

Bring Back the Nature of Transdisciplinarity in Social Studies Learning 4.0

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Abstract—This paper aims to conceptualize the basic value of transdisciplinary learning in social studies to prepare students with the skills they need to face the industrial revolution 4.0, which has been largely forgotten by educators in developing Social Studies learning in the classroom. Referring to the results of the literature study conducted, this research will answer about how the application of learning and learning outcomes resulting from social studies in transdisciplinary learning. This study shows that the concept of transdisciplinary learning that is meaningful and close to real-life experiences provides wholeness in students' understanding of the concept of learning, where learning outcomes will benefit students in contributing themselves in the community as social studies learning ideals.

Keywords: social studies, transdisciplinary, industrial revolution

I. INTRODUCTION

Social studies are naturally transdisciplinary. This is clearly stated in the document issued by National Council for the Social Studies (NCSS) in describing the nature of the subject of social studies which includes: (1) Integrated studies of the social sciences and humanities as well as content of mathematics, and natural science, (2) Transcend the boundaries of single disciplines and demand the power of integration within and across them, (3) Students expressing their understanding of the concept in a personal meaningful way, and (4) Aim to resolving issues of significance to humanity [1]. In line with this, in another source, Ross [2] also mentioned that the dominant pattern of social studies instruction is characterized by text-oriented, whole-group, teacher-centered approaches aimed toward the transmission of "factual" information, where it constitutes one of the fundamental bases of transdisciplinary. This is worthy of the spotlight because Indonesia is currently facing an industrial revolution 4.0, which is the era of transdisciplinary. As stated by Supriatna [3], that the fourth industrial revolution currently underway is a digital revolution characterized by a blend of technology that blurs the boundaries between the physical, digital and biological worlds. The process results in artificial intelligence that gives rise to benefits but on the other hand also threatens the employment of some people who are unable to develop themselves with the skills required.

As one of the references in the development of Social Studies in Indonesia, of course the definition proposed is also a guide for curriculum development and learning. However, contrary to the definition, in general the position of social studies in Indonesia is in a state that is not as it should be, this is shown by studies that state that Social Studies are considered to be unable to form students' social competencies, the learning still emphasizes memorization, where teacher as drill master and student as text coverer [4–6].

We propose a transdisciplinary learning framework as a solution to fill this gap. Using transdisciplinary learning ways and skills, students can make meaningful learning with integrating social studies concept and real life experiences and contribute themselves in the society. We conclude that transdisciplinary learning opportunities are an essential part of the student experience and should be recognized among social studies educators and curriculum decision makers.

II. METHODS

This type of research is library research. The nature of this research is a descriptive analysis with a philosophical and pedagogical approach. The data used in this study are secondary data in the form of books and primary or original scientific reports contained in articles or journals (printed and / or non-printed) with regard to learning transdisciplinary. Analysis of the data used in this study was annotated bibliography in order to obtain the results of identification in each document to be developed into a paper.

III. RESULTS AND DISCUSSION

A. Nature of Transdisciplinarity

The term "transdisciplinary" first emerged in the 1970s, defined as a comprehensive approach that tried to go beyond incorporating existing disciplinary approaches to create new frameworks, synthesis, that creates inequalities and inability to solve various humanitarian problems. It starts and basically born from a real-world problem that provide students to explore a relevant issue that integrates perspectives of multiple disciplines (and sectors) in order to connect new knowledge and deeper understanding of real life experiences [7,8].

Transdisciplinarity represents a change in thinking about research and education challenging the division of academic labor into traditional disciplines. It reliance on disciplinary paradigms and an acceptance of disciplines as a basis for organizing knowledge, inquiry, also interpenetration of boundaries between concepts and disciplines. Thus, in its application transdisciplinary teaching and learning is not just an intellectual activity but rather must involve the entire person: mind, body and emotions [8,9].

B. Social Studies Within Transdisciplinary Learning

Transdisciplinary learning as stated by Bernsten [9] and Gibbs [10], taking interdisciplinary learning a step further, facilitates collaborative learning through a shared conceptual framework. The key characteristic of transdisciplinary learning is participatory collaboration in which various levels of participation can control the overall quality of a conceptual framework and learning outcomes, integration of knowledge, and problem solving that all are engaging in a process of inquiry.

