

An Investigation Study on the Role of Automaticity and Formal Instruction on Second Language Acquisition

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Abstract

This paper is an investigation of the role of automatization (implicit learning) on second language acquisition. The objective of this study is to identify the role of implicit instruction (automaticity) on English language acquisition as second language (L2) among the school pupils. The experimental design is followed in this study. The target group is 87 Sudanese pupils enrolled in the Sudanese section in an international school in the Eastern Province in Saudi Arabia. The pupils were in two intact groups, the experimental group consists of 41 pupils (21 males and 20 females) and the control groups formed of 46 pupils (25 males and 21 females). All pupils took a pre-test and a post-test. The experimental group was taught in the implicit (automatic) method which took place twice a week for six (6) months. The results for the post tests showed that all pupils have improved in acquiring language rules together with comprehensive language understanding (functions and meanings). This proves that there is a strong role of automaticity method on language acquisition as there is a significant relation between the level of acquisition and the methods of learning. The most important recommendations states that the implicit method was proved to be an effective method that to be applied in learning the second language similarly to the mother tongue (L1).

Keywords: English as a second language, Language acquisition, implicit learning, automaticity

Introduction

Automaticity is claimed by Bialystock (1979), as the ability to do things without occupying the mind with the low-level details required, allowing it to become an automatic response pattern or habit. Automaticity is usually an outcome of learning, repetition, and practice. Examples of automaticity are common activities such as walking, speaking, bicycle-riding, assembly-line work, and driving a car. Moreover, Dekeyser (1995), announces automaticity as the subconscious condition wherein humans perform a complex series of tasks very quickly and efficiently, without having to think about the various components and subcomponents of action involved. As such, automaticity is often associated with language learning in a systematically and an instructional approach. Automatization is a slow, progressive process. It requires repeated and varied opportunities for pupils to practice their target language.

In second language acquisition, Hasher and Zacks (1979), and Posner (1978) defined automatic processes as being effortless, unconscious, and involuntary. social psychologist suggests that four characteristics usually accompany automatic behaviour. They are awareness, intentionality, efficiency and controllability. In natural language acquisition develops over

time, over certain words and certain word classes. Moreover, the social context generally provides a child with endless opportunities to practice and extend their vocabulary. In contrast, most pupils develop second language through formal instruction. With much less practice pupils are expected to acquire a level of proficiency like natural language. For language learning, Segalowitz (2003) characterized automaticity as a more efficient, more accurate, and more stable performance. As such automaticity is often associated with systematically and an instructional approach.

Explicit and implicit knowledge

Ever since Krashen (1977; 1981; 1982) overtly hypothesized that adult second language (L2) pupils have two independent ways for developing ability in an L2, namely, subconscious acquisition and conscious learning. A heated debate has ensued among researchers over whether or not L2 pupils develop one or two knowledge systems that is explicit or implicit knowledge and the role consciousness plays in that process. According to Paradis in Posner (2009), explicit knowledge is synonymous with metalinguistic knowledge, neurolinguistic sub served by declarative memory, which contrasts with implicit knowledge, neurolinguistic sub served by procedural memory.

Metalinguistics is the branch of linguistics that studies language and its relationship to other cultural behaviours.

The two types of knowledge also differ in (a) that explicit knowledge is open to introspection, but implicit knowledge is not, and (b) that use of explicit knowledge is purposeful and intentional but use of implicit knowledge is easy and non-intentional.

Implicit and explicit knowledge as two important concepts have long been at the centre of attention in second language research. Implicit knowledge of an L2 is defined as tacit, intuitive, procedural, which is target as well as nontarget like, and is only observable when second language pupils are communicating. On the other hand, explicit knowledge is conscious, declarative, is likely to be inaccurate, and can be verbalized. Language proficiency is defined as "a person's overall competence and ability to perform in L2 [Second Language]" (Thomas, 1994, p. 330). There is evidence in SLA research to consider grammar as one of the main components of L2 proficiency (Oller, 1979). Therefore, the purpose of the present paper was to mention some theoretical backgrounds about implicit and explicit L2 knowledge and language proficiency, and to qualitatively answer the question of the relationship between implicit and explicit knowledge and L2 proficiency.

