge or cognitive aspects, but also included attitudes and values (affective) and skills (psychomotor).

Second, the change must be the result of experience. Changes in behaviour occured in self-learners because of the interaction between himself and the environment. Changes in behaviour due to learning was persistently. Learning and Learning, 2007: 19)

Learning Process

The term “learning” is a new term used to indicate the activities of educators and learners. Previous use the term “Teaching – Learning Process”. The term “learning” is a translation of the word “instruction”. According to Gagne, Briggs, and Wager (1992), “learning” is a series of activities designed to enable the process of learning on learners. Instruction is a set of events that affect learners in such a way learning was facilitated. (Gagne, Briggs, and Wager, 1992: 3)

Learning as mandated in Chapter 1, Clause 20 of Act No. 20 of 2003 on National Education System, namely “Learning is a process of interaction with educators and learners, and learning resources in a learning environment.” (Department of Education: 2004) The concept is embodied five concept which are interaction, learners, educators, learning resources, and learning environment.

Learning Achievement

Learning achievement comes from the word "achievement" and "learning" means achievement outcomes (Department of Education, 1957: 787). While learning is the process of obtaining knowledge by reading and using the experience as knowledge that guide future behaviour (Winataputra, 2007: 14), so learning achievement is the acquisition of knowledge or skill.

Efficiency

In second edition of Great Indonesian Dictionary by the Balai Pustaka Publisher: 1995, efficiency means accuracy ways (business, labor) or the ability to perform tasks well and on (by not wasting time, effort and cost). In this study, learners were expected to solve test problems of cube root operation in each research quickly and precisely, less than the time provided for the each question on the National Math Exam or increased efficiency.

Motivation

The use of Mathematical models of learning were expected to increase learners' motivation in learning Mathematics. To overcome the difficulties faced by the learners, it was used the learning model in questions and the application of the cube root table. This was supported by the opinion of Bell, which states that game techniques was an effective and efficient technique in Mathematics. (Bell: 1986)

Cube root table was a presentation of abstract concepts into concrete concepts. With abstract concepts presented in simple concrete objects, learners would be aware of the relationship between Mathematics lessons with surroundings objects, so it would be more to grow interest and creative learners of Math. This opinion was supported by some experts such as Piaget, Bruner and Dienes who argued that the use of concrete objects in Mathematics could enhance students' active participation in learning Mathematics could improve students' learning outcomes (Ruesffendi, 1992: 144).

RESEARCH METHODS

The design used in this study was a design developed by Kurt Lewin as the following picture:

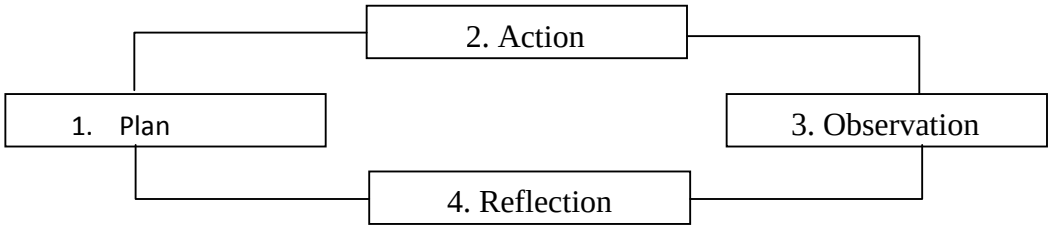

Figure 1: Design of a cycle of action research, Kurt Lewin's model.

Scenerio Actions

a. Pre study

- Making Lesson Plan
- Planning methods, media and learning activities
- Prepare a research instrument, test, observation sheet, questionnaire, interview questions.

b. Cycle 1, 2, and 3

- The division of the cube root table, 26 cards and each card comprised 6 questions with the difficulty level Easy : Medium : Hard = 1 : 2 : 1
- Observation of actions 1, 2, and 3

At this stage, educators observed the process and learning outcomes through: noted the difficulty of the learners, given the task to solve problems systematically in accordance with the topic of learning, observed the speed of task completion, assessed the results of the test, distributed questionnaire or called some learners to be interviewed.

The data collected through direct observation with the tools of observation guidelines and the mastery scale of Math concepts. Scale conducted to the mastery of concepts to give students concepts mastery of score data after the students were given actions. Furthermore, the score data were analyzed qualitatively and quantitatively. Qualitative analysis was to explain changes in behaviour appeared on the learners when

the measures was taken, whereas the quantitative analysis was used to determine the percentage of both mastery of concepts and increased learning outcomes.

Quantitative analysis used the formula:

$$P = \frac{Postrate - Baserate}{Baserate} \; 100\%$$

(Goodwin and Coatees, 1975)
Description:
P = Percentage increase
Postrate = Score after action
Baserate = Score before action

- **Analysis and reflection:** Criteria to improved learning outcomes was the increase of test results competency in the end of each action, with the thoroughness and absorption of individual learners. Indicators of absorptive capacity has reached 67% or the value of 67 (KKM 67%). Data analysis was done by analyze the competency test and to monitor whether it has been an increase in the operating results of studying the cube root of classical learning completeness that was, if KKM ≥ 67%, the learners has reached the absorption of 67% or more.
- **Reflection:** was required to review whether there were obstacles for the actions of each cycle, whether the application of the cube root table has been optimized to reach the target, or was participation of students high enough, and also the question about how big was the increase, if improvement was not fit yet with the necessary actions for the next cycle. So what has been done continuously until the goal was to reached action research.

  Competency test results expressed by the numbers in the range 000 – 100 were distributed in the division of the score as follows:

Table 2: The ranges of scores and indicators

Score Range	Indicator
0 – 4	Applied the cube root tables as the correct operation
0 – 4	Worked on each steps correctly
0 – 2	Got the right answer in the end of results

Obtained criteria score as follows:

Table 3: Criteria for scoring

Score Obtained	Criteria
85 – 100	High
67 – 84	Medium
≤ 66	Low

RESULTS AND DISCUSSION

First Cycle

Educators informed to complete the question examples in the textbook about the cube root operation for students with methods of solving prime factor tree. And then the students assigned to solve six questions in 30 minutes. Furthermore action was analyzed before given questions and tested for its ability with the same problems in 10 minutes. The result of competency test were recorded in recording the results of the competency test in the following table.

Table 4 : The learners' ability before and after the action.

Before the action				After action			
Score	**Criteria**	**∑ Students**	**%**	**Score**	**Criteria**	**∑ Students**	**%**
85 – 100	*High*	*0*	*0%*	*85 – 100*	*High*	*5*	*19,23%*
67 – 84	*Medium*	*10*	*38,46%*	*67 – 84*	*Medium*	*9*	*34,62%*
≤ 66	*Low*	*12*	*61,54%*	*≤ 66*	*Low*	*12*	*46,15%*

Table 5 : Percentage changed in the used of time (efficiency)

Before the action (10 minutes)			After the action (10 minutes)		
Criteria	**∑ Students**	**%**	**Criteria**	**∑ Students**	**%**
Faster	*0*	*0%*	*Faster*	*6*	*23,08%*
Stable	*2*	*15,38%*	*Stable*	*12*	*46,15%*
Slower	*22*	*84,62%*	*Slower*	*8*	*30,77%*

Qualitatively, after given a competency test at the end of the study there were significant change to the mastery of concepts increased by 12,82% and the efficiency increased by 34,90%. After the learning process have completed, some students have low criteria (12 children) were interviewed: 69% said that they were happy to follow the Math lesson, 100% said the implementation of the cube root table was easier than prime factor tree. 100 % have difficulty in solving the problem if the number was the tens of

thousands and hundreds of thousands. 100% would done their homework after school at home because their memories was stil fresh.

Second Cycle

To overcome the difficulties faced in the first cycle of reflection, which was solving the cube root operation for number tens of thousands and hundreds of thousands, learners were invited to observe the cube root tables 1 to 9, and the asked to memorize in order to facilitate completion of the cube root operation. Furthermore, learners were given tasks in accordance with the ordered group. Each group completed the questions as many as 30 questions in 30 minutes. Once given the task of each group of students tested for its ability to solve 10 questions in 10 minutes, the results were recorded in the recording of the test competency in the following table:

Table 6 : The learners' ability before and after the implementation of the cube root tables.

Before the action				**After action**			
Score	**Criteria**	**∑ Students**	**%**	**Score**	**Criteria**	**∑ Students**	**%**
85 – 100	*High*	*5*	*19,23%*	*85 – 100*	*High*	*12*	*46,15%*
67 – 84	*Medium*	*9*	*34,62%*	*67 – 84*	*Medium*	*10*	*38,46%*
≤ 66	*Low*	*12*	*46,15%*	*≤ 66*	*Low*	*4*	*15,38%*

Table 7 : Percentage changed in the used of time (efficiency)

Before the action (10 minutes)			**After the action (10 minutes)**		
Criteria	**∑ Students**	**%**	**Criteria**	**∑ Students**	**%**
Faster	*6*	*23,08%*	*Faster*	*15*	*57,67%*
Stable	*12*	*46,15%*	*Stable*	*8*	*30,79%*
Slower	*8*	*30,77%*	*Slower*	*3*	*11,54%*

Based on the data, there seemed positive change towards mastery of the concept from before and after the action given, that was equal to 15,38% and the efiiciency increased by 23,06%. In addition, increased mastery of concept amd efficiency in the second cycle of action was better than the mastery of concept and efficiency in the first cycle of action. What was more exciting and efficiency that the score in the second cycle was higher than before the first cycle of action. According to the analysis of the first cycle of action, learners were encouraged to prepare themselves, to learn at home, before

learned at school, in other words increased the passion of learning or motivation. The result of interviews with 7 students (excluding those invited to interviewed on the first cycle), 100% said that the night before they continued to read materials from earlier lesson, and 71,83% said they done the homework after school. It showed that passion increased learners' learning.

Third Cycle

Conducted an evaluation and reflection on the results obtained by the possibility of a second cycle of action that would occured, namely the tendency of ennui on the learners themselves if the test was given continuously. To overcome the saturation, learners were invited to make a quartet cards, each student was assigned to make a pair of quartet cards. And then, to play the cards with cube root operation with peer assignment system, and the results were tabulated in the following table:

Table 8 : Peer Assignment on quartet game with cube root operation

No.	**Name**	**Participants who have dropped the quartet cards**				**∑ Skor**
		First (100)	**Second (75)**	**Third (50)**	**Fourth (25)**	
1.						
2.						
3.						
4.						
Day / date:				Games by: ..... round		

The goal of the game is to improve the competency, motivation, sportsmanship and honesty. Thus, each learners would have compete fair competency. The result of interviews with seven students (excluding those who previously have been interviewed) were that 85,71% students liked Math subject, 100% liked the teacher, 85,71% spelled out duties after school, 100% have studied first before played quartet cards to win the game.

