

TRINGO TAMANSISWA (NGERTI, NGRASA, NGLAKONI): THE DEVELOPMENT OF SUBJECT SPECIFIC PEDAGOGY WITH VALUE CLARIFICATION-INQUIRY LEARNING

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ABSTRACT

Inquiry learning based on clarifying values is one of the innovative education that cannot separate from the reality of daily life, which involves students actively and internalizing values in students. This study aims to describe the development of subject-specific pedagogy with value clarification-based learning to develop tringo. Through this learning, students are invited to understand, experience, and manage so that learning becomes more meaningful. Teachers should prioritize not only cognitively but also psychomotor and affective. So, the value of the investment is carried out in an integrated and consistent manner in science learning to form a generation that is not only smart but also personality or character. The research method used is the modification of the R&D model of Plomp and Ely, namely: 1) formulating needs; 2) designing; 3) data preparation; 4) preparation and writing; 5) integration and evaluation; 6) making the initial master; and 7) master. Data collection techniques were carried out using observation techniques, interview techniques, documentation techniques, and questionnaire techniques. The results of this study are the development of the concept of 'tringo' which internalized through a value clarification approach. And developing an attitude of tolerance, the emergence of self-discipline, having a sense of responsibility, developing a work ethic, having a sense of openness, being able to think positively, developing self-potential, cooperating, respect each other and foster honesty. value clarification learning can use as one of the innovation models in meaningful learning.

Keywords: Subject Specific Pedagogy, Value Clarification, Inquiry, and Tringo Tamansiswa.

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Introduction

The very rapid development of science and technology in this millennium era has increasingly increased the complexity of the community so that it is needed awareness of the importance of morals, values, ethics, and its benefits for the community (Chowdury, 2016). Often, the value of education is charged to the subjects of Religion and also the teaching of Pancasila Citizenship. It causes the application of value in learning to be partial and as if other matters have no role in the internalization of benefits to students. In general, the assessment of the teacher's learning is also only on the cognitive aspects alone to rule out affective and psychomotor aspects. The acquisition of value as a nurturant effect as a "hidden curriculum" also has not received full attention in learning. The value appears as an unplanned experience, and often results are not as expected and sometimes not expected for students to be studied (Fraenkel, 2012).

Lessons learned on formal, informal and non-formal education should be oriented to values education to shape the character and life of a potential nation and a dignified and civilized nation based on the noble values of Indonesian culture (value-based and claims), faith, piety, noble, knowledgeable, capable, creative, independent, democratic and responsible (Fitriani & Sundawa, 2016). Cultivation of these values can be done in an integrated and consistent so that it can form a generation that is not only smart but also personality or character. Students should be learning in a variety of choices in a comprehensive way that helps students develop their intellectual and emotional. Collinson states that they mainly use collective inquiry to foster communication and encourage values and attitudes conducive to intellectual

freedom (Collinsons, 2012) Therefore, teachers can participate in value education to foster student character.

"One-way" and passive learning both inside and outside the classroom have resulted in a poor meaningful learning experience in the process of character building and behavior of students (Chotimah, 2011). It is compounded by the existence of Student Worksheets in schools that do not support students in developing the concepts of knowledge being learned. Student Worksheets used by students in schools are made by publishers that usually contain a summary of material and questions related to the material (Sari, Fitrihidajati & Kuntjoro, 2013). LKS is only used to answer questions and rarely provide opportunities for students to develop process skills, students' critical thinking skills and scientific attitude as well as student character.

Education Unit Level Curriculum or KTSP curriculum changes into the curriculum of 2013, both revised edition 2016 and 2017 resulted in teachers adapt again to learn to compose the lesson plan by the suggestion using a scientific approach. It makes the teacher focus on preparing a suitable format of subject-specific pedagogy that has not had time to think about integrating the development of thinking skills and the inculcation of values. In addition, teachers still find it challenging to explore and implement life values in learning.