There are two views concerning nature of linguistic knowledge as mentioned by Ellis (2005). The first view refers to Chomsky's universal principles which are applicable to all languages and some parameters which are language specific working one behind the other to give rise to a specific language from poor input. According to this view, positive evidence or input activates principles and parameters to drive a person's linguistic knowledge. The Second view which is related to the works of connectionists theories of language learning does not make a difference between language knowledge and other kinds of knowledge and considers linguistic knowledge as an outcome of bit by bit abstraction of rules manifested by frequency and likeliness of happening of form/ function mappings. The above-mentioned rules are achieved by having a long-term experience of learning a language. Based on this approach "linguistic knowledge emerges gradually as pupils acquire new sequences, restructure their representation of old sequences, and, overtime,

extract underlying patterns that resemble rules" (Ellis, 2005, p. 142). As a result, second language researchers have controversy over determining which two views authentically demonstrate the nature of linguistic knowledge. Although there is a big difference between the two positions towards the nature of linguistic knowledge, the distinction between implicit and explicit knowledge is a characteristic which both connectionist and Chompskian positions have agreement upon. Giving a much lesser role to consciousness, Ellis (2005; 2006; 2007), on the other hand, maintains that learning is mainly implicit, an associative and rational process through which pupils intuitively identify and organize constructions or form-function mappings based on their probabilistic encounters with relevant exemplars in the communicative environment. However, this process is not ideal and can be to some extent 'irrational,' in that a priori tuned usage system (i.e. L1 or 'learned attention') may interfere with the learner's processing of L2 input. Though, such imperfection can be improved through explicit teaching 'involving the learner in a conscious tension between

In this study the intermediate pupils in Saudi Arabia, in general, follow the grammatical method in learning English in the schools. The researcher has observed that some of these pupils acquire the grammar rules in the language through automaticity. Therefore, the idea of this research has been formed. Language acquisition has been the method of learning mother tongue. The human brain is made to understand how to differentiate among different fields automatically, including: Language as mother tongue, second language, math and science. As children, we have the instinct to learn and use the information that we need to learn another knowledge.

Sudanese secondary pupils in one of the international schools: Sudanese section in the Eastern Province (Saudi Arabia) come from different intermediate schools in this area. Some are governmental schools in Sudan and Saudi Arabia, and some are from international schools. Examining the pupils involved in this study, the fact that some of them have a good understanding and use of grammar properly, while others have difficulty with grammar use. Grammar is always built into the reading comprehension passages. This makes it easy for pupils to understand different verb tenses as present or past, etc.

Grammar is the core part of any language used by educated or uneducated people. This can be inferred from what Chomsky (1957) said that grammar is hardwired into our brains. People use different grammar tenses in their conversation. Some pupils are good at grammar while others have difficulty using correct grammar. Most speakers of English as a foreign language can acquire the language to communicate properly, although they use poor grammar. Pupils who study at international schools, can use correct grammar because they acquire it automatically from their teachers. On the other hand, pupils who study at other schools have difficulties using correct grammar in their spoken English.

Schools in the Sudanese system usually use traditional methods of instruction. Teachers usually use traditional tools of instruction. They use the board to explain grammatical rules in the Sudanese curriculum. Therefore, the need for this study emerged to find out the value of including the method of automaticity in teaching English. Recently, there is an interest in using modern methods of instruction to keep up with the fast pace of development in life. Automaticity is one of the modern methods of instruction. Segalowitz (2003) allows pupils to creatively apply previously acquired knowledge in new communicative context.

Methods

This paper follows the experimental design. An experimental design is a plan for assigning experimental units to treatment levels and the statistical analysis associated with the plan (Kirk, 1995:1). The design of an experiment involves a number of inter-related activities. It employs the experimental research design to make sure about the different totalities research. This study divided the participants into two groups, the control group and the experimental one. Helmenstine (2019) defines the experimental group as a set of subjects exposed to the change in the independent variable. This is suitable for this study to find out the effect of automaticity on instruction. The control group were instructed in the traditional grammar method, while the experimental group was instructed in the automaticity method. The age range was 15-16 years. The control group was 46 pupils, while the experimental group was 41 pupils. The length of the study was six months. The study was conducted in a