In their previous study about transdisciplinary learning, Savage [8] and Christens [11] integrates the perspectives of multiple disciplines in order to connect new knowledge and deeper understanding to real life experiences. In this term, teachers role as interactive learning designer and students as knowledge producers through students personalized inquiry. Inquiry here emphasizes the process of interpreting the concept of social studies into real world context problems. starting with a series of questions that they want to find out based on the problem being developed in the material, students are given the freedom to determine from the perspective of the discipline they are going to explore. Then through different ways of exploration, students develop a layered understanding of themselves and the connections they have with the rest of humanity.

By studying Social Studies, NCSS as well as Indonesia's 2013 Curriculum has recognized the importance of educating students who are committed to the ideas and values of their democratic republic and who are able to use knowledge about their community, nation, and world, along with skills of data collection and analysis, collaboration, decision-making, and problem-solving. Those skills also emphasized in transdisciplinary learning as a basic student in applying the learning cycle as we modified Gibbs's [10] learning cycle in the following figure 1.

Naturally Social Studies learn about humans. Referring to Social studies scope and sequence developed by International Baccalaureate [12], themes developed in transdisciplinary contain humanitarian themes and they transform the themes into social studies strands. These following strands can be developed by other curriculum because in principle they are the extension of scientific disciplines in social studies (see table 1).

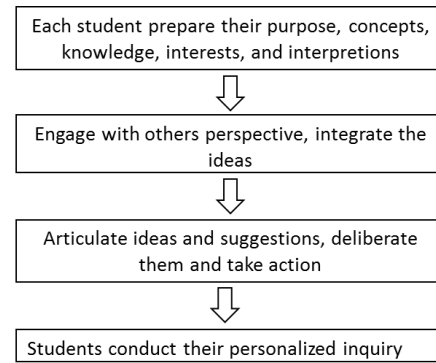


Fig. 1. Transdisciplinary learning cycle.

TABLE I. SOCIAL STUDIES STRANDS

Strands	Description
Human systems and economic activities	The study of how and why people construct organizations and systems; the ways in which people connect locally and globally; the distribution of power and authority.
Social organization and culture	The study of people, communities, cultures and societies; the ways in which individuals, groups and societies interact with each other.
Continuity and change through time	The study of the relationships between people and events through time; the past, its influences on the present and its implications for the future; people who have shaped the future through their actions.
Human and natural environments	The study of the distinctive features that give a place its identity; how people adapt to and alter their environment; how people experience and represent place; the impact of natural disasters on people and the built environment.
Resources and the environment	The interaction between people and the environment; the study of how humans allocate and manage resources; the positive and negative effects of this management; the impact of scientific and technological developments on the environment.

Each one of the strands encompasses the universal understandings common to all human beings. They are open enough to embrace a variety of perspectives and content areas. For example, in 2013 Social Studies Curriculum which was discussed by Supriatna [13], during the unit "*Dinamika Interaksi Manusia*" (Dynamics of Human Interaction)", students explore the ways in which they find and express ideas, feelings, nature, different cultures, beliefs and values, creativity and appreciation of past lives, examine changes that occur and give value to their plans for the future. Teacher can facilitate students with the experience of exploring students in depth by asking conceptual questions to students such as: (a) How do human allocate scarce resources to meet unlimited human wants? (b) How do consumers decide on what and how to consume? (c) How can personal choices that can help sustain the environment?.

Through different ways of exploration, students develop a layered understanding of themselves and the connections they have with the rest of humanity. Best practices in a transdisciplinary environment do not compartmentalize learning, but rather explore content within the context of

inquiry. For example, children learning about human systems and economic activities might work with a math strand of data using tally marks and graphs to analyze information. Through science, they will understand the concept of production that is friendly and not environmentally friendly. Through visual arts, they will explore their creativity by learning to present ideas with vlogs. Through languages, they will explore new vocabulary that will help them create an imaginative writing about human economic activities and their relationship to the environment.

Students can also gather information by collaborating with communities, experts, government and industry in expanding the dimensions of their knowledge. And these ones will provide opportunity students to analyse how individuals' and communities' needs and/or wants are met, evaluate the equity of different economic systems and marketplaces, develop criteria for ethical practices regarding products and services, explain how supply and demand are affected by population and the availability of resources and reflect on and self-assess his or her personal use of natural resources.