CONCLUSION

Based on the results of research and discussion, conclusions that could be drawn from this study were: difficulties in following learners to learn cube root operation, if the number was tens of thousands and hundreds of thousands. Once assigned to memorize

the cube numbers ranged from 1 to 9, this difficulty has gradually decreased. Another difficulty that faced by learners was the use of mental on the cube root operation. This difficulty was resolved by cube root quartet game, also has gradually decreased because each has the same desire to won the game.

The learners' ability to do the cube root operation could be improved through the implementation of the cube root table. In terms of the learners' number, from 26 students who have been studied, there were 12 children or 46,15% increased their ability, 38,46% or 10 children were constant, and 15,38% or 4 children were decreased. This decrease was not due to the applied learning method, but because non-academic factors which was Student Board.

With the implementation of the cube root table, the time to complete 10 questions was more efficient. There were 57,69% or 15 children could complete questions faster than the time provided, 30,77% or 8 children to complete the questions in accordance with the time provided, whereas students completed the questions slower than the time provided by 10,34% or 3 children. On the topic of the cube root operations, the motivation of learners increased after the implementation of the cube root table and quartet cards games with cube root operation. The indicator was the increased ability and the time was used more efficiently.

REFERENCES

Abdullah, Solichan. (2002). Teknik Penilaian Yang Dapat Mendorong Siswa Meningkatkan Belajar Matematika. Surabaya: Jurnal Gentengkali Vol.4, No.3 dan 4.

Bell, F.H. (1981) Teaching and Learning Mathematics (In Secondary School) Wm.C Brown Company, Dubuque, IOWA.

Dahar, Ratna Wilis. (1988) Teori-teori Belajar. Ditjen Dikti. Depdikbud. Jakarta: P2LPTK

Depdikbud, (1995) Kamus Besar Bahasa Indonesia. Jakarta: Balai Pustaka

Depdiknas. (2003) Pendekatan Kontekstual (Contextual Teaching and Learning CTL). Jakarta: Depdikbud.

Hudojo, Herman. (1988). Mengajar-Belajar Matematika. Ditjen Dikti Depdikbud. Jakarta: P2LPTK.

Ismalinda. (1998). Kemampuan Siswa SLTP di Kecamatan Kapur IX Pada Topik Volume Bangun Ruang Sisi Datar (Tesis) Pasca Sarjana IKIP Surabaya.

Maidiyah, Erni. (1999). Efektivitas Pembelajaran Kooperatif Pada Topik Bilangan Bulat di SLTP (Tesis) Pasca Sarjana IKIP Surabaya.

Narsisto, Drs. (2003). 10 pertanyaan agar guru sukses mengajar. Yogjakarta: Majalah Pendidikan Gerbang Edisi 1 Th. III Juli 2003.

Nurhadi dan Senduk. A.G. (2003) Pembelajaran Kontekstual dan Penerapannya dalam KBK. Malang: UM Press.

Sriyanto, Hj. 2003. Membaca Kecemasan Anak Terhadap Matematika.Yogyakarta: Majalah Pendidikan Gerbang Edisi 11 Th. II Mei 2003

Sunuyeko, Nurcholis. (2003). Perkembangan Peserta Didik (Bahan Kuliah) Malang: Duta Kencana.

WORLD-CLASS SCHOOL AND EDUCATION CHALLENGES IN INDONESIA

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Abstract

The hard-stream of globalization affected educational policy in Indonesia and encouraged the education to be World-Class School (WCS). WCS is the school in the world with some criteria as follows: internationally teaching-learning, teaching-learning environment can be a reference, creative scientific activity, efficient and effective funding, and international communication access. International Standardized School (SBI) conducted since 2006 in Indonesia is leading to WCS. There are challenges in Indonesian education need a solution in order to lead WCS. These challenges are: government political willingness in regulations and funding, preparing educational human resources (teachers, supporting staff and school principal), access to international communication, active roles of businessman owner, development of local wisdom, and creative learning environment.
Keywords: globalization, World-Class School, International Standardized School

INTRODUCTION

Effect of globalization on all of living aspects was seen almost in every region-state in the world. Globalization is to be a supra-system in all of the state. A policy of education in a state was affected by globalization. Globalization impact toward educational policy forced human resource development in global-perspectives.

Burbules and Torres (2000) state that globalization:(1)…. emergence of institutions supranational whose decisions shape and constrain the policy options for any particular nations state…;(2) …..the overwhelming impact of global economics process, including process of production, consumption, trade, capital flow, and monetary interdependence…;(3) ….the emergence of new global cultural forms, media, and

technology of communication, all of which shape the relations of affiliation, identify, and interaction within and across local cultural settings…; (4)….. a perceived set of changes, a construction used by state policymakers to inspire support for and suppress opposition to changes because "greater forces" (global competition, responses to IMF or World Bank demands, etc.) leave the nation-state "no choice" but to play by a set of global rules not of its own making.

As a form of response towards global impact of education policy in Indonesia, the government of Indonesia through Minister of National Education, improve the educational quality by International Standardized School (SBI) at primary-school (SD), secondary-school (SMP) and high-school (SMA/SMK). International Standardized School (SBI) is a school passed the National Standard of Education (SNP) with enrichment by higher quality from OECD countries members or other developed countries. International Standardized School can be assumed as a response toward globalization or as an improvement of education quality.

Based on Times Higher Education Supplement (THES) about five enhancing criteria of university quality as World Class University (WCU) are: (1) teaching-learning activity, (2) research activity, (3) citation, (4) income from industries, and (5) international communication on human resources; school quality enhancement toward World-Class School (WCS) can be analogized as THES criteria. By the analogy, characteristics of WCS as follows: (1) WCS is a school with an internationally teaching learning quality, (2) WCS has ability to create a high quality in teaching-learning environment (as center of scientific writings and products), (3) WCS can be a reference by other national or international school, (4) WCS is supported by established funding, (5) WCS has a best international communication. A qualified internationally teaching-learning affected positively toward academics and non-academics students' products, like a qualified research products in a university. A research product and academics and non-academics achievement produced by an internationally qualified school has a real contribution towards a nation.

Based on statement above, there are some problems: (1) What is World-Class School?, (2) Can International Standardized School in Indonesia be classified as a World-

Class School, or lead to World-Class School?, (3) What are challenges of education in Indonesia for leading to World-Class School?

DISCUSSION

World Class School

Discussing World Class School must not be trapped by this definition. World-Class School can be understood as a school with special criteria. As we known before, World-Class School must follow five criteria as follows: (1) WCS has a teaching-learning with an internationally quality. It means, that all of teaching-learning activity using an appropriate strategy is used by other schools in the world; (2) WCS has a teaching-learning environment which creates a school as a center of scientific writing; (3) WCS has a strength to be a reference for other national or international school (for example: traditional art and handicraft); (4) WCS has a efficient, effective and accountable educational funding system, and ; (5) WCS has an international communication with other school to lead a harmonic cooperation.

There are some schools models in Indonesia with the main characteristics lead to WCS. The first model, International Standardized School (SBI) was conducted by Indonesian government. Initially, SBI was conducted only by one class each school, by combining a school curriculum (for National Evaluation) with Cambridge curriculum from English (for International Evaluation as A-Level). This school model based on International Curriculum under a certification institution is like Cambridge International Examination. Teaching-learning of students in this school is using integrating international and local curriculum. Other model of school is International School and Diplomatic Corps School based on Government Regulation of Indonesia No. 17 Year 2010. Diplomatic Corps School is a foreign school conducted by a Diplomatic Corps from foreign country in Indonesia. This school is conducted for educational needs of Diplomatic Corps family. International School is a school cooperated result among accredited educational institute in foreign countries and accredited educational institute in Indonesia. The second model, foreign school model is conducted by using fully-curriculum from initial country, but this school is followed by local students with special requirement. This model of education institution is funded by Turkey's government or

foundation (Passiat and Semesta Foundation School). The third model is international school model designed for foreign students in this country. This school is founded to accommodate needs of foreign's students in Indonesia. For example for this models, are Gandhi Memorial School and Gothe Institute. The fourth model, is a school conducted by some enterprises owner in Indonesia for educating and training students in business skills. For example of this school model is conducted by Pelita Harapan Foundation, or Ciputra Foundation School, or Bakri Business School.

International Standardized School (SBI) in Indonesia

Based on Indonesian Constitution No 20 Year 2003 about National Education System stated that National Government and Regional or Local Government conduct minimally one educational unit (a school) on all level of education to be developed as a international Standardized school (SBI). Following the Indonesian Constitution, Minister of National Education in Indonesia, since year 2006 stated 260 schools (100 secondary schools, 100 high-schools, 60 vocational school) as Pioneering International Standardized School (RSBI). At year 2007 this school developed to be 318 schools (100 secondary schools, 99 high-schools, 119 vocational schools). Data of this school has developed every year. For example, based on Vocational School in year 2009 showed 230 Pioneering International Schools for Vocational School (SMK RSBI) funded by Indonesian Government (APBN) and 90 Pioneering International Standardized Schools (SMK RSBI) funded by Asian Development Bank Loan as an Indonesian Vocational Education Strengthening program.

Pioneering International Standardized School (RSBI) has a chance to be a International Standardized School (SBI) after six years. Conceptions of International Standardized School is a school passed the National Standard of Education (SNP) with enrichment by higher quality from OECD countries members or other developed countries.

In fact, although Indonesian governments have assisted the entire program of education, development of RSBI to be an SBI is in variety. Many of RSBI are still unready to be SBI. There are some causes of unreadiness of this school. Teacher's competence in the international communication in foreign language (essentially in

English) is still dissatisfaction for daily communication and for teaching-learning activity. Master degree requirement for teacher qualification is not met in quantity and in quality. ICT- based teaching-learning and administration facilities is incomplete in school activity. International communication of the school with OECD countries and other developed countries as "school-sister", student-exchange program, teacher-exchange program are still uneasy to do with a lot of reasons. Although this educational enhancing program stated in Indonesian Constitutions, some stakeholders (like local government and school-committee) do not understand SBI program. This bad condition of the program caused a negative perception in society. Society has assumed that SBI are expensive school, and many teachers of these schools have low-qualification. This perception is not too wrong because many SBI is improving the school in order to meet requirements (See Table 1)

Table 1

Implementation Criteria of International Standardized School (SBI) in Indonesia

Parameters	**Requirements**
National Standard of Educational (SNP)	Must be met
Teacher	Minimally, Master/Doctor Degree: 10% (Primary School), 20% (Secondary School), 30% (High/Vocational School)
School Principal	Minimally, Master Degree and be able to communicate in foreign language
Accreditation	A (95)
Facility	ICT based
Curriculum	Curriculum of education unit (KTSP) enriched by curriculum from OECD countries and developed countries; application of semester credit units (SKS) on High/Vocational School (SMS/SMK)
Teaching-learning	ICT based, bilingual (starting class 4 in primary school), sister school with other developed countries
Management	ICT based; ISO 9001 and ISO 14000
Evaluation	To apply national examination/evaluation model and enriched by international examination/evaluation system from developed countries or other countries with special strength
Output	Possess international competitiveness to advance to education and to work
Culture in school	To guarantee character education, bullying-free, democratic, participative
Funding	National funding (APBN), local funding (APBD), take funds from society based on accountable funding plan; min 20% poor-students get educational subsidy.

