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Creativity-Induced forms of non-verbal communication in the process of vocabulary internalization in case of young learners

Wpływ kreatywnie sterowanych form komunikacji niewerbalnej na proces internalizacji słownictwa w przypadku młodych uczniów

Abstrakt

Badanie miało na celu znalezienie odpowiedzi na pytanie, czy użycie ikonicznych gestów niewerbalnych pozytywnie wpływa na przyswajanie wybranego słownictwa przez małych (6 lat) uczniów szkół językowych. Badaniami objęto 20 uczniów dwóch prywatnych szkół językowych, których podzielono na grupę eksperymentalną (G1), w której uczniowie uczyli się metodą gestów, oraz grupę kontrolną (G2), która uczyła się tego samego materiału w tradycyjny sposób przyswajania słownictwa. W obu przypadkach nauka (prowadzona przez tego samego nauczyciela) trwała cztery tygodnie po dwie 50-minutowe lekcje tygodniowo. Do pomiaru danych podczas nauki zastosowano zarówno test wstępny (pre-test), jak i test końcowy (post-test). Do obliczeń statystycznych zastosowano wzorec t-testu. Przeanalizowano podstawowe instrumenty pomiarowe, takie jak średnia, mediana, zmienna, a także wariancja standardowa. Dodatkowe sesje obserwacyjne przeprowadzono w każdej grupie w trzecim tygodniu badania. Zebrane informacje pozwoliły nam wysoce uprawdopodobnić hipotezę, że wprowadzone podczas nauki działania oparte na gestach mają pozytywny wpływ na utrwalenie nabytego słownictwa wśród sześciolatków.

Słowa kluczowe: komunikacja niewerbalna, gesty, nauka słownictwa, kreatywność

Abstract

The study is aimed to answer whether the use of iconic nonverbal gestures positively influences the acquisition of selected vocabulary by young learners. The research entailed 20 young private language school students split into Experimental (G1) group, where students were taught by the use of the gestural method; and Control (G2) group taught the same material using the traditional way of acquiring vocabulary. In both cases, the treatment lasted 4 weeks with two 50 minute-long lessons weekly. To measure the data from the treatment time, the pre-test and the post-test were employed. The *t*-tests were applied for statistical calculations. The basic measurement instruments, such as mean, mode, median, variance, and standard deviation were analysed. Additionally, the observation sessions were conducted in each group during the third week of the study. The gathered information allowed us to prove the hypothesis that gestures have a positive influence on retention of acquired vocabulary among six-year-old learners.

Keywords: nonverbal communication, gestures, vocabulary learning, creativity

Introduction

Recent research has shown an increased interest in the study of the use of nonverbal communication in the development of L2 instruction¹. Educators use more and more innovative techniques to help students in acquiring new vocabulary simply and effectively. Gestures as one of the forms of non-verbal communication are essential elements not only in the presentation of new vocabulary but also in students' understanding and memorizing. Gesticulation usually combines with speech so that it can be used as a tool in L2 vocabulary learning. Teachers, as well as students, use gesticulation in L1 and L2 learning. Moreover, abandoning the use of textbooks as the main teaching tool may positively influence young learners', as well as teachers', motivation during classes.

Daily, we use nonverbal cues to respond during a conversation. In the context of nonverbal communication, there are some essential elements used in every speech, as following: posture, facial expression, eye gaze, gestures, and voice tone. Beginning with easy signs, such as a handshake or one's

¹ Some of useful remarks can be found in a paper written by Linda Q. Allen (1995). Apart from that, many interesting suggestions are offered by Peter Carels (1981) Also J. Davidheiser (2002) and T. Gregersen (2007) give many useful remarks on the topic. Finally, a paper by M. Tellier (2008) and a chapter by C. Cristilli (2014) offer a few useful remarks on the topic of non-verbal communication. Carla Cristilli, for example, defends her thesis that gestures, when appropriately applied, effectively facilitate various processes of human communication and are sometimes even more important than words. This is why children, who see gestures as context explaining pictures rather than message carriers, are so highly sensitive when approaching different forms of gestures in their daily activity.

appearance features like hairstyle, it can help one define who a person is and how the person is different from other people. The body communicators are focused mostly on their facial expressions, instead of words. In the research presented below, we intend to demonstrate that the creative use of iconic non-verbal gestures improves young learners' vocabulary taught in a language school.