Based on the Gibbs study in the previous discussion and explanation above, to apply it in school, we suggest that the learning flow can be carried out as shown below (figure 2).

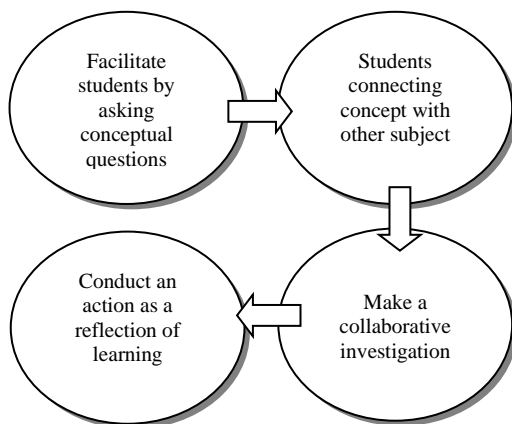


Fig. 2. Social studies within transdisciplinary learning.

C. Learning Outcomes : Prepare Students to Thrive in Disruption Era

As mentioned by Supriatna, Disruption is defined as something that arises suddenly and causes disruption and chaos. However, if examined more broadly, the meaning of disruption is a positive thing because of the change of something old to new, especially if it is associated with the teacher's creative revolution in interpreting and presenting meaningful learning for students. The existence of artificial intelligence in the industrial revolution 4.0 indirectly requires teachers to increase their creativity in teaching because after all artificial intelligence can record tastes including taste, but cannot express them, because only humans have a sense, which if managed properly can provide a stimulus that is also positive for the development of student skills [3].

In transdisciplinary learning the teacher's creativity will also be automatically honed, because the teacher acts as an interactive learning designer and students become knowledge producers. The teacher's sensitivity to real-world problems makes it the basis for providing learning, and the ability to integrate the concept of social studies is the basis for the development of this learning.

One of the results of transdisciplinary interpretations in social studies is also exemplified by Supriatna in his book *Prosa dari Praha* (Prose from Prague) [3] which writes the results of analysis and opinions of the era of consumerism in the form of romance novel. Supriatna explained the concept of the era of consumerism, an era in which humans not only buy what is needed, but shifted by buying "desires" with regard to social status, prestige, and image, where this is very relevant in the problems that arise in the era of disruption. The existence of this novel indicates that in an effort to criticize social phenomena, the concept of social studies can be developed by writing techniques from the realm of language, and used as a source of learning for students to foster student competence so as not to be consumptive amid the ease of making economic transactions today.

Of course social skills do not come by themselves, it needs an ongoing process. Approaches to Learning skills in transdisciplinary learning include: observing, analysis, and communication skills were developed in a truly transdisciplinary context, helping students and teachers alike to recognize their long-term and immediate value. Basic competencies such as critical thinking and communication skills are a prerequisite to foster competencies in sustainability and to prepare students for actual inter- and transdisciplinary challenges [14]. Then by the experiences, Gibbs [10] and Nicolescu [7] stated that it will help students understand in a practical way how a community interacts and helps them to gain better understandings of how their and others' perspectives, knowledge and values contribute to solving problems, opening levels of perception of various dimensions of reality, to mobilize the emergence of general intelligence: curiosity, creativity, and reflection.

IV. CONCLUSION

There are so many problems and complex questions to solve happen in the environment. we need to prepare ourselves and our students to change our behaviour as well as the development of our knowledge, so we need the learning method that can support this goal by designing "Meaningful" and "connect to the real world" in social studies. Transdisciplinary learning makes students accustomed to seeing and paying attention to real-world problems. the inclusion process that integrates various concepts and collaborations with many parties is a way students can have the knowledge, motivation, commitment and skills to work, both individually and collectively in finding alternatives or providing solutions to existing problems and to avoid new problems around them. When students are able to navigate their learning process independently, that's when the teacher is

actually strengthening literacy skills across fields of study and will be useful for various professions in the future.

It is recognized, however, that analyzing an isolated dimension cannot result in a holistic study of the concept. For this reason, the findings presented are mostly treated as tendencies deriving from the literature, rather than as facts then considered essential that the topic is further investigated with the inclusion of a wider range of its interrelated dimensions, which would give a more holistic and profound visualization of the complex concepts discussed.

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