Based on a field study showed that model implementation SBI in SMA Negeri 1 Yogyakarta in Year 2004-2006 is using a "class development model" and since 2007 is using all of "class development model". This school cooperates with Cambridge International Examination (CIE) as an institution possessed international certification for students. In academic year 2004/2005 to 2005/2006, SMA Negeri 1 Yogyakarta as a Cambridge Center with a certification take an evaluation model IGCSE for international students by a subsidy. Starting in 2006/2007 a decision have taken by this school with a certification evaluation model A-Level, in which the certificate can be used to apply to university in the world. This school used an integrated curriculum by integrating national and international curriculum (as directed by CIE). The essential factor affected student's successes in certification test are time duration for preparation, teacher quality, matching in teaching material with testing material. Teacher's competences in this school are still dissatisfaction because they failed to predict the testing material, although there is a collaboration between this school with UGM in Mathematics and Sciences (Mathematics, Physics, Chemistry, and Biology).

Other example of problems has faced by SMP Negeri 2 Kudus in Central Java. As one school of RSBI which have a network with "sister school" in some schools, such as SMP Semesta Semarang, SMP 115 Jakarta, SMP 111 Jakarta, and with a school in Malaysia and Singapore. The main problems in this school are unsatisfied teachers' competence. These problems are low-ability in english communication, and low-competence in ICT based-teaching learning activity. This school have a big problem in uncompleted ICT based facility.

The condition in SMP Negeri 1 Blitar in East Java is classified as a school with good facility, good students in international-academic achievement and good teacher competence in teaching learning activity. However, this school have a problem with low internationally cooperation.

Actually, RSBI was still developed partially. It means, that program implementation in this school is conducted in under qualification condition. This condition will affect toward student's academic quality, because the student's achievement is be a teacher's responsibility. The teacher's qualification is still under

requirement in master degree. The teacher's competence is still low in english communication.

Based on the condition of RSBI in Indonesia, it is still difficult to categorize this school into WCS. World-Class School required some international characteristics, such as: has an internationally teaching-learning quality, be an higher-quality learning environment (be a center of scientific-writing), be an international prototype-school, be a school supported by efficient and effective funding, and has an best international-communication. In other word, recent RSBI cannot be categorized as WCS.

Challenges towards World-Class School

Based on condition of RSBI quality in Indonesia today and on globalization impact, there are some great challenges in education towards WCS.

The first challenge, it is necessary a willingness from government (in macro, mezzo, and micro) to educate the young people to be a human-resources with global-quality. By awareness towards diverse-school condition, government has to prepare the appropriate regulation and the funding to accommodate the needs of education with WCS's quality.

The second challenge, after the first is solved, is to prepare human-resources in education (such as teacher, supporting staff, school principal) with an international/world quality. Preparation of the human resources can do by development the recent of them or by recruitment. The recent teachers, supporting staff, and school principal can be retrained in order to be qualified-human resources.

The third challenge, it is necessary an international access with some educational institution in the world. The government as a stakeholder and the school as an educational unit have to communicate with international community. The international communications is conducted by sister school corporation, by students exchange activity, and by teachers exchange activity in the bilateral relation.

The fourth challenges towards WCS that WCS need the participation from international and national business community, whether as an school-output user or as a company owner. The both roles of business community are crucial thing in educational development by giving a suggestion and supporting educational funding.

The fifth challenges, WCS maintain local wisdom, as a local culture, art and product, share with developing internationally educational activity. In related to this challenges, Fazal Rizvi (in Burbules and Torres, 2000) states that Malaysia maintain the local identity and culture towards globalization stream by conduct teaching-learning in Malay language and by encourage almost half of young people to study abroad in western university. This ambivalent-action will accelerate to lead WCS.

The sixth challenges, the school has been encouraged to be a center of activity, a school prototype, a school referenced by national and international school in the world. For example of this roles are be a center of study about Asian Culture, be a referenced laboratory about traditional arts, and be a management system of post tsunami wave. Solution of this challenges will encourage the school to continue doing innovations in education towards international criteria.

CONCLUSION

Globalization stream flown towards countries in the world (included in Indonesia) affected changing in educational policy from national to international pattern, and WCS will be an probable school in Indonesia. Based on THES in WCU, a school in WCS category have to possess teaching-learning activity in international level; have to possess a strength which can be a referenced by other national and international school; have to possess a learning environment which can affect towards international reputation; have to possess funding efficiently and effectively; and have an access in international communication towards other school in the world.

SBI implemented in Indonesia since 2006 through RSBI is an effort enhancing educational quality by enriching the national quality with international quality in education from OECD's and other developed countries. In fact, there is a few of SBI in Indonesia met WCS's criteria. There are challenges to be solved to led WCS, such as: a willingness from government to support the school in regulation and funding; preparation teacher personal, supporting staff, and school principal through education and training in teacher educational institution; intensive international communication access; active roles-played by national and international business owners; develop the local-wisdom towards internationalization of education; to make school as a place of creative

educational environment and as a center of scientific study for other school in the world. Solution towards challenges will lead school to World-Class School's criteria.

REFERENCES

Burbules, C. Nicholas dan Torres, Alberto, Carlos Alberti .(2000). *Globalization and Education: Critical Perspektif.* New York: Routledge

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Development of Pre-Vocational Education Model at Junior High School

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Abstract

This study aims to find a model for the process and product of the pre vocational education, which is effective and productive to develop work values integrated in skills learning in junior high schools (JHSs). This study employed an R & D approach consisting of three steps: preliminary investigation, model development, and model application. The research subjects comprised 621 students of Grades 2 and 3 of JHSs. The data were collected through observation and quetionnaires, and analyzed using the descriptive technique and *Structural Equation Modelling (SEM* using the LISREL 8.71 software. The Results of the study are as follows. (1) The model for the process effective and productive to develop work values at the pre vocational education among JHS students consists of 6 process steps, i.e.: (a) work motivation construction; (b) production; (c) advancement access, process, and clarification; (d) work product meaning; (e) exhibition and sale; and (f) reflection. (2) The pre vocational education model fits to develop work values among JHS students, indicated by a p-value of $0.5638 > \alpha = 0.05$ and the result of goodness of fit index; RMSEA = 0.01161 < 0.08, CFI = 0.9785 > 0.08, and PGFI = 0.7580 > 0.06, showing that the model has empirical support and fits to use in the inculcation of work values in JHSs.
Keywords: pre vocational educational, work values, six process steps

INTRODUCTION

Junior High School Directory, since 1993 had development 4 (four) types program vocational education in Junior High School (JHSs), that part of pre vocational (Depdiknas, 2005: 37). The program are: (1) skill education program at JHSs organized skill program, (2) skill local program at JHSs regular, (3) basic technology education program (JHSs BTE) or usually called basic technology education and (4) skill education program at open JHSs.

Result observation limited of four schools that development skill education is; JHSs- organized skill program, JHSs regular, JHSs basic technology education, and open JHSs appear is not yet built job value and growth vocation knowledge, technology, job appreciation and creativity for the student is enough.

Result of the research about pre vocation education in JHSs level by UNDP, UNESCO and ILO at 1995 found local learning the skill is not doing because the school

has not tools needed, fund support, the teacher teaches and competency is not teach because it is not appropriate with the JHSs student (Depdiknas, 2005). Farida Hanum research (2005) at 12 Private JHSs at Kulon Progo regency found: (1) available skill of teacher to be requirement of local lesson; (2) cluster most interest of student is skill, culture, and environment and (3) a little the school development local lesson that appropriate with local potential.

Skill education model at JHSs is not yet good characteristic, so it needs found accurate model to learn of skill lesson. Terminology vocation in small meaning relationship with skill it means skill worker a half education, far meaning same as with vocational so vocational education, while education produces graduation degree technician will be degree with what is called the other country is technical education according to specialization yield likes mechanic, electric, building, agriculture (Sukamto, 1988: 20). Hence so far said education program is potential to job or career. In the view about job and vocational education, vocational is seldom meaning alone. Usually using the meaning of vocational is relationship with activity (Rehm, 1989). From the opinion can be saying vocational word is relationship with job activity.

According to meaning of vocation word, so pre vocation same as with pre vocational, it means same as with contexts above, the different only pre word that means before. The meaning before is the pre skill education that gives more or preparation to vocational school is higher. Pre vocational is still introducing job foundation are: introduce of job yield, using of tools, process and job skill, pre vocational because they study foundation material of skill job that appropriates with growth age of the student, so it growth interest and love to job world, but the primary purpose help the student chooses type of school continue, and it is not in work. Pre vocational in JHSs is learning program that: (1) content foundation skill, practice and simply; (2) direct benefit is luxury; (3) in order to development of entrepreneur potential; and (4) participant gets opportunity activity productive (Depdiknas, 2005: 2).

The purpose skill pre vocational is the student has ability: (1) able to development knowledge and skill to made various product craft and technology product is benefit to human; (2) the student has esthetic, appreciation to craft product, technology product and artepak from Indonesia area; (3) able to identifying potential local to

development by craft and benefit of simple technology; and (4) the student has professional attitude and entrepreneurship (Depdiknas, 2006)). While scope aspects: (1) craft skill; (2) benefit of simple technology is assembling technology, cultivation technology and industry technology; and (3) entrepreneurship.

Life skills program popular terminology skills vocational or occupational skills divide two parts are basic vocational skills and specific occupational skills relationship with job field. Basic vocational skills is basic move, using simple tools needs for people with manual job (for example hammer, screwdriver and tongs), and vocational skill reads simple picture. The other, basic vocational skill contents attitude principle, precise, accurate and on time to productive attitude, appropriate given degree basic education (http://dikmenum.go.id, access 9 Nov 2007). Hence, the really a basic principle in vocational skills produces items or produces service. Relationship with the limitation so pre vocational purposes in this research has basic vocational skills.

Skills pre vocational gets formal education is JHSs in well level with a training level (implementer) category is semi skills (Depdiknas, 2005). Skills education in pre vocational yield must be precise with the real needed each school appropriate with local characteristic is one of autonomy are and autonomy of education and curriculum application education unit education level and one of pillar support Sisdiknas policy to increase the number of senior vocational school (SMK) with growth loving and interest of student to the certain work, so purpose of broad based education reaching. Skills pre vocational gives opportunity to the student in various experience appreciation and creative produces job goods that direct benefit to the student living (Depdiknas, 2006).

