

INTEGRATION MODEL'S IMPLEMENTATION OF CHARACTER EDUCATION INTO SCIENCE IN ELEMENTARY SCHOOL

Sardjjo

Elementary school is a formal institution that educates 7-to-12-year-old children by providing value, knowledge and skills through reading skill, writing skill and numeracy for a well-prepared future in education. Those three aspects are the main parts of living, so that the process of character building in this stage takes precedence. Character building's process is responsible to everyone in school, mainly to teachers due to learning process. In other words, teachers are had to develop the value of student's character in every process of learning. The research is intended to analyze the integrating process of character education into science in elementary school. The research was conducted in Yapis Pembangunan V Wamena Elementary School. The data were collected through in-depth interviews, observation and analyzing the learning plan developed by the teacher. The findings show teachers present few difficulties in determining the types of character to be inscribed into Learning Plan. However, related to its implementation, teachers are uncomprehend that the inscribed types of character are supposed to develop in every learning process. The learning process of science itself, in general, is still dominated by the teachers while in learning plan; teachers have planned students to dominate by actively involving in some activities like: exploration, elaboration and confirmation.

Keywords: Character Education, Science, Elementary school stage.

1. INTRODUCTION

The establishment of elementary school is purposed to acknowledge students for preparing their further step of education (junior high school) by providing skill of reading, writing and numeracy. In addition, students are provided some basic skills and knowledge which are necessary during their stage of development. They are also involved in reflecting an appropriate attitude, value, norm or characteristics to social behavior.

Process of character building in elementary school is believed not only responsible to teachers but also to the whole part of school. Beside they all are had to be cooperative, they also are obliged to be an upstanding figure in which students reflect to. However, the teachers here, have the main role as they are involved in daily interaction with students. Consequently, teachers are supposed to perceive and be capable of developing, making explicit and correlating value, moral and norm with every course learnt in class.

¹ Lecturer of Open University, Jakarta Indonesia

The previous research informed the types of character to integrate into course of study which generally teachers dealt with various difficulties in developing lesson plan (RPP) of each class.

In relation to making lesson plan, teachers have noted the types of character that will be integrated into learning process of science related to standard competency (SK) and basic competency (KD), and also the indicator accomplished in the purpose of education. Those types of character are selected from several types of character represented in Permendiknas No. 41 (2010) which are further applied into available columns of lesson plan (RPP).

The result of learning observation shows that teachers in general, do in the same way as routine leaning but they do without character building; even though the lesson plan notes the value of character to build during learning process. The method chosen in leaning process is generally a method formed intodemonstration and role-playing, mostly speech and group discussion.

Permendiknas No. 41 (2010) presents a set of concrete model of student's character supposed to build in learning process which has been analyzed and decided by teachers to be included into syllabus. For instance, student's character for low grade (grade 1 to 3) comprises types of character: discipline, diligence, responsibility, carefulness, cooperation, tolerance, confidence, bravery. While for the high grade (grade 4 to 6) comprises: trustworthiness, respect, diligence, responsibility, courage, integrity, caring, fairness and nationalism.

Thus, the research aims to analyze integrating process of student's character/ value education into science in elementary school.

2. LITERARY REVIEW

(a) Concepts of Character Education

Law No 20 Year 2005 on National Education System Point 2 mentions that national education is based on Pancasila and the 1945 Constitution, which is rooted in religious and cultural values that are relevant and responsive to the demands of the rapidly changing era. In addition, in Chapter II Article 3, it is mentioned that the national education aims to build the character and develop civilisation of a dignified nation in an attempt to educate the people across the nation. That is to improve the quality of students to be faithful and aware of the God as well as to be noble, healthy, knowledgeable, competent, creative, independent, democratic and responsible.

Those education aspirations signify that the materials in education process should align with a set of values or character as the synthesis of cognitive, affective and psychomotor domains. As a matter of fact, the main purpose of national education emphasises the aspect of faith and piety. This suggests that the core

value of moral character building of the nation rooted in religious beliefs. Therefore, all the educational processes should gear towards strengthening of religious values in accordance with belief systems.

