LATERAL THINKING PRACTICE ON ELT SITUATION: INNOVATIVE STRATEGY TO PROMOTE HOTS

by

Putu Yoga Sathya Pratama
UNIVERSITAS PENDIDIKAN GANESHA
yoga.pratama@undiksha.ac.id
Ni Nyoman Padmadewi
UNIVERSITAS PENDIDIKAN GANESHA
nym.padmadewi@undiksha.ac.id
I Gusti Ayu Lokita Purnamika Utami
UNIVERSITAS PENDIDIKAN GANESHA
lokitapurnamika@undiksha.ac.id

*(**Received**: 15-11-,2021;**Review**1:05-12:2021, **Revised**1: 14-12-2021;**Revised**2:20-01-2022;**Accepted**: 10-02-2022;**Publihsed**;28-02-2022)*

Abstract:

Several conceptions of convergent and divergent thinking are being compared to determine the superior one. However, lateral thinking has emerged, blending convergent and divergent thinking whose potentials impact High Order Thinking Skills (HOTS). This conceptual writing aimed to describe the practice of lateral thinking skills in ELT situations. Furthermore, its role in promoting HOTS was discussed, especially in modern classrooms. A library research design was used to gather primary data through literature reviews. The examinations were done qualitatively; triangulated for more reliability and compelling. The findings reveal that lateral thinking is most commonly delivered on a problem-based learning model, which might be utilized to encourage students to think beyond the box in the future. Lateral thinking is also adaptable and applicable in various settings and courses. It is anticipated that practicing lateral thinking in the modern classroom would significantly impact students' problem-solving skills, discover new solutions, create discoveries and breakthroughs. It is highly suggested that both teachers and students employ lateral thinking to ensure that HOTS is trained to its full potential.

***Keywords**: Lateral thinking, Problem-solving skill, HOTS, Modern Classroom*

INTRODUCTION

Creative and critical thinking concepts are becoming increasingly popular in today's education. These phrases are highlighted because they are necessary to compete in today's world (Suprapto, Fahrizal, Priyono, & K., 2017). Creative and critical thinking abilities are highly beneficial in a variety of situations. However, they are all related to problem-solving and the generation of ideas (Fauziah, Marmoah, Murwaningsih, & Saddhono, 2020; Suprapto et al., 2017; YAZGAN, 2021; Zebehazy, Weber, Murphy, & Ghani, 2020). Through critical thinking, someone will examine which one is the best to be done and accepted. In comparison, thinking creativity encourages someone to explore ideas and solutions to the problem (Palmiero, Nori,

Piccardi, & D'Amico, 2020). Seeing these advantages, creativity and critical thinking have all been identified as the essential requirements for education, even since long ago.

Around the 1950s, Joy Paul Guilford, an American Psychologist, introduced the terms "convergent thinking" and "divergent thinking" related to the concept of critical thinking and creative thinking (Wenzel & Gerrig, 2015). Convergent thinking denotes critical thinking, while divergent thinking indicates creative thinking. Convergent thinking is a straightforward process that focuses on figuring out the most effective solution to problems. Additionally, convergent thinking is also well-known as a "close-ended solution." Divergent thinking refers to opening the mind in various directions and trying out multiple solutions for a problem. Moreover, divergent thinking is famous as an "open-ended solution" (Palmiero et al., 2020).

The concepts of convergent thinking and divergent thinking are, in fact, two important concepts that are frequently argued and contrasted (Shen, Hommel, Yuan, Chang, & Zhang, 2018; Shen, Hommel, Yuan, Chang, Zhang, et al., 2018; Wenzel & Gerrig, 2015). They are opposed to one another, yet they are highly crucial in our daily lives. Without considering other possibilities, people cannot condense facts and data into a single solution. Even people cannot answer as many answers as possible without first selecting and deciding which ones would be employed. As a result, while it is not necessary to constantly be used in conjunction with another, they perform better when used together.

These dilemmatic ways of thinking took around a decade to meet their resolution. In the 1960s, a new way of thinking terminology called "lateral thinking" was proposed by Edward de Bono (De Bono, 1970). Lateral thinking is well-known as thinking out of the box, conceiving, and observing things that ordinary people would not foresee and envision (Aydemir, 2021). Lateral thinking, according to Bono, is the process of using the information to spark creativity and transform perceptions through restructuring. Lateral thinking generates the notion that simultaneously divergent and convergent thinking should be carried out (Phillips, 2014). It involves the development of numerous ideas and then selecting the best of them. As a result, it not only trains students to be creative but at the same time also encourages them to be critical thinkers.

