

# Developing Education for Sustainable Development-Oriented-Character Learning Model for Indonesian Golden Generation

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## Abstract

This study aimed at developing and investigating the appropriateness of education-oriented-character learning model to develop sustainability to build 2045 Indonesian golden generation. The development model was adapted from Dick and Carey Model with product trial subject to XI graders of some schools in West Nusa Tenggara. The model of character learning was implemented into Biology, Chemistry, and Physics Subjects through learning instrument which had been developed with the syntaxes of character learning model. The indicator of character assessment was adapted from character education indicators which had been combined with 21st Century Skill. The data collection instruments included self assessment and observation sheets. The findings showed that: (1) the developed character learning model had syntaxes of collect, discuss, analyze, communicate, and apply; the problem and the solution was focused on themes of environment, society, and economy; (2) education for sustainable development-oriented-character learning model which had been developed was worth applying with very good category.

**Keywords:** character learning model, education for sustainable development, Indonesian golden generation

## 1. Introduction

The development of science, technology, and arts demands human resources to be able to compete globally in this 21st Century. This condition challenges government, academics, and the education stakeholders to produce qualified human resources in the future and also professional generation with good character and can carry the character building goal of Indonesian golden generation 2045. This is because in 2045 Indonesia will get demographic dividend which is in the form of the largest productive age population (15-64 years old) in history. If this opportunity is managed and empowered well, this Indonesian productive population can be the most valuable demographic dividend. On the contrary, if it is not managed well, this can be demographic disaster that may impact the national stability (Dongoran, 2014). Therefore, the role of education through both innovation and education revolution is very important to prepare the golden generation.

Golden generation must have competency, good character, religious values, good behaviors, thinking concept, knowledge, forward thinking, and must be well civilized in order to evoke responsibility and real contribution to make healthy, peaceful, dignified and sustainable environment and life (Agus, 2016). The values that are expected to build golden generation character are religiosity, honesty, tolerance to diversity, discipline, hard work, creativity, independence, democracy, curiosity, nationalism spirit, love to motherland, achievement, being communicative, peace, love of reading, caring for the environment, caring with society, and responsibility (Fahmy et al., 2015; Manullang, 2013).

The golden generation character also covers the skill of 21st Century. Kereluik et al. (2013) state three competencies of 21st Century that the professional must have: foundational knowledge (to know), meta knowledge (to act) dan humanistic knowledge (to value). These three basic competencies are elaborated and some of them are main basic knowledge, digital literation and information, multidiscipline knowledge, critical thinking skill and problem solving, communication and collaboration skill, creativity and innovation, life skill,

work skill, leadership, cultural competence, ethical knowledge, and emotional intelligence.

Table 1. The values being developed

CHARACTER EDUCATION	ANTI CORRUPTION EDUCATION
RELIGIOSITY	
HONESTY	
TOLERANCE	
DISCIPLINE	
HARD WORK	HONEST
CREATIVITY'	DISCIPLINE
INDEPENDENCE	RESPONSIBLE
DEMOCRACY	WORK HARD
CORIOUSITY	MODEST
NATIONALISM SPIRIT	INDEPENDENT
LOVE TO MOTHERLAND	FAIR
ACHIEVEMENT	BRAVE
FRIENDSHIP AND BEING COMMUNICATIVE	CARE
LOVE PEACE	
LOVE FOR READING	
CARE WITH THE ENVIRONMENT	
CARE WITH SOCIETY	
RESPONSIBILTY	

Source: The Publication of Curriculum 2013 in December 6, 2012 at Rez Plaza, Medan

However, degradation of young generation’s character is quite a problem nowadays. Some cases about the lack of care to society and professionalism appear because the shallow character education and absence of good character insertion into early education. There are news about young generation’s characters and behaviors in the media that tend to be negative nowadays. If there is no control, development, strengthening and the teaching of values, the problem may be the future generation’s negative characteristics (generation of 2045).

This happens because there is no insertion of character values in the teaching and learning process. Based on the result of short interview with some teacher representations and LPTK academics in some districts of West Nusa Tenggara, the teaching and learning which is based on character education strengthening and education for sustainable development with values and sustainable knowledge has not been implemented broadly in education. The competence is still considered strange and is almost never assessed well and also less inserted in the teaching and learning process by the teachers or lecturers. Thus, there are many young people that do not have ethical awareness and emotional management. They are not very digital literate, do not know much about communication skill, and collaborate in the process of learning and their daily life. The other problem that is faced by the educators nowadays is the inavailability of learning innovation which is in the form of character learning model as the base of application in the learning process to develop good behaviors and character even in the early education.