Jumsai (2008, as cited in Sardjiyo, 2011) argues that the learning model that based on human values adopted in his institution is proven successful in developing educational goals that do not merely concentrate on intellectual intelligence, but also emotional and spiritual intelligence. Result of implementing character/moral education in his institution indicates a transformation of both the teachers and students. Moreover, the teachers and students are motivated and inspired to hold on to the moral values and to defend them from negative influences arising from inside or outside.

Character education is the process of building and developing moral values in a person. In a similar sense, Mardiatmadja (as cited in Mulyana, 2004: 119) defines character/moral education as beneficial for students in leading them to realize as well as experience moral values and to adopt them to be an integral part in their lives. Character/moral education is not only taught through learning subjects, but it also through the entire education programmes.

(b) Definition of Character

According to Phenix (1964, as cited in Sardjiyo, 2011), an education curriculum should be designed in accordance with the sources of life. In this way, the curriculum can be long-lasting and loaded with essential contents.

Phenix (as cited in Sardjiyo, 2011) divides the meaning of moral values (contextualised values) into categories of meanings, namely symbolic, empiric, aesthetic, ethic, synoetic, and synoptic. The six categories are different in both level and functions. Symbolic is the simplest, whereas synoptic is the meaning that has the broadest scope. Furthermore, Phenix provides in-depth description and gives examples of the aforementioned meanings as the following.

- 1) Symbolic meaning includes language, mathematics and various forms of symbols that originally have no relation to each other (non-discursive), such as body language, rituals and rhythmic patterns. This meaning is expressed in arbitrary symbolic structure with formation rules that are agreed and accepted by society. These symbolic structures are then used as a means to express and relate various other meanings. Without these symbolic meaning, human being will face various difficulties and constraints in communicating and expressing their ideas. Therefore, this meaning is seen as the most fundamental meaning.
- 2) Empirical meaning consists of science of the physical world, biology and humans. This science provides a description of facts, conclusions, formulas and explanations of theories based on observations and experiments on

objects, life, thought or society. Through this meaning, people can test the possibilities of empirical truths, examine evidences, corroborate certain data and support any other analysis.

- 3) Aesthetic meaning comprises various arts such as music, visual arts, motion and literature. This meaning is related to the state of beauty of a perceived object. At a lower level, the nature of the aesthetic meaning is subjective, so that each individual can have different perception of beauty. In the higher level, however, something that possesses aesthetic meaning has true and objective beauty that everyone can acknowledge.
- 4) Synoetic, as stated by Phenix, is the only term that can only be used to represent personal experience, transcendent relationship between a man and God and direct consciousness/awareness. In addition, the term is an analogy to describe the relationship between knowledge and awareness in either inter-personal and transcendental relationships. This personal knowledge is concrete, direct and important.
- 5) Ethics meaning includes moral values that contain a set of obligations a persons is responsible to fulfil. This meaning comes from facts, perceptions or a person's concerns to keep social relations in harmony. Unlike science that is associated with abstract cognitive understanding, arts that expresses aesthetic perception, personal experience that reflects subjective understanding, this morality comprises human behaviour based on freedom, responsibility and prudence.
- 6) Synoptic meaning is a comprehensive and integral meaning. This meaning includes history, religion and philosophy which are integral studies of empiric, aesthetic and synoetic in a coherent unity. History gives an insight on what has happened, religion is related to meanings that are complete and absolute truth, while philosophy concerns with making reflective interpretations on all kinds of meanings.

For that, Phenix states that the teaching of language, mathematics, natural and social sciences, arts, personal relationships, morality, history, religion as well as philosophy are important fields of study in developing human's awareness to the six meanings. This awareness can provide an answer to the education question that is challenged by modernisation of life, which contains destructive values.

