

THE RELATION BETWEEN LANGUAGE AND MEMORY

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Abstract

A fascinating aspect regarding the human psyche is the psychological vocabulary. How the words procured can be put away and the backtracked again inside specific cycles in the human brain. The capacity of information should be passing the cycles as follows; tactile capacity, transient capacity and long haul stockpiling. The outside upgrade, such in tuning in and perusing cycles will be passing these three-store model of human memory. The degree of handling is in two sorts of models; either Base up or Hierarchical handling. In Base up lexical handling the level beginnings from phonetic, phonological, segmentational, lexical, syntactic, propositional lastly logical. In the mean time for Hierarchical handling lexical cycles is either between Independent or Intuitive models. In Intelligent, the structures and states of the letters might include in the procurement in the mean time in Independent, the cycle works freely by word discernment and acknowledgment; from letters to words.

Key words: *Language, memory, psycholinguistics.*

INTRODUCTION

The capacity to impart in numerous dialects makes it profitable to proceed with daily existence (Afrianto & Gulö, 2019), particularly in the South African setting where there are various dialects spoken and eleven of them have been perceived by the Constitution (Act 108 of 1996) as true dialects (Sartika & Pranoto, 2021).

According to (Muliyah & Aminatun, 2020) It is becoming evident that there are far reaching benefits of being able to speak a variety of languages as multilingualism has become a global phenomenon and has been explored from multiple perspectives such as a social and political as well as a cognitive standpoint (Mandasari & Wahyudin, 2019). The correlation between speaking different languages and outperforming monolingual speakers in activities of executive functions namely inhibitory control (Ayu & Pratiwi, 2021), task switching and working memory seems to lay in the fact that bilingual and multilingual speakers need to continuously use executive functions to control two languages or more as well as manage to suppress the interference from other languages while using another (Wahyudi & Utami, 2021).

Language and memory are a tightly connected entity (Nababan & Nurmaily, 2021). Using a bilingual framework, language framework leading to encrypting specificity and linguistic elements at the time recollection might impact memory accessibility (Sartika & Pranoto, 2021). Language-dependent effects extend across various types of memory

including autobiographical memory, episodic memory and academic learning (Agustina et al., 2021).

LITERATURE REVIEW

1. Language Experience

Language can be delegated the act of an organized course of joining words to move data (Mandasari & Agusty, n.d.). Since language is the center apparatus of correspondence at the removal of individuals (Sujatna et al., 2020), it is vital to feature that the specific part of language and correspondence that has caught the consideration of the more prominent exploration local area (Oktaviani, 2021), particularly in the specific area of mental brain science and neuropsychology has been that of bi/multilingualism (Istiani & Puspita, 2020).

Multilingualism is the worldwide standard today (Program & Pendidikan, 2021), the increment of the connection of dialects is one of the sources to intercultural association and social solidarity (Candra & Qodriani, 2019). People all over the planet have become familiar with learning something beyond their essential language (local language/primary language) because of the should have the option to speak with other people who are from various social foundations (Oktaviani et al., 2021), the individuals who have moved and relocated due to industrialisation and those looking for better open doors which are common in specific regions rather than others (Qodriani, 2021). The presentation of English as the most perceived and favored mechanism of instructive guidance and business conference all over the planet, has made it a need to learn and to consolidate its utilization in essentially most nations (Yulianti & Sulistiyawati, 2020).

It is basic to take note of crafted by Alexander (2011) as far as dissecting instructive strategy, as it reports that it is to the greatest advantage of those living in a multilingual society to become familiar with the language of strength or power to have uniform open doors in the work market and in different circumstances (Puspita, 2021). South Africa isn't special to having consolidated English as its essential mechanism of instructive guidance (Megawaty & Rahmanto, 2021). While this is the situation, the South African educational system energizes bilingualism and multilingualism and maybe even means to keep up with harmony of the utilization of some of the authority dialects by having a few schools educate the languages (Yudha & Mandasari, 2021), which are prevailing in the various regions to safeguard the learners' primary languages as second and third dialects in the educational plan (Afrianto et al., 2021).