The experiment is also carried out to assess the potential of using gestures in teaching English to a particular group of Polish learners. Even though there are plenty of studies referring to the use of gestures in a teaching context, there is a deficit of the research concerning teaching young learners at a particular age, especially when it comes to Polish language schools. Due to that fact, we decided to design and conduct research to answer the following research question:

What are the differences and benefits of using the iconic gestures-based techniques versus using conventional vocabulary teaching techniques in education?

1. Literature review

The conducted studies to nonverbal communication² are mainly focused on the interaction among individuals, and these can be divided into three primary fields, such as the place of conversation, the physical appearance of the speaker, and one's behavior during interaction. The sign-language engages two important processes, i.e. encoding and decoding. In the same way, very young children in one of the first stages of their mental development, learn how to use non-verbal cues from the social-emotional background, to communicate with the external world. Children learn by observing other people.

The same situation can be seen while teaching a foreign language. Gestures become an essential element of non-verbal communication, being a common term in the context of teaching a foreign language³, in which they

² Edward Wertheim's (2008) short but very informative presentation gives the basic picture of the importance of non-verbal communication in everyday life. Some other publications worth reading are also Scott Thornbury's (2013) and Paul Sooriya's (2017). The paper written by the second mentioned-above researcher sees non-verbal communication to be a tool that belongs to the culture-driven message context rather than its morphological configuration. What's more, Sooriya claims that certain gesture clusters have been borrowed from the local culture and, as such, can be recognized as its representatives on the footing equal to dialectal phrases.

³ There are many different research papers on the topic, but perhaps one of the best is a publication by L. Flevaris, & M. Perry (2001). Also, a paper by S. Goldin-Meadow, S. Kim & M. Singer (1999) is worth reading, mostly because of convincing paragraphs on

are seen as factors that support vocabulary learning. Therefore, the teacher, who consciously uses nonverbal cues and acquires them subconsciously, should be responsible for teaching the learners how to use them properly.

Kendon (1986) observes that the terms concerned with gestures refer to any movement produced by people. According to Kendon⁴ the phrase ‘gesticulation’ embraces all these gestures that accompany one’s speech and provides a categorization of autonomous gestures, i.e. these that can be performed separately from speech.

Another relevant term is a system of co-verbal gestures, that is based on the gestures occurring together with words opinion, entail “beats, metaphors, and iconic gestures”. For this study, our main interest is on iconic gestures, defined by McNeill & Levy(1982)⁵ as the ones that land in form and manner of execution deliver a meaning relevant to the simultaneously expressed linguistic meaning.

Our research focuses on co-speech gestures, i.e. these groups of gestures that are related to speech-accompanying hand movements. According to the classification of co-speech gestures provided by McNeill (1991)⁶, there are four types of them: iconic, metaphoric, beats, and deictic gestures. Our research is primarily focused on the first, i.e. iconic gestures. This particular type of body movement illustrates the semantic content of speech. What is more, these body signals are not limited by any standard rules, which makes them more understandable than spoken words. The iconic gestures can be both kinetographic (body movement-related) as well as pictographic (presenting the form of the objects).

Some of the FL teaching techniques that largely implement context-entailing gestures concern classical TPR (Total Physical Response), TPRS (Total Physical Response Storytelling), or – proposed by Carels (1981)⁷ – pantomime gestures, whose effective teaching technique was constructed

the many functions of teacher’s gestures in the course of a [math] lesson. Anybody wishing to spot an obvious connection between various forms of verbal and non-verbal communication should also reach for an older but still worth reading book by David McNeill (1991).

