

Creative Thinking Education for Vietnamese Primary Students

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Abstract This paper presents some theoretical knowledge about creative thinking education for primary students in Vietnam. It provides some specific suggestions on learning tasks and guidance on the application of constructivist teaching roles that Vietnamese teachers can apply to classroom practices to help develop creative thinking in primary students, thereby contributing to the effective implementation of the new General Education Program 2018. This paper suggests future research directions for the enactment of suggested creative learning tasks within competence-based lessons and evaluates their effectiveness in helping students develop creative thinking, so that appropriate recommendations for creative thinking education can be produced in accordance with the characteristics of primary teachers and students in Vietnam.

Keywords: *creative thinking, competence, education, primary students, learning tasks*

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1. Introduction

Along with curiosity and diversity, creativity is acknowledged to be one of the important factors that have helped humanity develop into what it is today. Creativity is associated with the history of the existence and development of human society, from humans discovering how to produce fire and making rudimentary stone tools to using atomic energy, exploring the universe, and so on. Creativity is derived from creative thinking (CT), which is considered an intellectual competence that is extremely important to an individual's success. Many researchers believe that everything that has been and will happen to someone is the result of the way that person uses his or her mindset, including CT. This thinking competence can be learned and enhanced through training and education. Education that helps develop CT in students will produce future citizens with the necessary competences and personalities to help contribute to the sustainable development of the country. This is even more important in the 21st century, which is characterised by uncertainties because of social, economic, and technological changes in the world [1]. Countries are in a fierce economic competition in the race for science and digital technology, which requires inventions and intellectual products that involve CT more than ever.

CT has been and will continue to be a core competence that many education programs around the world as well as in Vietnam focus on developing in students. The resolution of the 8th Central Conference on the fundamental and comprehensive reform of education and

training in Vietnam states that teachers should “Continue to strongly innovate teaching and learning methods in the direction of modernity; promote the positivity, initiative, creativity and application of learners’ knowledge and skills; overcoming one-sided imposition, remembering machines”. [2]. However, CT education is still a challenge for many schools and primary teachers in a Confucianism heritage culture like Vietnam. One of the reasons for this is that many teachers are familiar with the old-fashioned way of thinking about and practising teaching, which is more inclined to transmit, impose and focus on providing factual knowledge and exploiting memorisation in students [3]. In addition, they have not been provided with enough necessary and useful knowledge about CT, how to teach it, and appropriate learning activities to help develop CT in primary students. This leads to the fact that they may be aware of the importance of CT education for students, but have difficulty in implementing it. Many teachers lack suitable ideas for lessons, including for constructivist teaching roles to help develop CT in students, even though the new General Education Program 2018 [4] has been implemented in school practices with a strong call for teachers to change teaching approaches. It is not difficult to see that there are many classroom practices wearing an outer layer called “innovation” but practising an inert, still traditional way of teaching, which is not effective in developing CT in students due to the absence of creative learning activities and the lack of constructivist teaching roles for teachers in the process of interacting with students in class. This paper aims to present some theoretical issues about CT education for primary students. It also provides some specific and meaningful suggestions on learning tasks and

constructivist teaching roles that teachers can apply to classroom practices to teach CT to primary students, thereby contributing to the effective implementation of the new General Education Program 2018 in Vietnam [4].

2. What is Creative Thinking?

There are many opinions and definitions regarding CT. Taylor [5] has identified more than 60 different definitions of CT. Based on an analysis of the content of articles on CT, Plucker and Beghetto [6] define CT as the interaction between the capabilities, processes, and environments through which an individual or group creates a product that is believed to be both novel and useful in specific social contexts. CT is also understood as a process of linking and combining many elements. Many researchers describe CT as the ability to perceive, understand and generate new ideas from a problem, and the ability to convey results inherent in the synthetic and adaptive nature of human thinking [7,8]. Craft [9] highlights creativity in terms of thinking about the learning context (problem-solving, novelty and problem-finding) as a process which involves imagination, posing questions and play. He argues that CT is associated with a process that includes imaginative activities, questioning and experiences. CT also implies observing and analysing a problem from various perspectives, coming up with new solutions, and approaching new cognitive entities that did not previously exist [7,10].