African first language talking students from the Western Cape are leaned to fail to meet expectations in their matric assessments rather than their English talking partners because of the method of training and evaluations not being in their essential language however in a moment or third language (Journal & Kiranamita, 2021). The focal point of the review depended on the learners' level of capability in the language of instructing of their establishments of schooling (which are predominantly either Afrikaans or English in the Western Cape) versus the degree of scholastic execution (Heaverly & EWK, 2020). The review analyzed similitudes and/or contrasts of schools in three classes in particular Afrikaans (Andrade et al., 2009), English and Xhosa medium schools in the year 2000 and surveyed the normal matric pass rates in the subjects of Science (Pahdi et al., 2020), English First Language, Actual Science, Topography and Math. The pass rate midpoints were gotten to from the Western Cape Schooling Department's measurements (Sari,

2019). According to (Asia & Samanik, 2018) The outcomes found slight contrasts in the Afrikaans and English First Language brings about the non-phonetic subjects while the Xhosa First Language bunch performed fundamentally lower in quite a while as the assessments were in a moment and some of the time third language. This is an especially huge finding as Collier (1995) specified that it can require somewhere in the range of 4 and 12 years briefly language English speaker to work (etymologically and intellectually) on a similar level as a local English speaker (Anugerahwati et al., 2021).

This addresses difficulties that numerous understudies/individuals might be looking in scholar and mental testing circles in South Africa the broad work that actually should be placed in to cure what is going on that African first language talking understudies face everyday (Samanik, 2018).

Given South Africa's verifiable foundation with the Politically-sanctioned racial segregation system having pronounced Afrikaans as the favored mechanism of correspondence (Fithratullah, 2019), different dialects spoken by most of the nation endured and the shift towards English can be credited towards the empowerment of the African nation who endured the worst part of the impacts of underestimation (EWK, 2018).

The Constitution of the Republic of South Africa (Act 108 of 1996) institutes eleven authority dialects and specifies that the public authority should do whatever it takes to inspire the conspicuousness of the multitude of dialects, the public government and every common government should use something like two authority dialects; regions should consider the language use and tendencies of its occupants and all official dialects should be treated with a similar value (Oktaviani et al., 2021).

2 Verbal Working Memory and Its Relation to Language Experience

Working Memory (WM) is the portion of memory that encompasses all the knowledge of details and techniques that have been recently activated in memory; this includes the short-lived, transitory short-term memory and the subject matter it holds. According to (Oktaviani et al., 2020) "working memory has the ability to store information in mind and revise this information while performing a task". Working memory plays a very critical role in various cognitive domains including academic accomplishment, mathematical abilities and working memory abilities have been correlated with language (Nurmala Sari & Aminatun, 2021) which attests to the level of importance that working memory plays in people's lives.

As (Teknologi et al., 2020) suggests that there is a model of working memory that comprises of four core elements which essentially make up working memory. "The four elements include the following: a Visuospatial Sketchpad, which is involved in the process of briefly holding visual images in memory (Aldino et al., 2021). The Phonological Loop retains inner speech for the purposes of verbal understanding and acoustic rehearsal. There are two main components of the Phonological Loop. The first one is Phonological storage, which is responsible for holding material in memory (Yulianti & Sulistyawati, 2021). The other is Sub-Vocal rehearsal, and it is involved in incorporating information into memory in the first place. The third component of working memory is the Central Executive, which organizes attentional activities and controls responses. The fourth component of working memory is a variety of other "Subsidiary Slave Systems" that execute other cognitive or

perceptual tasks. The Episodic Buffer falls under the “Subsidiary Slave Systems” and is a limited capacity system that connects information from the subsidiary systems and from long-term into a unitary episodic representation (Setri & Setiawan, 2020). The phonological loop is of the utmost importance and interest where this research is concerned as it is important for verbal working memory to function” (Sasalia & Sari, 2020).

