

Stimulating Bilingual Students' Divergent Thinking

TIARMA MARPAUNG

<http://orcid.org/0000-0002-0784-2812>

tiar.lulan@gmail.com

Artha Wacana Christian University
Indonesia



ABSTRACT

Bilinguals are claimed to possess divergent thinking indicated by having creativity. As candidates of teachers, students of English Education should gain the quality of being creative so that the students can be interested in learning English. This study tried to stimulate and reinforce the ability of divergent thinking of 35 English Education students of Artha Wacana Christian University Kupang, Indonesia as they are from bilingual family. It also tried to find out the students' level of divergent thinking ability using Gestalt and Jackson's bucket test. It consisted of students from various ethnics of East Nusa Tenggara Province, Indonesia. Among 35 participants, only 14 were fluent bilingual students. Those bilinguals acquire their mother tongue as a first language and Bahasa Indonesia as a second language. The bilingual students can mention at least 3 to more than ten uses of the tin within 7 minutes. The result shows that 36% of the students have below average scores of divergent ability, 36% of them acquire average scores, and 28% of them are categorized as creative. Thus, it indicates that the students could not gain their maximum ability of divergent thinking which was possibly due to the qualities of their divergent ability. Uncomfortable environment, individual learning style, familiar use of the object, and lack of motivation have manipulated the students' fluency, flexibility, elaboration, and originality in diverging their thoughts. Further research needs to be done to investigate those influencing factors deeply and more issues related to bilinguals' divergent thinking.

KEYWORDS

Divergent thinking, Qualities of divergent thinking, Bilinguals, Indonesia

INTRODUCTION

Creativity is necessary to make the learners interested in what they are learning. To create creativity in his or her classroom, a teacher oneself should be innovative and productive in designing interesting instruction. Teachers should provide large opportunities for the students to do synthesis as the product and reflection of their creative thinking in making decision and solving problems (Brophy, 2011: 20). They also need to understand each student's background to be able to solve any learning difficulties which prevent each student for being creative. As candidates of teachers, students of Teachers Training and Education should previously attain the quality of being creative.

Carter (2009: 155) defines creativity as "mental processes that lead to solutions, ideas, concepts, artistic forms, theories or products that are unique or novel." Creativity is needed in the process of learning. Students require creativity in solving learning problems. To be able to solve their problems, students need to think laterally that requires them to be capable in looking at the problems from many different sides before going to the best solution (Carter, 2009: 155). To do so, students need to change their conventional point of view and to be *innovative*. However, there is a possibility that the students do not employ their creativity optimally in their individual life. The underuse of creativity is caused by the lack of opportunity to explore the creative side of the brain.

Creative students tend to have the ability to diverge their thought. Guilford, 1950 in Glăveanu (2014: 8) mentions that divergent thinking is one measure that supports creative thinking. However, it does not mean that all bilinguals are creative. Kecskes and Albertazzi (2007: xi) in their preface say that "...although bilingualism may lay the foundation of creative thinking it does not necessarily imply being creative". It means that bilinguals should fulfill certain requirements or criteria of being creative, especially of possessing divergent thinking.

Thus, experts have set indicators of bilinguals to be categorized as ones having divergent thinking. One of the experts says that divergent thinking has four major qualities; they are fluency, flexibility, elaboration and originality (Guilford in Kharkhuri, 2008: 226). Students with fluency can create a solution to solve the problem immediately. Flexible students can adopt any strategies for solving the problems directly. Elaborative students are capable of thinking any single piece of ideas to be applied in solving the problems. Meanwhile, students with originality have different ideas than the others. Based on TTCT (Torrance Test of Creative Thinking), Kharkhurin (2008: 226) has found that bilinguals have those four qualities of divergent thinking. By doing her research, the writer expects that her students at English Education of Artha Wacana Christian University gain the qualities of divergent thinking.

There are some factors that influence divergent thinking. Researchers mention behavioral mimicry (Ashton-James & Chartrand, 2009: 1036); and humorous atmosphere (Ziv, 1983: 68) as factors that can influence divergent thinking. Besides, Bialystok (2001: 7) says that factors which largely influence students' linguistic and cognitive competence are "social, economic, and political circumstances of life." Runco (1985: 2) also mentions motivation and intelligence as indicators of creative potential. Language proficiency, the length of language experience, and age of second language acquisition also have an effect on learners' divergent thinking (Kharkhurin, 2008: 225). Those factors vulnerable can affect the linguistic and cognitive competence of students at English Education of Artha Wacana since they have various backgrounds.