Pre vocational in JHSs hopes to growth interest of the student in job yield, so emerge animus graduation to enter in vocational high school. We know the special purpose of vocational education is the human asset, (2) prepare human resources has comparative advantage and competitive advantage to building industry sector and economy sector etc, and (3) given provisions to the student to development to continue (Directory Construction vocational high school, 2008).

The American Vocational Association indentifying vocational education strata education under academic, that planning to development skills, ability, understanding, attitude, job usually, and appreciation that needs applicant to enter and made advance in

job so it is more productive and benefit (Thompson, 1973:111). While according to Evans (1978) vocational education can be form someone is more employable in job than the other education. Relationship with vocational education, so pre vocational benefit gives knowledge to growth interest of the student in chosen education career or working.

Product will be produce in this research is pre vocational education model for JHSs. Pre vocational model is tolls procedure skill learning in the JHSs. Characteristic model uses certain steps, so the all material practice given understanding and experience for the student in: vocational knowledge, technology knowledge, entrepreneur knowledge and interest and creativity.

This procedure model is: (1) developing thinking constructs pre vocational for the students of JHSs, with the student choose free material, planning job procedure and the material job designs that made and free work, with practice made job material and using simple tools; (3) developing entrepreneur knowledge with usually the student made job report, presentation in front of class, job quality is valued by themselves, product exhibition and selling.

Model frame builds local curriculum for JHSs, integration with learning by PNJ approach. Success performance PNH showed from four components: job appreciation, knowing technology, interesting and entrepreneur knowledge. Learning scenario pre vocational is (1) construction works interest; (2) production; (3) advance access, processing and clarification; (4) meaning job result; (5) exhibition and selling; and (6) short reflection.

RESEARCH METHOD

The research method uses research and development model R&D design step: pre development step are: view, theory and skill competence, indentifying needs development model of learning, student characteristic and analyzing data, step development model are determine development model and made prototype model and step applying model is activity: validity scientist, and practice, try out, evaluation and implementation. Subject research is the students the second and third grade of JHSs, sum 321 students. Data collects observation and questionnaire. Instrument uses validity instrument with confirmatory analyzing factor (CFA) and reliability uses Cronbach Alpha.

Technique analyzing data uses descriptive statistic and interest with goodness fit model uses structural equation modeling (SEM) uses software LISREL 8.71.

RESEARCH RESULT AND DISCUSSION

Effectiveness Learning Pre Vocational

Analyzing of effective learning process for pre vocational is developed by steps (1) construction works interest; (2) production; (3) advance access, processing and clarification; (4) meaning job result; (5) exhibition and selling; and (6) short reflection. Next, each dimension data analyzing indicator of effective level interest job constructs effective, construction builds job interest that developing indicators.

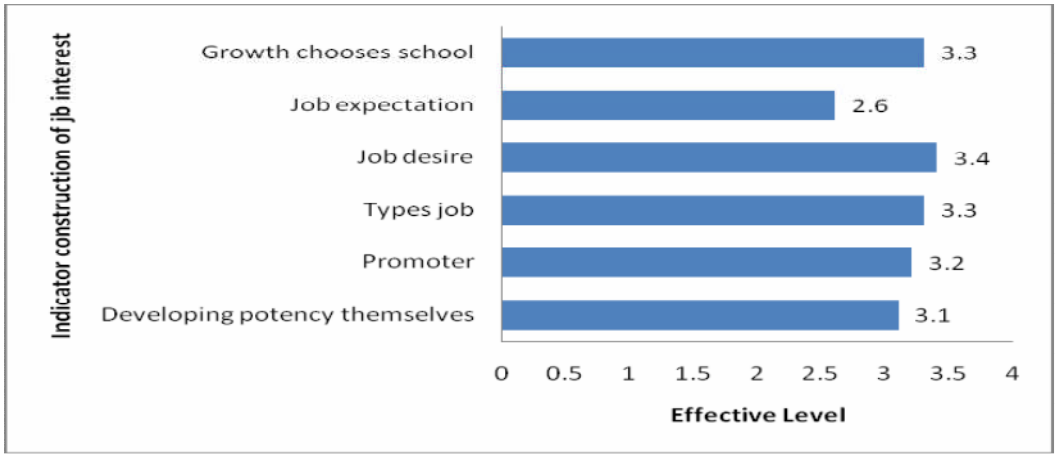

Figure 1. The effectiveness of the working interest constructio

Figure 1 shows indicator develops potential himself desired, job activity likes, dreaming about job, chosen the school to continue construct that school precise with job interest, look for information about school that prices with job interest and school story is people success in their job that gets score with very good in practice; and expectation indicator about job that gets 2.6 score, it means success in practice. The result shows process of job interest construct can growth job interest, with high level to development themselves, desire types job, job desire, job expectation and desire choose a school influences job interest construction.

Effectively of production activity shows technology aspect, the student active in practice. Effectively analyzing shows technology value analysis effectively indicator uses tools are

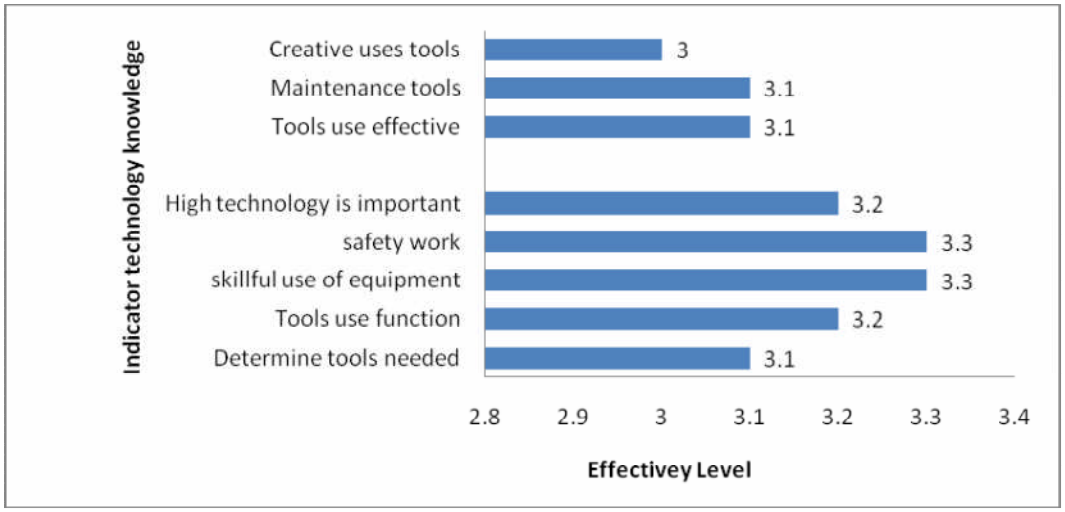

Figure 2. Knowledge Technology

Figure 2 shows indicator determines tools before practice, using tools is prices with function, skill uses tools, safety work, understanding about high technology, tools use effective, maintenance and changes tools component if destroy, using creative in tools, using creative in tools gets score with category always the student did in practice. Practice procedure had given work experience for the student. The experience is importance component support in job likes using tools, material, safety work, way work and technology benefit

Effectively process advance access, process and clarification seen from the student appreciation result work by indicator:

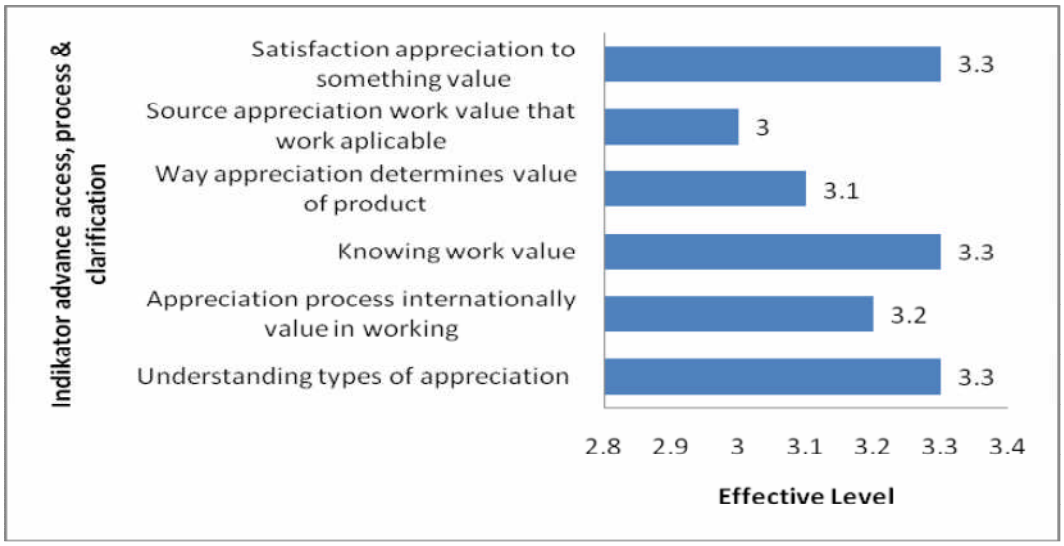

Figure 3. Advance access level, process and clarification from work appreciation aspect

Figure 3 shows indicator of appreciation understanding is various values; value of internal appreciation process in working, work value, the way to determine value of product, source work value of appreciation is applied in working and appreciation satisfaction to product value that gets score with category. It always works or student when they practice.

Meaning effectively process is work result that shows from viewing entrepreneur of student wishes growth honest value and accurate to build entrepreneur. Result analyzing effective procedure meaning of result work shows indicator:

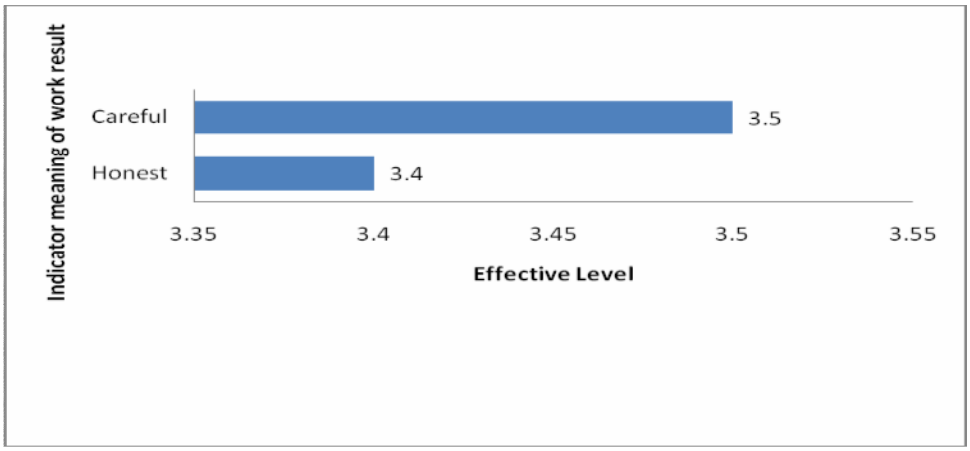

Figure 4. meaning of work result

Figure 4 shows if (1) indicator applying honestly is aspect, applying honestly in promotion activity and selling and keep size accurate of item selling, get score 3.4 it means very important in entrepreneur activity; (2) indicator practices careful is aspect promise to be the key success in selling and buying and given value to quality of product is accurate, and checking is careful to goods that buying, get score 3.5, it means important in entrepreneur practice. Meaning process is work result with applied honest aspect and carefully to the students is understand because it is important aspect in selling and buying activity of entrepreneur.

