Critical Multiliteration Model Based on Project Based Learning Approach in Developing Basic School of Metacognition Thinking Skills

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Abstract: The problem is the low ability of students, and the low orientation of developing students' thinking skills in learning, especially the thinking skills metacognition which is the thinking of the 21st century skills. These factors are one of the main factors that are still oriented towards achieving knowledge in a partial-textual way and not an integrative contextual understanding of the knowledge learned. Therefore, there are efforts that can be used to resolve the problem through effective and up-to-date effective models that are effort-oriented in improving students' metacognitive thinking skills, which is through the application of critical literacy models based on project based learning approaches. The critical multiliteration model is a learning model developed based on awareness and recognition of cultural perspectives and the diversity of learning styles. In addition, the critical multiliteration model is a model that is oriented towards efforts to build students' thinking skills through multicontext, multicultural and multimedia approaches. In this context, critical multiliteration models are specifically developed as a dynamic learning approach, where students actively explore problems in real world, provide challenges, and gain deeper knowledge. This is based on the purpose of developing a model oriented to the development of metacognitive thinking skills.

Keywords: Multiliteration, Project Based Learning Approach, Metacognition

1. Introduction

The 21st century is a century of changing times marked by advances in science and technology that have implications for increasingly complex life changes. This also impacts on the building of an increasingly competitive life structure, so that it is necessary to develop the quality of human resources as a whole, both the ability or skills possessed, in order to increase strong and superior competitiveness to compete in a world without limits [1]. This is consistent with Freire's opinion that an era is always marked by the complexity of problems, ideas, concepts, expectations, and challenges in dialectical interaction to formulate solutions [2].

In connection with the above, efforts to increase human resources can be done in the education sector as an effort to build a new civilization in the dynamics of life that is increasingly advanced. That is because the education process is part of social change [3]. Education must be able to improve the quality of people who have the critical, creative, metacognitive power to be able to compete in following global competition, and not give birth to mute humans without critical power and tend to be passive-

receptive. Therefore Education should be able to build a critical attitude that is responsible, not critical dogmatic-ideological. Based on this, it can be understood that quality human resources can only be achieved through quality education [4].

Based on this view, education should be oriented towards the provision of competencies that can fully prepare valuable superior generations with various abilities and skills of the 21st century without ignoring moral aspects and sensitivity to socio-cultural reality. In the 21st century there are at least four learning competencies that must be mastered namely Conceptual understanding, creative thinking, critical thinking and collaboration and communication [5]. In this regard, there is another opinion that in the 21st century learning must be oriented to the effort to supply 21st century competencies which include life and career skills, learning and innovation skills, and information, media and technology skills [6]. Furthermore, other experts also view that there are ten skills that must be possessed in the 21st century which are classified into four competencies. These skills are: creative thinking skills, critical thinking, metacognitive thinking, communication, collaboration, information literacy, ICT literacy, citizenship, work and career, as well as individual and social responsibility skills [7]. These ten skills are an essential basis for someone to be able to exist in this century's life. Based on this, in order to grow students' abilities and skills optimally, learning should always be critically charged with developing literacy in a variety of subject matter.

Based on the explanation above, Indonesian education has not been oriented to efforts in giving birth to educational people who have the ability and skills of the 21st century. This is evident from the fact about the low ability of Indonesian students to multiliterate as evidenced by the Program for International Student Assessment (PISA) in 2000 to 2012, which shows that Indonesian students have the ability to Multiliterate (reading literacy, scientific literacy, and mathematical literacy) is low [8, 9, 10, 11, 12,]. In addition, the results of a study conducted by the Progress in International Reading Literacy Study (PIRLS) in 2011 which showed that Indonesian students had lower Multiliteration abilities than students in several other Asean countries. This condition is the basis for efforts to reform systematically in the context of education, both in the aspects of schools, teachers, curriculum, learning activity and in relation to other supporting aspects.