One study analysed the lexical knowledge and working memory of second-generation Spanish-English bilinguals in Florida between the ages of 19 and 54 who were born from native-Spanish parents, who had either moved to the United States before the age of 10 or were born there and mostly/totally attended school in English using subtests such as the Letter-Number Sequencing (from the WAIS-IV), Verbal Fluency, Digits, Sentence repetition (from the Multilingual Aphasia Examination), the Vocabulary Subtest (from the WAIS-III) and more. The results of the study concluded that the second-generation bilinguals have more lexical knowledge and a better verbal working memory capacity in their L2 (English) than their L1 (Spanish) (Ardila et al, 2015). This study by Ardila et al (2015) reflects some similarities to the study conducted in the present report as multilingual, young adults were also studied using the Letter-Number Sequencing (from the WAIS-IV) and therefore, it is pivotal to consider the outcome of the former study as it speaks to the nature of the role that L2 plays in the lives of multilingual speakers who have to manage more than three languages.

3. Visual and Verbal Long-Term Memory and Its Relation to Language Experience

Memory is the means by which we are able to preserve and elicit on our past experiences to use that information in the present (Sari & Putri, 2019). Long-term memory stores a very large amount of information for very long periods, perhaps even indefinitely in contrast with working memory which is only capable of storing relatively limited amounts of information for very brief periods (Richardson-Klavehn & Bjork, 2003).

According to (Lestari & Wahyudin, 2020) memory comprises of three common procedures, namely: encoding, storage and retrieval. Encoding refers to the transformation of a physical, sensory input into a kind of representation that can be placed in memory. Storage refers to the retention of encoded information in memory. Retrieval refers to how access is gained to information which has been stored in memory (Herz & Engen, 1996). Encoding, storage and retrieval are observed as sequential stages. “First the information is taken in, and then the information is held in for a while and later the information can be pulled out” (Sternberg, 2009, p.217). The level of processing of information influences the encoding of information into long-term storage. “When studying lists of words, participants transport additional information into long-term memory when using a semantic encoding strategy than when using a non-semantic strategy, but encoding of information in long-term memory is not exclusively semantic, there is evidence for visual and acoustic encoding as well” (Sari, n.d.). The multi-store model taxonomy (see Atkinson & Shiffrin, 1968) describes memory as information flowing through a system which results in it falling under short-term memory or long-term memory based on whether rehearsal was present or not. Raaijmakers and Shiffrin (2003) later suggested that rehearsal could be elaborative. For this reason, this study has decided to describe the visual and verbal aspects of memory in this regard as long-term memory (which is also referred to as semantic memory) due to the extensive rehearsal and learning that took place during the two tests that were used to measure these two variables (Suprayogi & Pranoto, 2020).

Chomsky (1965, 1972) supports the notion that humans may very well possess some sort of predisposition to language acquisition. "Human speech discernment is quite astonishing given the sort of auditory processing capacities for other noises. Although adults do not have the same rapid rate of language acquisition as children, many adults still have a good ability of learning new languages though they are likely to retain an accent that reflects the phonemes of their first language when they speak the new language" (Sternberg, 2009, pp. 368-369). Metacognition, which is our ability to understand and control our cognition, also plays a significant role in the learning of new languages. However, metacognition assists to the extent at which the new language/s is similar to the languages that are already known (Scheck & Nelson, 2003).

Long-term memory for visual information has confirmed that humans have an impressive ability to recognise (Shepard, 1967; Standing, Conezio & Haber, 1970) and recall, pictorial information. Adding to that, Mandler and Johnson (1977) as well Mandler and Parker (1976) showed that memory for the elements in a picture and memory for spatial arrangement of the components can be influenced independently in experiments. However, additional research by (Mandler, Seegmiller & Day, 1977) has suggested that a great deal of spatial information is automatically processed when the components of a visual scene are encoded in long-term memory.

METHOD

This type of research is field research, namely research conducted in a place chosen to be used as a location to investigate objective symptoms that occur. This field research is essentially a method to find out specifically and realistically about what is happening at a time in the midst of people's lives.