3. RESEARCH METHOD

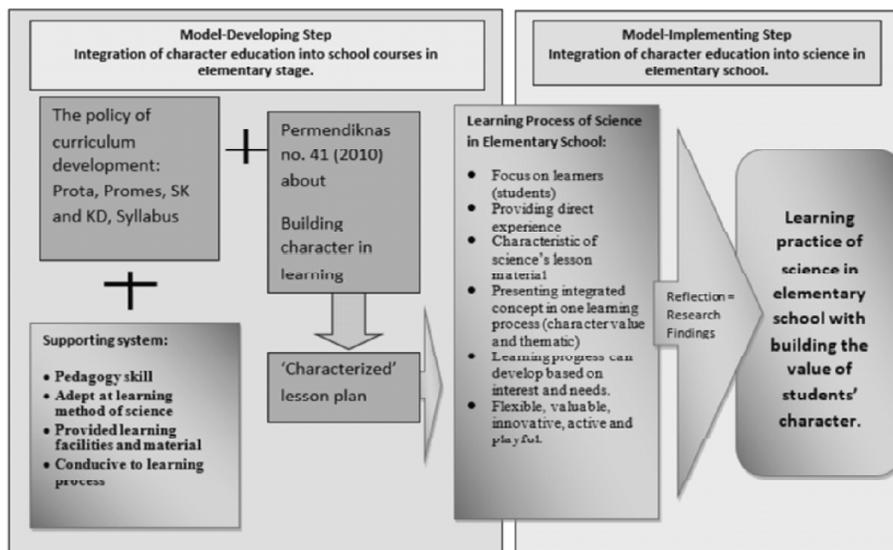
Research Design

In a development phase of the integration of character education model into the curriculum of the elementary school education, there are several stages to be

considered. As stated in the Elementary School Curriculum Development Policy, the action begins by reviewing and identifying elementary school annual and semester programmes, Competency Standards and Basic Competence, as well as syllabus. To create conducive school atmosphere, a supporting system such as teachers' pedagogical competence, subject matter comprehension, as well as mastery of learning method and instructional tool should be reinforced. Government policy through decree of Minister of National Education of the Republic of Indonesia No. 41 Year 2010 on Strengthening Character Traits in Learning improves teachers' skills in developing lesson plan.

Subsequently, the lesson plan is implemented in a science teaching-learning process in elementary level that centres on students, provides students with direct experience and presents an integrated concept in a teaching-learning process (characters and thematic). Moreover, the teachers should stimulates active, interesting and fun learning as well as flexible teaching-learning process that can accommodate students' interests and needs.

In the implementation phase, the research examines teaching-learning process of science in elementary school level that integrates character building point, presented:



Picture 1: Research Design

The research is concluded through evaluative approach related to Stake idea (1975). Data and information are collected through these activities, they are:

- (1) First step of research is equalizing perspectives among teachers and headmaster as respondents of procedure to identify Prota, Promes, SK or KD, Syllabus and determining types of character based on Permendiknas No. 41 (2010) to be applied into Lesson Plan which is further known as Characterized Lesson Plan.
- (2) Concluding observation related to the implementation of Science's learning model that has integrated the types of character, or in other words: observation to implementation of Characterized Lesson Plan
- (3) Identifying the transcendence and problems found in teaching Science by integrating types of character.
- (4) Organizing research instrument that consists of interview and observation guidelines.

Data Collection Technique

Collecting data is concluded through:

- (1) Organizing an observing activity and negotiating in order to determine the time taken for learning implementation and availability of learning tools.
- (2) Recognizing manner and behavior of audiences: teacher and students, during learning process.
- (3) Discussing observation result with the audiences to establish the relevance.
- (4) Preserving good connection to audiences (*rapport*).
- (5) Developing transcript to transcribe a report.

Data Analysis Technique

After all data are collected, the data will be analysed in several processes, i.e., selection, simplification, abstraction and transformation of the field note results. These processes are conducted by means of summarising, theme drawing, data grouping and scrap writing until the end of the research.

4. FINDINGS AND DISCUSSION

Preparation phase

- 1) Head of school and teachers' perception on integration of character points at school.