The pedagogical concept (sustainability education) of sustainable development concept is taught and designed by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to teach good character and social caring early (UNESCO, 2002, p. 5). The concept of sustainable development which was first presented in the Report of Brundtland with name of World Commission on Environment and Development is a concept which is related with three components: environment, social, and economy (Nicolette et al., 2013; United Nations, 1987). Some learning strategies are recommended as character strengthening pedagogy and education for sustainable development by United Nations Educational, Scientific, and Cultural Organization (UNESCO)

(UNESCO, 2002, p. 4). They cover experiential learning (Perkasa, 2015; Redman, 2013; Evans & Graff, 2012), project based learning (Micangeli et al., 2014; Jollands & Parthasarathy, 2013), inquiry learning, story-based-learning, values-based-education, authentic assessment, problem-based-learning, outdoor learning, and problemsolving community (UNESCO, 2002, p. 5). Thus, in order to solve the problems that have been mentioned before, there should be development of character learning model which is education for sustainable development oriented that aims at building golden generation with good character and sustainable knowledge to support the goal of character building of Indonesian golden generation 2045 and meet the 21st Century challenge.

## 2. Method

This study was a development study with development model adapted from Dick & Carey which was modified into five stages that covered all of the development stages: introduction, analysis, design, development, and distribution. The data collection was performed in six senior high schools in districts of West Nusa Tenggara in 2018. The analysis stage was conducted to analyze the main components of learning model development by analyzing the students, syllabus, the structure of content and concept, and the purpose of the study.

The development stage was done by developing the product which was in the form of character learning model which was based on character education values and contained in lesson plans, worksheets, and instrument of the study. the distribution stage was done to know hthe purpose of the development and the appropriateness level of the character learning model product. The distribution stage was performed to distribute and fixate the developed learning model product. Validation was performed in the stage of development by validating the product to expert.

## 3. Result

Need assessment was performed at the preliminary stage of the study. KI was aimed at obtaining the real preliminary data to be the foundation of the study analysis. Some scoold were made as the location of preliminary study by doing short interview with teachers of Chemistry, Biologym Physics Subject. Those schools were the State Senior High School 2 of Bima, the State Senior High School 1 Bolo, Bima District, the State Senior High School 1 Dompu (Dompu District), the State Senior High School 2 Dompu (Dompu District), the State Senior High School 1 Mataram, the State Senior High School 3 Matara, the State Senior High School 1 Gunungsari (West Lombok District), and the State Senior High School 1 Narmada (West Lombok District). However, need assessment was only conducted at six schools (from the eight schools) which were the State Senior High School 2 Bima, the State Senior High School 1 Bolo (Bima District), the State Senior 1 Dompu (Dompu District), the State Senior High School 2 Dompu (Dompu District), the State Senior High School 3 Mataram, and the State Senior High School 1 Narmada (West Barat District). The need assessment is also one of the demanded behavior in the 21st Century which is related with 4Cs (communication, critical thinking, collaboration & creativity).

Based on the result of the interview, observation, and need assessment which was performed at six schools, some information had been obtained:

1. learning model to implement the concept of character education did not exist and had not been taught by the teachers;
2. some teachers did not know the education concept which was based on environment and education for sustainable development in science teaching and learning implementation;
3. some teachers still emphasized the science teaching evaluation on knowledge assessment;
4. assessment on behavior and skill especially which is related with national character values and character education was still less performed in the teaching and learning process.

Student analysis was conducted by analyzing the need assessment result on students which was related with behaviors demanded in 21st Century and 4Cs (communication, critical thinking, collaboration & creativity). Indicator of 4Cs was adapted from Partnership for 21st Century (P21) (Griffin et al., 2012; P21, 2011). Based on the questionnaires about students' daily life which was related with their character, the results showed that the students had knowledge about character education values-based-behavior. However, their knowledge was not portrayed in their daily life. The need assessment result is presented in Table 2.

Table 2. The Result of Need Assessment of 21st Century Behavior

The amount of sample in every school ( $\Sigma$ )	21st Century Behavior											
	Critical Thinking			Collaboration			Communication			Creativity		
	High	fair	low	high	fair	low	high	fair	low	high	Fair	Low
A (35 students)	-	8	27	-	11	24	1	13	21	-	8	27
B (27 students)	-	6	21	-	2	25	-	17	10	-	11	16
C (32 students)	-	4	28	2	7	26	1	11	23	-	3	29
D (30 students)	-	7	23	-	14	16	-	15	15	-	5	25
E (32 students)	-	8	24	5	15	12	2	13	17	-	5	27
F (28 students)	-	6	22	-	10	18	1	7	20	-	4	24
Total	0	39	145	7	59	121	5	76	106	0	36	148

Based on Table 1, it can be known that most of the students did not achieve high category regarding with 21st Century behavior. Data distribution of the students indicates that most of the results were in the low category. This indicates that the 21st Century behavior learning and character values are important and urgent to teach. The internalization of character education values through the teaching and learning can be conducted by applying the ESD character learning model.