Zuriah states that to increase the students' success to form mental, moral, spiritual, personal, and social by the application of character can be used various approaches by choosing the best approach and interrelated with each other to generate optimal results (synergistic) (Zuriah, 2011). These approaches include 1) inclusion approach, cognitive moral development approach, value analysis

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approach, value clarification approach, and learning approach to doing (action learning approach). Therefore, to overcome the above problems, then this research is expected to be a model for teachers to be able to arrange a science lesson plan integrated value clarification within the inquiry-based learning approach.

Value clarification within inquiry-based learning approach is the combination of two methods, as an innovative of the learning approach in science and the reality of everyday life, involving students actively and internalizing the values in students. Through inquiry, students will gain the knowledge that makes it easier for the students to test, modify, alter their original ideas and adopt new ideas, so they can be stored longer and easier to apply in the students' efforts to construct their knowledge (Ariani, Saptaningrum, & Siswanto, 2016). Ki Hadjar Dewantara introduces the concept of education called the 'tringo' concept. Basically, the idea invites students to increase their comprehension of what they learn or understand (ngerti), to sharpen their sense to improve understanding of what they know or feel (ngrasa) and also to improve the ability to carry out what they have learned or act (nglakoni).

In principle, the current learning objectives are educational concepts that Ki Hajar Dewantara has taught from the very beginning. Learning outcomes to be achieved are cognitive (ngerti), affective (ngrasa), and psychomotor (nglakoni). The cognitive process (ngerti) is arranged in stages, including remembering, understanding, wearing, analyzing, judging, and creating. The dimensions of knowledge are facts, concepts, procedures, and metacognition. Affective process (ngrasa) is a process to achieve the learning objectives associated with

feelings, emotions, value systems, and attitude that shows acceptance and rejection of something.

Yamin adds a written learning objective should contain elements: 1) description of observable behavior; 2) conditions that support the existence of a certain behavior; and 3) the criteria used to determine or assess whether the learning objectives have been achieved (Yamin, 2008). The development of value-clarification based RPP will help teachers to internalize the acquisition of affective values in students so that 'tringo' can be applied in science learning. Thus, through science learning based on value clarification will help students in mastering the concept of material (ngerti), students can feel / perceive (ngrasa) to apply the ideas and values obtained in everyday life with good (nglakoni). In the process value clarification serves to: a) measure and know the level of student awareness about a value; b) fostering students' awareness of their values, both positive and negative, to be encouraged for improvement or improvement; c) instilling values to students in a rational way and accepted by the student as his personal property (Zakiyah, Qiqi & Rusdiana, 2014). Amien state that teaching with a value clarification strategy has seven advantages for students, such as 1) expected to make a positive choice when in a difficult position facing ethical or moral problems and so on, 2) see alternatives ideas from the problem, 3) considering alternatives and their consequences with sincerity, 4) considering what it needs to do with the problem area, 5) strengthen the choice; 6) treats and livelihoods its decisions, and 7) repeatedly tests the ways and behaviors of its life (Amien, 1988). Therefore, through science, learning based on value clarification can invite and assist students in obtaining a value that is considered useful in dealing with problems through

the process of analyzing the values that exist in students themselves.

Research Method

This type of research is development research. This study aims to produce, develop, and validate educational products in the form of lesson plan-based inquiry-value clarification to develop 'tringo'. This product development model uses the Plomp, T and Ely, D.P (2008) models in Setyosari (Setyosari, 2015), which consist of 1) formulating the need; 2) designing; 3) data preparation; 4) preparation and writing; 5) integration and evaluation; 6) early master making; and 7) master. The development steps in this research in Figure 1.