Based on the explanation above, it can be concluded that the types of field research or field research are:

This research is done by examining the object directly at the location to be studied in order to get maximum results. In this study, the researchers took the research location at the Indonesian Technocrat University.

This research is descriptive, descriptive research is defined as a study that seeks to describe a phenomenon/event systematically according to what it is. Literally descriptive research is research that intends to make a description (description) of situations and events. Descriptive research with the aim of finding detailed factual information that causes the existing symptoms. Develop appropriate individual traits, specific symptom states or specific groups or to determine the cause of symptoms. In this study, the purpose of descriptive research is to provide an explanation of the relationship between language and memory in a psycholinguistics perspective.

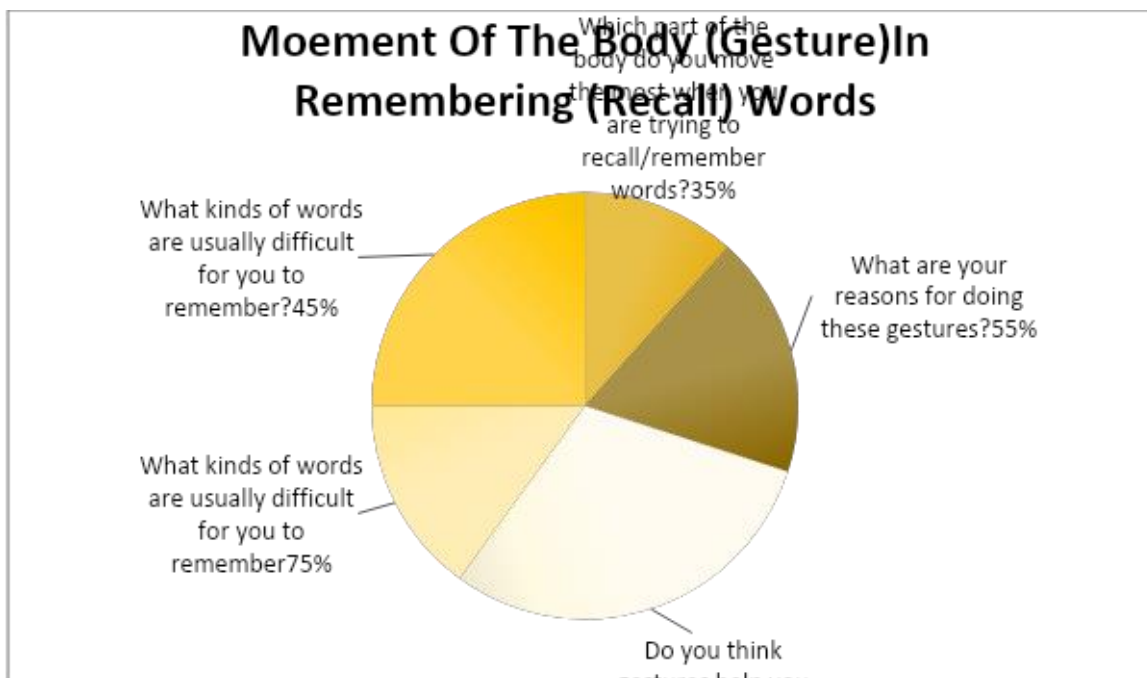
After the data was collected, the researchers conducted an analysis. Technique from. The data analysis used by the researcher is descriptive statistical analysis, in other words, the researcher presents the percentage of approval from the respondents. SPSS 25 software was used to analyze the data. When responding to questions on a Likert scale, respondents determine their level of agreement with a statement by selecting one of the available options.

Positive Questions (+)	Negative Questions (-)
Score 1. Verydisagree	Score 1. Veryagree
Score 2. No agree	Score 2. Agree
Score 3. Agree	Score 3. No agree
Score 4. Veryagree	Score 4. VeryDisagree

RESULTS AND DISCUSSION

The data used for this study used Questionnaires which were distributed and given to find out the appropriate response. The data in this study were obtained via the Questionnaire link:https://docs.google.com/forms/d/e/1FAIpQLSewRS_o30tbeWZf45TpzXy0RXTtoRQ_V2lFyVhHS2DsCqIjkNQ/viewform?usp=sf_link And collected data through www.google.com. The population that is used as a sample is filling out the Questionnaire that has been distributed under the title 1. Movement Of The Body (Gesture) In Remembering (Recall) Words. For example, can be seen in Table 1 below.