The idea of lateral thinking proposed by Bono is one of the High Order Thinking Skill (HOTS) requirements. It is believed that someone who acquires HOTS can analyze, criticize, and create valuable ideas for themselves or others (Mei Ardaning Tyas, 2020; Prachagool &

Nuangchalerm, 2021). HOTS currently is being in rapid promotion, especially in the modern classroom. The contemporary classroom reflects an educational system that emphasizes critical and creative thinking (Allison & Goldston, 2016; Prachagool & Nuangchalerm, 2021). Its vibes mainly focus on a student-centered approach, with the exact problem and prominent project-based learning. The final goals of the modern classroom are training students to compete globally and preparing them to be part of the future global issues solver (Fuchs, 2021).

Seeing the essentiality of HOTS, it needs to be promoted through attractive strategies so that learners can follow it positively. Surprisingly, the dimensions of creative and critical are preserved on the lateral thinking concept. The lateral thinking concept that combines divergent (creative thinking) and convergent (critical thinking) ways can be implemented in promoting HOTS itself. In short, practicing lateral thinking can catch up with the need to be creative and critical in a single learning activity.

Considering the potencies carried by lateral thinking on promoting HOTS, recent kinds of literature around divergent thinking, convergent thinking, lateral thinking, activities that promote HOTS, and modern classroom have been further reviewed (see appendix). Reviews on research around divergent, convergent, and lateral thinking show an indication that the number of literature around lateral thinking has gotten little attention in the recent five years (Aydemir, 2021; Karagöz, 2019; Mustofa & Hidayah, 2020; Srikongchan, Kaewkuekool, & Mejaleurn, 2021). Compared to the grounded of it, convergent and divergent thinking has been discussed and more popular since a few years ago (Fauziah et al., 2020; Forthmann, Wilken, Doebler, & Holling, 2019; Frith et al., 2021; Martín-Brufau & Berná, 2021; Palmiero et al., 2020; Ramain, Mohr, & Abu-Akel, 2021; Shen, Hommel, Yuan, Chang, & Zhang, 2018; Shen, Hommel, Yuan, Chang, Zhang, et al., 2018; Taylor, Esmaili Zaghi, Kaufman, Reis, & Renzulli, 2020; Zebehazy et al., 2020) than the discussions of lateral thinking. It shows the gap of lateral thinking's deliberation, which needs to be enhanced.

This writing describes the concept of lateral thinking strategy's practice and its role in promoting HOTS, especially in ELT situations and current classroom circumstances. The enhancement of lateral thinking literature is one of the rationales this writing carries. Seeing the valued potential of lateral thinking in employing both critical and creative thinking simultaneously, the practice of this terminology in the modern classroom becomes highly essential to explore.

The ELT situation becomes crucial since the HOTS instruction needs to be conveyed in English. On the contrary, several kinds of literature (Mei Ardaning Tyas, 2020; Mustofa & Hidayah, 2020; Prachagool & Nuangchalerm, 2021) show that students' low competencies in English often becomes a challenge in promoting HOTS since the HOTS instructions conveyed in English are interpreted differently. Therefore, practicing lateral thinking, which employs divergent (creative) and convergent (critical) approaches, can enhance the English competencies. It is also at the same time promoting HOTS implicitly, as what has been done by Forthmann, Lips, Szardenings, Scharfen, & Holling (2020). It is also offered to enhance all subjects (not only English) in a broader case. The main reason is that lateral thinking literature explores and manages ideas; it occurs in every study in general. Hence, different results are also anticipated to capture information on lateral thinking practice, which seems to lack documentation. The research problem focuses on how lateral thinking skills and their role in promoting HOTS in EFL classrooms. This conceptual writing aimed to describe the practice of lateral thinking skills in ELT situations and its role in promoting HOTS, particularly in modern classrooms. Therefore, educators and researchers are expected to consider this writing as one of their references in employing lateral thinking discussion.

