



# Social Science Material Development Design Space- Time-Values Dimensions to Improve 21st Century Life Skills

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## Social Science Material Development Design Space-Time-Values Dimensions to Improve 21st Century Life Skills

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### ABSTRACT

This development research aims to produce a design for the development of Social Science materials with space-time-values dimensions to improve 21st century life skills among students of the Faculty of Social Sciences, Universitas Negeri Medan. The specific target to be achieved is the production of a Social Science Material Development textbook with the Space-Time-Values Dimension. The research method used is the R&D method following the Borg & Gall procedure. The research subjects involved: lecturers who teach courses; students as subjects for a limited group trial; and five experts for textbook validation. The instruments used were expert validation questionnaires, learning outcomes tests and observation sheets which were analyzed using qualitative descriptive analysis to analyze information on various field conditions; quantitative descriptive analysis used to analyze the scores given by the expert; and statistical analysis assisted by STATCAL software. The result of the research shows that the textbook for the Development of Social Science Materials with the dimensions of space-time-values was developed, valid and suitable for use. Other findings based on observations show that the design of textbook material development contributes to students' 21st century life skills in aspects: critical thinking and problem solving, creative and innovative, communication skills, and collaboration skills.

### KEYWORDS

Social Science; Space-Time-Values Dimension; Life Skills 21st century

### INTRODUCTION

The development of the times is always followed by the development of life skills which are at the same time the demands and needs of the community according to the conditions of the era. The life skills needed in the 20th century are certainly different from the life skills needed in the 21st century. Globalization, which is marked by the intense development of information and technology, does not only require skills in the form of conceptual knowledge (Sahin, 2009), but more than that requires ownership of a number of skills in applying the knowledge possessed (Ananiadou & Claro, 2019). This condition has an impact on the demand for educational development to be more oriented towards developing the ability to apply concepts, skills and a number of other life skills (Griffin, 2012). Various 21st century life skills that need to be developed by educational institutions can be grouped into four aspects, namely: ways of thinking, ways of working, tools for working, living in the world (Binkley, 2012). Thus, ideally education does not only contain conceptual knowledge, but is also equipped with the life skills that students need for their future (Ulfiana & Tenriawaru, 2018).

<sup>4</sup> The Government of Indonesia, through the Ministry of Education and Culture, has established competency standards for graduates based on 21st century life skills. These life skills include: creativity and innovation; critical thinking; solution to problem; decision-making; learn how to learn; metacognition; information and communication; collaboration; information literacy; technological literacy; local and global citizenship; personal and social responsibility (Partnership for 21st Century Skills, 2002). These life skills should be possessed by students in 21st century society, and educational institutions have a role in developing a number of these life skills through a continuous learning process.

However, the facts show that students' skills in using knowledge to overcome life problems are still low (Novili, 2016). Added by Yuningsih (2019), the 21st century life skills category which includes: critical thinking, problem solving skills, creative thinking and innovation, communication and collaboration, is <sup>20</sup> low so it needs to be developed through educational institutions systematically. Likewise in the context of education, the application of 21st century learning in Indonesia has not produced optimal results (Chairmisak, 2019), even the learning system is still dominant in teacher centered learning and has not fully trained a number of skills for 21st century life skills (Mardhiyah, 2021).

Learning facts and problems that have not yet contributed to 21st century life skills need attention from educational institutions through the reconstruction of learning based on 21st century life skills. Especially in the global era that has brought a number of changes to all aspects of life, including changes in education aspects. . 21st century learning needs to be designed by adhering to the principles: instruction should be student centered; education should be bi collaborative; learning should be have context; schools should be integrated with society (Syahputra, 2018). Through this principle, 21st century learning design is designed to produce graduates who have life skills with a number of skills, such as: creative thinking, critical thinking and problem solving, communication, and collaboration (Septikasari & Frasandy, 2018).

<sup>26</sup> Based on the facts and problems above, as well as the importance of 21st century life skills for students for their future, the Faculty of Social Sciences, Universitas Negeri Medan has designed 21st century learning for the group of faculty courses, one of which is the Social Science Material Development course. This course is designed with the aim that students as prospective Social Science teachers are able to develop Social Science materials, as well as equip students with a number of competencies: knowledge, attitudes, and skills. Knowledge competence is formulated with the aim that students <sup>22</sup> are able to develop concepts of social sciences that are integrated into Social Sciences, such as: Geography, History, Economics, Sociology and Anthropology. Attitude competence is formulated with the aim that students have a concern for social problems that exist around their environment to the wider environment. Skill competencies are formulated with the aim of students being able to solve real problems that are useful for themselves, their communities and society.