Exhibition effective process and selling show knowledge entrepreneur aspect hopes can growth entrepreneur value for the student. Result analysis from figure 6 shows if (1) negotiation indicator is aspect that needed strategy and surely buyer in promotion and selling product of activity gets score 3.4 it means the students is understand that the entrepreneur is very important; (2) leadership indicator and decision making gets score 3.3, it means, the student is understand that entrepreneur is very important; (3) corporation indicator, collaboration and synergy get score 3.4, it means that the student is understand that the entrepreneur is very important; (4) creativity indicator is aspects look for new way, finding new idea and they have way to promotion and selling get score 3.2, it means the student is understand that entrepreneur is very important; (5) anticipate indicator and ability in problem solving get score 3.3 that it means the student is understand that entrepreneur is very important; (6) initiative and audacious in the risk get score 3.2 that it means the student is understand that entrepreneur is very important; (7) profit orientation and market indicator get score 3.3 that it means the student is understand that entrepreneur is very important; (8) competition indicator gets 3.2 that it means the student is understand that entrepreneur is very important; and (9) catch and opportunity benefit indicator get score 3.3 that it means the student is understand that entrepreneur is very important.

Figure 5. The effectiveness of the exhibition and sale of entrepreneurial insight

Procedure of exhibition scenario and selling are entrepreneur value for the student. It shows from negotiation, leadership and decision making, corporation, collaboration and synergy, creativity, anticipate and ability to problem solving, initiative and audacious takes risk, profit and market orientation, competition and catch and benefit are opportunity for the student is understand that is very important in exhibition and selling activities growth entrepreneur knowledge for the student

Reflection process activity in experience learning through the students from the first step to eighth learning pre vocational influences to study satisfaction for the student. The students have happy experience, fulfill their desired will be satisfaction in learning. Many aspects can fulfillment needed of the student satisfaction for example indicator following:

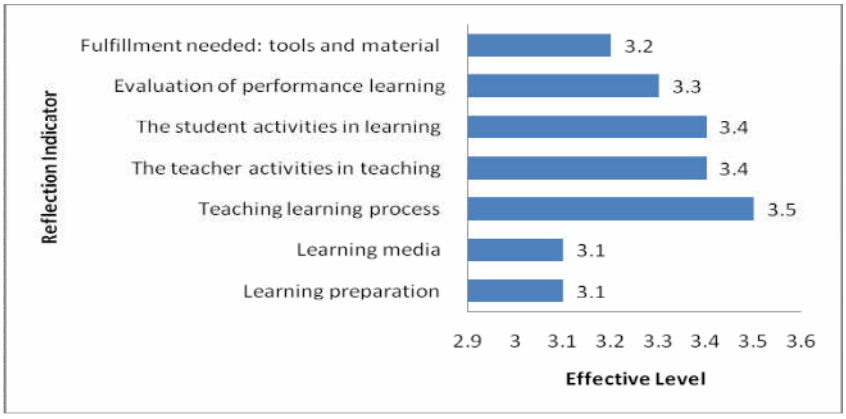

Figure 6. Reflection Effectively Level from learning satisfaction aspect

Figure 6 shows if: (1) learning preparation indicator gets score 3.4 that means the student is satisfaction in skill learning; (2) learning media indicator gets score 3.1 that means the students is satisfaction in skill learning; (3) learning teaching process indicator gets score 3.5 that means the student is satisfaction in skill learning; (4) teacher activities in learning gets score 3.4 that means the students very satisfaction in skill learning; (5) the student activities in learning gets score 3.4 that means the students is satisfaction in skill learning; (6) evaluation of performance learning gets score 3.3 that means the students is satisfaction in skill learning; and (7) fulfillment needed: tools and the practice material, commendation and free to actualization themselves through work practice gets score 3.2 that means the student is satisfaction in skill learning.

Learning reflection result pre vocational influences to learning satisfaction of the student, it shows from observation indicator shows the values are satisfaction. Learning preparation, learning media, learning process, the teacher and the student activities in learning, learning evaluation and fulfillment the student needed in learning practice are fulfillment and satisfaction.

Result model test shows value of goodness of fit index model fit. Output test shows fit that chi square coefficient, fro test result shows 1163.7268 with probability (p) is 0.05638, $p > 0.05$ shows if empiric data has not different with theory that construct according to structural equation modeling, it means model support empiric or fit (Tabachnick, 1996). Kai quadrate also is overall fit model size, the value is not significance that means all model are receive. Result GOF at the other parameter shows in the table following:

Table 1. Result Goodness of Fit Index

No	Index	Cut of value	Result	Explain
1.	Kai quadrate (p)	Small ($p > 0.05$)	1163.7268 (p=0.5638)	Fulfill
2.	RMSEA	$\leq$ 0.08 (Min 0)	0.0161	Fulfill
3.	CFI	$\geq$ 0.90 (Max 1)	0.9785	Fulfill
4.	PGFI	➢ 0.06	0.7580	Fulfill

CONCLUSION

According to result of the research and discussion, so the conclusion are: (1) finding learning model pre vocational with 6 steps process are: (a) construction work interest, (b) production; (c) advance access, processing and clarification; (d) meaning

work result; (e) exhibition and selling; and (f) reflection is effective growths work value to the student in JHSs at skill learning, according above; very fulfill dimension pre vocational; very good component pre vocational; and very good level process pre vocational, (2) pre vocational model is developed fit using to growth work value for the student at JHSs when it is applied in skill learning, with p value $p = 0.5638 > 0.05$ and result goodness of fit index; RMSEA = 0.01161 < 0.08, CFI = 0.9785 > 0.08, PGFI = 0.7580 > 0.06, that means model can support empiric or fit using to growth work value.

REFERENCES

Depdiknas. (2005). *Pengembangan life skill untuk program keterampilan dasar*. Jakarta: Dit. PLP, Dikdasmen.

Evan, R. N. (1978). F*ondation of vocational education*. Columbus: Charles E.Merril Publishing Co.

Farida Hanum. (2005). *Upaya Pengembangan Muatan Lokal di SMP se Kabupaten Kulon Progo.* Jurnal Pendidikan, 2, 213-232

Rehm, M. (1989). *Emancipatory vocational educator: pedagogy for the work of individuals and society*. Jounal of education 171, 3, 109-123.

Rojewski, J.W. & Kim, H. (2003). Career choice patterns and behavior or work-bound youth during early adolescence. *Journal of Career Development*, Vol. 30.No.2; ProQuest Educational Journals, pg.89.

Sabirin Ismail. (2002). *Sejarah pendidikan teknik dan kejuruan di Indonesia*. Jakarta: Dikmenjur, Dikdasmen Depdiknas

Sukamto. (1988). *Perencanaan Dan Pengembangan Kurikulum Pendidikan Teknologi Dan Kejuruan.* Jakarta: Depdikbud Dirjen Dikti, Proyek Pengembangan LPTK.

Thompson, J.F., (1973). *Foundations of vocational education. social and philisophical concepts*. New Jersey: Prentice Hall.

UTILIZATION OF CONTENT MANAGEMENT SYSTEM (CMS) AT INTERNATIONAL SCHOOL

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Abstract:

To improve school qualifications from the national standards into the international school should be followed by the use of active, creative, effective, fun, and dynamic learning model. Teaching and learning process should emphasize on the development of creativity, innovation, and experimentation to find the likelihood, possibility or new ideas that have never existed. In addition, the learning process should make it easier for users (students) in reviewing the material and the operator (teacher) in terms of managing learning materials. Content Management System or more popularly by the CMS acronym, is an answer to solve these problems.

Keyword: e-learning, CMS, international school.

INTRODUCTION

Developing transportation and communication give various colors almost sectors. Education is a part touch with information technology and communication, of course they effect. Although paradigm changes learning that relationship with developing of knowledge and technology and information like this, many paradigms change learning according to Widiaty (2008) is:

> (1) teacher roles transmitter to facilitator, guidance and consultant, (2) teacher roles as knowledge source to be partner learning, (3) learning direction to curriculum to the student, (4) schedule learning is accurate and open, flexibility with needed, (5) learning is according to fact bases the problem and project, (6) learning bases theory to world and the real action for reflection, (7) usually repeat and training are planning and detection, (8) loyal to law and procedure are finding and creation, (9) competitive is collaborative, (10) focus class is to society, (11) result determines before the result to be open, (12) learning of norm to be various that creative, (13) computer uses learning object of tools learning, (14) presentation static media interactions multimedia that dynamic, (15) communication limit in the class to unlimited communication, and (16) learning result value is normative to measuring of comprehensive work.

In other hand, the change of learning paradigm has an implication in determine of rule in the construction of learning theory. The rule then focus on the theory of learning

bases knowledge and technology development. They are (1) four education frame lies UNESCO: learning to know, learning to do, learning to be, and learning to life together are learning paradigm, (2) learning orientation changes teacher centered to student centered, (3) content based curriculum changes competency based curriculum, (4) changing learning theory to behavior model to constructiveness model and (5) theoretic changes to contextual, (6) learning paradigm changes standardization to customization.

While the other side, school called international level if the school has learning teaching process that active, creative, effective and happy, and change of learning teaching process pressures creative that developed, innovation and experiment finding probability or new ideas that is not yet find before (http://www/tedcbandung.com/:Januari 2011). Hence output has comparative quality in national and international, cognitive, affective or psychometric aspects so the competition increases in global.

International school is according to National Education is 8 (eight) standards are graduate competence, content, process, teacher and education worker, media and tools, cost, management and value is rich that developed, far, width are adaptation or adoption to education standard estimates quality reputation in international.

Relationship with some qualification international school, where the school has teaching learning process that active, creative, effective and happy, they need new finding about benefit of information technology so learning process more effective, quality and meaning, hence it is not need much cost.

