# THE RELATIONSHIP OF HIGHER-ORDER THINKING TO LINGUISTIC INTELLIGENCE

**M. Asholahudin[1], Uyu Wahyudin[2], Nurhaedah Gailea[3]**
Universitas Sultan Ageng Tirtayasa[13], Universitas Pendidikan Indonesia[2]
solahudinade35@gmail.com, udinpls@upi.edu, nurhaidah@untirta.ac.id

## ABSTRACT

This objective of research is to know the correlation between higher order thinking with linguistic competence. The method of research is used quantitative method with correlational technique. The try out for research instrument on 17 s.d 23 May 2022 with the total number of respondents 542. The result of try out for research instrument showed up the questionnaire of higher order thinking skill about 25 items is all valids, and also the questionnaire of linguistic competence 25 items was all valid. The result of correlation between higher order thinking skill and linguistic competence which is the repondents about 230 repondents showed up that the correlation is medium. It can be concluded that there is significance between higher order thinking skill and linguistic competence, because $\alpha < 0,05$ $(0,000 < 0,05)$.
**Keywords:** Higher Order Thinking Skill, Linguistic Competence

## INTRODUCTION

Article 57 of Law Number 20 of 2003 concerning the National Education System states that evaluation is carried out within the framework of controlling the quality of education nationally as a form of accountability of education providers to interested parties. Evaluation is carried out on students, institutions and educational programs on formal and non-formal channels for all levels, units and types of education.

The development of learning that is oriented towards higher order thinking skills (BTT) is a program developed as an effort by the Ministry of Education and Culture through the Directorate General of Teachers and Education Personnel in an effort to improve the quality of learning and improve the quality of graduates. This program was developed following the policy direction of the Ministry of Education and Culture which in 2018 has integrated Strengthening Character Education (PPK) and learning oriented towards higher-order thinking skills.

The results of the Trends in International Mathematics and Science Study (TIMSS), Indonesia got an average score of 397 and was ranked 4th (fourth) bottom out of 43 countries participating in TIMSS. About 75% of the items addressed in TIMSS have been taught. But the depth of understanding is still lacking. Meanwhile, for the 2015 Program for International Student Assessment (PISA), Indonesia got an average score of 403 for science (third from bottom), 397 for reading (last place), and 386 for mathematics (second from bottom) from 72 countries. which follow.

Even though the increase in Indonesia's achievements is quite significant compared to the results of 2012, the achievements in general are below the average for OECD (Organization for Economic Cooperation and Development) countries. If this increase continues, it is predicted that by 2030 Indonesia's achievements will match the OECD (Organization for Economic Cooperation and Development).

The results of measuring student achievement based on the UN (National Examination) were in line with PISA (Program for International Student Assessment) and TIMSS (Trends in International Mathematics and Science Study) achievements. The results of the 2018 National Examination showed that students were still weak in higher order thinking skills (BTT) such as

reasoning, analyzing and evaluating. Therefore the Ministry of Education and Culture through the Directorate General of Teachers and Education Personnel (Ditjen GTK) seeks to improve the quality of learning which leads to improving the quality of students by organizing a Learning Competency Improvement (PKP) program. One of the materials developed in the PKP program is an assessment based on higher order thinking (BTT).

Higher-order thinking skills (BTT) are triggered by four conditions, including the following:

a. particular learning situation that requires specific learning strategies and cannot be used in other learning situations.
b. Intelligence is no longer seen as an ability that cannot be changed, but rather a unity of knowledge that is influenced by various factors consisting of the learning environment, strategy, and awareness in learning.
c. Understanding views that have shifted from ini-dimensional, linear, hierarchical, or spiral to understanding views that are multidimensional and interactive.
d. More specific higher order thinking skills such as reasoning, analytical skills, problem solving, and critical and creative thinking skills

Intelligence is the ability that someone has to see a problem, then solve the problem or make something that can be useful for others. According to Dewi (2019) intelligence is the ability that exists within a person to solve problems or produce something of value in culture. According to Gardner (Khan, 2010) put forward the definition of intelligence includes three understandings, namely: the ability to solve problems, the ability to produce new problems that are solved, and the ability to create something that will bring appreciation in individual culture.

From some of the definitions above, it can be concluded that intelligence is a person's ability to solve problems faced, the ability to generate new problems, and create something new that is beneficial to himself and others.