Diagram 1. Movement Of The Body (Gesture) In Remembering (Recall) Words



The results are in the form Diagram 1 that people will easily remember words if they use Movement Of The Body (Gesture) In Remembering (Recall) Words. It can be seen from number one in the table with the question Which part of the body do you move the most when you are trying to recall/remember word by 35% to remember words using hands and

eyes when trying to remember a word. Second, What are your reasons for doing these gestures by 55% with answers to remember easily. Third, Do you think gestures help you effectively recall/remember words, 90% of the people given the question chose yes, to remember a word. Fourth, What kinds of words are usually difficult for you to remember from the results obtained by 45% words in a foreign language. Finally, What kinds of words are usually difficult for you to remember by 75% with the answer aware.

CONCLUSION

Based on the results of research and discussion, it can be concluded that Marian and Kaushanskaya (2007) suggest that language and memory are a tightly connected entity. Using a bilingual framework, Marian and Neisser (2000) proposed that a language framework leading to encrypting specificity and linguistic elements at the time recollection might impact memory accessibility. Language-dependent effects extend across various types of memory including autobiographical memory, episodic memory and academic learning (Marian & Neisser, 2000; Ross, Xun & Wilson, 2002; Marian & Fausey, 2006). The ability to communicate in many languages makes it advantageous to proceed with everyday life, especially in the South African context where there are a number of languages spoken and eleven of them have been recognized by the Constitution (Act 108 of 1996) as official languages. This research was taken through the distribution of Questionnaires and they were able to fill in according to the truth during the Moment Of The Body (Gesture) In Remembering (Recall) Words. Respondents' responses from the Questionnaire distribution, the results obtained using body gestures to remember are 35% for the hands and head. Second, 55% for easy to remember words. Third, 90% agree it is very effective to remember words. Fourth, 45% words in a foreign language and finally 75% aware.