DISCUSSION

CMS Definition

Content management system or popular with CMS is an answer the problem. The first CMS is the answer or human needed will be fast information supply (http:www.ilmukomputer.com:januari,2010) fresh in our remember, a simple website in 90s. it is only HTML language program and some pictures and static information, a firm/education course efforts to shows enough information to visitors. Each information changes the management must be contact with social relation before when the all materials given to webmaster. It changes content of website. It is happened continue, repeat and much quality, many time and education need to all process.

It is not efficient, operational cost spends much. Of course everyone is not desire this situation. Said, a method or system can increasing productivity level of institute and efficiency in development website is much needed. And one of solution is precise with applied content management system or CMS. CMS simple can the meaning following:

A system gives users easily to manage and change of content of website that dynamic without knowledge about technique before. Hence, everyone, the writer or editor use far made, erase or renew content of website direct without webmaster every time (http://www.ilmukomputer.com:2010).

Because CMS divides content and design, consistency picture can good keeping. Every part of website has content and picture that different, we must be worry lost identity of all website. Although all data save in one place, benefit of information is various needed that easily. CMS also gives flexibility to manage workflow and access right, so participate is more of user in development of website. It will be advantage if website has high complexity and high advance.

CMS Benefit

Anything called above, CMS also gives some benefit to user that explained following:

- Management data

  This is the primary function of CMS. All data/information can organizer and saving are good that layout or not yet. The other, data/information uses again precise with needed. The other, CMS also support various data likes XML, HTML, PDF etc. Indexing, browsing function, and control to data/information. Usually CMS uses to knowledge about program language that is not needed, because all process with automatic (WYSIWG). Update process to be rapid so information guarantee in screen.

- **Manage website cycle**

  Many CMS give facilities to user for manage part or content is anywhere will be screen, period/time screen and location screen in website. Part or content often is layer before review by editor so validity is guarantee.

- Support template web and standardization

  Every page of website is result from template is available by CMS before. The other, it keeps layer consistent for all, the writers and editor can concentration in their job is available content of website. If the content had available, so publication process is easily because there is template before. Usually some part of website determines so it changes easy. It gives standardization to all part of website.

- Website personal

  Content determines in CMS, the content layer with desire and needed of user. CMS advance divides design and content, it causes personal process is easy.

- **Syndicate**

  Syndicate gives website to divide content to the other websites. Format data support varieties from rss, rdf, xml to backend scripting. Same as with personal, syndicate is easy because the content and design made dividing.

- **Accountability**

  Because CMS support plot and right access are clear to user, data/information gives different authority. Hence, every change happened in website can browsing and repairs soon.

CMS principle uses to various needed and various conditions following:

1. Manage learning
2. Manage personal website
3. Manage business/firm website
4. Manage organization/community/school website
5. Portal and website community
6. Photo gallery
7. Forum
8. Application E-commerce
9. Etc

Many types CMS, from commercial to open source. CMS commercial offers stability and performance is good from open source, remember this is usually when CMS made commercial that needs cost and professional skill. But user CMS open source is not

need afraid, CMS characteristic open source made development CMS is easy because it do everyone. Some CMS open source is many users following:

1. Drupal

   Drupal is content management system and blogging engine the first development by Dries Buytaert a bulletin board system. Now, drupal uses websites that has high traffic and it has handle level a website that hierarchy is complex (http://drupal.org).

2. Mambo

   The first mambo is called mambo open source or MOS is free software or open source content management system uses to made and manage website by interface that simple. Now, mambo is chosen and used because it is easy that given to operational. Almost CMS likes mambo that has ability templating or ability to change layer of website without upload/change content. Mambo offer facility and components likes shopping chart (using virtue mart component), photo gallery, forum, pools, calendars website searching, multi language etc. Almost website we build with mambo choose CMS. We are happy because one of CoreDev Team Mambo is Indonesian (http://mamboforge.net).

3. Joomla

   Word Joomla takes from a Swahili ethnic is Jumla that means to be one or called it has ability same as with Mambo, because CMS is the first code Joomla! 1.0.0 uses code Mambo 4.5.2.3. Many components of Mambo are also using Plugin Joomla. We ability choose plugging is accurate for each release that chosen research process avoid conflict or crash because many plugging need adjustment every version (http://www.joomla.com).

4. WordPress

   One CMS uses many website the primary web-blog, CMS is precise to using website bases news. Simple administrator side makes the CMS that easy using the beginner. Templating ability is chosen because it is very easy to understand. Surprise now when wordpress with plugging develops so it needs CMS corporate so it uses simple shopping chart. The other advance from CMS is easy to optimum to be website that search engine friendly with tag system, friendly url, custom meta, auto

ping, sitemap and rss. Using and weblog (http://www.WordPress.org and WordPress.com).

Special CMS for e-commerce

1. **osCommerce.** From open source commerce is online store management software. osCommerce appears more specific for CMS user that eCommerce is available all standard facilities and functionality (http://www.Oscommerce.com).
2. **Prestashop.** If you want to have a shop online alone, you see application e-commerce open source that is called prestashop. Prestashop is high technology and it has features web 2.0 like dynamic ajax and design are fresh. The first you see front layer you will thinking with their performance is simple but it is complete. Operational is easy for visitors or administrator to navigation when searching catalog product (http://www.Prestashop.com).
3. **Magento.** One chosen platform ecommerce application is Magento – Open source ecommerce evolved. Slowly but continue Magento changes the application before like Oscommerce, Joomla with Virtuemart, etc. magento is the winner best commerce in SourceForge interface, etc it is ok and good (http://www.magento.com) and the other. But CMS upper usually using for users CMS open source.

CONCLUSION

It's the time for every school implementing CMS, given the many conveniences it brings, among others:

1. Learning material management will be easy to correct or update
2. Design layer is interest and only need just minute to design learning management
3. It is not need computer with high specification to this application
4. Software choose open source it is not need high cost
5. Appear paperless to training or test for the student, so the paper uses and tools is cheaper
6. For education institute is good base or university, public or private or institute or the firm use learning with model e-learning choose one of chosen the following:
   - Moodle (htt://www.moodle.org)

- ATutor (http://atutor.ca)
- Dokeos (http://dokeos.com)
- Claroline (http://claroline.net)

REFERENCES

Widiaty, I. (2008). *Pembelajaran Pada PTK* (Model-model Pembelajaran 1) Tersedia di http://ismakurnia.blogspot.com/2008_08_05_ archive.html, Januari 2009.
http://www.tedcbandung.com/tedcbandung/index.php?page=109:Juni 2010
http://www.abuaufa.com/macam-macam-cms/Januari 2010.
http://www.ilmukomputer.com:Desember 2010
http://www.drupal.org:Desember 2010
http://www.mamboforge.net:Desember 2010
http://www.joomla.com:Desember 2010
http://www.wordPress.org:Juni 2009
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http://www.Prestashop.com:Desember 2010
http://www.magento.com:Desember 2010
http://www.moodle.org:juni 2009
http://www.atutor.ca:Desember 2010
http://www.dokeos.com:Desember 2010
http://www.claroline.net:Desember 2010

HUMAN RESOURCE MANAGEMENT IN THE DEVELOPMENT OF WORLD-CLASS SCHOOLS

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Abstract

The development of world-class schools is aimed at elevating educational quality and competing power, which ultimately becomes the basic competence and competing power of the nation in the international or global level. The elevation of educational quality is meant for educational institutions to produce Indonesian persons who are intellectual and competitive that in time will increase the competing power of the nation. In order to achieve these, one of the strategies that need to be taken by schools is to manage well the human resources especially teachers. The quality of education is determined by the availability of adequate facilities, but more importantly by the availability of competent teachers who have the commitment towards the quality of their work.

Keyword: teacher, human resource management, World-Class School

INTRODUCTION

It has often been stated that the globalization era has united various world regions through informational flows that have eliminated the boarders of time and space through out nations. Various aspects of life from people migration to trades have reached the boarders of nations. This condition has a direct impact to Indonesia in this era of free competition, whether or not Indonesia is ready for that.

The development of the global era brings in chances and challenges to the development of the nation, but abilities and requirements are needed for this nation to possess the competence and competitiveness. One of the important factors required is the availability of human resources who possess adequate competences to endorse that free competition. The importance of the availability of the qualified human resources, as stated by Myers, et al. (1965) in Soedijarto (1998), is that if a nation is unable to develop its human resources, it will not be able to do anything to increase and improve itself in politics, nationalism, or economy. This statement shows that without the support of qualified human resources, not a lot can be done by a nation including the management of natural resources for welfare. This is what happens at present. On the contrary, by having the qualified human resources, such as Japan who relatively does not have natural resources as rich as Indonesia, they are far more advanced than Indonesia.

The weakness in human resources is directly related with the weakness of the education system. There have been educational policies that are designed in the effort to improve the quality of education, but the outcome has not reached the expected goals. One of the determining factors is the condition of educators or teachers. The low level of the educational quality is due to the low level of the teachers' performance. Regardless of the educational facilities, if the teachers' performance is poor, those expensive facilities do not function as they are expected to. As stated by Hadari Nawawi, regardless of amount of the fund and technology, all will be meaningless, valueless, and unfunctioning if they are not supported by qualified human resources (2000: 134). On the other hand, if an educational institution possesses qualified educational human resources, various problems and obstructions can be overcome and goals can be achieved.

Therefore, to prepare for junior high schools to make way to world-class schools, one effort is to develop educational resources to possess world-class competences. Schools need to implement the management of education resources in order to be able to elevate and empower teachers in the effort to reach the expected goals.

DISCUSSION

The policy of the elevation of educational quality becomes a strategic step that needs to be supported by all the nation components in order to overcome the problem in the weakness of the nation competitiveness in the global era. As has been stated before, through the process of quality education Indonesian human resources will be produced that will advance, compete, and maintain the existence of the nation in the global era. Without the availability of such human resources, Indonesia will not be able to do much including in managing the rich natural resources of the country. So much of the natural resources has been managed by foreign countries due to the fact that this country has the quantity of human resources but not the quality.

To overcome the problem of the low quality of the human resources, the solution is for the country to improve the quality of education such that educational institutions will be able to produce qualified graduates. Efforts to improve the quality and competitiveness of these school graduates must be directed to develop educational processes and evaluations to the level of those achieved by advanced countries. It is a fact

that these advanced countries, through free trades, are able to acquire and make use of opportunities emerging in the global world.

The policy to implement world-class schools at educational institutions, including the junior high level, is a strategic policy to overcome the weakness in the human resources of the nation. It is a common phenomenon that an innovative policy will be faced with pros and cons. In relation to such pros and cons, John Bailey, et al. (1991: 498) presents information related to a number of problem sources that will be faced by the school. These can be seen in Table 1 below.