Linguistic intelligence is one of the multiple intelligences that was discovered and developed by Howard Gardner, a developmental psychologist and professor of education from the Garduate School of Education, Harvard University, United States. He began writing his ideas about multiple intelligences/intelligence in his book entitled Frames of Mind in 1983 then in 1993 published his book entitled Multiple Intelligences, after doing a lot of research and the implications of multiple intelligences in the world of education.

The indicators of linguistic intelligence studied included rhetoric, mnemonics, explanations, and metalanguage contained in the linguistic intelligence questionnaire. The statements in this questionnaire are a modification of Armstrong (2022) as follows:

a. Rhetoric, meaning to be able to use language to influence others. As an example in arguing, a person tends to use words that are easy to understand and can convince others, likes to write the steps in the LKPD, enthusiasm when debating and speaking in front of the class, communicates well when discussing in class, and more likes to express opinions rather than write them down.
b. Mnemonic, meaning that people with this intelligence can use language to remember something. For example, when you have to remember something, you create words or rhythms that help you remember it, it's not easy to forget things, even if they're trivial, it's easier to remember what you hear, and you make important notes to remember and understand something.
c. Explanation, meaning that in explaining something can use language well. An example of a statement is that people with this intelligence can explain complex topics in teaching materials into something simple and easy to understand, easily explain solutions to problems that are considered difficult by others, have a broad vocabulary and can express themselves

when having to present in front of the class. , and can easily retell the problem in a contextual form.

d. Metalanguage, meaning that you can use language to discuss the language itself. An example of the statement is when another friend asks the meaning of certain words/language, one can interpret it by using good language, having a good vocabulary compared to other students, being able to understand the problem by writing the words and symbols correctly contained in the problem. contextual questions proposed, and able to plan solutions in good and correct language when given non-routine questions

Educating students with higher order thinking (BTT) means making them able to think. Students are said to be able to think if they can apply their knowledge and develop their skills in the context of a new situation.

According to Kuswana (2011) thinking is using reason to consider and decide something, weigh it in memory. To think means to have a mind, to have reason. Meanwhile, the mind is the result of thinking, and the thought is a process, way, act of thinking, and the thinker is a smart, clever person, and the results of his thoughts are used by others. The definition of thinking is explained by Suriasumantri (1997) that thinking is a process that produces knowledge. This stage is a series of thought movements by following a certain way of thinking in order to arrive at a conclusion in the form of science. From some of the definitions above, it can be concluded that thinking is a rearrangement of the mind to decide something to produce new knowledge and experience.

Higher-order thinking (BTT) as a transfer process in the context of learning is to give birth to meaningful learning, namely the ability of students to apply what they have learned to new situations without the direction or guidance of educators or other people. High-level thinking (BTT) as a critical thinking process is in the context of learning to form students who are able to think logically (reasonably), be reflective, and make decisions independently. High-level thinking (BTT) as problem solving is to make students able to solve real problems in real life, which are generally unique so that the solving procedure is also unique and not routine.

**RESEARCH METHOD**

The high-order thinking questionnaire instrument trial and linguistic intelligence were sent via Google Form, and the data entered was 542 respondents in the dissertation research tabulation data. The high-order thinking questionnaire instrument trial consisted of 25 questions. The purpose of testing this instrument is to determine validity and reliability.

The results of testing the high-level thinking questionnaire instrument SPPS 20 Software. The results obtained are all questionnaires are valid. The linguistic intelligence questionnaire instrument trial was sent via Google form, and the data entered was 542 respondents in the dissertation research tabulation data. The linguistic intelligence questionnaire instrument trial consisted of 25 questions. The purpose of testing this instrument is to determine validity and reliability.