However, the facts in the field, based on observations, Social Science learning in universities tends to be dominant in the presentation of conceptual knowledge. Even Social Science learning which should be given in an integrated manner in practice is still delivered separately (Sulistyo, 2012: 2). The implementation of Social Science learning which tends to be presented separately between geography, economics, history and sociology-anthropology, causes social studies learning to be less meaningful and not optimal in achieving its learning objectives. This condition has an impact on the incompleteness of student competencies, especially in training for critical-analytical thinking, caring attitudes, and <sup>38</sup> skills in solving social problems (Setiawan, 2017).

Based on the problems above, it is deemed necessary to reconstruct the learning of Social Sciences as a faculty subject at the Faculty of Social Sciences, Universitas Negeri Medan in

order to meet student competencies according to the needs and demands of the times. Therefore, this research proposes the idea of developing Social Science material with space-time-values dimensions to improve 21st century life skills. to carry out ecological adaptation and adaptation to space (spatial adaptation), so that they are skilled in solving real problems that exist in the surrounding environment to an increasingly widespread environment through an interdisciplinary approach. The design of material development on the dimension of time represented by history, is formulated with the aim that students have the ability to think chronologically, prospectively and anticipatively, so that students are skilled in solving socio-cultural problems in order to build their society today and in the future. The design of material development on the dimensions of values represented by economics, sociology-anthropology, is formulated with the aim that students have the ability to utilize existing resources, interact and communicate with each other in accordance with the rules and rules that apply in society. Through this learning design, social studies learning is designed as a systemic program for strengthening 21st century life skills for students to have a number of skills, such as: creative thinking, critical thinking and problem solving, communication, and collaboration.

## LITERATURE REVIEW

### *Social Studies Learning Dimensions of Space-Time-Values*

Social Science Education (IPS) is essentially an educational program that integrates a number of social science disciplines that are systematically, selectively and simplified for educational purposes. This statement contains the following meanings: 1) Social studies education is not a scientific discipline, but is more accurately referred to as an educational program or field of study or field of study designed with the aim of equipping students to be able to understand the phenomena of social life, have a caring attitude and be skilled in participate in solving social problems that exist around their environment; 2) Social studies education as an education program is designed by integrating or combining a number of social sciences such as: Geography, History, Economics, Sociology and Anthropology. Thus, Social Studies Education materials are designed by combining existing materials in Geography, History, Economics, Sociology and Anthropology; 3) The integration of social studies material is carried out "selectively and simplified" which means: the materials contained in Geography, History, Economics, Sociology and Anthropology, are selected and adjusted to suit the role of humans in social life and the environment (Somantri, 2001).

In general, Social Studies education as an educational program is applied to almost all universities, especially ex-LPTK (Educational Education Personnel) tertiary institutions as a faculty subject or identity course at the Faculty of Social Sciences (FIS) or at the Faculty of Social Sciences Education. (FPIPS). Social studies education as an educational program at this university, is designed hierarchically into a group of Social Sciences (IPS) courses which include: Social Studies Material Development (IPS 1), Integrated Social Studies Learning (IPS 2), and Indonesian Society Studies (IPS 3). Specifically in this research, the study of social studies is focused on the development of social studies material (IPS 1) which is directed at deepening social studies material which includes the following materials: Geography, History, Economics, Sociology and Anthropology coupled with the skills to develop these materials holistically and integratively. The integration of the social sciences in social studies learning can be shown in the following figure.





**Figure 1.** Integration of Social Science Branches  
 (Source: Pargito, 2010:74)

Social studies materials are arranged in topics that contain concepts and generalizations that must be presented in accordance with the formulation of the meaning of social studies, concepts and generalizations originating from various branches of social science, such as: geography, history, economics, sociology, anthropology, political science, and can be supported with other sciences, such as social psychology, and philosophy. (Pargito, 2010:74). Barr, Barth, & Shermis (1977), defines Social Science as "the integrated study of the social sciences and humanities to promote civic competence". Therefore, social studies learning should apply a multidisciplinary approach (National Council for The Social Studies, 1981), namely an approach that involves a lot of knowledge that is packaged in an integrated manner in order to achieve the goals of social studies learning holistically (Sapriya, 2009).

