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The Effect of Second Language Proficiency on Linguistic Creativity

The aim of the study is to investigate the possible effects of second language acquisition on performance in tasks recquiring creativity and linguistic creativity. Participants in the study were Hungarian learners of English (dual-language school pupils and non-language specialized pupils) whose creative ability was measured with a standardized creativity test and tasks compiled for measuring linguistic creativity. Creativity and linguistic creativity were measured by the three aspects of creativity - originality, flexibility and creative fluency. Findings suggest that there is no correlation between results of creativity and linguistic creativity, although daily contact of a second language might have a possitive effect on linguistic creativity.

Introduction

Since the 1990s English as a school subject in Hungary has had a privileged position in education as it could have been taught differently compared to other school subjects: children had the chance to do playful activities, take part in competitions or express themselves by writing stories or doing role-plays because their own ideas came into the focus of teachers' attention. New course books were published and new teaching methods were introduced. Teachers could have felt the wind of change. The novel methods might have influenced students' attitudes and this change might have had effect on the applied methods as well. Due to new language teaching methods positive attitude towards foreigners started to evolve and students became more open to other cultures. Openness could have resulted in the appearance of abilities of adjusting to variable circumstances easily, making fast decisions and thinking flexibly and originally. Only one thing has not changed for years: developing abilities in school context is still determined and directed by the conscious approaches of teachers.

It is widely accepted that creative ability as an educational intstrument and learning strategy might be suitable to improve foreign language skills. For the proper promotion of this ability teachers have to clearly understand the connections between creativity and linguistic creativity.

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Teaching English in a dual-language school is challenging: students are highly motivated and eager to know. They enjoy switching from different creative activities and linguistic structures without a hitch and a higher language level is not intimidating for them. They are also able to express themselves in the target language during the whole lesson and pick up and recall information seamlessly. Many questions are raised while teaching these children. What makes them able to adjust to emerging circumstances so quickly? Does learning in a dual-language school influence children's abilities and personal qualities? If yes, to what extent? Is there any relationship between flexible thinking and language learning? Is it rational to make a distinction between second language learning and bilingualism in school context? In what ways are bilingual students different from second language learners? There are many misconceptions connected to creativity and bilingualism. This research paper was written in order to help primary dual-language school teachers to make clear expectations about them.

Theoretical Background

Creativity

Nowadays developing creative ability is one of the main focus points in the teaching process. Scientists and laypeople have been highly interested in its nature since 1950s when research conducted on creativity initiated. Several definitions have been created since then although there is still no clarified one (Buda, 2004).

Czeizel (2004) claims that creativity and intelligence are components of talent and they cannot be separated although the relationship between them is equivocal. There are approaches confirming that creative thinking is different from intelligence. While Michalko (2012) claims that a high level of intelligence does not assume that of creativity and vica versa, Srinivasan (2007) emphasizes that fluid intelligence may have an important role in it. Silvia (2008) found that intelligence might be predicted by two components of creativity: originality and fluency. Many researchers believe in the threshold theory that assumes a minimum level of intelligence that is considered to be necessary regarding creativity (Ghonsooly–Showqi, 2012).

Another distinction shoud be made since there is difference between children's and adults' creative ability. Children reach the peak level of their creativity at about the ages of three to four. Their creative expressivity declines until the first school year and in the fourth grade this impairment continues. The loss in creative ability is not randomized: the expected

behaviour and the instructed skill development hindrance the progress in creativity (Schatz, 2001).

Czeizel (2004) agrees with this while emphasizing the innate character of creativity that can be either developed or suppressed by the social context. If students' original thoughts are critisized, or if they do not have enough time to think a task over they might be frustrated. Being forced to do tasks or to keep rigid rules and discipline also undermine the release of creative ability (Buda, 2004). Mérő (2012) claims that this change does not mean that children have a loss in creativity. He suggests that it is the sign of maturity. Children start to understand how the world operates and while they are asking questions new pieces of information might be gained and organized in their minds.

Linguistic creativity

Linguistic creativity is the basis of creativity and creative ability is manifested in linguistic creativity. This notion seems to be confirmed by the fact that creativity is mainly measured by language tests (Nagy–Péntek, 2000).