REFERENCES

- Afrianto, A., & Gulö, I. (2019). Revisiting English competence at hotel. *Teknosastik*, 17(1), 35–39.
- Afrianto, Sujatna, E. T. S., Darmayanti, N., & Ariyani, F. (2021). Configuration of Lampung Mental Clause: a Functional Grammar Investigation. *Proceedings of the Ninth International Conference on Language and Arts (ICLA 2020)*, 539(Icla 2020), 222–226. <https://doi.org/10.2991/assehr.k.210325.039>
- Agustina, E. T., Wahyudin, A. Y., & Pratiwi, A. A. (2021). *The Students ' Motivation and Academic Achievement at Tertiary Level : A Correlational Study*. 1(1), 29–38.
- Aldino, A. A., Saputra, A., & Nurkholis, A. (2021). *Application of Support Vector Machine (SVM) Algorithm in Classification of Low-Cape Communities in Lampung Timur*. 3(3), 325–330. <https://doi.org/10.47065/bits.v3i3.1041>
- Andrade, H., Wang, X., Akawi, R. L., & Akawi, R. L. (2009). *Efficacy for Writing Rubric-Referenced Self-Assessment and Self-Efficacy for Writing*.
- Anugerahwati, M., Rachmajanti, F. S., & Noviya, H. (2021). Maximizing Students' Critical Reading through Virtual Literature Circle Strategy: A Conceptual Framework. *KnE Social Sciences*, 2021, 221–227. <https://doi.org/10.18502/kss.v5i3.8542>
- Asia, J., & Samanik. (2018). Dissociative Identity Disorder Reflected in Frederick Clegg ' S Character in the Collectors Novel. *ELLiC*, 2(1), 424–431.
- Ayu, M., & Pratiwi, Z. F. (2021). THE IMPLEMENTATION OF ONLINE LEARNING IN ENGLISH LANGUAGE TEACHING DURING PANDEMIC: THE TEACHERS' VOICE. *Journal of Research on Language Education*, 2(2), 93–99.
- Candra, L. K., & Qodriani, L. U. (2019). An Analysis of Code Switching in Leila S. Chudori's For Nadira. *Teknosastik*, 16(1), 9. <https://doi.org/10.33365/ts.v16i1.128>
- EWK, E. N. (2018). Redefining Hybridity of Chicano Literature in Jimenez's Fictions. *The Center for Asia and Diaspora*, 8(2), 293–319. <https://doi.org/10.15519/dcc.2018.06.8.2.293>
- Fithratullah, M. (2019). Globalization and Culture Hybridity; The Commodification on Korean Music and its Successful World Expansion. *Digital Press Social Sciences and Humanities*, 2(2018), 00013. <https://doi.org/10.29037/digitalpress.42264>
- Heaverly, A., & EWK, E. N. (2020). Jane Austen's View on the Industrial Revolution in *Pride and Prejudice*. *Linguistics and Literature Journal*, 1(1), 1–6. <https://doi.org/10.33365/lj.v1i1.216>
- Istiani, R., & Puspita, D. (2020). Interactional Metadiscourse used in Bloomberg International Debate. *Linguistics and Literature Journal*, 1(1), 13–20.
- Journal, L., & Kiranamita, S. (2021). *THE PORTRAYAL OF MALIGNANT NARCISSM IN THE VILLAIN*. 2(1), 33–40.
- Lestari, M., & Wahyudin, A. Y. (2020). Language learning strategies of undergraduate EFL students. *Journal of English Language Teaching and Learning*, 1(1), 25–30.
- Mandasari, B., & Agusty, S. T. P. (n.d.). MOBILE LEARNING: THE IMPACT OF WHATSAPP USAGE IN ENGLISH LANGUAGE LEARNING. *Section Editors*.
- Mandasari, B., & Wahyudin, A. Y. (2019). Flipped Classroom Learning Model: Implementation and Its Impact on EFL Learners' Satisfaction on Grammar Class Corresponding Email Article's History Flipped Classroom Learning Model: Implementation and Its Impact on EFL Learners' Satisfaction on Grammar C. *Ethical Lingua*, 8(1), 2021.
- Megawaty, D. A., & Rahmanto, Y. (2021). *Implementation of The Framework for The Application of System Thinking for School Financial Information Systems*. 1, 1–10.
- Muliyah, P., & Aminatun, D. (2020). Teaching English for Specific Purposes in Vocational High School: Teachers' Beliefs and Practices. *Journal of English Teaching*, 6(2), 122–133.
- Nababan, R. M., & Nurmaily, E. (2021). *THE HYPERMASCULINITY AS SEEN IN THE MAIN CHARACTER IN RAMBO : LAST BLOOD MOVIE*. 2(1), 25–32.
- Nurmala Sari, S., & Aminatun, D. (2021). Students' Perception on the Use of English Movies to Improve Vocabulary Mastery. *Journal of English Language Teaching and Learning*, 2(1), 16–22. <http://jim.teknokrat.ac.id/index.php/english-language-teaching/index>