⁴ Adam Kendon (1986) finds gestures as not fully developed remnants of Locke’s atomistic theory. By providing additional fuel to the ongoing process of message production, gestures tend to make it not only more complete but also much easier to follow.

⁵ The “kingdom of gestures”, as D. McNeill & E. Levy (1982), see it, is far undervalued. According to the calculations offered by the researchers, as much as 81% of everyday human communication is normally carried out with the help of gestures.

⁶ It is really difficult to find out which of the four groups of gestures specified by McNeill (1991) turns to be the most commonly used one. The researcher himself is not able to indicate the gesture form, although he thinks these should be either iconic or deictic ones.

⁷ Basing upon James Austin’s TPR, Peter Carels’s (1981) suggestion to adjust specific gestures and/or gesture-like activities in the process of storytelling is definitely worth

by narrative storytelling with the use of vocabulary to present the meaning of the new vocabulary items. He also claimed that the teacher, as well as the students, ought to use gestures to support the process of remembering new words.

According to Seaver (1992)⁸, while providing educational instructions, many teachers neglect this kinetic approach by limiting the teaching to only one direct linguistic channel. His study enumerates evidence of how to use mimetic activities in many different language-based instructions, claiming that the application of the pantomime in teaching grammar, vocabulary, and FL culture may have a positive effect on stimulating language acquisition and learners' motivation. Additionally, the teacher can observe their students, being confident that the students follow the course of the lesson.

2. Methods

2.1. Participants and Procedures

The study was conducted between two groups of language school-attending young learners. The participants were 32 Polish pupils at the age of six (20 girls and 12 boys), enrolled in two classes in the language school. To establish the level of FL proficiency, as well as to collect the proper sample of the participants involved in the research, a pre-test was conducted. Thus, the Experimental and Control Group included sixteen six-year-old students in each of them (6 boys and 10 girls).

The experiment aimed to compare two different learning situations in L2 acquisition of English action verbs by young Polish learners in the language school. The study started in the middle of April 2019 and lasted for four weeks. In the first stage of data collection, both groups of young learners were assigned to two different learning situations. In both groups, two different vocabulary learning techniques were employed. The Control Group (G1) was taught with the help of the traditional teaching methods

consideration. Such an endeavor might help young learners easier understand different words (or even phrases) and let them follow the plot of a story with much lesser effort.

⁸ As observed by Paul Seaver (1992: 21): „[...] language teachers often reduce language teaching to the single channel of strictly linguistic features, thus ignoring kinetic sources of input in language instruction. Such a simplistic approach makes the whole process of L2 education not only more difficult to follow by the learners, but also deprives it of one most natural elements of everyday communication that effectively simplify the processes of both message production and its most natural receipt”.

(based on flashcards and worksheets), whereas the Experimental Group (G2) was taught with the use of the iconic gestures method.

Fifteen English action verbs were selected for the experiment. These words had been presented to the participants by their teacher during the instruction part for four weeks. Both groups were administered with instruction twice a week. In G1, the new vocabulary was presented through the colourful flashcards and for practising they used textbook exercises (standard method at school); in G2, the new vocabulary was presented only by the production of non-verbal gestures (iconic gestures) by the teacher and the learners imitated gestures after the educator. In both groups, there was the same selection of vocabulary items and their order of the presentation. An observation session was conducted during their activities in the third week of the treatment. The observation, performed with the help of the language school owner, was used to gather the data about the pupils' commitment and their preferences to choose the iconic gestures, or the traditional method of teaching and learning vocabulary.

Additionally, both groups participated in various practical activities (vocabulary games) to acquire new vocabulary items properly. At the end of the experiment, the students took part in the post-test with the changed order of items to avoid the same scheme from the pre-test and the students' remembering of correct answers.

2.2. Data Collection Instruments

The primary data collection instruments employed in this study were the pre-test, the post-test, and the observation session. Both the abovementioned tests included the same selected vocabulary to check the participants' knowledge at the beginning and the end of the treatment.