It is believed that character education of students at schools should be supported by the head of school, teachers and the school components. According to the Grand Design of Character Education of the Ministry of National Education of the

Republic of Indonesia (2010), there are six character points that must be built at elementary school level. The character points comprise honesty, responsibility, intelligence, cleanliness, healthy, caring and creativity. Each school is given the freedom to decide which character points to build and develop for the students from grade 1 to 6. The Grand Design stipulates that at least four characters of the six recommended characters should be fostered. To take a case in point, an elementary school under Yayasan Pendidikan Jayawijaya Tembapapura determines the character points that need to be built and developed are honesty, responsibility, empathy, open-mindedness and integrity (Edumedia, 2013).

With reference to the stipulated character points, all teaching-learning processes at school should always be oriented toward themes that will build and develop the character points of the students.

2) Teacher' competence in selecting and building students' character

The true curriculum developer is teacher. Teacher is the one who can ensure teaching-learning process takes place in balance between two elements in the class: teacher and student. Even though teacher is passive, static and stagnant; the teaching-learning process will remain running, in the sense that all the focus is centred toward the teacher. Therefore, the ideal teaching-learning process is the one involving both teacher and students, with teacher as the facilitator. The government, Ministry of National Education, provide only signs and supporting tools for the school to implement the curriculum that integrate character education. As it

TABLE 1: FORMULATION OF SKL AND VALUE/CHARACTER

<i>No</i>	<i>Formulation of SKL</i>	<i>Value / Character</i>
1	Applying religious teachings based on student's development stage	Trustworthy and responsible
2	Recognizing self-perfection and self-imperfection	Trustworthy
3	Obeying the rules applied in society	Responsible
4	Respecting to other religions, culture, race and socio-economy classaround.	Caring
5	Being logical, critical and creative in using information about surroundings	Cleverand creative
6	Showing capability of think logically, critically and creatively.	Cleverand creative
7	Showing curiosity and realizing potency.	Clever
8	Showing ability to solve problems in daily life.	Clever
9	Showing capability of digging the indication of nature and society.	Caring and clever
10	Showing deep affection of caring to surroundings.	Caring and responsible
11	Showing affection and pride to nation and homeland.	Caring, responsible and integrity
12	Showing capability of making art and local culture.	Creativeand responsible
13	Showing the habit of living healthy, clean, secure and taking advantages of spare time.	Healthy, spotless and responsible

happened, the socialisation of the new curriculum seemed to be sudden and hasty. It is apparent on the performance of teachers in remote areas. The lack of socialisation leads the teachers unready to implement the new curriculum. The irony is that when the teachers start to understand and begin to implement the curriculum, and as they are comfortable with the curriculum, the government, with various reasons, introduces new curriculum.

3) In general, teachers support the integration of character education in the curriculum.

The character education for students at schools, especially in elementary schools, concentrates on 'teacher system' instead of 'subject system'. Hence, the teacher should be able to teach all the subjects in the classroom (except for religious education and sports). The problem happens in schools located in remote areas that are inadequate in terms of number of teachers. Hence, the limited amount of teachers should teach all subjects in more than one class. The positive effect of this system is that the teacher can devote maximum attention to the class he/she is assigned to.

According to Jamal Ma'mur Asmani (2011), with this system, teachers have a number of roles in the teaching-learning process, such as caregiver, role model, mentor, motivator, facilitator and counsellor.

4) Disagreements of the character education among teachers and school components

There are criticisms toward the integration of character education at school. Some teachers stated that the changing of curriculum is inconvenient for them. They added that the point is that the teacher can educate the students and that the parents will be happy. In addition, if teacher applied various methods that will impact negatively on students, the teachers are always to blame. Hence, they suggest that it is better to apply lecture method, because student characters will be built by itself without having to be intervened by teacher. This criticism should be observed positively because everyone has a different point of view in interpreting a phenomenon. Those who criticise may be disappointed with the school policy.

Result of in-depth interviews with those teachers indicates that they have an apathetic nature that leads them rather difficult to change and accept feedbacks. This type of teachers tends to defend their ideas even though they are in contrary with the majority of other teachers.