Students of English Education of Artha Wacana Christian University have different cultural background. They come from various regions in East Nusa Tenggara Province, Indonesia. By this information, the writer assumes that they are mostly bilinguals in their mother tongue as their first language (L1) and Bahasa Indonesia as their second language (L2). The writer also expects that these students have attained the qualities of divergent thinking.

A person is said to be bilingual if he or she can use at least two languages proficiently to a certain degree (Moradi, 2014: 107). If students can use their two languages equally well orally or written, they are called as balanced bilinguals. However, they tend to have better knowledge in one language than the other one. Meanwhile, Macnamara (1967) in Landry (1968: 2) says that a bilingual is "a person who possesses at least one of the language skills even to a minimal degree in their second language." Bilingual students in Indonesia have learned Bahasa Indonesia formally as their first or second language since in Elementary Education. As Indonesia is a multicultural country, students previously have acquired their mother tongue as their L1. Thus, the writer can say that they should have been proficient in L1 and L2 since they have learned those languages in their family and at schools which apply bilingualism in communication.

Bilingualism is said to give positive influence toward students' cognitive functions. As cognitive development is dealing with mental processes, creativity should be included. Creativity mostly works on the right side of the brain, as Carter (2009: 170) says that "the right side (of the brain) is creative and intuitive and leads, for example, to the birth of ideas for works of art and music." However, being overlapped in functions, the left side of the brain also contributes creativity in cognitive development regarding thinking logically and laterally. Thus, the writer can say that creativity will be performed most effectively when the two sides of the brain work together equally. TTCT is helpful for teachers to find out which part of the students' brain is more active. TTCT with some innovation can be used to exercise students' brain to be more balanced.

As bilingual students, then they are claimed to have divergent thinking. To know individual's degree of creative thinking, Gestalt and Jackson's test of divergent ability suggested by Carter (2009: 175) can be used as one of the measurement. The divergent ability test is called the bucket test in which each testee has to mention as many users as possible for an object such as "a bucket," a paper clip," or "a brick," etc. in a limited time given.

OBJECTIVES OF THE STUDY

Based on the writer's assumption that students in Indonesia are proficient in L1 and L2, this research has aimed mainly at finding the level of divergent thinking ability of bilingual students and secondarily at possible factors of influence in their test result.

METHODOLOGY

The writer has chosen randomly 35 students of English Education of Artha Wacana Christian University located in Kupang city, East Nusa Tenggara Province, Indonesia as participants in her research. The participants are chosen as they are from different ethnics of East Nusa Tenggara. From those 35 students, there are ten students from Timor, six students from Sumba, two students from Rote, and nine students varied from Alor, Ambon, Sabu, Flores, and Malaka. Meanwhile, eight students are from a bilingual family in which their parents speak different mother tongues. Since 2014, most of the students have begun living in Kupang in which the people in the society mostly speak in Kupang Malay, since 2014.

This paper is intended to describe the bilingual participants and their creative thinking measured through their divergent thinking. Gestalt and Jackson's bucket test in Carter (2009: 175) is used to find out the students' divergent ability. A test has been held to discover their ability of divergent thinking. Students should be able to mention as many uses of a small-sized tin. A questionnaire has been used to facilitate the writer to investigate bilingual students' background information and factors influencing the test result.

RESULTS AND DISCUSSION

Based on the result of a survey which the writer has conducted towards 35 English education students in Artha Wacana Kupang, there are only 14 bilingual students who can speak two languages fluently; their mother tongue and Bahasa Indonesia. Most of the participants only acquire Bahasa Indonesia as their daily communication.

In her research, the writer has asked the participants to write as many users as possible of a small-sized tin. Within seven minutes, students have written at least 3 to more than ten uses of the tin. The uses of the tin are varied from the daily to multi-purpose uses. For the daily uses, a small-sized tin can function as a rice measuring cup; a string can for spices or salt, pins or needles, or stationaries. For multi-purpose uses, the students mention some uses of the tin as a flower pot, a candle/light dispenser, an ashtray, a piggy bank, a toy, or decoration. The distribution of ideas on the uses of the tin by 14 bilingual students is listed in Table 1.