Table 1. Problem sources in change processes

Problem Sources	**Proposed responses**
Fright from ignorance	Give information and motivation
Need for security	Explain goals and methods
No need for change	Show problems and challenges
Threat of individual interest	List key persons in change processes
Difference in interpretation	Give valid information and facilitate group discussion
Changes not on the right time	Postpone changes to a more favourable time
Lack of resources	Provide needed resources or decrease expected work load

The table above shows that every innovative idea is faced with pros and cons. This also happens to the policy of the development of world-class schools. The most extreme response is for the government to stop the world-school policy. If this response is taken, this nation will not be able to advance and to compete with other nations. For the reason that world-class schooling is needed for the advancement of the nation, this policy must be implemented with various corrections towards operational aspects that become an obstruction in achieving the objectives.

In the development of world-class schooling including that for junior high levels, one of the dominant factors to take into account is the existence of educational practitioners or teachers and non-educational workers or school employees. The school must be able to manage these human resources in order to support the changes and improvement towards world-class schooling. The success of the school in proceeding towards a world-class school is determined by the capability of the school through good management. This is caused by the fact that school institutions are different from other

institutions. School institutions deal with personnel or human resources who are related to educational processes such as the school teachers and the administrative staff. As stated by Sergiovanni, et al. (1987: 134), "*perhaps the most critical difference between the school and most other organizations is the human intensity that characterize its work. Schools are human organizations in the sense that their products are human and their processes require the socializing of humans.*" This shows that human resource issues become very dominant in the educational/instructional processes. This also means that the management of educational human resources becomes the key to the implementation of the policy of world-class schooling.

Management in the context of these educational human resources can be understood as the effort that the teachers are ready, feel confident, and give maximum contribution to the achievement of the school goals. Therefore, educational human resources especially teachers need to be well managed and organized in the effort to increase their performances in order to be able to give contribution to the attainment of the school goals towards world-class schooling. The improvement of teachers' performances will have an impact in the better performance of the institution including junior high schools.

The management of human resources becomes a factor that will determine the performance of the school organization. The right use and development of human resources in the integration with the school organization in a unified swing will become the primary resources for the school to improve its organizational capability in attaining the school goals. Human resource management consists of activities that are related to the human resources in the organization. Human resource management will give directions for the management of teachers so that they can be optimal in giving contribution to the development of the school quality. Human resource management functions consist of planning, organizing, actuating, and controlling. Human resources processes consist of recruitment, maintenance, and development.

The planning function consists of the empowering of all the human resources owned by the school by means of delegation and distribution. Delegation is a function in which responsibility and tasks are passed over and the success of delegation depends on the right selection of the personnel being chosen. For this reason, the school must have

the map of the competences of the human resources of the school. From this map, problems can be detected that are related to the capacities of the human resources of the school. This will become a challenge to be overcome so that it will not become an obstruction in the attainment of the school objectives. One possible solution is by improving the quality of the human resources through relevant educational or training programs. One thing to be emphasized, mastery of the English language in world-class schools is an important thing, but this should not become a communication obstruction in the instructional processes. Communication between the teacher and students in the instructional process is important. It must be related to the more important issue which is related to the mastery of the standard contents that are equal with those in advanced schools. Mastery of the standard contents should become a priority for the teachers.

The organizing function consists of the activating all the media to reach the organization objectives. In this, all the planning schemes are carried out by the personnel to form all the structural relations among the jobs together with the persons and support factors. Basically, all activities carried out in the school must be related among each other and are synergically directed towards the attainment of the purpose of improving the quality of the school.

The actuating function consists of the effort of the leaders to make use of all the human resources to work cooperatively, effectively, and synergically for the purpose of achieving the school objectives. In this case, the school principal must have a good mastery of change strategy. The mastery of change strategy becomes important in view of the great variety of the qualities of the human resources owned by each school. Sukoco, in his dissertation (2008) finds that directive change strategy is the right way to improve the innovativeness of teachers with low abilities. Participative strategy is for teachers with high abilities.

The controlling function consists of the efforts in monitoring, evaluating, and improving the activities in line with the pre-designed plan. The controlling function is conducted not only at the end of the programs but also during the carrying out of the activities of the programs.

As has been stated above, process management of human resources consists of recruitment, maintenance, and development (Pigors and Myers, 1961). The management of school human resources uses this technique.

Recruitment is related to acquisition of human resources by the educational organization through planning, announcing, applying, screening, accepting, appointing, and placing. An important thing in recruitment is for the school to have the number and criteria of the positions needed which show the actual conditions of the school. Up to the present time, there have been certain weaknesses in the recruitment of the school personnel as evident in the fact that many teachers have difficulties in getting class hours for the purposes of teacher certification. Lack of class hours shows that the school has more persons than what it actually needs to have. One of the reasons for this difficulty is that the school does not do teacher recruitment by itself. Recruitment is done by another institution outside the school.

Recruitment can be done internally by the school or externally by another organization outside the school. Internal recruitment can be in the form of the empowerment of the available through mutation either with or without promotion. This type of recruitment is an important factor in the running of the organization and becomes one of the principle functions of the organization leader. The most important thing to be emphasized in this matter is for the leader to empower the human resources efficiently and optimally. This means that the available human resources are maximalized in their functions up to the measures of common limits of capabilities.

The best principle of human resource empowerment is that of satisfaction on the part of the workers themselves. The level of workers' satisfaction becomes the motivating power for the persons to achieve better and become more useful to the organization and other parties. Human resource empowerment can be done in various ways from the simples to the most sophisticated technique. Empowerment begins with placement of the workers in the positions that are suited with the workers' capacities. The principle is the right man on the right job.

External recruitment places selection as an important step. Selection should be done in an open manner (open competition) based on standards and qualities that are measurable in line with the needs of the organization. In worker selection, either new

personnel or mutation with or without promotion, the following criteria should become the principle considerations: ability, competence, aptitude, knowledge, skill, attitude, and personality that are required for a certain position.

Maintenance consists of the responsibility of the leader or school principal in keeping the performance of the workers. Reward giving to the right personnel will give motivational drives for the commitment of the workers towards their jobs which ultimately will give positive impacts to the running of the organization. The main objective of maintenance is to make the persons in the organization be motivated, maintain achievement, and function optimally. Workers who are not given the right rewards and incentives will lose motivation and perform unoptimally.

Development of human resources is directed to efforts in improving the capacities of the workers in line with the development of the organization. Efforts towards improvement of workers' capacities will support the attainment of the goals of the organization. If a school organization is backed up by improving capacities of the human resources, it will achieve the pre-planned objectives. Human resource development can be done through educational and training programs which are suited to the needs of the school organization.

Human resource development through educational and training should start with the initial step of needs assessment to answer the three aspects of development. These are (1) organizational analyses to answer the question: How will the school conduct training for the teachers?; (2) job analyses to answer the question: What need to be included in the training to improve teachers' capacities?; and (3) personal analyses to answer the question: Who needs what training? The results of these analysis aspects will give a picture of the levels of skills and performance of the employees in the organization that can be used for the setting up of the educational or training programs.

Performance is related to factors that can be summarized as ACIEVE. This consists of ability (skill and aptitude), capacity (skill that can be developed), incentive (material and non-material reward), environment (work surroundings), validity (guide and job description), and evaluation (feedback for work outcome). Of these six factors, capacity can undergo intervention by education and training; the other factors lie outside the reach of education and training.

CONCLUSION

Based on the discussion above, conclusions can be drawn as follows:

1. Teachers as school human resources hold an important role in supporting the school organization including junior high schools to achieve world-class schooling. So essential is the role of teachers that experts say that no quality change or improvement occurs without change and improvement of teacher qualities.
2. In view of the important role of the teachers in attaining world-class schooling, the school should be able to manage the available teachers as human resources through the right approach to human resources management.
3. School institutions will undergo continuous changes. For this, the school efforts should be conducted towards the capacities of teachers' innovativeness by way of educational and training processes and the right change strategy.
4. Maintenance of teacher human resources will support the elevation of teachers' motivation and commitment so that they will work optimally towards educational advancement and quality in the scheme of the attainment of world-class standards.

REFERENCES

Peraturan Menteri Pendidikan Nasional RI Nomor 16 Tahun 2007 tentang Standar Kualifikasi Akademik dan Kompetensi Guru.

Bailey, John, et. al., *Managing Origanizational Behaviour*. New York: John Wiley & Sons, 1991.

Gaynor, Gerard H., *What Every New Manager Need to Know*. New York: AMACOM, 2004.

Hadari Nawawi, *Manajemen Strategik.* Yogyakarta: Gadjah Mada Universitas Press, 2000.

Hook, Sidney. *Education For Modern Man, A New Perspective.* New York: Alfred A Knopf, 1967.

http://uharsputra.wordpress.com/pendidikan/manajemen-sdm-pendidikan/ 13 Jan 2011

Joyce, Bruce and Weil, Marsha, *Perspectives for Reform in Teacher Education.* New Jersey: Prentice-Hall, Inc., 1972.

Kisdarto Atmosoeprapto, *Menuju SDM Berdaya.* Jakarta PT. Elex Media Komputindo, 2002.

O'Malley, Michael N., *Creating Commitment.* New York: John Wiley & Sons, Inc., 2000.

Phesey, Diana C., *Organization Cultures, Type and Transformations.* New York: Routledge, 1993.

Schmuck, Richard A., dkk., *Organization Development in Schools.* California: Mayfield Publishing Company, 1977.

Smither, Robert D., Houston, John M., and McIntire, Sandra D., *Organization Development.* New York: Harper Collins College Publishers, 1996.

Soedijarto. *Pendidikan sebagai Sarana Reformasi Mental dalam Upaya Pembangunan Bangsa.* Jakarta : Balai Pustaka, 1998.

EMPOWERMENT OF INTERNAL POTENTIALS OF VOCATIONAL SCHOOLS IN PREPARATION FOR WORLD-CLASS STANDARD

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Abstract

In line with the Government Acts Number 20 Year 2003 concerning the national educational system, starting from 2005 the Government has developed initial programs for instituting international-standard schools. Facilitation for these programs also goes to vocational schools that have the potentials to go international. The success of the school internationalization depends on the capacities and commitments of individual schools in the processes of quality improvement. One of the obstructions faced by these efforts is the wide variety of school environments and conditions which needs different treatments for different schools in order to reach the determined targets. Because education in a way provides services to the stake-holders, it will be better to empower these stake- holders in the improvement of the education quality. This cooperative approach concept is in line with that of the school-based school management. This school-based management has been as the school-based quality management (SBQM). Through SBQM, the school must be able to translate and capture the essences of macro education policies and to comprehend its environmental conditions and then, through planning processes, formulate these into micro education policies in the form of program priorities to be carried out by the school. This way, the school can independently, but still in the referential frame of the national educational policies, carry out its responsibilities in developing its resources in line with the learning needs of the students and the needs of the society. This means that all the internal school potentials should be developed in improving the quality of education.