The assessment of students' character building is conducted at the same time with assessment on their academic performances. Teachers, however, have their own criteria to assess character building, namely, "authentic assessment" (Jamal M Asmani, 2011).

This type of assessment is the process of collecting information about students' development and learning achievement through various techniques. These

techniques are able to reveal, prove or demonstrate appropriately that the learning objectives have been completed and achieved by students.

The aims of authentic assessment are to assess individual capacity through specific tasks, determine learning needs, assist and encourage students to keep learning, assist and encourage teachers to keep improving their teaching, determine learning strategies, as well as enhance institutional accountability and improve the quality of the overall education.

Authentic assessment is carried out in either test or non-test form. The test can be conducted orally, in writing and in practice, while the non-test assessment can be undertaken with attitude scales, checklists, questionnaires, case studies and portfolios.

In teaching-learning process, this series of assessments should be done by the teacher. Generally, all types of assessments have its own weaknesses and advantages.

(a) Implementation Phase

The results of observation of learning in the class in detail are put forward in the following paragraphs.

Grade 1: Related to research findings which appear in curricular structure of 2013 for social and science studies, it is considered to have not been provided to lower grade (grade 1 to 3) due to be a source of competency but not to be knowledge disciplines in building scientist's manner and concern to social interaction; learning materials in social and science studies are used for object of study. The allocation of time is 35 minutes that is weekly differed based on class grade, in which: grade 1, in a week has 30 times (of 35 minutes class); grade 2 has 32 times; grade 3 has 34 times; and grade 4 to 6 have 36 times.

The arranged position of student in classroom and a number of classrooms to achieve learning comforts are found deficient. In fact, some of students are seen facing back of the teacher during learning process. According to regulatory technical guidelines with Ministry of Education and Culture (Mendiknas), Ministry of State Apparatus' Empowerment and Bureaucracy Reform (Menpan), Ministry of Home Affairs (Mendagri), Ministry of Finance (Menkeu) and Ministry of Religious Affairs (Menag) in 2011.

In addition, the character promotion of grade 1 students has occurred in a form of student's participation. A student participates by showing numbers and words available in front of the class. In other words, student's character of "courage" is promoted based on *Aku Ingin Sukses* team establishment.

Grade 2: Character to build. With a theme of harmonious living, there are a number of characters that can be promoted in learning process, although the approach is not by means of science study based on research references.

The approach proposed by teachers potentially emerges various maximed activities. However, those activities are able to emerge through discussion and question-answer method.

While characters proposed to develop in lesson plan are confidence, trustworthy and well-mannered. Although teachers infrequently promote those three characters, researchers claim that teachers are believed to have successfully promoted through various methods applied in learning process.

Grade 3: The findings suggest that the School-based curriculum (KTSP), which is loaded with competences to achieve and the application of core learning by using exploration, elaboration and confirmation approaches, is effective if the teacher has an in-depth understanding.

In the teaching-learning process, character building has not yet reinforced even though the teachers actually have the opportunities and materials do it. Some of the factors are that the teacher does not deeply understand how to integrate character education into the subjects, the teacher already knows but has difficulty in strengthening it, the teacher is not yet accustomed to integrating character education into subjects, or the teachers are pessimistic and apathetic towards the development of student characters through instructional tools.

Grade 4: Analysis of the findings shows that teachers are not passionate in carrying out the teaching-learning process even though the topic is interesting and challenging for the students. Some of the factors are that the teachers do not master the subject matter, do not understand the meaning of curriculum development, do not execute their lesson plan correctly or even do not write a clear lesson plan, do not prepare learning aids, do not do evaluation, do not comprehend variety of models or methods to engage more students, do not utilise resources and media learning, etc.

If the teacher is not as described above, the teaching-learning process will be interesting since the topic of discussion concern on students' daily activities such days as conserving energy, utilising natural energy, saving energy for future generations and understanding the role of energy in daily life.