In an effort to build superior education people can be done through several learning approaches, one of which is the Project Based Learning approach or project based learning. Project-based learning is a dynamic learning approach, where students actively explore real-world problems, provide challenges, and gain deeper knowledge [13]. In a different view it was stated that "project based learning focuses on creating a product or an artifact by using problem-based and inquiry based learning depending on the depth of the driving question" [14].

Based on the above opinion, it can be understood that project-based learning as a systematic teaching approach that involves students in learning to gain knowledge and skills through a structured and complex inquiry process, through authentic questions and designed products and assignments. Therefore project-based learning can improve the

quality of student learning. Based on this reality, efforts to improve the quality of education capable of delivering Indonesian people with 21st Century competence should be carried out as early as possible by revitalizing education, so that education is able to play its role in giving birth to those with 21st century competence, one of them is metacognition thinking skills.

2. The concept of the Multiliteration Model based on *Project Based Learning Approach*

In terms of multiliteration can be understood as an integrated process of the application of language skills and skills using information and communication technology. Apart from that the skills will relate to various scientific disciplines and various cultures. Furthermore Multiliteration is learning that optimizes multiliteration skills in creating better learning situations [15].This learning is oriented towards the development and use of the four 21st century competencies, namely critical thinking competencies, conceptual understanding competencies, collaborative and communicative competencies, and creative thinking competencies. In addition, Multiliteration is a learning approach developed based on awareness and recognition of the diversity and complexity of students' cultural perspectives and the diversity of learning styles they possess.

Based on the description above, in practice it can be concluded that the multiliteration model is an interdisciplinary learning concept that substantially needs to be applied so that students acquire and are able to build knowledge optimally and deeply through the use of information and technology media and in the background of students' cultural lives. This is based on the assumption that students will gain meaningful knowledge if learning is based on a material that is interdisciplinary and contextual according to the cultural background of students' lives, in order to develop the concept of student knowledge as a whole [16].

Based on the explanation above, in relation, the Multiliteration Model is defined as an educational model that builds contextual knowledge with cultural life settings and the development of technology and information media, as an effort to train in developing students' thinking abilities to address life phenomena and problems in multiperspectives. In other words, the Multiliteration Model emphasizes the meaningful experiences of students as a basis for constructing knowledge effectively and efficiently. In addition, the critical Multiliteration Model can also be said as an educational model based on the use of information media and real life situations through cross-disciplinary learning as an effort to optimize student potential [17]. Through the application of a critical multiliteration model can encourage students to gain high understanding and master learning. In addition, the steps of the multiliteration model can also improve students' critical and creative thinking skills [18, 15].

The multiliteration model is built by four components namely practical situations, clear learning, critical frames, and critical transformation [19]. The four components are a unified whole that mutually reinforces each other [17]. Practical situations allow teachers to understand the socio-cultural background of students and provide a series of

learning that is important for the formation of self-identity. Clear learning from the teacher is an explanation or theoretical provided to help students build insight and deep understanding. The critical frame is used as a tool for students so that they are able to work innovatively through the development of creative critical capabilities. Transformative practice is a way to prove the performative tasks that have been performed. This practice deals with critical feedback on teachers and students regarding the usefulness and creativity of the task [15]. Based on the four components, it can be understood that the multiliteration model is built based on a constructivist and contextual approach and is oriented towards student character development, because it emphasizes more on the process than on the results. Process-oriented learning will be able to develop student character while developing student academic abilities [20].

Based on the opinions of the experts above, the Multiliteration Model can be seen as an educational model that is not only oriented towards achieving the results of knowledge alone, but more than that on the process or activity that is able to develop the potential and all aspects of students including high thinking skills (critical, creative and metacognition) and other abilities and develop students' character through multimedia, multicontext and multicultural approaches.

2.1.1. *Concept of Metacognition Thinking Skills*
Metacognition skills are understood as abilities that are general in nature and are seen to have uniqueness as skills that depend on the particular scientific discipline to be learned [21]. In connection with this conception, metacognitive knowledge is needed in studying each discipline which in its application will vary according to the structure of knowledge and content of the discipline (Bransford et. al [22]. Metacognition involves a person's knowledge and awareness about cognitive activities Metacognition knowledge is a high level of cognition (knowledge) that is used to monitor and regulate cognitive processes such as reasoning [23]. Metacognition skills are important to master because they can be used to regulate thinking and learning [24, 25].