In line with the above opinions, in this paper, CT is understood as a cognitive activity for creating new material or immaterial products, which are useful to people based on certain understandings of related subject matters. This means that in order to use CT, primary students need to have background knowledge associated with the subject of the lesson so that they can develop and create new and meaningful products. Students need to be encouraged and given the opportunity to implement and practise CT activities and learning tasks to develop CT appropriately.

Creativity and CT can be developed in primary students through the process of living and learning. They are projected to be key skills for the future workforce [11]. By fostering creativity and imagination, students develop skills useful for exploring and understanding their own world, which help them create new concepts, or modify or expand existing knowledge [12]. CT education will help develop thinking skills in students, making learning outcomes sustainable and profound, and resulting in learning becoming more interesting and engaging. In particular, CT can help primary students develop problem recognition abilities and find solutions to solve problems, as well as the ability to identify, evaluate and create new things.

The emphasis in education for primary students in Vietnam is on specific activities and learning tasks in classroom practices. However, many primary teachers in Vietnam are still vague, confused, and do not understand how education helps develop CT in students. Many still teach with rigid steps, sequences, and rules, with the focus on teachers [3], so students have not yet broken out of the stereotype and cannot develop CT or promote their competences. This mechanical, imposing, one-sided way

of teaching, which does not value diversity and adheres to a somewhat reserved view, prejudiced against differences and novelties, is also a barrier for both Vietnamese teachers and students in implementing the competence-based education and development of CT [13], meaning neither group dares to create new things. Teachers easily return to the traditional teaching style, leading pupils to undertake learning by rote, falling into cliché theory and hindering the promotion and development in students of necessary personalities and competences.

3. Components and Manifestations of CT Competence

CT, critical thinking and problem-solving are closely related and intersect because they have much in common [4,14]. These thinking competences emphasise the need to develop CT in students in many general education programs around the world, based on the goal of training and developing qualified students to meet the requirements of the new era. For example, the UK education program has launched six core competences across all academic fields and subjects, including CT. The Australian general education program consists of seven general competences including critical thinking and CT. CT is also among the nine key competences mentioned in the US general education program. Thus, CT is a competence that is valued in many educational programs around the world. This is understandable and plausible, especially in the context that the world is currently entering a knowledge revolution with the outstanding development of science and technology. CT has become an important factor and strength for many countries in the race to create unique, different and quality material and spiritual products. In this race, education plays a strategic role because it can help prepare every future citizen for CT from the time they start school.

Table 1. Criteria and indicators of CT and problem-solving described by Vietnam MOET

Criteria	Indicators
i. Recognise new ideas	Know how to identify and clarify new information and ideas from the given resources according to instructions.
ii. Detect and clarify problems	Know how to get information from situations, recognise simple problems and ask questions.
iii. Implement new ideas	Based on existing knowledge, know how to form new ideas and predict the results of implementation.
iv. Propose and select solutions	Outline how to solve a simple problem according to instructions. - Identify the main content and how it works to achieve the goals set according to the guidelines.
v. Design and enact activities	- Comment on the significance of the activities. Ask questions about surrounding things and phenomena; do not be afraid to state personal opinions when given different information about things and phenomena; be willing to change when mistakes are realised.
vi. Adhere to independent thinking	

Source: Vietnam MOET, 2018

To meet the requirements of innovation from practice and changing international trends, the General Education

Program 2018 [4] has also emphasised CT and affirmed that CT and problem-solving are closely intertwined. These are two of the key competences that need to be taught to and developed in primary students. The program also pointed out the core elements of competence CT and problem-solving, and provided the level of development of these competences at all three levels of education. For the primary education level, CT and problem-solving competences are presented with six criteria described by the following necessary indicators in Table 1.

As seen in the table above, CT consists of a series of activities associated with recognising ideas and creating new ones to solve problems, clearly shown through activities such as proposing and designing, where students show independent thinking with different opinions and are willing to change and accept new ideas.

4. Creative Thinking Education for Primary Students

CT is interrelated with independent thinking and critical thinking, which are components of the 21st-century skills for the young generation [14,15,16]. CT is considered a high-level thinking competence that needs to be taught to students starting in primary school. According to Bloom's cognitive taxonomy [17], creating is at the top of the thinking skills group, as shown in Figure 1 below.