Taylor (cited by Nagy–Péntek, 2000) specifies five dissimilar levels of linguistic creativity. Levels of expressivity, productivity and invention can be characteristic features of the linguistic creativity of an average person, but levels of innovatory and emergentive creativity are those of the most creative ones. Expressivity is described as spontaneity. At the level of productivity the speaker is able to acquire skills that are neccesary for effective communication. Level of productivity denotes the imprinted and skilled application of the complete linguistic competence. At the level of emergentive creativity the speaker is an organic part of neology and the language use, as a result of this process, is appreciated by other people (Nagy–Péntek, 2000).

Tannen (1998) refers to linguistic creativity as literariness. Crystal (1998) claims that linguistic creativity is equal to language play. This playfulness is necessary in effective language teaching. Bell (2005) points it out that this playfulness has a positive impact on second language acquisition. Ludányi (2007) makes a distinction between two types of linguistic creativity. On one hand it is the outburst of an individual's linguistic abilities in language use. On the other hand it is the combination of individual features compared to the conventions.

Early language start

Crystal (2003) estimates that around 400 million people speak English as a first language and 7–800 million people speak English as a second language. Around a billion more speak English as a foreign language. As Englishes started to evolve more and more studies were conducted on the beneficial effects of early language start and brain activity. Researchers aimed to reveal the relationship between language and mind and the representations of the language system in brain areas.

In 1870s theories of localization connected to Paul Broca and Carl Wernicke state that the system of language processing and production consists of task-specific components that can be identified in certain brain areas. The followers of the equipotential theory (anti-localizational theory) suggest that all areas of the brain are equally active in overall mental functioning. According to this theory, the effects of damage to the brain are determined by the extent of the damage[2].

At a young age the plasticity of brain areas specified in language processing and speech function are in progress. In this formative phase synaptic transmission among brain areas is more fluent. That is why after a certain age as the Critical Period Hypothesis (Penfield–Roberts) states the first language acquisiton is impossible or only at a lower level (Bartha, 1999). The current level of the native language might predict the future level of a second language (Nikolov, 2004).

English teachers are fully aware of the similarities and differences of language learning and language acquisition. However, they do not seem to be so unfaltering if they are asked about the quality of their own students' knowledge whether they are bilinguals or second language learners.

The subjects of the present study are 11–12-year-old dual-language school children. According to the classification based on age they are claimed to be bilinguals. Three types of bilinguals are differentiated: infant, child or adult bilinguals. In the past regarding the onset of the two languages two types were outlined: simultaneous (both languages are acquired at the same time) and consecutive (one language is followed by the other) language acquisition (Navracsics, 1998). Nowadays the two are referred to as early and late bilingualism. Early bilinguals are those who start to acquire their second language before puberty. (Navracsics, 2008). It is widely stated that early bilinguals are the 'real' bilinguals. Their 'solidity' seems to be confirmed. Czeizel (2004) refers to studies conducted on early bilinguals and adult

[2] http://psychology.jrank.org/pages/384/Localization-Brain-Function.html 2015.

language learners whose brain activities showed differences in their Broca-fields. In early bilinguals only one cohesive nerve cell was detected compared to the control group. In their brains two different nerve cells were detected. These findings correlate with the everyday observations: children learn languages with less effort than adults.

Other researchers lay the emphasis on the positive effects of bilingualism on cognitive abilities. Morales–Calvo–Bialystok (2013) claim that when a bilingual person is speaking in one language the other language is also active in the mind to some extent. The executive control system is responsible for focusing this attention. The development of it starts in childhood and lasts till adolescence and it is developed earlier in bilingual children compared to their monolingual counterparts. It is localized in the frontal lobes of the brain and responsible for the children's academic achievements. It has three core components: working memory, selective attention and inhibition and shifting (Morales–Calvo–Bialystok, 2013).

Working memory is the capacity to hold and manipulate information over short periods of time. Children with stronger working memory, inhibition and attentional skills are able to make higher scores on early Maths, language and literacy development tests during preschool years than their counterparts with weaker executive function skills.