Based on the explanation above metacognition ability is the ability to think at a higher level reflecting what has been thought [26, 27]. In other words, metacognition is a process of reflection on the thoughts we have and keeping our mind track focused on the goals to be achieved [28]. Understanding further, metacognition is understood as an ability someone has to think about their own thoughts and feelings and to predict what other people think [29, 30]. Based on the above, Schneider understands that metacognition is a person's knowledge of their own ability to process information, as well as knowledge of thinking tasks, and about strategies for copying similar tasks. In other words that metacognition includes knowledge about learning strategies, assignments, and personal variables or knowledge about self [31].

3. Conclusion

Based on the above assessment, the low multiliteration abilities of students, and the low orientation of developing students' thinking skills in current learning, need to be a serious concern for all elements, especially those involved in the world of education.

This is because students as educational products are future generations who must be ready to accept the leadership relay in fighting for the life of the Indonesian nation. Therefore, education must actually be able to make Indonesian education people a generation of nation thinkers who have full competence to be able to live and live in an era of cultural dynamics that has been formatted globally. Education must be oriented to efforts in building critical awareness and competence of the 21st century through integrative-contextual understanding, and not oriented to the achievement of partial-textual knowledge.

Based on this, there needs to be an effort that can be used as a solution to resolve the problem through effective and up-to-date effective models and effort-oriented in improving students' metacognitive thinking skills, one of which is through the application of critical literacy models based on *project based learning approaches.* Critical Multiliteration model based on *project based learning approach* is a model that is oriented towards efforts to build students' metacognitive thinking skills through multicontext, multicultural, and multimedia approaches, where students actively explore problems in the real world, provide challenges, and gain deeper knowledge , and build students' reflective analytical skills on the problems they face through their thinking strategies.

4. Suggestion

In today's era of life, the development of science and technology is a necessity. This has implications, not only on the constellation aspects of life, but also on the demands of the quality of Indonesian human resources that must be multicompetent. The effort can be made through a revitalization of education that is oriented towards efforts in giving birth to education people who must have high-level thinking skills, one of which is metacognition thinking skills. This needs to be supported by the development of holistic educational practices, meaning that education must be developed comprehensively based on multiple approaches. The critical multiliteration model based on *project based learning approach* is one of the latest learning models that is able to answer these conditions. Therefore, the critical multiliteration model based on *project based learning approach* is one of the highly recommended models for achieving the expected educational goals, namely giving birth to multicompetence education people, one of which is to have metacognitive thinking skills as 21st century skills.

References

[1]   Herlambang, Y T, (2018). Pedagogik: Telaah Kritis Ilmu Pendidikan Dalam Multiperspektif. Jakarta: Bumi Aksara.

[2]   Freire, P. (2005). *Education for Critical Consciousness*. London: Continuum.

[3]   Tilaar, H.A.R. (2012). Perubahan Sosial dan Pendidikan: Model Transformatif untuk Indonesia. Jakarta: Rineka Cipta.

[4]   Tilaar, H.A.R. (2009). Kekuasaan dan Pendidikan: Manajemen Pendidikan Nasional Dalam Pusaran Kekuasaan. Jakarta: Rineka Cipta.

[5]   Morocco, C.C., et al. (2008). Supported Literacy for Adolescents: Transforming Teaching and Content Learning for The Twenty-First Century. San Francisco: Jossey-Bass A Wiley Imprint.

[6]   Trilling, B. & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. San Francisco: Jossey-Bass A Wiley Imprint.

[7]   Binkley, M., et al. (2012) "Defining Twenty-First Century Skills" dalam Assessment and Teaching of 21st Century Skills. New York: Springer.