The writer has evaluated the divergent thinking of 14 bilingual students by asking one of her family members to score each use of the tin. The scores are ranked based on the level of divergent ability of the students seen from how good, practical, and original the uses of the tin are. The uses score 2 points if they are good, original or useful; 1 point if they are not-so-good but constitute a good attempt; 0 points if they are completely impractical; and 0 points if they are anti-social such as for doing violence. Then the scores are ranged between 7-11 points for average divergent ability; 12-15 points for being creative; and 16-20 points for being highly creative and imaginative.

Table 1. Distribution of ideas on the tin uses by 14 bilingual students

No.	Uses of a small-sized tin	Points	Number of Bilingual students
1	Flower pot	1	5
2	Candle/light dispenser	2	6
3	Decorative flower	2	6
4	Ashtray	1	3
5	Piggy bank	2	6
6	Measuring cup	1	9
7	Storage can	1	13
8	Watering can	2	3
9	Flower vase	2	5
10	Toys	2	7
11	Stationary dispenser	1	9
12	Tissue holder	2	3
13	Audio speaker	2	1
14	Waste can	1	2
15	Cooking instrument	2	2

Based on the research among those 14 bilingual students, the writer found that there are relatively 36 % of the students have below average scores of divergent ability, 36 % of the students have average scores of divergent ability, and 28 % of the students are in the creative category. The writer cannot generalize this result as there are possible factors that could become the reasons for the students to be unable to achieve their maximum divergent ability during the test. **Figure 1** shows the students' score distribution of divergent ability.

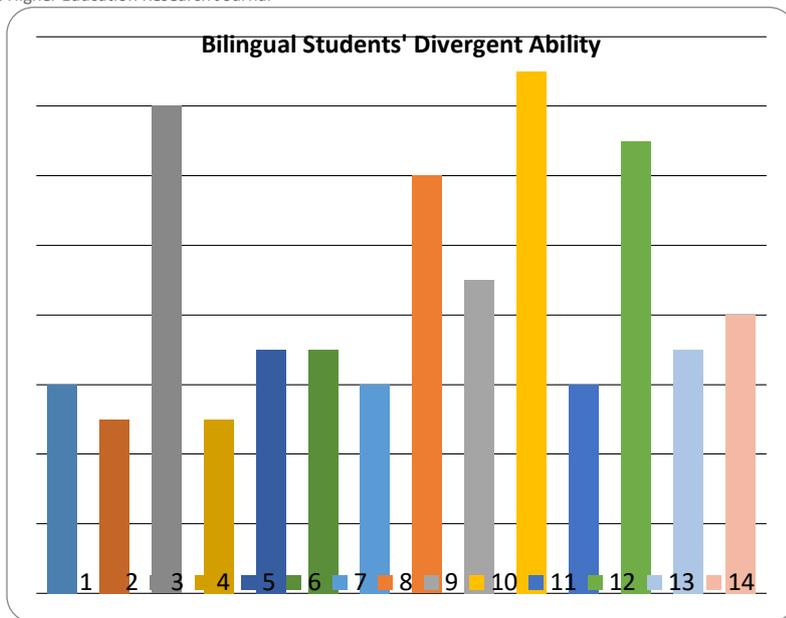


Figure 1. Distribution of divergent ability score

There are possible factors that can cause the students unable to attain their maximum divergent ability. The writer has observed and found some possibilities of factors influencing their test result. The uncomfortable environment during the test taken place for the students to diverse their optimal thinking as they were sitting in cubicles; the sitting arrangement was without enough space for the students to feel free having their original ideas without being disturbed by other students; the students' familiarity with the object used to define the uses; and the lack of motivation which made the students less serious in doing the test.