Inhibitory control is the skill people use to master and filter dominant and automatic thoughts intentionally. Its functions have a great role in reading, comprehension, acquisition of lexicon and mathematics. Bull and Scerif (cited by Tánczos, 2012) consider that the lack of inhibition and poor verbal working memory may lead to the disfunctions of the executive control system. It is responsible for word retrieval, functions of attention, manipulation, permanent compliance of rules, shifting and monitoring among tasks and it has a key role in learning, memory and cognitive processes. Shifting is the capacity to adjust to changed demands, priorities or perspectives. It enables us to apply different rules in different settings. This ability is in connection with writing skills and mathematics (Tánczos, 2012).

One of the most important criteria of the operation of the executive functions is flexibility which is also a characteristic feature of creativity. Flexibility makes people capable to change strategy while fulfilling a task or to adapt to changing circumtances (Navracsics, 1998). Bilingual children have to adjust to the circumstances and they do not attach much importance to the connection between content and form that is why they are able to view them more flexibly (Kovács, 2006).

Nikolov (2004) emphasizes other positive effects of early language start since it can be quite beneficial to achievements in sport, art, acceptance of other nations and people and

languages. Findings of her research showed that time spent with language learning has a beneficial effect on the outcome of the learning process. Foreign language knowledge may positively influence the development of native language and thinking skills (Sominé, 2011).

Language teaching today

Language teaching methods have always been influenced by certain psychological theories (grammar-translation, audio-lingual, audio-visual, direct-method) (Klein, 2011). The latest one is the dynamic usage-based approach. It claims that there is no innate faculty for the acquisition of grammar. Each learner is assumed to discover how the language works through exposure and experience with it. One of the main factors of driving acquisition is the frequency of input similarly to that of dual-language schools. The term ’dynamic’ suggests that the present level of development depends highly on the previous one and that is why the starting conditions are important (Verspoor–Schmid–Xu, 2012). This method is in accordance with CLIL (content and language integrated learning).

Many studies assert the possitive effects of bilingualism on creativity but few studies investigated the impact of learning a foreign language in a context where the interaction is limited to teacher-student form. Albert (2006) states that creativity (defined as imagination, unconventionality, risk-taking, flexibility and the formation of new classifications of knowledge) is not taken into consideration in the process of second language acquisition although it might have an influential role in it.

Methodology of Research

Hypotheses

This study was designed to provide evidence about the higher creative ability of students learning according to a dual-language syllabus. It is supposed that they achieve better results in creativity and linguistic creativity tasks than their peers learning according to a normal syllabus. Teachers may have certain assumptions on the given problem area so inductive hypothesis statement is applied to assist the initiation of the whole procedure (Falus, 2000).

H1: students learning according to a dual-language syllabus achieve better results in creativity tasks than their counterparts learning according to a normal syllabus.

H2: students learning according to a dual-language syllabus achieve better results in linguistic creativity tasks than their counterparts learning according to a normal syllabus.

H3: girls have better linguistic creaitivity than boys.

Sample of Research

Current research was administered in a primary dual-language school in a county town. A class in year 5 was devided into two groups. One of them is learning according to a dual-language syllabus (N= 12, six girls and six boys between the ages 11 and 12), the other one (N=11, 4 girls and 7 boys) is learning according to a normal syllabus (three English language lessons a week). Students learning according to the dual language syllabus have five English language lessons a week of which one is held by a native speaker teacher. They are learning History, Natural Science and Target Language Civilization in English as well. They have been learning English since the first school year. The normal group serves as a control group. They started English in the third school year at the age of 9.

Stratified sampling was applied where the number of English lessons formed the basis for stratification. The sample is not suitable for drawing general conclusions, but it may be expedient to reveal context-dependent problems of linguistic creativity.

The number of participants is 26 from whom two pupils are private students and one was absent from school on the research day. There are two children in the class with special needs. One of them faces with problems of adaptation, learning and behaviour. A girl has spent a long time abroad and she is an English dominant English-Hungarian bilingual. English is the only foreign language spoken in the class. Approximately half of the pupils are said to be ambitious. They are mainly the ones that are learning according to the dual-language syllabus. Some of them are struggling with problems of concentration or they are undermotivated or laggards.

The applied method

The methodological background of the analysis consists of a worksheet created for examining creativity and linguistic creativity. During compilation the focus was on the characteristic features of tests applied for measuring divergent thinking but the research instrument was basically constructed by the author.