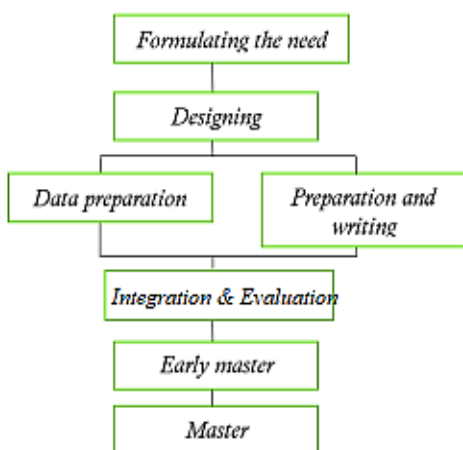


Figure 1. Development Steps

First, formulating the need to analyze problems and needs in science lessons in junior high schools, identifying information, analyzing information, reviewing theories, defining/limiting problems, and planning for follow-up activities. In this first stage, we also explored student characteristics and teacher experience in developing values in learning science. The second stage, designing the solution under the need assessment. In this case, it is focused on

the development of innovative learning approaches to developing 'tringo'. This stage consists of the drafting stage of drafting and preparation of data collection instruments. Third, the quality of design will be developed by experts and practitioners. Suggestions and criticism from experts and practitioners become the basis for the improvement of developed products. Subsequently, revised products are tested to test their effectiveness in learning after the test phase will be obtained the final product as a result of the Master stage.

In this study, the steps that can be implemented in the integration and evaluation phase of experts and practitioners. The test phase cannot be done because the material developed into a lesson plan has been learned in the classroom. The quality of learning set developed is known from the test of validity. A validity test is conducted to find out whether the learning set developed by the researcher has been by the characteristic of value clarification with the inquiry-based model and the 'tringo' development indicator. Meanwhile, the effectiveness test is conducted to find out the extent to which the resulting learning tools can improve the ability of 'tringo' that includes understanding (ngerti), feel (ngrasa), and perform (nglakoni) students. Validity test using validation questionnaire of lesson plan, Student Worksheet and research instrument filled by 2 science lecturers qualified academic S2 and 1 science teacher junior high school. Four steps do the data analysis technique of the test result: (1) perform the recapitulation of assessment data of the learning set into the table covering aspects, indicators, and validity values for each validator, (2) determine the average value of assessment result from all validators for each indicator, (3) determine the average values for each aspect, and (4) determine

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the validation score, ie the total mean value of the mean values for all aspects. Furthermore, the results obtained will be compared against the validity criteria and learning tools, as in Table 1.

Table 1. Assessment Criteria Validation Results

Interval	Criteria of Validity	Note
$1 \leq Va < 2$	Not Valid	Total Revision
$2 \leq Va < 3$	Less Valid	Partial Revision
$3 \leq Va < 4$	Valid	Little Revision
$Va = 4$	Very Valid	No Revision

Note: Va is the value of determining the validity level of the learning set.

Result and Discussion

Based on the results of interviews with some science teachers obtained information that the planting of values in science learning has been planted only not yet structured systematically so often, teachers forget to emphasize the implantation of value to students. There are also science teachers who think that the value of instilling is the responsibility of religious education and civic education. Teachers have difficulty in applying character because, at the time of science learning. The teacher feels different student characters and low-achieving students. The teacher thinks that the seventh-grade students prefer lessons that teach skills and do things. Grade VII students in the school also have character if invited to think rather tricky. Therefore, teachers in the school generally use the "free" model with the perception of conditioned children but good morality, although the learning achievement is still low.

The result of learning observation indicates that the learning activity of

science of junior high school has been done with experimental activities. However, there is still a tendency of teacher domination in terms of scientific reasoning and inference. Surely it already reflects active student learning, only not yet optimal, especially when scientific reasoning activities.

Based on the study of several educational references, obtained information that Ki Hajar Dewantara provides direction that against all the teachings and ideals of life adopted required an understanding, awareness, and sincerity in implementing it. Understanding or knowing is not enough if not feel, realize, and will not mean if not apply it. Feeling alone without the knowledge and not exercising or running without awareness and understanding will not bring results. Based on the results of an analysis of research data about the implementation of value-based 'tringo' clarification conducted through the stages of knowledge (cognitive), feelings (affective), and implementation (acting), it shows the existence of harmony between understanding implemented through cognitive moral approach, ngrasa through planting approach of value and nglakoni with value clarification approach. Students can understand the values of life through the discussion of thought and realize the levels of value that need to be known or may have been known through understanding the value or mention of why the value needs to be understood. Based on the results of an analysis of research data about the implementation of value-based 'tringo' clarification conducted through the stages of knowledge (cognitive), feelings (affective), and implementation (psychomotor), it shows the existence of harmony between understanding implemented through cognitive moral approach, ngrasa through planting approach of value and nglakoni with

value clarification approach. Students can understand the benefits of life through the discussion of thought and realize the levels of value that need to be known or may have been known through understanding the value or mention of why the value needs to be understood. Through the process of learning, the introduction of life values will provide the facilitation gained in the behavior, especially in the learning process. Students will master the expected competencies and can also be designed so that students do or recognize, realize, and care and internalize the values of character and make behavior.