At the stage of design, the developed learning model is equipped with detailed syntaxes and specific purpose. The learning model should fulfill five model characteristic elements: (1) syntax, (2) social system, (3) principles of reaction, (4) support system, and (5) instructional & nurturant effects (Joyce & Weil, 2000).

The developed learning model is named Model Pembelajaran Karakter ESD (ESD Character Learning Model) which aims at building student’s character which is based on values in character teaching and 21st Century demand. The character values can be inserted in the ESD character learning model which are religiosity, honesty, tolerance to deversity, discipline, hard work, creativity, independence, democracy, curiosity, nationalism spirit, love to motherland, achievement, communication, love peace, love for reading, caring with environment, caring with society, and responsibility. The syntaxes overview of ESD character learning model is presented in Figure 1.

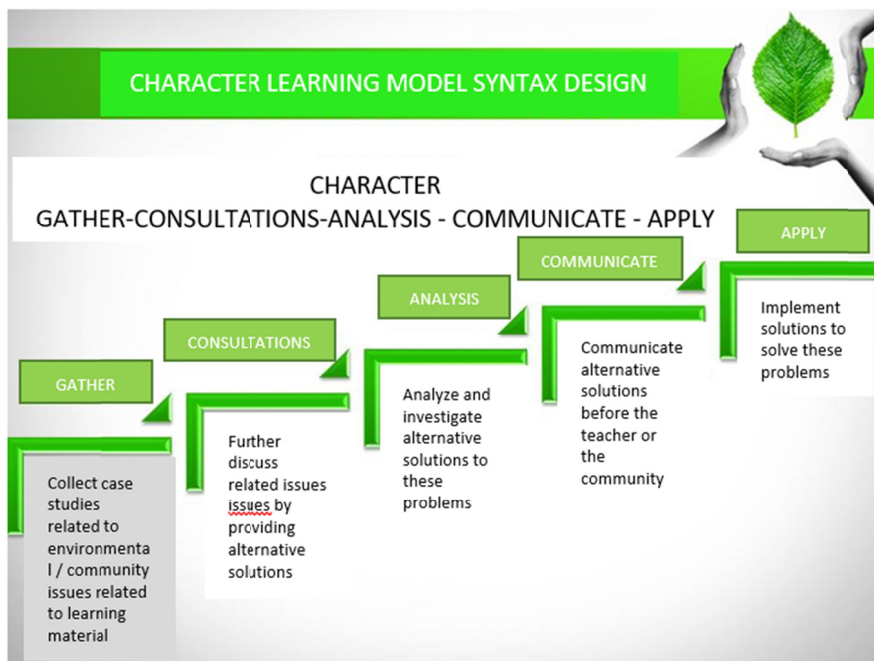


Figure 1. The Syntaxes Overview of ESD character learning model

Below are the syntaxes elaboration of ESD character learning model:

1. Collect

In this stage, the information about the learning material and the application in daily life is taught through case study method and brainstorming. The students are asked to collect information which is related with the learning material around the school and their neighborhood. The information can be about the problems being faced by the society. The problems can also be collected at school. In this stage, the taught behaviors tolerance, creativity, curiosity, communication, caring with society and environment, and responsibility.

2. Discuss

The information about the learning material which is in the form of problem is collected and then discussed in group. In this stage, the students can also discuss about the alternative solution for the problem. The behaviors which are hoped to appear in this stage are tolerance, discipline, hard work, creativity, independence, democracy, curiosity and love peace.

3. Analyze

This stage is a stage for further analysis, being rational, and analyzing the information about the solution of the problem. At this stage, the alternative of solution is discussed further until the students can select the most appropriate solution for the problem. The behaviors which are hoped to come at this stage are honesty, tolerance to diversity, discipline, hard work, creative, independence, curiosity, nationalism spirit, love to motherland, achievement, love peace, caring with environment, caring with society, and responsibility.

4. Communicate

The most appropriate and contextual solution for the problem is communicated to teachers or the representation of the community where the problem appears. Communication among teachers, group members or the community can trigger the students to be able to develop behaviors of being religious, respect to elders, tolerance to diversity, discipline, hard work, creative, independence, democratic, nationalism spirit, love to motherland, achievement, communication, love peace, care with environment, care with society, and responsibility.