The results of the SPPS 20 software linguistic intelligence questionnaire test. The results obtained were that all questionnaires were valid. The reliability of vocabulary mastery questions is 0.75. So the classification is high. Correlation test results of higher order thinking with linguistic intelligence.

| Correlations | | Higher Level Thinking | Linguistic Intelligence |
|---|---|---|---|
| Higher Level Thinking | Pearson Correlation | 1 | ,450** |
| | Sig. (2-tailed) | | 0,000 |

| | | | |
|---|---|---|---|
| | N | 230 | 230 |
| Linguistic Intelligence | Pearson Correlation | ,450** | 1 |
| | Sig. (2-tailed) | 0,000 | |
| | N | 230 | 230 |

Correlation test results for higher order thinking and linguistic intelligence in the table above shows that the correlation coefficient between higher order thinking and linguistic intelligence is 0.450 at a significance level of α 5%. So it can be said that the relationship between higher order thinking and linguistic intelligence has a moderate relationship. The correlation coefficient (+) means that there is Higher Level Thinking with Linguistic Intelligence. The table shows that sig.(1-tailed) or one-sided significance shows a number of 0.000. This shows that there is a significant relationship between higher order thinking and linguistic intelligence, because α < 0.05 (0.000 < 0.05).

**CONCLUSION**

The relationship between higher order thinking and linguistic intelligence has a moderate relationship. This shows that there is a significant relationship between high thinking and linguistic intelligence. Higher-order thinking is something that must be deepened by students in the world of education. Linguistic intelligence that already exists in the potential of students, it will support the success of higher order thinking.

**REFERENCES**

Abidin, Yunus. 2017. Pembelajaran Literasi : Strategi Meningkatkan Kemampuan Literasi Matematika, Sains, Membaca dan Menulis. Jakarta : Bumi Aksara

Ahmad, Kuniawan. 2018. The Implementation of Teaching LOTS and HOTS in English Teaching-Learning Process in Senior High School. Jurnal RETAIN Volume 6 Nomor 1

Andriani, Rina. 2019. Model Pembelajaran Keterampilan Membaca Pemahaman Berbasis HOTS (Higher Order Thinking Skills). Jurnal Bahasa, Sastra Indonesia dan Pengajarannya Volume 12 Nomor 2 Hal 51-55

Ansori, Muhammad, Joko Nurkamto dan Suparno. 2019. Teacher's Belief and Practices in the Integration of Higher Order Thinking Skills in the Teaching Reading. Jurnal ELS on Interdisciplinary Studies on Humanities hal 541-555

Arnita, Sajidan. 2019. Improving Student's Critical Thinking Skills in Cell-Metabolism Learning Using Stimulating Higher Order Thinking Skills Model. International Journal of Intruction.

Arifin, R Nugroho. 2018. HOTS Kemampuan Berpikir Tingkat Tinggi : Konsep, Pembelajaran, Penilaian, dan Soal-Soal. Jakarta : PT Gramedia Widiasarana Indonesia.

Author, Nailul Restu. 2018. Penerapan Higher Order Thinking Skills (BTT) untuk Meningkatkan Keterampilan Membaca Siswa SMA. Jurnal Taddidukasi. Volume VIII Nomor 1 Hal 127-142.

Azisah, Siti. 2020. Pembelajaran Bahasa Inggris: Model dan Aplikasi. Bandung : PT. Remaja Rosdakarya.

Ballakrishnan, Kheshinee dan Maslawati. 2020. Teacher's Teaching Methods in Teaching Higher Order Thinking Skill (BTT) Comprehension Questions. International Journal of Academic Research In Business and Social Sciences Volume 10 Number 2

Emzir. 2009. Metodologi Penelitian Pendidikan : Kuantitatif & Kualitatif. Jakarta : PT. RajaGrafindo Persada.

Fred dan Melody. 2014. Applying Multiple Intelegences in the Classroom : A fresh Look at Teaching Writing. International Journal of Scholarly Academic Intellectual Diversity. Volume 16, Number 1, 2014

Gardner, Howard.2006. Multiple Intellegence. USA : Basic Books

Hamdani. 2011. Strategi Belajar Mengajar. Bandung: Pustaka Setya.

Kaur, Charanjit Swaran. 2020. A Review of Research on the Importance of Higher Order Thinking Skills (BTT) in Teaching English Language. Journal of Critical Reviews hal 740-747

Helmawati. 2019. Pembelajaran Dan Penilaian Berbasis HOTS (Higher Order Thinking Skills). Bandung : PT Remaja RosdaKarya

Kaur, Charanjit Swaran. 2020. A Review of Research on the Importance of Higher Order Thinking Skills (BTT) in Teaching English Language. Journal of Critical Reviews hal 740-747

Kemdikbud. 2017. Modul Penyusunan Soal Higher Order Thinking Skill. Jakarta

Kemdikbud. 2019. Buku Penilaian Berorientasi Higher Order Thinking Skill. Jakarta