According to Bloom's taxonomy, (1) memorising refers to recognising and recalling; (2) understanding relates to interpreting, exemplifying, classifying, summarising, comparing and explaining; (3) applying corresponds to executing and implementing; (4) analysing means differentiating, organising, and attributing; (5) evaluating

involves checking (assessing internal consistency) and critiquing (assessing external consistency); and (6) creating includes designing and producing [18]. Creating, evaluating and analysing are considered higher-order thinking skills. Memorising, understanding and applying are viewed as lower-order thinking skills. Figure 1 shows that higher-order thinking skills are developed based on lower-order thinking skills. According to Bloom, in order to promote CT in students, teachers should use a variety of different learning activities and tasks for students to perform, such as proposing, designing, assembling, building, conjecturing, developing, creating, composing, investigating, producing, role-playing, inventing, and so on.

Creating with CT has been studied for various domains such as art, drama, music and for various models such as spatial, verbal and visual ones [19]. Table 2 provides some suggestions on learning tasks that teachers can use to teach CT to Vietnamese primary students through a number of subjects included in the Primary Education Program 2018 [4].

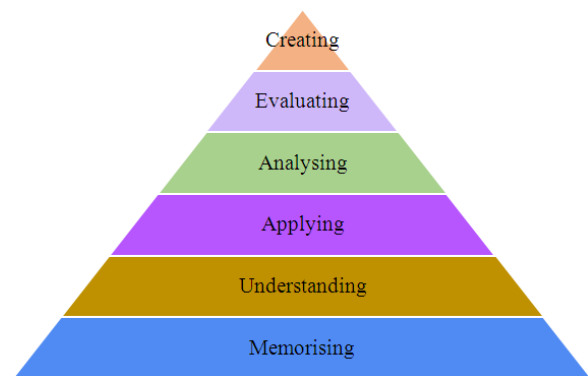


Figure 1. Bloom's taxonomy

Table 2. Suggested learning tasks for teaching CT to primary students

CT activities	Subjects	Themes	Suggested learning tasks
Proposing	Maths	Fractions (Grade 3)	Suggest ways to divide one rectangular sheet of paper into two or four equal parts.
	Vietnamese	Vocabulary (Grade 4)	Suggest ways/measures to identify nouns, verbs, or adjectives.
	Moral education	Friendship (Grade 2)	Propose behaviours to strengthen the solidarity and compassion of students in class.
	Science	Soil (Grade 4)	Propose activities to protect the soil environment.
Designing	Maths	Geometry (Grade 3)	Design a house with windows that use circles, rectangles, or/and squares. Colour and decorate that house.
	Maths	Geometry (Grade 4)	Design a bag or floor tiles that use parallel lines and decorate parallel lines beautifully.
	Vietnamese	Writing (Grade 3)	Design and decorate the title for a poem using capital letters.
	Nature & society	Weather (Grade 1)	Design costume drawings for boys and girls of suitable outfits for sunny, rainy, hot or cold weather to keep the body healthy.
Assembling	Moral education	Preserving household items (Grade 2)	Design a poster describing how to preserve a household item.
	Maths	Geometry (Grade 3)	Assemble wooden blocks with different shapes to form a model of an object.
	Vietnamese	Writing (Grade 3)	Assemble the given text cards to form complete sentences describing an object.
	Nature & society	Plants and animals (Grade 3)	Assemble parts of a tree to make a suitable model of a complete tree. Name those parts.
Building	Maths	Calculations with natural numbers (Grade 2)	Create a maths problem (verbally or in drawings) about addition, subtraction, etc.
	Vietnamese	Writing (Grade 3)	Build an outline for a paragraph describing an object.
	Moral education	Public rules compliance (Grade 3)	Develop library/reading corner rules for the school/class.
	Science	Substance (Grade 4)	Build a model or diagram of the water cycle in nature.