5. Apply

The last stage of the syntaxes of ESD character learning model is to apply. At this stage, the selected alternative is not only communicated to teachers or the community, but is also applied to optimize the function of the solution. The behaviors which are hoped to appear at this stage are religiosity, honesty, tolerance to diversity, discipline, hard work, independence, democratic, curiosity, nationalism spirit, love to motherland, achievement, communication, love peace, love for reading, caring with environment, caring with society, and responsibility.

At the development stage, validation was also performed. Internal validation was performed to know the appropriateness of the developed product to achieve the development goal based on the qualitative assessment of the constructive side and lecturer expert. The result of the internal validation is presented by the expert lecturer in Table 2.

Table 3. The Result of Expert Validation

No.	Validator	The Aspects of Assessment		
		Lesson Plan	Worksheet	Assessment Instrument
1.	Lecturer 1	84	42	16
2.	Lecturer 2	80	38	14
3.	Lecturer 3	82	40	15
	Mean	82	40	15
The Category of Appropriateness		Very Good	Very good	Very good

Based on the category of the product appropriateness, the data of product validation scores given by the expert show that the teaching and learning product which includes lesson plan, dictates, and assessment instrument is very good. The expert lecturer who was the validator was an expert and was competent in terms of aspect of learning instrument development and learning material. The lecturer also mastered the material.

In the test, the number of the students as the subject in limited test is 184 orang was divided in six schools. The result of limited test was used as the material for revision II. The product was revised in terms of the readability, the learning goal achievement, development, and the time allocation which was related with the technical conduct of the development. If the product had met the two aspects of revision both in terms of appropriateness and the goal achievement, the product did not need to be revised. The data of limited test result is shown in Figure 2.

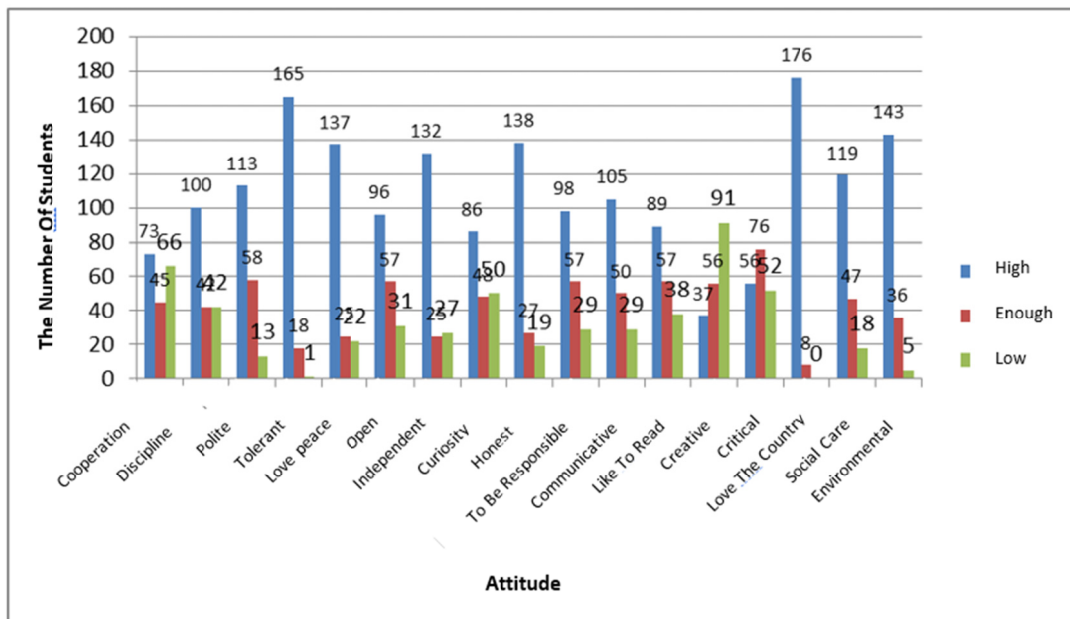


Figure 2. Data Distribution of the Students' Behavior

Based on the data overview presented before, it is known that the application of character learning model is needed to improve student's behavior/character based on the development purpose.

**4. Conclusion**

The developed learning model is called character learning model with syntaxes order: collect, discuss, analyze, communicate, and apply. Character learning model which is based on character education value is worth applying to build Indonesian 21st Century golden generation with good character categorized as "very good". The learning model is hoped to be effective to be one of the learning models that applies concept of education for sustainable development.