METHOD

Design

This conceptual writing employed a qualitative approach with a library research design, and it used a qualitative approach in the form of data text. Library research was also determined to choose because this research attempted to conceptualize lateral thinking practice regarding the reviewed literature. It was possible since data and information needed by library research can be reached straightforwardly, not limited by time and space (Chu, 2015). The primary data were collected from various references, namely: articles, books, and related documents. The data were selected based on several criteria, i.e., published in the last five years, employed four databases (Eric, Google Scholar, ScienceDirect, Researchgate), and used five keywords (convergent, divergent, modern classroom, lateral thinking HOTS). From the database, 25 selected articles discuss the implementation of HOTS through convergent, divergent, or lateral thinking in the context of the modern classroom (Aditya, 2020; Asari et al., 2019; Aydemir, 2021; Can et al., 2019; Choi & Lee, 2020; Fauziah et al., 2020; Forthmann et al., 2019; Fuchs, 2021; Frith et al., 2021; Karagöz, 2019; Martín-Brufau & Berná, 2021; Mustofa & Hidayah, 2020; Mustika et al.,

2020; Otty & Milton, 2019; Palmiero et al., 2020; Prachagool & Nuangchalerm, 2021; Ramain et al., 2021; Reade, 2017; Schut et al., 2019; Shen et al., 2018; Srikongchan et al., 2021; Suprapto et al., 2017; Taylor et al., 2020; Tyas, 2020; Zebehazy et al., 2020;).

Instruments and subject of the research.

The authors function as instruments to harvest wished data from the destined subject. The researchers involve several articles, books, and related documents from 5 years. Meanwhile, the object was the practice and implementation of lateral thinking in EFL classrooms. Lateral thinking was chosen as the main object in this research due to the lack of documentation of lateral thinking practice in enhancing HOTS. The fact is that lateral thinking significantly influences high-order thinking skills. Hence, reviewing literature about lateral thinking is essential to be discussed.

Data collection and data analysis technique

The primer data was derived from articles about lateral thinking in modern classrooms and its implementation to enhance HOTS on EFL learners. The data were obtained by selecting articles, books, and documents related to lateral thinking in EFL classrooms. Data trustworthiness was employed data triangulation. The analysis was done qualitatively considering the interactive data analysis process (data reduction, data display, and conclusion drawing) proposed by Miles & Huberman (2014). Data reduction is selecting sources that may be useful for result data. Data display means a process that aims to display the analysis result. Then, conclusion drawing is the last step to conclude the data results. The obtained findings were analyzed, and other related results from various sources were included to obtain their readability and reliability (Matthew B., Huberman, & Saldana, 2014). The whole process of citation, either in-text citation or list of references, uses a referencing tool of Mendeley with model offline automatic desktop (Turmudi, 2020).

RESULT AND DISCUSSION

Practices of lateral thinking in the modern classroom

As an innovative teaching strategy, practicing lateral thinking in the modern classroom requires educators to deeply comprehend its core, convergent, and divergent thinking.

Conversely, convergent thinking refers to logic, critical thinking, vertical thinking, analytical thinking, and linear thinking (Lubart, 2016). On the other hand, Lubart (2016) also proposes that divergent thinking denotes creative and horizontal thinking.

Lubart's (2016)deliberations indicate that convergent thinking gathers facts and data from numerous resources and references, applying logic and knowledge to solve problems and determine decisions. There, it does not require significant creativity. Most practices regarding convergent thinking strategy are observable standardized multiple-choice (Cosgrove, 2015; Wenzel & Gerrig, 2015).

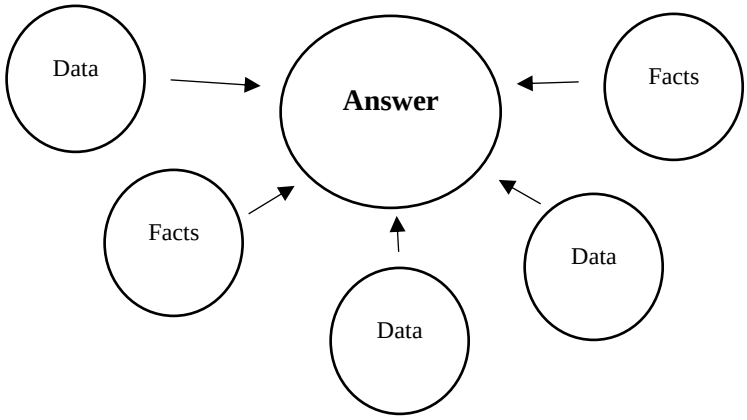

Figure 1. *Convergent Thinking's Visualization*

Contrary to convergent thinking, divergent thinking is the process of thinking that generates ideas through exploring multiple possible solutions (Palmiero et al., 2020). In its practice, the divergent thinking approach is often observable in classroom discussion, creative writing, puzzles, and project-based, allowing students to choose decisions (Palmiero et al., 2020).