However, the facts on the ground show that social studies learning in universities tends to be dominant in the presentation of conceptual knowledge. Even social studies learning that should be given in an integrated manner in practice is still delivered separately (Sulistyo, 2012: 2). The implementation of social studies learning which tends to be presented separately between geography, economics, history and sociology-anthropology causes social studies learning to be less meaningful and trains students to think critically-analytically, caring attitude, and skills in solving social problems. This condition requires the reconstruction of social studies learning through the design idea of developing social studies material with space-time-value dimensions to improve the life skills of 21st century students.

**Table 1.** Social Studies Material Development Measure Space-Time-Values

<b>Life's Dimension</b>	<i>Space</i>	<i>Time</i>	<i>Values</i>
Integrated Disciplines	Geography	History	Economics, Sociology/Anthropology
Study Substance	Nature is a space and provider the potential of nature resources	Life in progress, past, present, and future	The value of life is based on norms / rules or rules that become the glue and guarantor of the harmony of human life
Developed Competencies	Spatial and exploratory adaptation	Think chronologically, prospectively and anticipatively	Consistency with mutually agreed norms/rules

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Based on the table above, the design of social studies material development is designed to include the dimensions of space-time-values that are packaged in an integrated manner. Geography that represents the dimension of space (space) is packaged by developing competencies in the ability of spatial adaptation and exploratory abilities of students in their interaction with nature or their environment in harmony; History which represents the dimension of time (time) is packaged to develop competence in chronological, prospective and anticipatory thinking skills related to human life that proceeds both in the past, present and future; while Economics-Sociology-Anthropology which represents the dimensions of values (value-life) is packaged by developing competence on the ability of students to be consistent with agreed norms or rules in building harmonious life together. Thus, the Social Studies learning design is designed not only to provide conceptual knowledge, but also to train a caring attitude and a number of skills, such as: creative thinking, critical thinking and problem solving, communication, and collaboration. (Septikasari & Frasandy, 2018), as life skills in 21st century society.

### **21st Century Life Skills**

Globalization which is currently bringing a number of changes to all aspects of life, including changes in the education aspect, demands 21st century learning design to produce graduate competencies who have life skills with a number of skills, such as: critical thinking and problem solving skills, creativity and innovation, communication skills and collaboration skills (Trilling & Fadel, 2009).

The first 21st century life skill is critical thinking and problem solving skills. This skill describes the ability of students to think critically, be independent, and problem-solving abilities. These skills are developed by covering the ability to: determine the credibility of a source; distinguish between relevant and irrelevant; distinguish between facts and subjective judgments; identify and evaluate assumptions; identify existing biases; identify points of view; and evaluate the evidence to support the confession. The second skill, namely creativity and innovation, describes the ability of students to think divergently, productively, creatively, to think heuristically and to think laterally, with the ability to develop, implement and convey new ideas or create novelty and be able to adapt in various situations. The third skill is communication skills, which describe the ability of students to process the transmission of information, ideas, emotions, and skills using symbols, words, pictures, graphics and numbers. This skill in the learning process is demonstrated by the ability of students to understand, manage, and create effective communication in various forms, both orally, in writing and in multimedia. While the fourth skill, namely collaboration skills, describes the ability of students in the learning process which is indicated by the ability to work together with one another to help each other, and complete tasks in accordance with predetermined goals, have empathy and the ability to compromise with others. other members or different groups.

The four life skills chapter 21 above are very important to be trained and even cultivated in a systematic learning process. Therefore, the four skills need to be designed in a lesson plan by developing implemented indicators, as shown in the table below:

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**Table 2. 21st Century Life Skills**

<b>Critical thinking and Problem Solving skill</b>	<b>Creativity and Innovation</b>	<b>Communication Skills</b>	<b>Collaboration Skills</b>
1. Thinking logically 2. Systems thinking 3. Analyze effectively 4. Reflection 5. Ability to conclude 6. Interpreting information/data 7. Ability to identify	1. Originality 2. Elaboration 3. Responsive 4. Adoption 5. Creative idea	1. Listening ability 2. Processing information 3. Express thoughts effectively 4. Communication for various purposes 5. Using various media	1. Cooperation 2. Share tasks 3. Dexterity 4. Responsibility 5. Participation

Adopted from: Yuningsih (2019)