If the teachers were apathetic, development of character points as stated in the literary review of this research will fail to be implemented.

Grade 5: The findings indicate that some teachers are nervous in executing teaching-learning process in the classroom. This may be because the teacher did not make lesson plan and because they knew that they were being observed. However, some teachers were able to overcome this problem by assigning the students into groups and making a demonstration, for example on formation changes of objects from solid into liquid examined by students. Later, the students make a presentation about their observation. Another finding shows that the instrument of

student activity during the observation contains steps in doing the demonstration. However, there is no demonstration method mentioned in the lesson plan.

Other key factors to support the teacher's success is making a detailed lesson plan that includes character building plans and props that can support creative teaching-learning. This is in line with Jerry Wennstrom (2005) who states that the creative teaching-learning process is an exploration format that is unique. Creative teaching-learning process is a specific format linked towards real-life experience. This process is an act of continuous discovery and deep as well as passionate excavations to gain new perspective and experience (<http://www.handsofalchemy.com>)

Character building can be strengthened by teachers, for example when the students present results of their observation in groups. The character point of honesty can be developed since the presentation is delivered from the group observations. Furthermore, a character point of discipline can be strengthened with implementation of rules in classroom management, while a character point of intelligence is fostered as the students discuss and answer questions from teacher or other groups.

Grade 6: From analysis of the research findings related to curriculum, lesson plan, discussion topics and time allocations, Yapis Pembangunan V Wamena elementary school implements two curricula (Curriculum 2013 and 2006/KTSP curriculum). The curriculum adopted by the school is not a major subject. Rather, this research focuses more on the implementation of the curriculum whether it is referring to 'learning' rather than 'teaching' activities.

If the curriculum refers to 'teaching', the focus is on teacher-oriented activities. The teacher will dominate the class activities, which will lead the students to be a passive entity who only listen quietly to the teacher. Meanwhile, if the curriculum emphasises on 'learning', the activities will likely be oriented towards students' activities. This is in line with Sunhaji (2009), who postulates that learning is an activity to transform learning materials to the students' minds. In this context, teachers act as facilitator and translators of the materials for the students. Therefore, teachers should select various strategies so that the students can comprehend the materials more effectively.

With reference to Sunhaji's opinion about teacher's efforts in selecting and determining strategies, teachers need to be able to determine the most appropriate learning method. Some education experts call this method differently. For example Winkel calls it didactic procedure, Abdul Gafur names it instructional, James K Phohan calls it transactional, Mudhofir names it approach (Jamal M. Asmani, 2011). Materials and methods are two sides of a coin that cannot be separated. Material without methods is perceived as less effective and the method without

material will feel empty, because nothing to process and develop. Both are essential to learn and practice so that the learning will be effective and have high quality.

In addition, the findings indicate that teachers do not include what method to use in the lesson plan. The reasons are varied, some of the possible reasons are that the teacher forgot to include or they are confused to write it even though they understand the application of active student learning approach, i.e., exploration elaboration and confirmation. This is proven by the fact that some teachers bring real props about the types of plants. They also apply the aforementioned active student learning approach.

Based on the Grand Design of Character Education of the Ministry of National Education of the Republic of Indonesia (2010, as cited in Sarjiyo, 2011), character education in Indonesia has been a national scale, which is often called character education in macro context, while character education for students is usually called character education in micro context, which is in the context of holistic education unit. The educational unit, as a leading sector, seeks to utilise and empower all existing learning units to continuously initiate, improve, strengthen and refine the character education process in education units.

In the micro context, character education is divided into four pillars, namely, learning activities in the classroom, daily activities in the form of school culture, co-curricular and extracurricular activities, as well as daily activities at home and in the community.

5. CONCLUSION AND RECOMMENDATION

Conclusion

In general, the research subject lacks in developing (promoting) and building students' character through integration of character education into science study due to science is only present in certain grades based on Curriculum 2013 and 2006. For teaching preparation, teachers are handled by lesson plan (RPP) and they, in constructing lesson plan, note the value/character to be promoted in learning process.