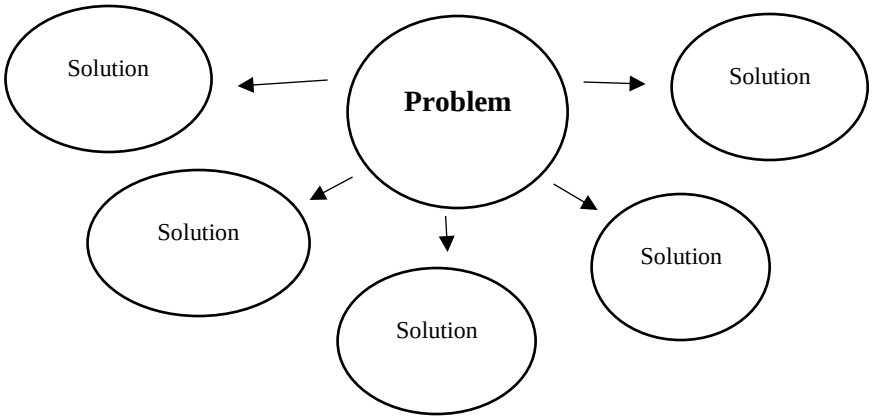

Figure 2. *Divergent Thinking's Visualization*

Thinking divergently means thinking outward and values whether the data, facts, and evidence are supporting or not. It also indicates several characteristics, such as 1) spontaneous, 2) free-flowing, and 3) non-linear (Lubart, 2016). Accordingly, considering divergent thinking seems to be more flexible than convergent thinking.

Blending both convergent and divergent thinking in terms of lateral thinking practice must be started by considering its dimensions, namely: 1) use random ideas to generate new ideas; 2) recognizing the dominant ideas of the problem; 3) looking for different ways of looking at things; and 4) loosening rigid ways of thinking (De Bono, 1970). Triangulating the characteristics of divergent, convergent, and its blended, lateral thinking; the flow of practicing lateral thinking strategy can be done through this pattern:

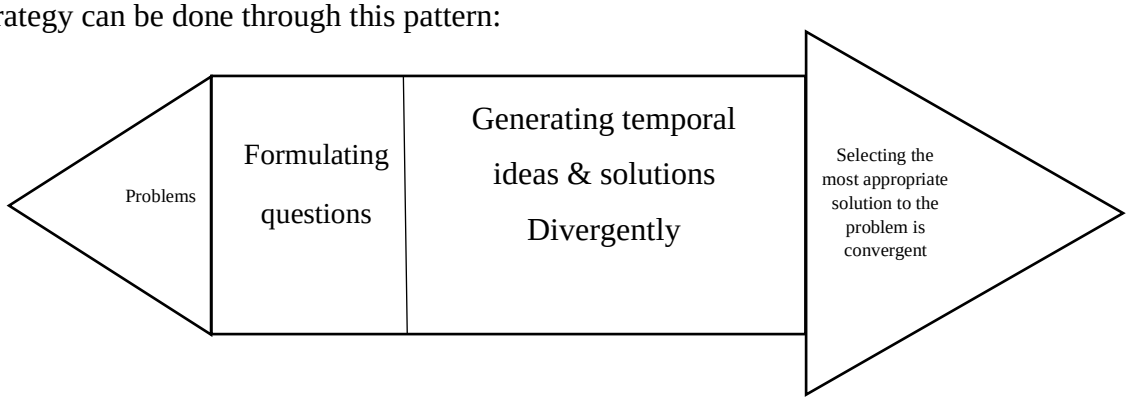

Figure 3. *The pattern of Practicing Lateral Thinking Strategy*

In accord with the formulated pattern, educators can start offering students stimuli in the form of problems/issues. Students observing the challenges given will be shown on the work focus they created through their formulated questions. Temporal ideas and solutions must then be designed as many as possible divergently. Students do not need to limit themselves, even make examinations from the beginning because it will restrict their mind to produce ideas. In short, they are free to express their wild capacity to think without any barriers. The examinations are conducted after obtaining ideas and solutions. Educators must guide students to pick the best resolution, emphasizing various considerations critically. In which it shows the capacity to think in a convergent manner. The final results will portray students acquiring the most appropriate solution toward the encountered problem. Taking into account, through employing creative and critical thinking simultaneously, HOTS is being promoted during the whole process of lateral thinking is practiced.