## RESEARCH METHODS

### Research Location and Time

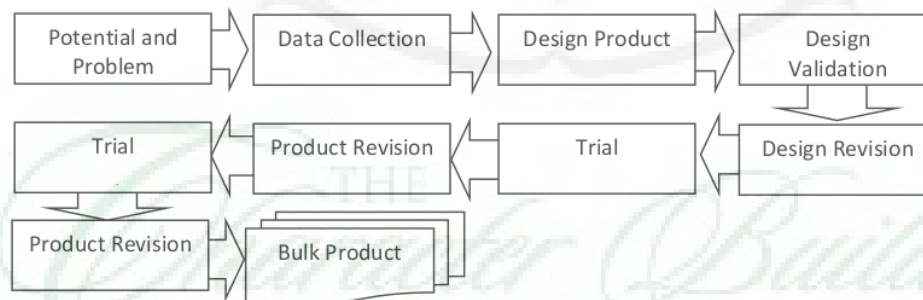
This research was conducted at the Faculty of Social Sciences (FIS) Universitas Negeri Medan (UNIMED) which is located at Willem Iskandar Pasar V Medan Estate. The time of the study was carried out from February to December 2022.

### Research subject

The research subjects include: (1) lecturers who are in charge of the Social Sciences Material Development course as a faculty course/course on Identity FIS UNIMED; (2) students as a limited trial group; and (3) five experts for the validation of textbooks.

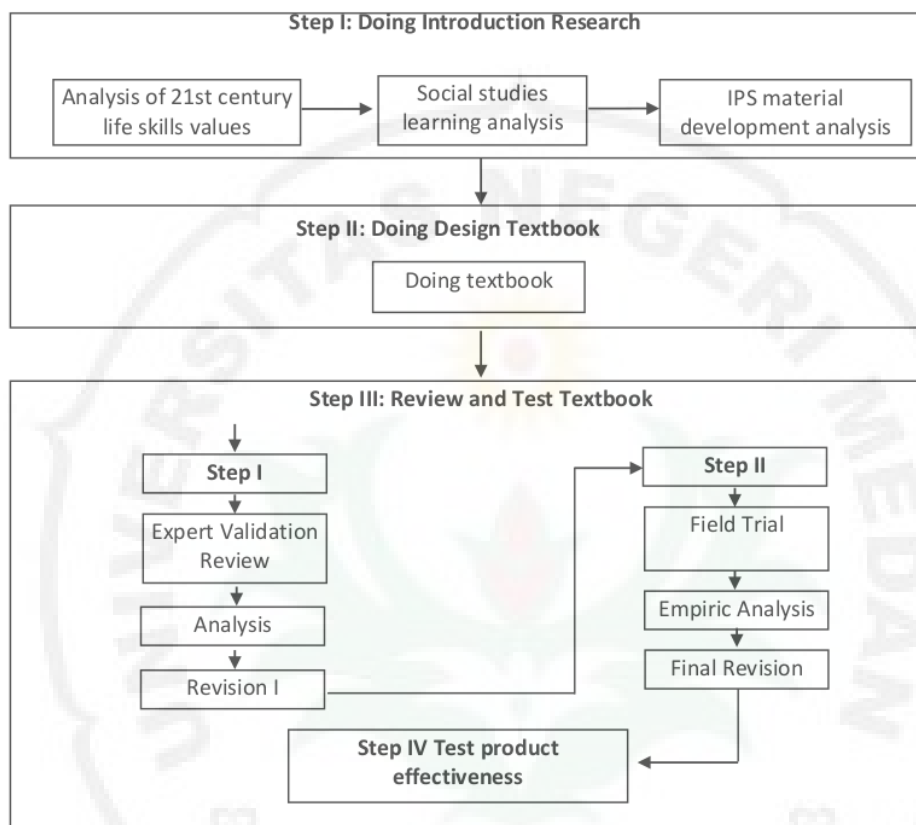
### Research Model

This research applies the development research model from Borg & Gall. The R&D development model is a research that is intentionally and systematically directed at finding findings, formulating, developing, producing, testing the effectiveness of certain products that are superior, new, effective, efficient, productive and meaningful (Sukmadinata, 2007). In practice, this R&D research follows the procedure developed by Sugiyono (2017):



**Figure 2. Research and Development Steps**

The development procedure achieved to produce a product in the form of a Social Studies Material Development textbook with Space-Time-Values Dimensions. Which is carried out in 4 stages, namely: (1) conducting preliminary research, (2) designing textbooks, (3) review and test of textbooks, and (4) test the effectiveness of the product.