[8]   OECD (2003) Literacy Skills for the World of Tomorrow: Further Results from PISA 2000. Canada: OECD.

[9]   OECD (2004) Learning for Tomorrow's World: First Results from PISA 2003. Canada: OECD.

[10] OECD (2007) PISA 2006: Sciences Competecies for Tomorrow's World Volume 1 Analysis. Canada: OECD.

[11] OECD (2010) PISA 2009 Results: What Students Know and Can Do Volume I. Canada: OECD.

[12] OECD (2013). PISA 2012 Results: What Students Know and Can Do Volume I. Canada: OECD.

[13] Lucas, G. (2015). *Project Based Learning vs. Problem-Based Learning vs. X-BL [Online]*. Diakses dari http://www.edutopia.org/Project-Based Learning vs. Problem-Based Learning vs. X-BL_edutopia.html.

[14] Johnson, L., & Lamb, A. (2007). *Project, Problem, and Inquiry-Based Learning. [Online]*. Diakses dari http://eduscape.com/tap/topic43.htm

[15] Abidin, Y., Mulyati, T., Yunansah, H. (2015). Pembelajaran Literasi dalam konteks Pendidikan Multiterasi Integratif, dan Berdiferensiasi. Bandung: Rizqy Press.

[16] Ivanic, R. (2009). "Bringing Literacy Studies into Research and Prospects" dalam The Future of Literacy Studies. New York: Palgrave MacMillan.

[17] Cope, B. dan Kalantzis, M. (2005). Multiliteracies: Literacy Learning and the Design of Social Futures. New York: Routledge.

[18] Iyer, R. & Luke, C. (2010). Multimodal, Multiliteracies: Texts and Literacies for the 21st Century. dalam Pullen & Cole (Eds.). Multiliteracies and Technology Enhanced Education: Social Practice and the Global Classroom. New York: Information Science Reference (an imprint of IGI Global).

[19] The New London Group (2005). A Pedagogy of Multiliteracies: Designing Social Futures. In B. Cope and M. Kalantzis (eds) Multiliteracies: Literacy Learning and The Design of Social Futures (pp. 9-38). South Yarra, VIC: Macmillan.

[20] Lickona, T. (2004). *Character Matters*. New York: A Touchstone Book.

[21] Abidin, Y. (2016). Revitalisasi Penilaian Pembelajaran: dalam Konteks Pendidikan Multilterasi Abad ke-21. Bandung: Refika Aditama.

[22] Zohar, A. & Dori, Y.J. (eds.) (2012). *Metacognition in Science Education: Trends in Current Research.* NewYork: Springer.

[23] Metcalfe, J & shimamura, Ap. (1994). *Metacognition: Knowledge About Knowing.* Cambridge, MA: MIT Press.

[24] Anderson, L, W. & Krathwohl, D, R. (2014). *Kerangka landasan untuk pembelajaran, pengajaran dan asesmen*. Yogyakarta: Pustaka Pelajar.

[25] Wells, A. (2001). Emotional disorder and metacognition: innovative cognitive therapy. New York: John Wiley & Sons, Inc.

[26] Wells, A. (2009). *Metacognition Therapy For Anxiety and Depression*. New York, NY: The Guildford Press.

[27] Vandergrift, L. & Goh, C.C. (2012). Teaching and Learning Secobd language Listening: Metacognition in Action. New York: Routledge.

[28] Larkin, S. (2010). *Metacognition in young Children.* New York: Oxford University Press.

[29] Quirk, M. (2006). Intuition and Metagonition In Medical Education: Keys To Developing Expertise. New York, NY: Springer Publishing Company, Inc.

[30] Schneider, W. (2010). *Metacognition, Strategy Use & Instruction. Dalam H. S. Waters & W. Schneider (eds.), Metacognition and Memory Development In Childhood and Adolescence* (pp. 54-81). New York: The Guilford Press.

[31] Flavell, J. (1979). Metacognition and Cognitive Monitoring: A New area cognitiveDevelopment Inquiry. (906-911. American Psychologist.