Task types

The content and the length of the worksheet was established in alignment with the interest, bearing strength and attention span of the subjects (Falus, 2000). Special attention was given

to time span of a primary school classroom session (45 minutes). The worksheet was presented in Hungarian language.

During the creation of the tasks the main criteria were the age and language proficiency level of the population. The inappropriate compilation of the tasks may have influenced the outcome of the research detrimentally. While working on the tasks students need to think at the level of words because a higher level of language proficiency might result in unrealistic data. The tasks also have to be motivating (close to their interests) and easily comprehensible to eliminate the possible negative effects of excitement that may emerge while working on the tasks.

Tasks measuring divergent thinking (linguistic creativity)

In Task 1 Participants have to create as many wordpairs as they are able to. They can see the following example as guidance: (_____(_____)_____): sun(flower)pot. They need to think at word level because the emphasis is on creative thinking in the target language not on language competences (process of creative thinking might be influenced by the language and its regularities). The basic words in the example suggest that students do not have to think of difficult combinations. The aim of the task is to make them think flexibly and switch among thoughts easily.

Task 2 is complied on the same basis (See Appendix). Participants have to create as many words as they are able to by using the given letters and write them into a chart. (Verbal fluency tasks are similar to this one and they are often applied for research based on balanced bilinguals.) Each letter is allowed to be used once in a word to exclude trivial solutions. The method of letter-selection is based on a list of the most frequent letters assigned by www.oxforddictionaries.com. 1, 215 words with the criteria of given word lenght (three to six letters) can be created. (The number of the solutions are calculated with the help of http://www.wordplays.com/word-jumble-solver website.) The high number of word solutions justifies the applicability of this task since fewer possible word solutions and limits in language competence may obstruct the vivid functioning of children's imagination.

Test of 'Circles' for measuring creativity

In Task 3 Participants have to create recognizable pictures by using the given cirlcles. The circles have to be in the centre of the picture. They are allowed to draw in the middle, outside or on the lines of the circles. They can be connected to each other but it is not a rule. They are asked to try to create pictures that nobody can think of.

That will take some explaining why a new set of tasks were complied instead of using a tried and trusted one. In 1974 Torrance created the *'Verbal Battery of the Creative Thought Test'* but it requires such a high level language usage that students at this language level will not be able to perform.

Research environment and the procedure

The research was carried out in a local (primary) dual-language school in a county town on November 26, 2013. It started at one o'clock in the afternoon and lasted for 45 minutes (from which 30 minutes were planned to solve the problems presented in the tasks). Children (aged 11–12) taking part in the research are attending year 5.

After a short introduction children were asked to complete the worksheet. In order to keep the retrieved data confidentially, only monograms were required to be given. Since the research was set out in school circumstances the subjects were convinced about the anonimity and lack of school assessment. The participants were not informed about the objective of the research since the outcome of it would have been distorted. The children had 30 minutes to fill the worksheet. They were instructed to solve the tasks in the given order, do their best and finish them by the end of the time limit. Before working the tasks were looked through together and the emerging questions were answered to ensure a more relaxed atmosphere.

Results of Research

Evaluation of the retrieved data

The analysis of the retrieved data is processed in accordance with the quantitative research paradigm. The characteristic features of the variables are analysed with the help of descriptive statistics.

Reliability refers to that particular property of the measurement instrument that the same results are achieved while re-measuring the same phenomena (Falus, 2000). To ensure this the measurement errors emerging from the abstract nature of creativity should be eliminated. The evaluation method of these tasks was the same as in case of the 'Circles' test. Since the test of 'Circles' is a well-known, scientifically accepted and applied method its construct validity is unquestioned.

Divergent (creative) thinking is measured by open-ended measurement devices that are mainly based on Guilford and Torrance's notions. These tests measure different structural

elements of creativity and evince the level of development of divergent thinking. According to Guilford (1950) the achievement can be characterized by the number of solutions (fluency), shifting among the groups of solutions (flexibility) and the originality of them (originality) (Buda, 2004).

In task 1 children might have got a score for ’inventing’ new word pairs that seem to be acceptable and meaningful. Taking the complexity of Task 2 into consideration of particular spelling mistakes that do not influence the recognition of words or phrases are admissible. Regarding Task 3 the number of recognizable and apprehensible pictures are evaluated. If the participant give answers pertaining to the same category (e.g. faces) then the score for flexibility would be zerus. Every shift regarding categories means a score.