The research included the teaching of the following action verbs: *to walk, to run, to sleep, to drink, to eat, to clap, to write, to wash, to jump, to drive, to knock, to listen, to cry, to swim, to fly*. The total amount of points of the post-test was 15 points. The students had to choose the correct answer from the three variants presented to them. Additionally, the observer was to complete the engagement checklist during the observation session of each of the two groups in the third week of the treatment.

3. Results and discussion

The data included in Table 1 and Table 2 contain information about mean, median, mode, variance, and standard deviation of the two sample groups: G1 and G2. The pre-tests, meant to confirm the groups' homogeneity. It was confirmed by the average scores $M=5.3$ (35%) obtained by both G1 and G2. As can be seen in the post-test, both groups achieved improvement after the treatment. The post-tests results, the Experimental Group obtained $M=12.7$ (84%), whereas the Control Group scored $M=10.02$ (66%). The difference between the two means is 2.68 points (17%) when comparing both groups' results. We can conclude that the outcomes in G2, where the gestures teaching method was used, proved to be more effective in teaching vocabulary.

When we take into account the average median outcomes, the G1 value is higher (13) than the value of G2 (10) from the post-tests in both groups. Further, we considered the mode, where the obtained results are the same as the abovementioned median values.

The analysis of standard deviation and variance reveals high deviation ($\sigma=1.33749$) in post-test in the sample of G2 scores. We can observe the most noticeable deviation from the mean here. Nevertheless, the lowest standard deviation ($\sigma=0.91894$) might be observed in G1 in the post-test. That means the range of variability among the scores of the Experimental Group was more visible than the one of the Control Group concerning the selected vocabulary items. Therefore, it can be assumed that the Experimental Group was more effective in acquiring new vocabulary items than the Control one. The use of gestures has a positive impact on the process of learning selected action verbs during the schooling session in the Experimental Group. The pupils from G1 were more interested in the lessons. This fact could contribute to better remembering the vocabulary items by the G1 participants.

Table 1. Mean, Median, Mode, Variance, and Standard Deviation in the Experimental Group

	Mean	Median	Mode	Variance	Standard Deviation
Pre-test	5.3	5	4	1.34444	1.1595
Post-test	12.7	13	13	1.78889	1.33749

Source: Own research.

The dependent *t*-test samples of pre-test and post-test of the Experimental Group were chosen to check if the production of the iconic non-verbal gestures had an impact on the implementation of the selected English action verbs among six-year-old language school pupils. The *t*-test is based on two types of scores from the pre-test and the post-test conducted in the

Experimental Group before and after treatment to observe and assess the progress of acquired English verbs. The t value is 33.467759 and the amount of p equals .00001; that means the obtained result is statistically significant. It demonstrates that the use of iconic gestures improves the acquisition of selected English verbs, according to the participants' outcomes of the sampled Experimental Group.

Table 2. Mean, Median, Mode, Variance, and Standard Deviation in the Control Group

	Mean	Median	Mode	Variance	Standard Deviation
Pre-test	5.3	5	4	1.34444	1.1595
Post-test	10.2	10	10	0.84444	0.91894

Source: Own research.

Later on, the independent t -test post-test sample was conducted to compare the results between the participants from both G1 and G2. The obtained outcome shows the results of the t -value 4.87177, and the p -value .000061. We conclude that the scores are significant. It is a statistically-proven that the class where gestures were used as a teaching method obtained much better results than the learners taught through the traditional methods. We may deduce that the gestural approach positively influenced young learners' results in acquiring the vocabulary after the four-week-long treatment.

Table 3. Students Engagement Checklist Results From the Experimental Group

Scale	Very Low	Low	Medium	High	Very High
Positive body language-focus on speaker and appropriate posture				X	
Consistent focus-focused on learning activities, with minimum disruption				X	
Verbal participation- express thoughts, ideas and attending in activities					X
Students Confidence- self-confidence in completing task and work in a group				X	
Fun and Excitement- interest, enthusiasm and a positive attitude to learning					X

Source: Own research.