The thinking process cannot take place without any feelings process. Both cannot be separated so that the better the students' sense of the character, the higher the curiosity to explore the manners further. In return, students are increasingly mastering the character and the better also in appreciating and assessing the value of behaviors. The development of practices through 'tringo' is the basis of a focused acceptance of morale knowing that will fill the cognitive sphere such as moral awareness, knowledge of moral values, perspective, moral logic (moral rising), decision making, and self-knowledge.

They need to strengthen the emotional aspects (moral feeling) so that students have good character and character. In addition, the importance of habits or habituation to do good, so that has a high moral awareness. People who do honest because they feel themselves as if seen by others but can also because of sincerity to appreciate self-honesty. Therefore, the character needs the aspect of feelings or affective domains. This component will lead to a wider good.

Based on the results of interviews, observation, and reference review, it is essential to realize a lesson with

innovative models of inquiry containing value clarification to develop 'tringo'. There need to be examples of learning tools that support the implementation of innovative learning models in the form of the lesson plan and Science Student Worksheet of junior high school.

The design of learning tools in the form of the lesson plan and the student worksheet includes an inquiry model with the following steps: orientation to the problem, formulating problems, formulating hypotheses, collecting data, analyzing data, drawing conclusions, and developing new questions. As for the benefits of value-clarification include belief/religion, attitude, opinions/views, feelings or intuition and moral. Students are oriented to have values such as always happy, confident, passionate, positive in perception and reaction, consequent/responsible, not easily emotional, and have a particular purpose in life. The value of value clarification depends on the activities of the students and the topic of science learning. The value clarification is written explicitly in the lesson plan so that the teacher can interpret the learning objectives that are rated value clarification so that real learning implementation can be optimal for planting the expected values.

Based on the analysis of competence and essential material, the main subject matter of science that is potential to be learned by applying the inquiry model of 'tringo'-oriented value clarification is "Environmental Pollution." In this case, the researcher chose the subject of "Water Pollution." The examples of the lesson plan are to display design results in the learning scenario as figures 2 and 3.

Tabapan	Kegiatan Pembelajaran	Alokasi Waktu
Pendahuluan	a. Menyiapkan peserta didik secara psikis dan fisik untuk mengikuti proses pembelajaran;	10 menit
	b. Memberi motivasi belajar peserta didik secara kontekstual sesuai manfaat dan aplikasi materi ajar dalam kehidupan sehari-hari dengan memberikan orientasi masalah pencemaran air contoh berupa berita tentang fakta-fakta pencemaran air beserta sebab dan dampaknya (mengamati, Negeri)	
	c. Menjelaskan tujuan pembelajaran atau kompetensi dasar yang akan dicapai; dan	
	d. menyampaikan cakupan materi dan penjelasan uraian kegiatan sesuai silabus.	
Kegiatan inti	a. Guru membentuk siswa ke dalam kelompok heterogen (collaborative).	60 menit
	b. Guru membagikan LKPD 1 "Pencemaran Air dan menjelaskan tugas yang akan dilaksanakan	
	c. Guru meminta kelompok untuk mengkaji artikel berjudul "Berbagai Masalah Kesehatan Akibat Pencemaran Air di Indonesia" dan "Darat Sungai di Indonesia", "Sampah popok bayi membuat ikan mandul", Kandungan Timbal dalam Air beserta Dampaknya (literasi, Negeri)	
	d. Guru memberikan arahan kepada siswa untuk merumuskan masalah berdasarkan wacana dalam artikel tersebut. Contoh pertanyaan yang diharapkan: (menanya, menalar) 1. Apakah air yang tercemar berpengaruh terhadap kehidupan ikan? 2. Apa saja bahan yang mencemari air? 3. Bagaimana Upaya untuk mengatasi pencemaran air tersebut? (critical thinking, Negeri)	
	e. Guru meminta siswa untuk berhipotesis terkait rumusan (menalar, critical thinking)	
	f. Guru memberikan kesempatan kepada siswa untuk berdiskusi mengumpulkan data (Collaborative Negeri)	
	g. Guru memberikan kesempatan kepada kelompok untuk melakukan diskusi untuk menganalisis data dan kaitan referensi dalam menyusun pembahasan LKPD (mengamati dan menalar)	
	h. Guru berkeliling dan membimbing masing-masing kelompok agar siswa dapat berdiskusi untuk menjawab permasalahan yang dirumuskan (Menanya dan Menalar)	