Originality refers to unique solutions while fluency refers to the number of the circles a child uses (Barkóczi–Zétényi, 1981).

Discussion of the results

Regarding the rate of the sexes in the research it can be stated that there are twelve students in the dual-language group of which the number of boys is six. The relative frequency is 50 %. In the control group there are eleven students of which the number of boys is seven. The analysis of the data is implemented in accordance with the hypotheses.

Task 3 is applied to justify the rightness of Hypothesis 1 (students learning according to a dual-language syllabus achieve better results in creativity tasks than their counterparts learning according to a normal syllabus). The task has three main areas for evaluation: fluency, originality and flexibility. Regarding both the dual-language and the normal group Task 3 is evaluated in accordance with these subfields. Firstly the total score of each student, then the mean of the groups is calculated.

As for the results of Task 3 Hypothesis 1 is justified but the difference between the two groups is minimal (d= 0.6). Regarding the normal group only eleven students participated this may cause the small difference. In Task 3 the total score of the boys learning according to the normal syllabus is 138 while that of the other group is 124. Girls in the dual-language group achieved 127 scores compared to 86 scores gained by the girls of the normal group.

Mode in case of the girls in the dual-language group is 17, but that of the boys cannot be stated unequivocally. The mode also cannot be stated in case of the girls of the normal group while it is 24 in case of the boys in the same group. By the results of Task 3 it can be affirmed that the highest total score is achieved by the boys of the normal group outdistancing the girls in the dual-language group.

Tasks 1 and 2 are applied to justify the rightness of Hypothesis 2. Tasks 1 and 2 were created to measure linguistic creativity. These tasks are evaluated in accordance with the subfields. Regarding both the dual-language and the normal group the same method of evaluation is applied. As for the results of Tasks 1 and 2 Hypothesis 2 is justified since the average score of the students in the dual-language group is approximately the double of that of the normal group students' (14.08 and 7.18). The total score of the tasks requiring linguistic creativity is significantly lower in the normal group than in the dual-language one. These results draw the attention to the importance and efficiency of the daily contact with a second language. Only one girl, the English-dominant bilingual girl, had outstanding scores in tasks requiring lingusitc creativity (29). One boy in the dual-language group reached high scores in tasks requiring both linguistic creativity (26) and creativity (18). In the non-specialized group children with the highest creativity scores achieved poor results in tasks requiring linguistic creativity (a girl 27, 8; a boy 38, 7).

In the next paragraph Hypothesis 3 is going to be investigated. The hypothesis 3 is considered to be justified since the total score of the girls in the dual-language group is 98 compared to that of the boys (71). The same cannot be stated regarding the normal group since the girls' total score is 37 and the boys' 42. In the latter case there might be a problem with the sampling: the number of the boys is nearly twice as big as the girls' (N=7 and N=4). In the dual-language group the rate of the boys and girls is the same (it might be a distorting factor).

Conclusion

After having described the focus points regarding creativity and linguistic creativity different theories and definitions of bilingualism were highlighted. However, Hungarian teachers are highly-educated regarding various subfields of English language teaching, like methodology or grammar-teaching, they might not be aware of other influencing factors. Teachers need to be familiar with other disciplines connected to language teaching and learning to be effective enough in this perpetually changing world.

The hypotheses of this present research paper suggesting that students in our local primary dual-language school are able to perform better in tasks focusing on creativity and linguistic creativity have been partly confirmed according to the present research conducted

among twenty-three Hungarian pupils of English. To confirm the substantiation of the hypotheses the tasks complied for studying creativity and linguistic creativity were suitable.

In light of the results of this particular research it is advisable for the teachers working in our dual language primary school to take a careful look on students' creative abilities to improve their language skills more consciously.

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Appendix

Appendix 1 Worksheet

Kedves Tanuló!

Kérlek, az alábbi játékos feladatok megoldásával segítsd a munkámat. A feladatsor kitöltése önkéntes és név nélküli. Köszönöm a segítséged.