CT activities	Subjects	Themes	Suggested learning tasks
Predicting	Maths	Numbers and calculations (Grade 1)	Guess what the number is by using your body and actions to simulate it.
	Vietnamese	Spelling (Grade 1)	Guess what the letter or word is through your body language and actions.
	Nature & society	External parts and senses of the body (Grade 1)	Guess what a thing is based on your verbal description.
	Science	Mixtures and solutions (Grade 5)	Guess what happens when you mix sugar or sand into a glass of water and stir.
Developing	Maths	Calculations with natural numbers (Grade 2)	Give a number in advance and create a problem related to the given number.
	Vietnamese	Speaking (Grade 3)	View pictures and build a story associated with the characters in the pictures
	Moral education	Apologies (Grade 3)	Imagine and further develop the given situation with a demonstration of appropriate behaviour.
	Nature & society	Plants and animals (Grade 3)	Complete a diagram of a tree and identify the names of parts of that tree.
Establishing	Maths	Geometry (Grade 3)	Make a mind map about the shapes.
	Vietnamese	Vocabulary (Grade 3)	Make a word mind map.
	Moral education	Valuing your time (Grade 2)	Make a timetable to implement a good routine for living.
	Nature & society	Family (Grade 2)	Create a family tree including family and relatives.
Composing	Maths	Geometry (Grade 3)	Compose a short poem introducing a certain shape.
	Vietnamese	Writing (Grade 3)	Create a poem or paragraph about a friend you like and illustrate it.
	Moral education	Friendship (Grade 2)	Paint a tree of friendship with flowers inscribed with the names of actions that show good friendship behaviours.
	Nature & society	Plants and animals (Grade 3)	Observe and write a short paragraph introducing a certain tree with its parts.
Investigating	Maths	Geometry (Grade 1)	Observe and indicate which objects in the class are in the form of squares, circles, triangles or rectangles.
	Vietnamese	Spelling (Grade 1)	Identify which objects in the class have names containing the syllable being studied.
	Nature & society	School (Grade 3)	Investigate which areas of the school are or are not kept clean.
	Moral Education	Respect for teachers (Grade 3)	Investigate and discover which behaviours of respect for teachers are well done by classmates.
Producing	Maths	Geometry (Grade 3)	Mould shapes or models with clay.
	Vietnamese	Writing (Grades 2–5)	Produce class magazines or comics.
	Moral Education	Compassionate (Grades 1–3)	Make postcards for relatives, teachers, or friends.
	Science	Solar, wind and water (Grade 5)	Make a pinwheel with paper.
Role-playing	Maths	Natural numbers/ Geometry (Grade 1)	Rope-play a natural number or a shape and introduce or describe it.
	Vietnamese	Storytelling/ Writing (Grade 2)	Role-play a character/thing and make a story about her/him/it.
	Moral education	Suitable for all themes	Role-play to solve the given problem associated with the matter of the lesson.
	Science	Substances (Grade 5)	Imagine yourself as water and role-play to introduce the subject of water.
Inventing	Science, technology, engineering and mathematics (STEAM)	Interdisciplinary, integrating a lot of knowledge	- Make water purifiers. - Make a chair/potted plant from recycled items.

5. Implementing Constructivist Teaching Roles in CT Education for Primary Students

The absence of CT activities and creative learning tasks for students to undertake and a lack of motivation to learn are becoming a more common reality [20]. For students to be creative, the constructivist teaching roles [21,22] are important. They represent a pedestal on which students can promote and develop their CT competence. In order to

perform constructivist teaching roles in CT education for primary students, teachers should note the following points.

a. Be open to receiving opinions and comments

In order for students to be creative, teachers need to have an open attitude in the process of interacting with pupils in class [22]. If teachers force them to do activities, they will destroy CT in students because they will think that their ideas and products are not right or accepted, but must be like those of the teacher. At that time, students' ideas and perceptions will be accidentally limited and reframed, which can lead to the situation that students act

to satisfy the teacher's wishes but not through their own thoughts or beliefs. This openness is reflected in the fact that teachers should know how to recognise opinions and products created by students, listen to their presentations and see the advantages and positives in students' opinions and products, express concerns and questions about a problem or opinion they do not understand related to students' activities or products, and give them the opportunity to respond or clarify. Teachers should not frame their comments in the simplicity of "right" or "wrong" for ideas expressed by students and should not consider themselves the centre of commenting and evaluation activities. Instead, teachers should create opportunities for students in the class to comment on and evaluate peers' ideas and products with the goal of recognising advantages and giving constructive suggestions to improve the products.