Figure 2. Scenario of RPP in Indonesian language version

Step	Learning Activity	Time (minutes)
Preliminary	a. Preparing students psychically and physically to follow the learning process;	10
	b. Giving motivation learners learn contextually according to the benefits and application of teaching materials in everyday life, by giving the orientation of the problem of water pollution example in the form of news about the facts of water pollution and its causes and impact (observe, Negeri)	
	c. Describing the learning objectives or basic competencies to be achieved; and	
	d. Conveying material coverage and explanation of activity description according to syllabus.	
Core Activities	a. Teachers form students into heterogeneous groups (collaborative).	60
	b. Teacher distributes LKPD 1 "Water Pollution" and explains the task to be performed	
	c. The teacher asked the group to review the article entitled "Various Health Problems Due to Water Pollution in Indonesia" and "Emergency River in Indonesia", "Waste diapers make infant fish barren", Lead in Water and Impact" (literasi, Negeri)	
	d. Teachers provide direction to students to formulate problems based on the discourse in the article. example of expected question: (asks, reasoning) 1. Does contaminated water affect fish life? 2. What are the substances that contaminate water? 3. How is the effort to overcome the water pollution?" (critical thinking, Negeri)	
	e. The teacher asks the students to formulate the hypothesize (reasoning)	
	f. Teachers provide opportunities for students to discuss and collect data (Collaborative Negeri)	
	g. The teacher gives the group the opportunity to conduct discussions to analyze the data and reference studies in compiling the discussion of LKPD (observing and reasoning)	
	h. Teacher walks around and guides each group so that students can discuss to answer the formulated problem (Asking and Associating)	

Figure 3. The Steps of Learning in Lesson Plan

The data obtained from the results of the validity test consisted of data from the test results of the prevalence and lesson plan, the test results of the prevalence, and the research lesson plan as the initial prototype. Data analysis of preliminary test results and validation prototypes are presented in Table 2.

Table 2. The result of prototype validation by the validator

Kind of Prototype	Validator Mean Validation		Note Criteria		
	I	II			
Lesson Plan	3.80	3.85	3.83	Valid	Little Revision
Student Worksheet	3.74	3.11	3.44	Valid	Little Revision

Table 2 shows that, based on expert judgment, the learning set with value clarification within the inquiry-based learning approach is valid, with little revision — the average value of 3.83 for the lesson plan, and 3.44 for student worksheets. The changes based on suggestions and input validator to improve the lesson plan that inquiry phase must be explicit, write the scope of the material systematically and attached in detail, and the writing of learning objectives is equippe with the appropriate degree.

The revision of the RPP learning tool is improving the objective formula by listing learning activities is not the learning model, systematizing the steps in the learning scenario to match the inquiry model syntax, asserting the value of clarification and 'tringo' value. Based on the practitioner's suggestion. In addition, it is improving the clarity in guiding the Student worksheet to complement student worksheets for project activities on the effect of pollutants on aquatic biota and its solution with consideration of the characteristics of students who are not

accustomed to conducting investigations through group project activities.