**Figure 3.** Borg & Gall and Dick & Carey Development Procedures

#### 4.7. search Data Collection Techniques

The instruments used in this study were expert validation questionnaires, learning outcomes tests and learning outcomes observation sheets which were filled in based on the results of observations and treatments during the learning process.

The grid of expert validation questionnaires on research products in the form of textbooks on Social Studies Material Development Design with Space-Time-Values Dimensions is presented as shown in the following table:

**Table 3.** Grid of Teaching Material Validation Questionnaire Instruments

SUB COMPONENTS	ITEM
A. Contents	1. The suitability of the material with learning outcomes
	2. The material presented is in accordance with the learning objective
	3. Clarity of material description
	4. Completeness of materials
	5. Relevance of material with daily life
	6. The suitability of the examples presented
	7. The truth of the concept in the material



	8. The interrelationships between materials
	9. Ease of understanding
	10. Material difficulty level
B. Encourage Curiosity	11. Encourage a desire to seek more information
	12. The material stimulates students to think critically
	13. The material can provide motivation to learn
	14. The material can be used by students in independent study
	15. The material is easy for students to learn
	16. The material presented is interesting for students

Furthermore, the observation grid of the learning process related to 21st century life skills is designed as in the following table:

**Table 4.** Learning Process Observation Grid

No	<sup>41</sup> <i>Critical thinking and problem</i>	HO	<i>Creativity and Innovation</i>	HO	<i>Communication Skills</i>	HO	<i>Collaboration Skills</i>	HO
1	Think logically	...	Originality	...	Listening	...	Cooperation	...
2	Identify the problem	...	Elaboration	...	Processing information	...	Various tasks	...
3	Interpret data	...	Responsive	...	Express thoughts effectively	...	Flexibility	...
4	Systems thinking	...	Creative idea	...	Communicate effectively	...	Responsibility	...
5	Making conclusions	...	Adoption	...	Using various media	...	Participatory	...
K	.....		.....		.....		.....	

**Description:**

HO = Observation Results

\*SN = Already visible, if most of the respondents (> 50%) have shown indicators

\*BN = Not yet visible, if most of the respondents (> 50%) have not shown indicators

K = Category

\*Very good, if it includes 5 indicators

\*Good, if includes 4 indicators

\*Good enough, if it includes 3 indicators

\*Not good, if it includes 2 indicators

\*Not good, if it includes 1 indicator

\*Very Bad, if it doesn't cover all indicators

**Analysis Techniques**

Data analysis was carried out on the design of social studies material development with space-time-values dimensions developed in the form of textbooks. To analyze the results of the assessment given by experts on the quality and feasibility of the product, statistical analysis assisted by STATCAL software was carried out (Gio & Caraka: 2017).<sup>39</sup>

Meanwhile, data analysis related to the life skills of 21st century students was carried out using qualitative descriptive analysis techniques on the results of observations during observations during the learning process in class.

## RESULTS AND DISCUSSION

This research was structured based on the development procedure adopted to produce research products in the form of a textbook for the development of social studies material with the dimensions of Space-Time-Values to improve 21st century life skills, which was carried out through 4 stages, namely: (1) conducting preliminary research, (2) making textbook design, (3) product review and trial, and (4) product effectiveness test.

### *First Stage: Introduction*

Based on interviews with lecturers who support the Social Sciences Material Development (IPS) course as one of the identity courses at FIS UNIMED obtained some information, that the design of the Social Sciences Material Development course has been designed to meet graduate profiles, graduate learning achievements, and academic achievement. learning courses, and has been equipped with documents in the form of learning tools, such as: lesson plans and textbooks. However, from the results of observations made through observations in the learning process in the classroom, it was found that a number of data showed that social studies learning, which should be practiced in an integrated manner, was still presented separately and not simultaneously. Social Studies as an educational program that integrates the disciplines of Geography, History, Economics and Sociology in its presentation in class has not shown any integration. Each material in the study of geography, history, economics, and sociology is delivered independently and has not shown any synthesis or linking one concept to another, especially in training students to solve problems. Social issues or social problems raised in social studies learning, should use a multidisciplinary, interdisciplinary or transdisciplinary approach, so that decision making in solving problems is not only in a mono-disciplinary perspective, but is carried out in an integrated manner with studies of geography, history, economics and sociology as a whole. integrated. This fact shows that the integration of social studies material in the learning process has not been implemented optimally, thus hampering the achievement of integrated social studies learning goals and achievements.