Learning implementation by choosing method and media that is sufficient for character building are inconspicuous. In lesson plan, teachers did not put the method and media but the implementation shows one of teachers who apply a method using ice cube demonstration. It occurs due to a lack of preparation. It concludes that the implementation of integrating character education requires practice and determination for teacher to develop student's character.

Character education through integration within studies (first pillar) has achieved a description of findings' explanation and analysis. While good harmony activity implemented in Yapis Pembangunan V Waena Elementary School becomes school

culture (second pillar). The circle of education units is maintained in order to allow physical and socio-cultural unit persistently establish daily activities in education units that reflect the embodiment of value/character.

Recommendation

School should conduct a program in order to define the main character as reference to all teachers in developing students' character. Besides, school is supposed to organize both workshop and simulation of character education's practice and to track the possibility of this implementation to apply into each class.

Bibliography

- Azra, Azzumardi, (2002). *Paradigma Baru Pendidikan Nasional Rekonstruksi dan Demokratisasi*, Jakarta, Kompas
- Bastian, Aulia Reza, (2002). *Reformasi Pendidikan. Langkah-langkah Pembaharuan dan Pemberdayaan Pendidikan Dalam Rangka Desentralisasi Pendidikan di Indonesia*, Yogyakarta, Lappera Pustaka utama.
- Clark, Kate Stevenson, (2009). *Character Education :Handling Peer Pressure*, New York; Chelsea House Publishing.
- Depdiknas (2006). *Kurikulum Tingkat Satuan Pendidikan*. Jakarta: Balibang Depdikbud.
- Jamal M Asmani (2011). *Tujuh Tip Aplikasi Pakem*, Yogyakarta, Diva Press.
- Kemdiknas (2010). *Grand Design Pendidikan Karakter*, Jakarta, Dikti.
- Lickona, Thomas, (1987). "Character Development in the Family" Dalam Ryan, K & Mclean, G.F. *Character Development in Schools and Beyond*. New York: Preager.
- Lickona, Thomas (1992). *Educating for Character : How Our Schools Can Teach Respect and Responsibility*. New York: Bantam Books.
- McCollum, Sean, (2009). *Character Education: Managing Conflict Resolution*, New York : Chelsea House Publishing.
- Megawangi, Ratna, (2003). *Pendidikan Karakter untuk Membangun Masyarakat Madani*, IPPK Indonesia Heritage Foundation.
- _____, (2007). *Pendidikan Karakter*, Cimanggis, Indonesia Heritage Foundation.
- Oetama, Jacob. (2006). Peran Media, Membangun Karakter Bangsa, *Orden, MT (2001), Character education: A Study of Elementary School Principals' Perceptions Among School Districts within Los Angeles Country with Populations of 5000 to 25000*. Doctoral dissertation, Ann Arbor, MI : Bell & Howell.
- Sardjiyo, (2011). *Kajian pendidikan nilai sebagai dukungan akademik terhadap Pendidikan Karakter (Studi kasus di UPI Bandung)*, Dissertation, Bandung, Unpublished.
- Sunhaji, (2009). *Strategi Pembelajaran, Konsep Dasar, Metode, dan Aplikasi dalam Proses Belajar Mengajar*, Yogyakarta, Grafindo Litera Media.
- Zaim, Elmubarok, (2008). *Membumikan Pendidikan Nilai, Mengumpulkan yang terserak, Menyambung yang terputus, dan Menyatukan yang tercerai*, Bandung, Alfabeta.

Website sources

<http://www.forum-rektor.org/opini.php?hal=36=21>, Retrieved 19 March 2008)

<http://www.handsfalchemistry.com>, Retrieved 4 December 2014

<http://www.akuingin sukses.blogspot.com>, Retrieved 4 December 2014

<https://akhmadsudrajar.wordpress.com>, Retrieved 4 December 2014

Article sources

Edumedia, *Majalah Komunitas Sekolah Yayasan Pendidikan Jayawijaya Tembapura*/Freport,
Edition : September – December 2014.