Khobar International School / Sudanese section in the Eastern Province in the Kingdom of Saudi Arabia for all intermediate pupils in grade nine (9) at Sudanese sections of international schools in Saudi Arabia. 17/4/2017 The sample size is 87 pupils selected conveniently (they were chosen in a way that was appropriate for the study) at Khobar International School International school where the researcher has access to the school as a teacher. The control group was 46 pupils, while the experimental group was 41 pupils. Both groups had males and females. The length of the study was six (6) months during the whole academic year. The data was collected through experiment which was conducted with the pupils for six months. There was a pre-test and a post-test that the pupils had to take. The test contains five questions covering reading comprehension and grammar. The types of questions were complete answers, fill in the blanks, choose the correct answer, and addition of prefixes (objective test).

The teaching was conducted into two modalities the traditional grammar teaching was practised with the control group, where the researcher used the explicit grammar rules and then learning activities with the pupils. Secondly, the experimental group was taught implicitly where comprehension passages were explained and from which the rules were detected. The experiment took place at the school premises into two separated class according to their distribution.

The pre-test was given at the beginning to know about their level and then the post test was conducted for evaluation reasons, the test was an objective one which was repeated after the experiment. In the two tests (pre-post), time was seventy-five (75) minutes where the pupils took enough time to answer it. both tests were marked according to the set marking scheme. The analysis used in this study was statistical analysis where the t.test is employed. A comparison between both groups using the mean marks and standard deviation was used. Many ethical Considerations were taken as pupils were notified that they were participating in this study before the beginning of the study. Also, permissions were granted from ministry of education and school administration together with confidentiality and anonymity which were highly considered. Voluntary participation was granted by the pupils' parents as

all of them had agreed to participate voluntarily. This study was limited to the Sudanese pupils who participated in the study. It was also limited to the time it was conducted. Also, the results of the study cannot be generalized to all other language features.

Statement of the problem

On the base of my experience as an English language teacher, the researcher has observed that pupils come from two different programs. Some had better knowledge of grammatical rules than others. Therefore, the need for a new method arose to help the pupils to become at a comparable level of language acquisition. The proposed study is an investigation of the association between explicit instruction of grammar and automatization of rules. Chomsky (1957) theorised that children have the innate ability to learn language and apply what they learn in the first language to the second one. This is a relatively a *new area* (this was true in 1997) in psycholinguistics. Very little research has been conducted and most of the studies have used artificial languages (Dekeyser, 1997 and Robinson, 1997). There are two main theories in this field. The first view is called the non-interface position. The main advocates of this approach are Krashen (1983) and Scot (1989). The effect of this approach is apparent in English language pedagogy. Krashen and Terrel (1983) proposed the natural approach to encourage implicit teaching of rules. Scot proposed the Total Physical Response to

facilitate unconsciousness learning. The second view, known as interface approach, emphasizes the role of explicit instruction in second language learning (Long, 1983; Norris and Ortega, 2000, Cadierno, 1995).

Study Hypotheses

- 1-There is no significant difference between the pre-test and the post-test among the control group.
2. There is a significant difference between the pre-test results and the post-test results among the experimental group.
3. There is a significant relation between the acquisition level of the language acquisition among the experimental group rather than the control group.

The data is analysed via statistical means of T-test and z-score. It is analysed to measure the reaction time and the degree of correctness in each test and for each group.

Results

The data was collected through experiment which was conducted with the pupils for six months. There was a pre-test and a post-test that the pupils had to take. The test contains five questions covering reading comprehension and grammar. The types of questions were complete answers, fill in the blanks, choose the correct answer, and addition of prefixes (objective test).

Table (1) t-test result showing group means of the experimental group for the pre-test and post-test

Valid	Mean	Std. Deviation	t	df	Sig. (2-tailed)	Conclusion
Pre-test	42.56	3.264	-0.584	40	0.56	Significant difference between pre-test and post-test
Post-test	42.71	3.408				

Source: IPM SPSS 24 package

The value of (T) test calculated to signify the differences between the numbers of individuals of the study was (0.584) with significant value (0.56) which is greater than the level of significant value (0.05%). These refer to that there are no differences statistically. Rewrite this sentence

The pupils achieved better marks in the post-test compared to the pre-test. Pupils in the experimental group were excited about the new method of teaching which was the automaticity method.