Hansen states that teachers can influence their students' values by learning methods and subject matter (Silay, 2013). Clement says values that can be identified in science, and then in science education (Clément, 2013). Value-clarification within the inquiry approach to developing 'tringo' can be tested in a limited and wide-ranging way to know its effectiveness and curiosity in science learning and for researchers to further develop tools for another potential of science topics with this innovative approach.

Conclusion

In summary, Inquiry-based inquiry learning tools that contain clarification of values (a product developed) are valid by experts and practitioners with a slight revision in the specific syntactic section and writing the goals and emphasis on the 'tringo' orientation. Value clarification-based learning should use a variation in learning so students can practice actively in solving problems, find out for themselves the learning concepts, and apply existing values to internalize in themselves.

References

- Amien, M. (1988). Buku pedoman laboratorium dan petunjuk praktikum pendidikan IPA umum (general science) untuk lembaga pendidikan tenaga kependidikan. Yogyakarta: IKIP Yogyakarta.
- Ariani, D., Saptaningrum, E., & Siswanto, J. (2016). Instrumen penilaian keterampilan kerja ilmiah pada pembelajaran fisika berbasis inquiry. *Jurnal Penelitian Pembelajaran*

Fisika, 7(2), 109–117. Retrieved from <http://journal.upgris.ac.id/index.php/JP2F>

- Chotimah, U. (2011). Active Learning – Based Civics Learning Model: Some Alternatives. In *International Seminar – Educational Comparative in Curriculum for Active Learning Between Indonesia and Malaysia* (pp. 1–12). Bandung.
- Chowdury, M. 2016. Emphasizing morals, values, ethics, and character education in science education and science teaching. *The Malaysian Online Journal of Educational Science*, 4 (2). p. 1-16.
- Clément, P., (2013). Values in Science and in Science Education. In Abrougui M. et al., *Science & Technology Education for Development, Citizenship and Social Justice (IOSTE-14)*, *Journal INEDP*, 1, (1)
- Collinsons, V. (2012). Exemplary Teachers: Teaching for Intellectual Freedom. *Pedagogies: An International Journal*, 7 (2). <http://doi.org/10.1080/1554480X.2012.655885>.
- Fraenkel, J. R. (2012). Bagaimana Mengajar tentang Sebuah Pendekatan Analitik Nilai-Nilai. *Laboratorium. Pendidikan Pancasila dan Kewarganegaraan dan Unit Mikro Teaching FKIP Universitas Lambung Mangkurat*.
- Fitriani, V., & Sundawa, D. (2016). Penerapan Model VCT dengan Menggunakan Media Cerita Daerah dalam Pembelajaran Pendidikan Kewarganegaraan Untuk Meningkatkan Karakter Peserta

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Didik. JPIS, Jurnal Pendidikan Ilmu Sosial, Vol. 25, No. 1, Edisi Juni 2016 24, 25(1), 41–57.

Sari, I. S., Fitrihidajati, H., & Kuntjoro, S. (2013). Pengembangan Lembar Kegiatan Siswa (LKS) Berorientasi Model Learning Cycle 5e pada Materi Ekosistem. *Bioedukasi Jurnal Pendidikan Biologi*, 2(1), 99–102. Retrieved from <http://ejournal.unesa.ac.id/index.php/bioedu%0APENGEMBANGAN>.

Setyosari, P. (2015). *Metode Penelitian Pendidikan dan Pengembangan Edisi Keempat*. Jakarta: Prenadamedia Group.

Silay, N. (2013). A Survey of Values Education and Its Connection with Character Education. *Academic Journal of Interdisciplinary Studies*, 2 (3), DOI: 10.5901/ajis.2013.v2n3p131

Yamin, M. (2008). *Paradigma Pendidikan Konstruktivistik*. Jakarta: Gaung Persada Press.

Zakiah, Qiqi, Y. & Rusdiana, A. (2014). *Pendidikan nilai*. Bandung: CV. Pustaka Setia.

Zuriah, N. (2011). *Pendidikan Moral Dan Budi Pekerti Dalam Perspektif Perubahan*. Jakarta: Bumi Aksara.