b. Value diversity and difference

Divergent thinking is considered an important predictor of CT [23]. Teachers who create CT in students always value diversity and difference because they understand that one of the CT characteristics is uniqueness. The value of diversity and difference is expressed by the teacher in that she allows students to have different approaches to problems, to voice ideas from their own thoughts and to use their own languages, as well as allowing pupils to express different, even opposing opinions. She does not force or encourage students to think, say, or do the same things, or create similar products. On the contrary, she is always conscious and encouraging so that students can boldly express their own ideas and products, as well as their interests, excitement and support for students when they create a diverse and different spiritual or material value in the classroom. Therefore, students also feel comfortable when giving opinions or ideas, or creating products in their own way without any hesitation or fear, and without being worried that the teacher or their peers will criticise or laugh at them.

c. Encourage new and unique ideas

In order to nurture CT in students, the teacher is not only open to students' opinions and products, but she also boldly encourages them to devise new, unique ideas, even unprecedented ones. She is willing to give students suggestions and commendations if their ideas and products are unique, but still ensure that they are convincing. She offers suggestions to help students approach a problem from different perspective instead of guiding or asking students to follow a common process. Therefore, she allows students to have many deep learning experiences and not see mistakes as daunting. On the contrary, she recognises errors as educational and learning through experiencing as a meaningful form of education, helping to develop CT in students.

d. Promote the role of supervision and facilitation

The role of supervision and facilitation is reflected in the fact that teachers know how to create space and time for students to learn autonomously and independently [22]. The teacher does not dwell on speaking and giving careful instructions, but focuses on the role of orienting, coordinating, supervising and facilitating when needed. If students can manage to perform tasks on their own with

the clear assignment of teachers, with good cooperation in a team, using available materials, in a positive, proactive and focused mind, teachers can let students learn completely independently without deep interference in their learning process. During the process of supervising pupils when performing tasks, if they find that students face difficulties, teachers can assist them to recognise those difficulties and provide open-ended questions, as well as suggestions for students to have more directions and bases for their choices and decisions.

e. Maintain a student-focused interactive learning atmosphere

Developing creative ideas always relates to what someone has accepted from his/her social environment by interacting with others [24]. Therefore, teachers who develop CT in students need to maintain an interactive learning atmosphere with a focus on the pupils, attaching importance to students' opinions, open sharing, comments and evaluations. Active learning is simply understood as letting students perform and asking them to talk about what they are doing. CT supports active learning because it encourages students to make products. The fact that teachers conduct discussions associated with each learning product made by students is important because it helps students attain the necessary feedback to learn more effectively, work better afterwards and then achieve progress in learning. In order to do so, a teacher needs to become a facilitator, a wise and democratic chair of a "class seminar" in which every student has the right to speak and give his or her own opinion regarding the topic of the lesson. The interactive discussion will also partly reflect the "diverse and different", "unique and new" characteristics of CT, and at the same time contribute to helping students obtain more rich information and practical knowledge from many sources to perfect their CT process and products.

6. Conclusions

CT education for Vietnamese primary students depends not only on the renewal of the program, but also largely on the implementers. Teachers play a key role in the development of CT in students, as well as in the implementation of competence-oriented teaching to develop personalities and competences. In order to develop CT in Vietnamese primary students, teachers themselves need to understand CT education and be aware of CT activities. In addition to gaining theoretical knowledge about it, teachers also must also be equipped and provided with practical ideas about learning tasks to help teach CT to primary students. In addition, they should know how to perform constructivist teaching roles to help nurture CT in students through classroom practices. This paper is theoretically significant in providing systematised scientific knowledge about CT, and also has practical significance in giving specific suggestions for CT learning tasks in accordance with the 2018 General Education Program [4]. It is useful for instructing teachers on how to perform constructivist teaching roles to help promote CT activities to Vietnamese students. This work also opens up future research directions on the

implementation of the suggested CT learning tasks within competence-based lessons and assesses their effectiveness in helping Vietnamese students to develop CT, so that appropriate recommendations can be produced for CT education in accordance with the characteristics of primary teachers and students in Vietnam.