Summing up the provided statistical calculation of the qualitative data has enabled us to answer positively on the two research questions. Taking into account the results obtained from the dependent samples t -test of pre-test and post-test of the Experimental Group, we may deduce that the

difference between means value is significant. That allows us to positively answer the first research question-that the production of iconic non-verbal gestures contributes to significant improvement in the learning of selected FL vocabulary among L2 young learners. When it comes to the second question, according to the results expressed in *t*-test of the post-tests, we confirm that of both groups' post-test results. According to the G1 and G2 outcomes, there are clearly higher scores in the Experimental Group. In our research, we prove that the gestural approach is a better solution in acquiring new vocabulary items than the conventional methods.

Table 4. Students Engagement Checklist Results From the Control Group (Own research)

Scale	Very Low	Low	Medium	High	Very High
Positive body language-focus on speaker and appropriate posture			X		
Consistent focus-focus on learning activities, with minimum disruption			X		
Verbal participation- express thoughts, ideas and attending in activities				X	
Students Confidence- self-confidence in completing task and work in a group		X			
Fun and Excitement- interest and enthusiasm and a positive attitude to learning			X		

Source: Own research.

The qualitative data was collected to observe the learners' behaviour during the treatment time in both G1 and G2. It functions as an essential source of information. The observation session was conducted during the third week of the experiment. It was aimed to examine whether the use of gestures had a positive influence on the learners' motivation and engagement during the lesson. Moreover, the benefits of using the gestural method in teaching were analysed.

The observation was based on a prepared engagement checklist at a five score scale. This type of observation can be defined as a non-participant, because the observer did not take an active part in the lesson. The observer had to fill the form during the inspection in G1 and G2. Additionally, only in the Experimental Group, the behaviour during the game activities was observed. The observer was a teacher with ten years' experience in teaching pupils on different levels of the English language.

Tables 3 and 4 presented above contain the data collected during the observations of the students' engagement in the lessons in G1 and G2. The assessment scale included five components. The highest engagement level was found in the areas of *Verbal Participation* and *Fun and Excitement*. In the category *Positive Body Language* the learners were noted to willingly participate in the exercises during the lesson; in the category *Fun and Excitement*, the participants were very enthusiastic and interested in the proposed activities which were carried out with the use of gestures during the lessons.

The positive attitude towards such elements as Positive Body Language, Consistent Focus, and Students Confidence indicates a high level of engagement in G1. In contrast to the Experimental Group, the Control Group obtained notable results only at the *Verbal Participation* engagement level. The aspect of pupils' confidence was remarked as the lowest one in G2. When it comes to the comparison of the two groups, the Experimental Group in all aspects provided better results than the Control Group. Moreover, the observer noticed that the pupils who used the body movement more often during the lesson did not interpret the whole activities as a strict process of learning, but as a possibility to have fun with the other participants in the group, what liberated various forms of their creativity.

The additional observation in the Experimental Group revealed the pupils' active participation in the games; such games as *Simon Says* or *Guess the Mine* attracted the greatest interest among the participants. In both games, to present the word, the learners had to use body language and gestures. The level of their engagement was assessed as high. The games *What Is Missing-Memory Game* and *Follow the King/Leader* were recognized as less effective because they attracted the pupils' attention only at the beginning. It can be concluded that the games with evident use of gestures made learners more motivated and focused on the activities.

The observation session in both groups included the observation of the learners' engagement during one lesson in the third week of the study. In G1 and G2, the levels of commitment and active participation in the activities were demonstrated. The behaviour of pupils of the Experimental Group was observed during playful tasks; the collected data G1 showed much higher levels of involvement of pupils in every activity. The provided observation data confirmed the beneficial use of the body language in case of the students' motivation and involvement during the lesson and in the whole process of learning.

4. Conclusion

According to all collected statistical and observation data, we have demonstrated that the production of iconic non-verbal gestures improves the process of learning of the selected English vocabulary among L2 young learners. The research questions confirmed that the use of the gestural method not only improved the process of language acquisition but also had a positive influence on the atmosphere in the class as well as the pupils' positive engagement in planned classroom activities.

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