In-depth triangulation, this strategy will be more effectively implemented on the problem-based learning model. It aligns with several reviewed literature (Fauziah et al., 2020; Mustofa & Hidayah, 2020; Zebehazy et al., 2020), showing lateral thinking correlates strongly with the problem-solving approach. Problem-based learning indeed has several syntaxes and characteristics, namely: (1) clarifying unknown terms, (2) problem definition, (3) brainstorming, (4) analyzing problems, (5) formulating learning objectives, (6) independent learning, and (7) report the result of problem-solving (Fauziah et al., 2020). There, lateral thinking can be covered through problem-based learning because it allows students to face authentic problems,

In the ELT situation, lateral thinking strategy can be further done on problem-based learning. However, the whole activities are formed in lateral thinking circumstances. Following the pattern of lateral thinking practice on figure 3 and problem-based learning model characteristics, an instance of activity that can be done in practice this strategy can be seen below:

1) Pre-Activity consists of recent issues, trending topics, updated social awareness, and questions about materials being taught as brainstorming. Those activities make lateral thinking strategy relevant across times. For instance, *"In your mind, why do you think people write an advertisement in attractive dixies?"*, *"Currently, English becomes an essential part of a career in all sectors; how do you prepare yourself toward this issue?"*, *"In several parts of our country, English is taught ineffectively; how do you put your participation in solving this issue?"*. This step has been implemented in Mustofa and Hidayah (2020) through brainstorming. They asserted that brainstorming becomes a lateral thinking process because different perspectives make students decide a problem through mindset. Students are involved in thinking ideas quickly, spontaneously, and broader during the process. In line with that statement, Jurcovic (2005) and Molnar (2008) have mentioned that brainstorming can develop students' lateral thinking skills. Brainstorming can be a setting that stimulates students to propose new arrangements, combine thoughts, and look from a different point of view.
2) Main-Activity consists of 1) formulating the questions, 2) generating temporal ideas and solutions divergently, and 3) discussing, researching, and examining the most convergent solution. The activities are highly suggested to be done in group discussion.

Students attempt to collaborate independently while keeping on being guided by the educator. Minimum instruction has been employed, yet students are the main actors that role themselves. There are issues with promoting HOTS (Tyas, 2020; Mustofa & Hidayah, 2020; Prachagool & Nuangchalerm, 2021). The English instructions are often misunderstood, minimized, even ruled out. Students can be freely express themselves regardless of their lack-competencies in English.

3) Post-Activity contains presentations, discussions, and feedback, and it can be set up freely considering the classroom climates. Implicitly, students can also train their communication skills, confidence, and critical manner on providing feedback toward others' work.

In addition, other exercises can be done as well in employing lateral thinking strategy, showing its flexibility and adaptability to be applied in various courses and subjects. In line with Madhavaiah & Ram (2016), those exercises are:

1. **Project-Based Felicitation.** Students are organized in an atmosphere that leads them to do a learning project. However, the project must be relevant to learning goals.
2. **They are generating critical questions.** This approach can be implemented by assigning generating questions to the students. The questions should not be open-ended, but they should be questions that push them to answer in detail.
3. **Perceptions on photographs & cartoons.** It can be done by administering different photographs and cartoons from several magazines, newspapers, or social networking. Based on the collection of pictures or cartoons, students can perceive beyond what the media has told.
4. **Situation-based responses.** In this case, students are given a worksheet with different critical situations or problems. Moreover, students are asked to respond to any situation with open discussion.
5. **Creating a theme for objects.** Students are assigned several things or objects. Then, they must choose one of those objects and make a simple anecdote and an appropriate theme.
6. **Short stories.** This way can enrich students' lateral thinking because students are asked to choose any themes from stories from different sources. Based on that, students must

create and perform the same story with different versions or from the modern point of view. Thus, students need to think creatively and out of the box, part of lateral thinking.