The initial analysis of the results of observations and interviews at this preliminary stage, it is deemed necessary to take innovative actions to design the development of social studies material that does not merely present social studies materials (geography, history, economics and sociology) independently or separately, but also presents social studies material that is designed to involve the dimensions of human life. Social studies material design that uses the dimensions of human life, is designed by involving the dimensions: space (space), time (time), and values (value). The design of the development of Social Science materials in the dimension of space represented by geography, is designed so that students have the ability to make ecological adaptations and adaptations to space (spatial adaptation), so that they are skilled in solving real problems that exist in the surrounding environment to the environment in which they live increasingly widespread through an interdisciplinary approach that is applied. The design of material development on the dimension of time represented by history, is designed so that students have the ability to think chronologically, prospectively and anticipatively, so that students are skilled in solving socio-cultural problems in order to build their society today and in the future. The design of material development on the dimensions of values represented by economics, sociology-anthropology, is designed so that students have the ability to utilize existing resources, are able to interact and communicate with each other in accordance with the rules and rules that apply in their society.

Preliminary observations were also made to observe how the application of social studies learning to student skills to develop 21st century life skills. The results of the preliminary research showed that these aspects of life skills had not been explored optimally in relation

to social studies learning which were still: (1) teacher centered approach; (2) verbalistic learning culture; (3) have not linked the material with real life experienced by students or contextual learning; and (4) still dominant in the realm of knowledge, so that they have not explored the realm of skills and attitudes optimally. Based on this fact, the design of social studies material development with space-time-values dimensions was carried out to improve 21st century life skills by training students' skills in the following aspects: critical thinking and problem solving skills, creativity and innovation, communication skills and collaboration skills.

### **Second Stage: Product Design**

The product produced in this research is the Social Studies Material Development textbook with Space-Time-Values Dimensions as one of the reference books in faculty courses at FIS UNIMED. Product design is carried out by developing the formulation of learning outcomes or social studies learning outcomes that prioritize knowledge and skills as well as social attitudes according to national standard qualifications. The learning outcomes of developing social studies material with space-time-values dimensions are presented in the following table:

**Table 5.** Learning Outcomes Textbook Social Studies (IPS) Development Design Based on Space-Time Values

Material	<i>Learning Outcomes</i>
<b>Social Studies Education Concept</b>	<ol style="list-style-type: none"> <li>1. Understanding Social Studies Education</li> <li>2. History and Background of Social Studies Education</li> <li>3. Social Studies Education Goals</li> <li>4. Scope of Social Studies Education</li> </ol>
<b>Integrated Social Studies Education</b>	<ol style="list-style-type: none"> <li>1. The concept of integrated learning in social studies and the characteristics attached to it</li> <li>2. Integrated Learning Approach in Social Sciences</li> </ol>
<b>Social Studies Material Development</b>	<ol style="list-style-type: none"> <li>1. Principle of Material Balance</li> <li>2. Principle of Expanding Environment</li> <li>3. Flexibility Principle</li> <li>4. Depth Principle</li> </ol>
<b>Dimensions of Space, Time and Values in Social Studies Learning</b>	<ol style="list-style-type: none"> <li>1. Space Dimension</li> <li>2. Time Dimension</li> <li>3. Value Dimension</li> </ol>
<b>21st Century Life Skills Oriented Social Studies Learning</b>	<ol style="list-style-type: none"> <li>1. Critical Thinking and Problem Solving Ability</li> <li>2. Creative and Innovative</li> <li>3. Communication Skills</li> <li>4. Collaborating Skills</li> </ol>

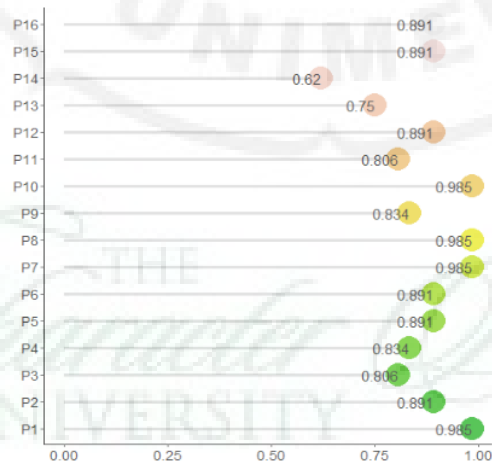
After the textbook product is developed based on learning outcomes, then at the implementation stage, validation of the textbook is carried out. Validation is carried out by a validator team consisting of Geography experts, History experts, Economics experts, and Sociologists. The assessment given by the expert validator is analyzed by testing the validity and feasibility of the product, while the suggestions for improvement from the expert validator serve as a reference for improvement or revision of the product being developed.