Key words: international-standard school, empowerment of internal school potentials

INTRODUCTION

Education plays a strategic role in improving the quality of Indonesian human resources and elevate their competitiveness in the national, regional, and international levels. The globalization era which has eliminated the borders of nations needs human resources who possess strong competitiveness in technology and management. The vocational school, as one of the middle-level education strata in Indonesia, becomes one of the stepping stones for producing Indonesian human resources who will be able to answer these challenges, who will be able to compete in the international markets.

The government step to institute the National Educational Acts is a strategic policy in improving the quality of education, specifically education quality in the vocational school. The implementation of this national educational policy includes the development of world-class schooling. This program has been carried out since 2005 and has been developed year to year towards a best format. International-standard schooling is based in the Government Decree Number 19 year 2005 concerning national standard education and the Government Acts Number 20 Year 2003 concerning the national educational system. The 2003 Government Acts Chapter 59 item 3 states that the central government and/or regional government is to institute at least one international-standard school. The development of world-class schools is directed towards the improvement of the competitiveness of the Indonesian nation for the international forum.

The success of world-class schooling depends on the program implementation phases shown by the preparedness and competences of the school together with the amount of obstruction in the implementation processes. There are cases where, at the macro level, programs are predicted to run smoothly but, at the micro levels, they cannot be implemented because of the vast and varied obstructions encountered in the field. It is for this reason that, in order to attain the educational goals, follow-up actions are needed to change external developmental drives into internal potential empowerment of the school. It is in this relation that the present article is written to discuss the internal potential of the empowerment of world-class vocational schools. The objective of this discussion is to show argumentative thought formulation which can be used as an alternative solution to the problems in the implementation of the world-class schools.

DISCUSSION

An international-standard school is one that has possessed all the requirements of the national standards plus that has a referential directions towards one of the Organization for the Economic Cooperation and Development (OECD) countries and/or other advanced countries that have specific superiority to have competitiveness in the international forum (The Education Ministry's Decree Number 24 Year 2006). Educational national standards consist of content standard, process standard, competence standard of graduates, teacher standard, funding standard, and assessment standard. For international-standard schools, all these standards are enriched, strengthened, developed,

deepened, and widened through the adaptation and adoption of educational standards of OECD member countries and/or other advanced countries that have possessed specific superiority in the field of education, have been considered as having the quality reputation, have been acknowledged internationally, and whose graduates possess the competences for international competition.

In order to be able to fulfill those characteristics and concepts about world-class schooling, there are at least two ways that can be conducted by the school. These are (1) adaptation, matching the elements that have already existed in the national standards with those in the OECD member countries and/or other advanced countries that have superiority in educational fields; and (2) adoption, adding certain elements to the national standards using references from those in the OECD member countries and/or other advanced countries that have superiority in educational fields (Hartoyo, 2007). Schools that will conduct adaptation or adoption processes should find an international partner from countries like the USA, UK, Australia, France, Japan, South Korea, Hong Kong, and Singapore whose qualities have been internationally acknowledged. Or they can work with training centres, industries, and certification institutions such as Cambridge, IB, TOEFL/TOEIC, ISO, study centres, and multilateral organizations such as the UNESCO.

The educational policies concerning the national standard schooling which later is followed by international-standard schooling policies have been one of the educational innovative movements in the effort of elevating the quality of education so that schools are able to produce qualified human resources. In the specific case of vocational schools, the policies have given the drives for the schools to provide graduates with adequate competencies either for them to continue btheir education to the higher education level or for them to directly go to work. The success of world-class schooling certainly depends on the competence and commitment of the individual school towards the processes of quality development. Without the needed preparedness, commitment, and further management, it will be impossible for schools to attain these objectives.

Based on observation in the monitoring and evaluation of the international school programs in various regions, it has been found that schools have conducted physical programs and showed evidence of achievement. However, from the deeper tracing through observation and interviews, it can be seen that the learning-teaching activities

have not much changed. Research conducted by Muhammad Ali and Hartoyo (2010) about the implementation of world-class vocational schooling in Yogyakarta shows that, of the eight criteria for school preparedness to run international schooling, the teaching-learning aspect has the lowest score. Meanwhile, preparedness for facilities is in the good category. This means that physical activities are still dominant when schools carry out programs from the government.

This problem may occur for two possible reasons. First, the school members still have the assumption that international schooling program is just like the other programs; in that when the program ends, so do their responsibilities, and things will come back to their previous characteristics. If this is what happens, international schooling programs will not attain their objectives. Secondly, the school members do not have the actual knowledge and competence to improve. If this is what happens, whatever facilities are given to the school will not be able to help the school carry out any development.

There are two other factors that can be used to answer why efforts to elevate the quality of education have not met their expected results. First, educational development strategies have so far been input-oriented. This strategy has the assumption that whenever all educational inputs have been fulfilled, such as the provision of books and learning materials and other instructional media, all the school institutions will automatically be able to produce qualified outputs as expected. It seems that the input-output strategy does not function optimally in educational institutions (schools). The strategy may be applied with good results in economic institutions and industries.

Secondly, the management of education has so far been macro-oriented, ordered by the beurocrates in the central government. As a result, many factors that are well projected in the macro level (central government) do not happen as expected in the micro level (schools). In another word, the complexity of the range of the problems in education often has not been captured wholly and accurately by the central beurocracy.

This discussion gives the understanding that development in education is not only focussed on the provision of educational inputs, but it must also take into account the process factor in education. Educational inputs are absolutely needed; however, within certain limits, they are not an insurance that the improvement of educational quality will automatically occur. In addition, the school is the frontier executioner of education who

has students with varied potentials that need varied educational services. Because of this, the school should be dynamic and creative in carrying out its efforts for the improvement of educational quality. This can be realized if schools with their varied characteristics are given the trust to manage themselves in line with their specific environmental conditions and students' needs.

Improving educational quality is not as easy as turning one's palm down. It needs persistent commitment from all the components of the nation. This is caused by the many factors that are interrelated and inter-influential among each other. However, in spite of the fact of all the difficulties and challenges, the policies for improving educational quality need to supported and given commitment especially in the implementation in the field. Such support and commitment can be in the form of critical attitudes towards the implementation of innovative programs. Critical attitudes will lead to the accuracy of the implementation of innovative programs as follows (Rogers, 1995).

First, self-concern will look at the characteristics of the innovation, specifically concerning the positive and negative impacts. This will lead to the correct understanding of the innovative concepts and to the correct implementation. Innovation will not be correctly implemented if its concepts are not well understood.

Second, task-concern will look at the way the innovation is implemented in the field to produce changes for educational development. Innovation is conducted in the educational processes to cause changes and improvement with the purpose to elevate quality. Critical attitudes will direct thoughts towards the way the changes are managed by all the components of the institution to attain the objectives.

Third, impact-concern will look at the way the students change the learning strategies and the products of their learning as a result of the implementation of the innovative programs. Innovative programs are expected to improve the students' learning activities and effectiveness such that their learning achievement improves. This impact-concern will also think of the ways in which various cooperation forms can be carried out with other schools that implement the same innovative programs.

As has been discussed above, the government has been committed, or at least has put efforts, to improve educational quality even though, up to the present time, this relatively has not brought about the expected results. One of the obstructions is the highly

varied environment of the schools which need highly varied treatments to achieve the intended goals. The running of a school cannot be separated from the influence of its environment and, if such thing happens, it runs against the nature of the implementation of education itself. As, principally, education gives out services to the stakeholders, it should be right that educational stakeholders are empowered to be involved in improving the quality of education.

This idea of joint efforts with stakeholders is in congruence with the school-based approach to education in the framework of educational quality improvement. In addition, it must be understood that, in the series of educational policies, the school is the frontier institution in the educational activities that will determine whether or not these policies are successful. It is for this reason that the school must be given the authority to manage its educational practices independently. This approach to educational management is known as the school-based quality management.

The concept of school-based management requires the tight cooperation among the school, the community, and the government with their own responsibilities. This concept develops from the intention give independence to the school to actively and dynamically manage all the efforts to improve the quality of education using all the resources it possesses. The school must be able to translate and capture the essence of macro educational policies, understand its environments (strengths and weaknesses), and then, through planning processes, formulate these macro policies into micro policies in the form of priority programs to be implemented and evaluated in line with its visions and missions. In other words, the school needs to be able to improve its decision-making competences. Afterwards, the school must determine its quality targets for the next year. This way, the school has independence, albeit still under the framework of the government policies and supported by adequate facilities, in managing all its resources towards educational quality improvement in line with the characteristics and needs of the students and the community. All this means that all the school internal potentials are empowered towards quality improvement which will support the development of world-class programs.

To manage all these synergic efforts, the school can make use of the services of information and communication technology (ICT). The use of ICT at school, especially

vocational schools, will give a lot of benefits in term of learning-teaching processes, elevate the school's ability in responding to the advancement of science and technology, and improve the competences in the field of work of the related fields of study. The quality of vocational education is measured from the quality and relevance of its graduates with the needs of the field of work (Calhoun and Finch, 1982).

By using ICT, the school can also tie a cooperation with other advanced schools in order to get data or information to overcome current weaknesses (the availability of benchmarking). Besides, the school can also make a cooperation with related industries both inside and outside the country. One final aspect that the school can do is the improvement of the school internal competences, especially those of the teachers, to carry out learning reconstructions in class based on information about the competence needs from the field through empirical activities in the form of classroom action research.

CONCLUSION

The international-standard schooling program must be carried out in that it is a mandate of the National Educational Acts. During the five years of its implementation, the schools still have difficulties in finding the right format of its implementation. However, as a frontier institution in the implementation of educational services, the school must be able to empower all its potentials to develop its: 1) decision-making competence, 2) make use of ICT, 3) carry out learning reconstructions through classroom action research.

REFERENCES

Hartoyo. (2009). *Menggagas Madrasah Aliyah Bertaraf Internasional*, Tersedia di http://hartoyo.wordpress.com/2009/07/10/rsbi/.

Muhammad Ali dan Hartoyo. (2010). Analisis Kesiapan Sekolah Menengah Kejuruan Di Yogyakarta Dalam Menghadapi Internasionalisasi Pendidikan. *Prosiding Seminar Nasional Hasil-hasil Penelitian, di Lembaga Penelitian UNY. 4 Desember 2010.*

Peraturan Pemerintah No. 19 tahun 2005 tentang Standar Nasional Pendidikan.

Permendiknas Nomor 24 Tahun 2006

Rogers, Everett M. (1995). *Diffusion of Innovation* . New York: The Free Press.

Undang Undang No. 20 tahun 2003 tentang Sistem Pendidikan Nasional.