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**References**

Agus, C. (2016, May 10). Pendidikan untuk Generasi Emas. *Harian Bernas* (p. 4).

Dick, W., Carey, L., & Carey, J. O. (2001). *The Systematic Design of Instruction* (5th ed.). Florida: Addison-Wesley Educational Publishers Inc.

Dongoran, F. R. (2014, April). Paradigma Membangun Generasi Emas 2045 Dalam Perspektif Filsafat Pendidikan. *Jurnal Tabularasa PPs UNIMED*, 11(1), 61-76.

Evans, J., & Graff, E. (2012). Promoting Environmental and Cultural Awareness through Experiential Learning. *The International Journal of Sustainability Education*, 1, 1-13. <https://doi.org/10.18848/2325-1212/CGP/v08i01/55268>

- Fahmy, R., Bachtiar, N., Rahim, R., & Malik, M. (2015). Measuring Student Perceptions to Personal Characters Building in education: An Indonesian Case in Implementing A New Curriculum in High School. *Procedia - Social and Behavioral Sciences*, 211, 851-858. <https://doi.org/10.1016/j.sbspro.2015.11.112>
- Fajarini, U. (2014). Peranan Kearifan Lokal dalam Pendidikan Karakter. *Sosio Didaktika*, 1(2), 123-130. <https://doi.org/10.15408/sd.v1i2.1225>
- Hussein, Z. (2017). Leading to Intention: The Role of Attitude in Relation to Technology Acceptance Model in E-Learning. *Procedia Computer Science*, 105, 159-164. <https://doi.org/10.1016/j.procs.2017.01.196>
- Jollands, M., & Parthasarathy, R. (2013). Developing Engineering Students' Understanding of Sustainability Using Project Based Learning. *Sustainability*, 5, 5052-5066. <https://doi.org/10.3390/su5125052>
- Joyce, B., & Weil, M. (2000). *Models of Teaching* (6th ed.). Boston: Allyn & Bacon.
- Kereluik, K., Mishra, P., Fahnoe, C., & Terry, L. (2013). What Knowledge Is of Most Worth: Teacher Knowledge for 21st Century Learning. *Journal of Digital Learning in Teacher Education*, 29(4), 127-140. <https://doi.org/10.1080/21532974.2013.10784716>
- Manullang, B. (2013). Grand Desain Pendidikan Karakter Generasi Emas 2045. *Jurnal Pendidikan Karakter*, 3(1), 1-14.
- Mardapi, D. (2008). *Teknik Penyusunan Instrumen Tes dan Non Tes*. Yogyakarta: Mitra Cendikia.
- Masita. (2012). Pendidikan Karakter Berbasis Budaya Lokal Pada Masyarakat Muslim. *Jurnal Studi Masyarakat Islam*, 15(2), 302-321.
- Micangeli, A., Naso, V., & Matrisciano, A. (2014). Attitudes toward Sustainability and Green Economy Issues Related to Some Students Learning Their Characteristics: A Preliminary Study. *Sustainability*, 6, 3484-3503. <https://doi.org/10.3390/su6063484>
- Perkasa, M., & Aznam, N. (2016). Pengembangan SSP Kimia Berbasis Pendidikan Berkelanjutan untuk Meningkatkan Literasi Kimia dan Kesadaran Terhadap Lingkungan. *Jurnal Inovasi Pendidikan IPA*, 2(1), 46-57. <https://doi.org/10.21831/jipi.v2i1.10269>
- Redman, E. (2013). Advancing Educational Pedagogy for Sustainability: Developing and Implementing Programs to Transform Behaviors. *International Journal of Environmental & Science Education*, 8(1), 1-34.
- Rokhman, F., Hum, M., Syaifudin, A., & Yuliati. (2014). Character Education For Golden Generation 2045 (National Character Building for Indonesian Golden Years). *Procedia-Social and Behavioral Sciences*, 141, 1161-1165. <https://doi.org/10.1016/j.sbspro.2014.05.197>
- Sipos, Y., Battisti, B., & Grimm, K. (2008). Achieving Transformative Sustainability Learning: Engaging Head, Hands and Heart. *International Journal of Sustainability in Higher Education*, 9(1), 68-86. <https://doi.org/10.1108/14676370810842193>
- UNESCO. (2002). *Teaching and Learning for A Sustainable Future*. Australia: Griffith University Publisher.
- White, J. (2008). Sustainable Pedagogy: A Research Narrative About Performativity, Teachers and Possibility. *The Journal of the International Association for the Advancement of Curriculum Studies*, 5(1), 1-14.

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