The following shows the results of the validity and reliability of the questionnaire instrument validation of teaching materials by expert validators in the form of tables and graphs which are presented sequentially below:

**Table 6.** Test the Validity of the Question Items of the Questionnaire Instrument  
Validation of Teaching Materials by the Expert Validator

7  
Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
P1	64.4000	75.300	.985	.976
P2	64.2000	81.200	.891	.978
P3	64.0000	82.000	.806	.979
P4	64.6000	79.300	.834	.978
P5	64.2000	81.200	.891	.978
P6	64.2000	81.200	.891	.978
P7	64.4000	75.300	.985	.976
P8	64.4000	75.300	.985	.976
P9	64.6000	79.300	.834	.978
P10	64.4000	75.300	.985	.976
P11	64.0000	82.000	.806	.979
P12	64.2000	81.200	.891	.978
P13	64.6000	80.300	.750	.979
P14	64.4000	80.300	.620	.982
P15	64.2000	81.200	.891	.978
P16	64.2000	81.200	.891	.978



**Figure 4.** Validity Graph based on STATCAL Software



The tables and graphs above show the results of the validity test for each of the questions on the questionnaire instrument validation of teaching materials by expert validators. The terms of the question items are said to be valid if the correlation value (Corrected-Item Total Correlation) of the question items > R table (0.3). Based on the data shown in Table 6 and Figure 4, it is known that all calculated R values (Corrected-Item Total Correlation) > 0.3 (R table). Thus, it can be concluded that all questions on the questionnaire instrument validation of teaching materials reviewed by expert validators can be declared valid with a magnitude of 85.75% or are in the good category.

Associated with reliability, reliability test can only be done if the questions on the questionnaire instrument meet the validity test. The following are the results of the reliability test on the questions of the questionnaire instrument that have been declared valid.

**Table 7. Reliability Test**  
 Reliability Statistics

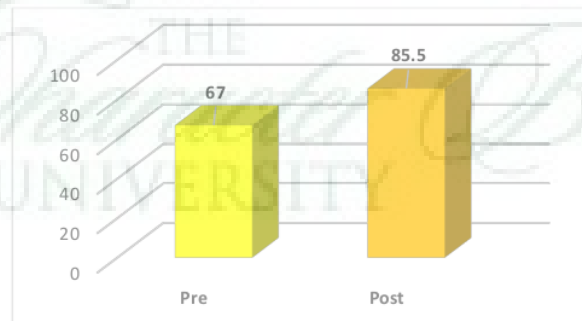
Cronbach's Alpha	N of Items
.979	16

The terms of the research questionnaire are said to be reliable if Cronbach's Alpha value is greater than 0.6. Based on the data shown in table 7, it shows that the questionnaire is reliable, because Cronbach's Alpha value of 0.979 is greater than 0.6.

The display of the data above shows that the results of the validation carried out by expert validators on the research products are in the valid category, so it can be stated that the research product in the form of a textbook for the Development of Social Science Materials with Space-Time-Values Dimensions is suitable for use by lecturers and students. Especially for the Social Science Material Development course as one of the identity courses at the Faculty of Social Sciences, Universitas Negeri Medan. The results of the expert validator's analysis stated that the research product was in the form of a book Development of Social Science Materials with Space-Time-Values Dimensions, in terms of material it had fulfilled the Social Science studies carried out in an integrated manner covering the dimensions of space, time and life values.