7. **Demonstration of Problems.** In this way, students are given problems such as riddles, which can be their brainstorming. From those problems, students need to think critically to solve them. This approach will train students' high order thinking skills(HOTs) since they solve the problems using their way.

High-order thinking (HOTs) skills can be considered reflective thinking, problem-solving, and metacognitive thinking (Aydemir, 2021). Lateral thinking refers to high-order thinking skills that reflect on an event from a different perspective. Thus, letting students think laterally will train them to create out-of-box solutions that may never be predicted (Aydemir, 2021). In 1972, lateral thinking techniques were promoted to develop learners' creative thinking (Srikongchan et al., 2020). This technique induces learners to make conceptual analyses to make the changes and to think differently.

Relating with HOTS, which focuses more on reflective thinking, problem-solving and metacognitive thinking, lateral thinking can be a supportive technique for students to implement and develop HOTS. It can be applied to two techniques: make a change from within and outside (Srikongchan et al., 2020). Hence, lateral thinking is divided into two parts, i.e., avoiding the old ideas and motivating new ideas. Students can analyze the existing concept and then think of new ideas. During this process, they can be reversing the thinking, distorting or exaggerating the ideas. They exercise to automatically set information into different shapes or perspectives to develop high-order thinking skills.

As an extended discussion, some anticipated impacts on practicing lateral thinking skill have been identified, as follow:

1) In the context of problem-solving, lateral thinking is helpful to discover alternative and broader ways of solving problems (Mustofa & Hidayah, 2020; Tabares, 2013). It is such an art of problem-solving, where it assists students gain the best solution from criticizing generated ideas. Problem-based learning activities can be an example of a learning strategy that helps deliver learning messages through observation and identification. The competencies in observing and identifying problems give them the opportunity the problem solving (Mustofa & Hidayah, 2020). Mustofa and Hidayah (2020) also found

that problem-based learning can directly enhance students' ability to think laterally. These activities push students to learn, find solutions and comprehend problems. While generating and selecting the solution, the student's brain will gradually shape the form of HOTS.

2) In the context of finding new ways. Most students nowadays only focus on common ways or how the majority of students have chosen. Lateral thinking trains the student to be brave to walk in a different path from others (Aydemir, 2021). Students need to move out of their current zone; as Bono stated, "*you cannot dig a hole in a different place by digging the same hole deeper*" (Phillips, 2014). Mustofa and Hidayah (2020)show that applying Problem Based Learning can increase students' thinking skills because students memorize information and present their ideas, defend, and revise what they need. Students learn new ways and ideas to finding alternative solutions (Mustofa & Hidayah, 2020). Automatically during PBL, students know how to practice lateral thinking and develop their thinking skills. In line with that statement, Karagoz (2019) asserted that individuals who think laterally commonly change their perspective or point of view. They can eliminate judgments or regular patterns and employ more useful solutions with innovative thinking. It is because lateral thinking skills teach individuals to idea-generating tools that will produce solutions for unusual problems.
3) In the context of inventions and innovations. Lateral thinking is a process of thinking creatively to produce innovative thinking. This definition is one of the fourth factors of lateral thinking, according to Bono (1970), that is, to use random ideas to generate new ideas. In line with (Aydemir 2021), currently, students are demanded to invent something new. Practicing lateral thinking is a powerful strategy to achieve this goal.

CONCLUSION AND SUGGESTION

Conclusively, lateral thinking has an enormous potential to promote HOTS. It allows students to think out of the box, relate to problem-solving, find a new way, and produce inventions and innovations. Due to its flexibility and adaptability, practicing lateral thinking strategy can be employed in almost all study subjects. Specifically, in ELT situations, practicing lateral thinking strategies offered in this writing can minimize the educators' superiority in the classroom; make students role their engagements better.

It is highly suggested that the English educators consider this writing as one of their references in promoting HOTS in their classroom. Also, further researchers are expected to investigate issues carried by this writing in more rigorous results. Since the assessment deliberation is not yet being scrutinized in this writing, investigating how to assess and evaluate lateral thinking activities is highly recommended for future inquiries.