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1. **Írj egy olyan értelmes angol szót a zárójelek közé, amely a zárójel előtti és a zárójel utáni szóval is értelmes szót alkot. Egy szót csak egyszer lehet beírni.**

sun (flower) pot

a) _____ (_____) _____

b) _____ (_____)_____

c _____ (_____) _____

d _____ (_____) _____

e) _____ (_____) _____

f) _____ (_____) _____

g) _____ (_____)_____

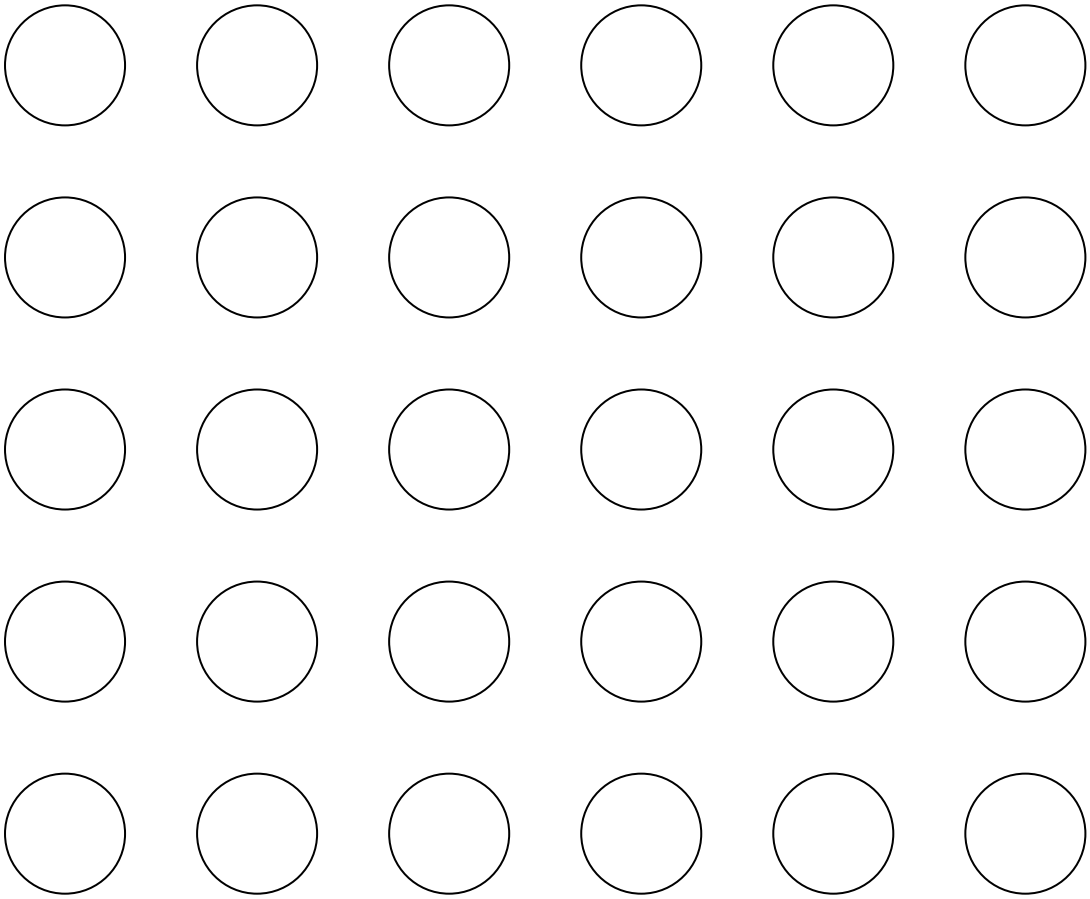
h) _____ (_____) _____

2. Az alábbi betűk felhasználásával alkoss annyi angol szót, amennyit csak tudsz. A betűk szavanként csak egyszer szerepelhetnek. A legrövidebb szó hárombetűs lehet.

a, c, e, i, l, n, o, r, s, t,

hárombetűs	**négybetűs**	**ötbetűs**	**hatbetűs**

3. **Alkoss a körökből értelmes képeket úgy, hogy a körök minden kép központi részét alkossák. Rajzolhatsz a körökön belülre, a vonalra vagy a körökön kívülre. Használd a fantáziádat, hogy minél egyedibb ábrákat rajzolj, ami másnak biztos nem jutna eszébe.**



A feladatsor vége. Köszönöm a segítséged.