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References

- [1] Beghetto, R. A. (2010). Creativity in the classroom. In J. C. Kaufman & R. J. Sternberg (Eds.), *The Cambridge handbook of creativity* (pp. 447–463). New York, NY: Cambridge University Press.
- [2] Vietnam Central Committee (2013). Resolution No. 29-NQ/TW dated 4/11/2013 of the 8th Central Conference of the XI session on fundamental and comprehensive reform of education and training. Retrieved from <https://moet.gov.vn/tintuc/Pages/doi-moi-can-ban-toan-dien-gd-va-dt.aspx?ItemID=3928>.
- [3] Hăng, N. V. T., Meijer, M.R., Bulte, A., & Pilot, A. (2015). The implementation of a social constructivist approach in primary science education in Confucian heritage culture: The case of Vietnam. *Cultural Studies of Science Education*, 10(3), 665–693.
- [4] Vietnam Ministry of Education and Training. (2018). General education program 2018. Retrieved from <https://moet.gov.vn/tintuc/Pages/tin-hoat-dong-cua-bo.aspx?ItemID=5755>.
- [5] Taylor, C. W. (1988). Various approaches to and definitions of creativity. In R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 99–121). New York, NY: Cambridge University Press.
- [6] Plucker, J., & Beghetto, R. (2003). Why not be creative when we enhance creativity? In J. H. Borland (Ed.), *Rethinking gifted education* (pp. 215–226). New York, NY: Teachers College Press.
- [7] Wang, A. Y. (2012). Exploring the relationship of creative thinking to reading and writing. *Thinking Skills and Creativity*, 7(1), 38–47.
- [8] Ward, T. B., Smith, S. M., & Vaid, J. (1997). Conceptual structures and processes in creative thought. In T. B. Ward, S. M. Smith, & J. Vaid (Eds.), *Creative thought: An investigation of conceptual structures and processes* (pp. 1–27). American Psychological Association.
- [9] Craft, A. (2000). *Creativity across the primary curriculum: Framing and developing practice*. London: Routledge.
- [10] Hensley, N. (2020). Educating for sustainable development: Cultivating creativity through mindfulness. *Journal of Cleaner Production*, 243.
- [11] World Economic Forum (2018). *The future of jobs report 2018*. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf.
- [12] Duffy, B. (2006). *Supporting creativity and imagination in the early years*. Maidenhead: Open University Press.
- [13] Hăng, N. V. T. (2019). The implementation of critical thinking in Vietnamese primary moral education classes. *Issues in Educational Research*, 29(2), 732–755. Retrieved from <https://www.iier.org.au/iier29/hang.pdf>
- [14] Hăng, N. V. T. (2020). Design of a competency-based moral lesson to teach critical thinking for primary students. *Issues in Educational Research*, 30(1), 115–133. Retrieved from <https://www.iier.org.au/iier30/hang.pdf>
- [15] Hăng, N. V. T., & Liễn, N. T. (2017). Critical thinking: Why is it needed to develop for Vietnamese students and what are challenges. *HNUE Journal of Science*, 62(12), 24–33.
- [16] Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. San Francisco, CA: Jossey-Bass.
- [17] Armstrong, P. (2010). Bloom's taxonomy. Vanderbilt University Center for Teaching. Retrieved from <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>.
- [18] Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory Into Practice*, 41(4), 212–218.
- [19] Sowden, P. T., Clements, L., Redlich, C., & Lewis, C. (2015). Improvisation facilitates divergent thinking and creativity: Realizing a benefit of primary school arts education. *Psychology of Aesthetics, Creativity, and the Arts*, 9(2), 128–138.
- [20] Rivas, P. G. (2017). Strategies for teaching and dissemination of artistic heritage by promoting critical and creative thinking among future primary education teachers. *Procedia - Social and Behavioral Sciences*, 237, 717–722.
- [21] Hăng, N. V. T. (2017). Some characteristics of the teacher create society. *Journal of Educational Sciences, Vietnam Institute of Educational Sciences*, (136), 42–45.
- [22] Hăng, N. V. T., Bulte, A., & Pilot, A. (2017). Interaction of Vietnamese teachers with a social constructivism-based primary science curriculum in a framework appropriate for a Confucian heritage culture. *Asia-Pacific Science Education*, 3(2).
- [23] Runco, M. A., & Acar, S. (2012). Divergent thinking as an indicator of creative potential. *Creativity Research Journal*, 24, 66–75.
- [24] Sitorus, J., & Masrayati. (2016). Students' creative thinking process stages: Implementation of realistic mathematics education. *Thinking Skills and Creativity*, 22, 111–120.



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