BIO-PROFILE:

Putu Yoga Sathya Pratama holds his Bachelor of English Language Education at the Ganesha University of Education Indonesia and is currently studying for a Master's Degree in the same University. His interests are in the scope of ELT, Debating, and Writing on Social-Issues deliberations. He has joined several Debating and Academic Writing competitions, such as National University Debating Championship (NUDC) since 2017, National Academic Writing Competition, and the Essay/Paper Competition. He is also actively joined educational communities, such as Bali Edukasi. Corresponding Email: yoga.pratama@undiksha.ac.id

BIO-PROFILE:

Ni Nyoman Padmadewi is a professor in English Education and the head of the Doctorate Degree Program, the English Language Education Department Postgraduate Program at the Ganesha University of Education Indonesia. She has experience developing several sorts of curricula for children with special needs. She did much research in English education (TEYL, assessment, English teaching methods), served as examiner of Ph.D. dissertations for universities abroad and in the country, and has also taken a role as a reviewer for international publications. Corresponding Email: nym.padmadewi@undiksha.ac.id

BIO-PROFILE:

I Gusti Ayu Lokita Purnamika Utami is currently a lecturer at the English Language Education Department at the Ganesha University of Education Indonesia. In 2018, she earned her PhD in ELT from Universitas Negeri Malang, Indonesia. Her research interests are on teacher professional development, English language instruction, the use of technology in language teaching, and literature teaching. Corresponding Email: lokitapurnamika@undiksha.ac.id

REFERENCES

Allison, E., & Goldston, M. J. (2016). An exploration of two "modern classrooms": elementary science and technology in the shadows of time, standards, and testing. *Electronic Journal of Science Education*, *20*(7), 26–49.

Aydemir, A. (2021). Social Innovation And Lateral Thinking Tendencies Of Preservice Social Studies Teachers. *International Journal of Progressive Education*, *17*(3), 250–262. https://doi.org/10.29329/ijpe.2021.346.16

Cosgrove, P. B. (2015). Variations on a theme: Convergent thinking and the integration of faith and learning. *Christian Higher Education*, *14*(4), 229–243. https://doi.org/10.1080/15363759.2015.1049756

De Bono, E. (1970). Lateral Thinking: A Textbook of Creativity. In *Penguin Books* (Vol. 3).

Fauziah, M., Marmoah, S., Murwaningsih, T., & Saddhono, K. (2020). The effect of thinking actively in a social context and creative problem-solving learning models on divergent-thinking skills viewed from adversity quotient. *European Journal of Educational Research*, Vol. 9, hal. 537–568. https://doi.org/10.12973/eu-jer.9.2.537

Forthmann, B., Lips, C., Szardenings, C., Scharfen, J., & Holling, H. (2020). Are Speedy Brains Needed when Divergent Thinking is Speeded—or Unspeeded? *Journal of Creative Behavior*, *54*(1), 123–133. https://doi.org/10.1002/jocb.350

Forthmann, B., Wilken, A., Doebler, P., & Holling, H. (2019). Strategy Induction Enhances Creativity in Figural Divergent Thinking. *Journal of Creative Behavior*, *53*(1), 18–29. https://doi.org/10.1002/jocb.159

Frith, E., Kane, M. J., Welhaf, M. S., Christensen, A. P., Silvia, P. J., & Beaty, R. E. (2021). Keeping Creativity under Control: Contributions of Attention Control and Fluid Intelligence to Divergent Thinking. *Creativity Research Journal*, *33*(2), 138–157. https://doi.org/10.1080/10400419.2020.1855906

Fuchs, K. (2021). Preparing Students for Success in a Changing World: The Role of Virtual Whiteboards in the Modern Classroom. *Education Quarterly Reviews*, *4*(1), 151–158. https://doi.org/10.31014/aior.1993.04.01.182

Karagöz, B. (2019). an Evaluation of Pre-Service Turkish Teachers' Lateral Thinking Dispositions With Regard To Different Variables. *Online Submission*, *5*(9), 156–165. https://doi.org/10.5281/zenodo.2542955

Lubart, T. (2016). Creativity and convergent thinking: reflections, connections, and practical considerations. *RUDN Journal of Psychology and Pedagogics*, (4), 7–15. https://doi.org/10.22363/2313-1683-2016-4-7-15

Martín-Brufau, R., & Berná, J. C. (2021). Foraging for New Ideas: Search and Research in Divergent Thinking Tasks. *Creativity Research Journal*, *33*(3), 246–254. https://doi.org/10.1080/10400419.2021.1888518

Matthew B., M., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data_Analysis : A_Methods_Sourcebook* (3rd Editio). Thousand Oaks. CA: SAGE Publications.