**Stage Four: Product Effectiveness Test**

After the expert validation results prove that the Social Science Material Development Textbook with Space-Time-Values Dimensions is valid and feasible to use, the next step is to test the effectiveness of the product. The product effectiveness test is carried out by implementing textbooks first semester students in the Social Science Material Development course class. The results of the product effectiveness test are presented in the following figure:



**Figure 5. Product Effectiveness Test Results**

The data above shows an increase in the average value of learning outcomes, before and after learning is complete. The pretest result or the average value of learning outcomes at the beginning of learning is 67%, while the posttest results or the average value after finishing learning is 85.5%. Based on Figure 3, it can be seen that there was an increase in learning outcomes of 18.5%, so it can be concluded that the research product in the form of a textbook for the Development of Social Science Materials with Space-Time-Values Dimensions, is effective in improving student learning outcomes. In accordance with the design of this study, student learning outcomes are designed to improve 21st century life skills which include indicators: critical thinking and problem solving, creativity and innovation, communication skills, collaboration skill. Based on the results of observations made through observations during the treatment in the learning process in the classroom, it shows that the design development of Social Science material with the space-time-values dimension that has been designed can contribute to the 21st century life skills of students which includes aspects of critical thinking and problem solving, creativity and innovation, communication skills and collaboration skills as presented in the following table:

**Table 8.** 21st Century Life Skills Observation Results

No	<i>Critical thinking and problem solving</i>	HO	<i>Creativity and Innovation</i>	HO	<i>Communication Skills</i>	HO	<i>Collaboration Skills</i>	HO
1	Think logically	SN	Originality	SN	Listening	SN	Cooperation	SN
2	Identify the problem	SN	Elaboration	SN	Processing information	SN	Various tasks	SN
3	Interpret data	SN	Responsive	SN	Express thoughts effectively	SN	Flexibility	SN
4	Systems thinking	BN	Creative idea	SN	Communicate effectively	SN	Responsibility	SN
5	Making conclusions	SN	Adoption	BN	Using various media	BN	Participatory	SN
K	GOOD		GOOD		GOOD		VERY GOOD	

The life skills shown by students the most are collaborative skills which are in the "very good" category. This data is shown by the appearance of students' ability to collaborate, the ability to share tasks, flexibility in carrying out joint tasks, responsible and participatory attitudes. While the other three life skills, namely: critical thinking and problem solving, creativity and innovation, communication skills, are in the "good" category. Critical thinking and problem solving, shown by the appearance of students' ability to think logically, the ability to identify problems, the ability to interpret data, and the ability to make decisions. Creativity and innovation, shown by the ability of students to show originality, elaboration, responsiveness, and creative ideas. Meanwhile, communication skills are shown by the ability of students to listen, process information, express thoughts effectively, and communicate effectively.

The findings of this study are supported by research by Mardhiyah (2021), which shows the importance of 21st century learning focusing on student centeredness to provide critical thinking skills, problem solving, metacognition, communication, collaboration, innovation, creativity, and information literacy. In designing 21st century learning, future educators are needed who can prepare students to be able to face the realities of 21st century life with a number of skills including content: communication, collaboration, critical thinking and problem solving, creativity and innovation (Prayogi & Aesthetics, 2019).

The importance of 21st century life skills from the two studies above, is also shown from the results of research related to Social Science learning raised by Marzuki (2012), by developing soft skill-based Social Science learning, to develop integrated Social Science learning through contextual approach by linking the material to real life (Nugroho, 2016). The results of studies on Social Science learning that are developed in an integrated manner, always describe the achievement of knowledge, attitudes and skills competencies that can significantly improve Social Science learning outcomes (Heldiana, 2018). Likewise in this study, the design of Social Science material development which was developed in an integrated manner through the integration of time-space-time-values dimension contributed to the improvement of 21st century life skills of students in the aspects of critical thinking and problem solving, creativity and innovation, communication skills, and collaboration skills.

### 34 CONCLUSION

The results of this study can be concluded, the research product in the form of a textbook for the Development of Social Science Materials with Space-Time-Values Dimensions was declared valid by the validators and declared eligible as a textbook in the Social Science Material Development course as one of the faculty courses at the Faculty of Science, Universitas Negeri Medan Social. The results of this study also show that the application of textbooks contribute to 21st century life skills in training students' skills in the aspects of: thinking reasoning and problem solving skills, creative and innovative, communication skills and collaboration skills. The results of the research in the form of a textbook for the Development of Social Science Materials with Space-Time-Values Dimensions, can be used as a reference source in social studies education for Social Studies Study Programs throughout Indonesia. This is based on the findings that show: the textbooks produced in this study assist learners in implementing integrated social studies learning; assisting students in developing 21st century life skills; and cultivate 21st century life skills in campus life and in realizing the character building university.

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