The first factor can be one reason as the environment has a role to cognitive processes, and each student has different environmental preference to bring their optimum creativity. This factor is related to individual learning style. Reid (2005: 123) mentions that it is important to provide "learning-friendly environment based on learning styles, equity, and creativity." The second factor can also be another factor that is still related to the students' learning style. The first two factors influence students' fluency and flexibility as well as elaboration qualities of divergent thinking. The third one influences the students' originality as a small-sized tin is commonly used in their daily life. Most uses of the tin the students have mentioned are familiar with their real life. The writer considers the lack of motivation that influences the four qualities of divergent thinking as they do not feel the importance of the test and are not obliged to complete the test, so they do not give their best effort. The lack of motivation also can make the students unable to use their parts of the brain optimally. Reid (2005: 11) also states that motivation can make the students confident to activate their metacognitive ability. This demotivation is because the result of the test is not included in the formal or regular learning assessment. However, this last factor still needs to be further investigated.

From the questionnaire, the researcher has found that sex differences additionally can be one factor that determines students' divergent thinking. Female students get a higher level of ability of divergent thinking than the male ones. However, Roue (2011, 2014) argues that gender brings influence towards divergent thinking. Meanwhile, Jaquish and Ripple (1980: 143) mention that gender differences have an influence towards divergent thinking in adolescent period. In their abstract they say:

Scores were obtained for fluency, flexibility, and originality of thought, and for self-esteem. Adolescents were significantly more fluent and flexible than preadolescents. The two age groups did not differ significantly in originality or self-esteem. Self-esteem correlated significantly with divergent thinking in preadolescents only. Female adolescents scored significantly higher on all dependent measures than adolescent males; there were no sex differences in preadolescents (Jaquish & Ripple, 1980: 143).

Above quotation has supported what the researcher has found based on the students' questionnaire.

Also, Kharkhurin (2008: 226) says that the languages proficiency of bilinguals is involved in determining the level of divergent thinking. That is why fully bilingual students with high level of languages proficiency perform better knowledge analysis than those who are partially bilinguals. Cummins (1977a) in Cummins and Swain (1986: 16) also states that "only those bilinguals who had attained a relatively high level of L2 competence performed at a higher level on the verbal originality task ... on verbal fluency and flexibility skills." Based on this statement, the writer assumes that the 14 bilingual students participated in the research do not acquire a high level of proficiency in the language they speak, especially in the second language. The result of this research also supports what Kecskes and Albertazzi (2007: xi) have mentioned that bilingual students do not always have creative thinking. The possible reason is that students do not speak L1 and L2 in balance whether in their family

or at schools and college. The more educated their parents are, the fewer students communicate in L1 with their parents. Communication is delivered more in L2. Schools they have attended also do not apply bilingualism all the time as their teachers also come from the different cultural background.

The writer also agonizes the bilingual students include in a subcultural group where their L1 belongs to the language of minority, or they belong to a particular group of people within a society different from the rest of that society. It should also be noted that research was done by Lembright and Yamamoto, 1965; Madaus (1967) in Landry (1968: 3) shows that “subcultural groups score lower on creativity measures than a ‘normal’ group.” Students participated in the research are living in Kupang, in where the habitats mostly speak in Kupang Malay in their daily communication. L1 is spoken when students gather with those of the same local language.

The 14 bilingual students participated in the research come from different cultures and languages. Five students come from Sumba; three students are from Timor; two students are Amboneses; and four others are from Rote, Lembata, Alor, and Belu. Based on <https://www.ethnologue.com>, there are nine different languages in Sumba island distributed in four regions. Timor language, Uab Meto is also different in dialects of different districts. The writer now can see that language differences in one area may be one of the causing factors of the students’ divergent thinking. However, further research needs to be done to find out how the differences can influence creativity.

CONCLUSION

Bilingual education is helpful to build and develop the foundation of creative thinking in students. However, the writer assumes that there are other factors which are able to stimulate students’ divergent thinking. Some possible factors are students’ intelligence, motivation, family and social-cultural background, and the length as well as the frequency of L1 and L2 usage. Gender is also a possible factor that influences divergent thinking in certain period or age. More factors and detail information about each causing factor may come with further investigation.

RECOMMENDATIONS

Thus, the writer suggests future researchers conduct more tests to find out more reliable result of bilingual students’ divergent thinking such as TTCT as recommended by Kim (2006: 14); reasons which lay behind the positive or negative result of the students’ divergent thinking; and for further research, the writer also suggests an investigation on strategies to develop students’ divergent thinking in English as a foreign language learning for English teachers to refer to.

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