Kusumastuti, Ima, Endang fauziati dan Sri Marmanto. 2019. Revealing Teachers' Belief of Higher Order Thinking Skills in Teaching Reading at Junior High School. Jurnal ELLic Volume 3 hal 155-162

------------2019. Challenges For Higher Order Thinking Skill (BTT) Implementation: Reports From EFL Classroom Teachers. Jurnal IjolTe Volume 3 Nomor 2

Kuswana, Wowo Sunaryo. 2011. Taksonomi Berpikir. Bandung : PT Remaja Rosdakarya

Linda, Bruce Campbell. 1999. Multiple Intellegences : and Students Achievement Success Stories From Six Schools. USA : Association for Supervision and Curriculum Development

Malini, Manjet Kaur, Sarjit. 2017. Promoting Higher Order Thinking Skills via Teaching Practices. The Souhthest Asian Journal Volume 23 Number 1

Mardiyah dan Mujib. 2017. Kemampuan Berpikir Kritis Matemtis Berdasarkan Kecerdasan Multiple Intelligences. Jurnal Al-Jabar: Jurnal Pendidikan dan Matematika. Volume 2 Nomor 2 Hal 187-196

Marina, Luz dan Maria. 2009. Reading Strategies to Develop Higher Thinking Skills For Reading Comprehension. Jurnal Profile Volume 12 Nomor 1

Nani, Ronsani. Pratomo. 2018. Developing Higher Order Thinking Skills (HOTS) for Reading Comprehension Enhancement. Jurnal of Physics.

Nofrion. 2018. Learning Activities in Higher Order Thinking Skills (BTT) Oriented Learning Context. Jurnal Geofera Indonesia Hal 122-130

Novianti, Rahmah. 2013. Pengaruh Permainan Kartu Bergambar dan Kecerdasan Linguistik Terhadap Kemampuan Membaca Permulaan. Jurnal Pendidikan Usia Dini.

Nunan, David. 1992. Research Method in Language Learning. Cambridge University Press

Pratama. 2020. Urgency of Higher Order Thinking Skills (BTT) Content Analysis in Mathematics Textbook. Jurnal of Physics hal 1-8

Rozak, Abdul. 2018. Pengembangan Model Pembelajaran Pencapaian Konsep Berorientasi Pada Kecerdasan Linguistik Dalam Pembelajaran Teks Eksposisi. Jurnal Tuturan. Volume 7 Nomor 1 Hal 795-802

Sada, Clarry. 2019. Exploring Teaching Learning Process in Developing Higher Order Thinking Skill (BTT) to Higher Secondary School (SMA) Students in Pontianak. Journal of Education, Teaching, and Learning hal 228-232

Siska, Bernadeta. 2019. Developing Students' Higher Order Thinking Skills (BTT) in Reading: English teachers' Strategies in Selected Junior High School. Journal of English Teaching hal 204-216

Sri, Setyarini, Ahmad. 2018. Thinking Critically While Storytelling: Improving Children's HOTS and English Oral Competence. Indonesian Journal of Applied Linguistics.

Sujana, Wayan dan Ayu Bintang. 2018. Korelasi Antara Kecerdasan Linguistik Dengan Kompetensi Pengetahuan Bahasa Indonesia Siswa Kelas V SD Gugus I Gusti Ngurah Rai Denpasar Barat Tahun Pelajaran 2017/2018. Journal for Lesson and Learning Studies. Volume 1 Nomor 1 Hal 33-42

Susanto,Edi, Heri Retnawati. 2016. Perangkat Pembelajaran Matematika Bercirikan PBL untuk Mengembangkan HOTS Siswa SMA. Jurnal Riset Pendidikan Matematika Volume 3 Nomor 2 Hal 189-197

Warjiyono, Sopian Aji. 2017. Melatih Kecerdasan Linguistik Dan Spasial Anak Berbasis Animasi Interaktif. Jurnal Information Management for Educators and Professional. Volume 2 Nomor 1 Hal 47-56

Widyawati, Santi. 2016. Eksperimentasi Model Pembelajaran Student Facilitator and Explaining (SFE) terhadap Hasil Belajar Ditinjau Dari Kecerdasan Linguistik. Aljabar: Jurnal Pendidikan Matematika. Volume 7 Nomor 2 Hal 267-274