- Oktaviani, L. (2021). Penerapan Sistem Pembelajaran Dalam Jaringan Berbasis Web Pada Madrasah Aliyah Negeri 1 Pesawaran. *Jurnal WIDYA LAKSMI (Jurnal Pengabdian Kepada Masyarakat)*, 1(2), 68–75.
- Oktaviani, L., Aminatun, D., & Ahmad, I. (2020). PENINGKATAN PROFESIONALITAS GURU SDN 4 MESUJI TIMUR MELALUI PROGRAM T2KT. *INTEGRITAS: Jurnal Pengabdian*, 4(2), 333–345.
- Oktaviani, L., Fernando, Y., Romadhoni, R., & Noviana, N. (2021). Developing a web-based application for school counselling and guidance during COVID-19 Pandemic. *Journal of Community Service and Empowerment*, 2(3), 110–117. <https://doi.org/10.22219/jcse.v2i3.17630>
- Pahdi, R., Mailizar, & Abidin, Z. (2020). Indonesian junior high school students' higher order thinking skills in solving mathematics problems. *Journal of Physics: Conference Series*, 1460(1). <https://doi.org/10.1088/1742-6596/1460/1/012031>
- Program, J., & Pendidikan, S. (2021). *CLUSTERING SUBJECTS IN LAMPUNG PROVINCIAL NATIONAL*. 10(4), 2268–2282.
- Puspita, D. (2021). *Journal of Literature , Linguistics and*. 10(2), 42–50.
- Qodriani, L. U. (2021). English interference in bahasa Indonesia: A phonology-to-orthography case in Instagram caption. *English Language and Literature International Conference (ELLiC) Proceedings*, 3, 349–355.
- Samanik. (2018). *A Contextual Approach: Business Presentation to Accelerate EFL Learners ' English Speaking Skill Samanik Universitas Teknokrat Indonesia*.
- Sari, F. M. (n.d.). *Study-from-home program: motivational beliefs of college students in the online learning environment*.
- Sari, F. M. (2019). Patterns of teaching-learning interaction in the EFL classroom. *Teknosastik*, 16(2), 41–48.
- Sari, F. M., & Putri, S. N. (2019). Academic Whatsapp group: Exploring students' experiences in writing class. *Teknosastik*, 17(2), 56–65.
- Sartika, L. A., & Pranoto, B. E. (2021). *Analysis of Humor in the Big Bang Theory By Using Relevance Theory : a Pragmatic Study*. 2(1), 1–7.
- Sasalia, O. A., & Sari, F. M. (2020). UTILIZING NOVEL IN THE READING CLASS TO EXPLORE STUSasalia, O. A., & Sari, F. M. (2020). UTILIZING NOVEL IN THE READING CLASS TO EXPLORE STUDENTS'VIEWPOINT OF ITS EFFECTIVENESS. *Journal of English Language Teaching and Learning*, 1(2), 56–61.DENTS'VIEWPOIN. *Journal of English Language Teaching and Learning*, 1(2), 56–61.
- Setri, T. I., & Setiawan, D. B. (2020). Matriarchal Society in The Secret Life of Bees by Sue Monk Kidd. *Linguistics and Literature Journal*, 1(1), 28–33. <https://doi.org/10.33365/llj.v1i1.223>
- Sujatna, E. T. S., Darmayanti, N., Ariyani, F., & Cooke-Plagwitz, J. (2020). Clause and predicative constituents in an Austronesian language: Lampung language. *Topics in Linguistics*, 21(2).
- Suprayogi, S., & Pranoto, B. E. (2020). VIRTUAL TOURISM EXHIBITION ACTIVITY IN ENGLISH FOR TOURISM CLASS: STUDENTS'PERSPECTIVES. *Celtic: A Journal of Culture, English Language Teaching, Literature and Linguistics*, 7(2), 199–207.
- Teknologi, J., Jtsi, I., & Rezeki, K. (2020). (*STUDI KASUS : TOKO KARYA JAYA SECURITY*). 1(2), 95–104.
- Wahyudi, C., & Utami, A. R. (2021). *EXPLORING TEACHERS ' STRATEGY TO INCREASE THE MOTIVATION OF THE STUDENTS DURING ONLINE*. 9(3), 1–9.
- Yudha, H. T., & Mandasari, B. (2021). *THE ANALYSIS OF GAME USAGE FOR SENIOR HIGH SCHOOL*. 2(2), 74–79.
- Yulianti, T., & Sulistiyawati, A. (2020). The Blended Learning for Student's Character Building. *International Conference on Progressive Education (ICOPE 2019)*, 56–60.
- Yulianti, T., & Sulistyawati, A. (2021). *Online Focus Group Discussion (OFGD) Model Design in Learning*.