Mei Ardaning Tyas, J. N. M. (2020). Cultivating Students' Higher -Order Thinking Skills in Efl Classes : the Role of the Teacher and the. *International Online Journal of Education and Teaching (IOJET)*, *7*(1), 267–276.

Mustofa, R. F., & Hidayah, Y. R. (2020). The effect of problem-based learning on lateral thinking skills. *International Journal of Instruction*, *13*(1), 463–474. https://doi.org/10.29333/iji.2020.13130a

Palmiero, M., Nori, R., Piccardi, L., & D'Amico, S. (2020). Divergent Thinking: The Role of Decision-Making Styles. *Creativity Research Journal*, *32*(4), 323–332. https://doi.org/10.1080/10400419.2020.1817700

Phillips, D. C. (2014). Creative and Lateral Thinking: Edward de Bono. In *Encyclopedia of Educational Theory and Philosophy*. https://doi.org/10.4135/9781483346229.n86

Prachagool, V., & Nuangchalerm, P. (2021). Perspectives of Thai educators toward 21st-century instruction. *Journal of Education and Learning (EduLearn)*, *15*(3), 432–437. https://doi.org/10.11591/edulearn.v15i3.20281

Ramain, J., Mohr, C., & Abu-Akel, A. (2021). How Cognitive Control, Autistic and Schizotypal Traits Shape Context Adaptation of Divergent Thinking. *Journal of Creative Behavior*, *55*(3), 783–799. https://doi.org/10.1002/jocb.489

Shen, W., Hommel, B., Yuan, Y., Chang, L., & Zhang, W. (2018). Risk-Taking and Creativity: Convergent, but Not Divergent Thinking Is Better in Low-Risk Takers. *Creativity Research Journal*, *30*(2), 224–231. https://doi.org/10.1080/10400419.2018.1446852

Shen, W., Hommel, B., Yuan, Y., Chang, L., Zhang, W., Schut, A., … Gerrig, R. J. (2018). Children's Responses to Divergent and Convergent Design Feedback. *Design and Technology Education: an International Journal*, *24*(2), 67–89. https://doi.org/10.1080/0163853X.2015.1023966

Srikongchan, W., Kaewkuekool, S., & Mejaleurn, S. (2021). Backward Instructional Design-based Learning Activities to Developing Students' Creative Thinking with Lateral Thinking Technique. *International Journal of Instruction*, *14*(2), 233–252. https://doi.org/10.29333/iji.2021.14214a

Suprapto, E., Fahrizal, F., Priyono, P., & K., B. (2017). The application of problem-based learning strategy to increase high order thinking skills of senior vocational school students. *International Education Studies*, *10*(6), 123. https://doi.org/10.5539/ies.v10n6p123

Tabares, I. (2013). Lateral thinking of prospective teachers. *Light House: Journal of Educational Reflection*, *I*(1), 28–32.

Taylor, C. L., Esmaili Zaghi, A., Kaufman, J. C., Reis, S. M., & Renzulli, J. S. (2020). Divergent thinking and academic performance of students with attention deficit hyperactivity disorder characteristics in engineering. *Journal of Engineering Education*, *109*(2), 213–229. https://doi.org/10.1002/jee.20310

Turmudi, D. (2020). English scholarly publishing activities in the industrial revolution 4 . 0 :

What , Why , and How ? *ELTEJ*, *3*(1), 52–63. Retrieved from http://journal2.uad.ac.id/index.php/eltej/article/view/1890

Wenzel, W. G., & Gerrig, R. J. (2015). Convergent and divergent thinking in the context of narrative mysteries. *Discourse Processes*, *52*(5), 489–516. https://doi.org/10.1080/0163853X.2015.1023966

YAZGAN, A. D. (2021). Investigation of the Relationship Between Pre-service Teachers' Lateral Thinking Levels and Problem Solving Skills. *Kuramsal Eğitimbilim*, *14*(1), 20–37. https://doi.org/10.30831/akukeg.793247

Zebehazy, K. T., Weber, R. C., Murphy, M., & Ghani, A. (2020). Divergent Thinking: The Performance of Students with Visual Impairments on Abstract and Scenario-Based Tasks and Their Correlates. *Journal of Visual Impairment and Blindness*, *114*(4), 301–314. https://doi.org/10.1177/0145482X20940101