They enjoyed learning the grammar by practice. They needed a longer time while taking the pre-test. They also needed some explanation of the questions. Although they all had similar understanding of the whole experiment, there were some differences among them in their understanding of the questions. Some of them understood the topic automatically, while others needed some more explanation. They were excited about the idea of the experiment as well as about taking the test. Once

they understood the idea of the experimental study, they had a better understanding of the new method and accepted it very well. Therefore, they achieved better marks in the post-test. This shows that the method of automaticity is promising in the field of instruction to keep up with the new technology. Pupils nowadays usually have the ability to grasp things fast. Table (1) t-test result shows group means of the experimental group for the pre-test and post-test.

Discussion

The aim of this study is to highlight the role of automaticity on the second language acquisition among school Sudanese pupils. Pupils in this study were able to learn grammatical rules in an automatization method through reading comprehension. The mean score in the pre-test of the experimental group was 42.56, while it was for the same group in the post-test was 42.71 which means there was no significant difference. They also were able to elicit information which is considered the core of the language as human speak language in terms of functions and meanings do not structure only. This result is supported by Chomsky (1957) who had claimed a theory that says children have an innate ability for learning language. Once they learn some rules of language, they can generate more language. The pupils achieved better marks in the post-test compared to the pre-test. Pupils in the experimental group were excited about the new method of teaching which the automaticity method was. They enjoyed, as mentioned earlier, learning the grammar by practice. They needed a longer time while taking the pre-test. They also needed some explanation of the questions. Although they all had similar understanding of the whole experiment, there were some differences among them in their understanding of the questions. They were excited about the idea of the experiment as well as about taking the test. Once they understood the idea of the experimental study, they had a better understanding of the new method and accepted it very well. Therefore, they achieved better marks in the post-test. This shows that the method of automaticity is promising in the field of instruction to keep up with the new technology. Pupils nowadays usually can grasp things fast and deal with it in an advanced way. Accordingly, the automaticity learning modality

is also important in provision of language as a wholistic means of communication rather than just grammatical rules. This was easy for the pupils as it was done in a natural way through practicing natural conversation with the teacher. This made their learning more natural, and close to real life situations without explaining the grammar rules precisely, but grammar was taught indirectly.

The results of the pre-test and post-test of the experimental group showed that the pupils have improved in terms of language acquisition and understanding of meanings and functions together with the grammar rules. Ellis (2005) as a reaction to the theory of Chomsky had two views related to L2 learning. The first view was that language input can serve in learning more structure in the language or in other languages. The subjects of this study in both groups had the needed input for learning the language. The second view was that any previously learnt rules can be applied in bits to new rules. The subjects of this study were able to understand the grammatical rules although they were included in reading comprehension.

Segalowitz (2003) characterized automaticity as a more efficient, more accurate, and more stable than grammatical instruction. However, he stated that it can be used to support automaticity. The results of this study support his opinion as subjects in both groups had better marks in their post-test results for e.g. Therefore, the conclusion of this research is to use both grammatical instruction and automaticity to support each other. Further research is recommended to pursue this conclusion.

The strong-interface position is best exemplified in skill acquisition theory as applied to SLA (introduced and discussed most by DeKeyser). This theory (see, e.g. DeKeyser 2007), taking its origin from cognitive psychology (Anderson 1982), suggests that language learning, akin to cognitive skills development at large, consists of, and proceeds through, a series of stages: a declarative stage, where pupils first accumulate a factual understanding (developing 'knowledge that'); then, a procedural stage, where pupils act on the declarative knowledge (developing 'knowledge how'); and finally, a stage of automatization, where the procedural knowledge becomes fluent, spontaneous, and effortless. This study reinforces the fact that pupils develop in learning L2 in this study.

According to the differences shown between pre-test results which was 42, 56 .The post-test was 42, 71. The pupils achieved better marks in the post test.

Conclusion

There is a significant difference between the results in the pre-test and the post-test of the experimental group. According to the results discussed above the automaticity as a mean of learning the grammar has not shown a great difference in terms of grammar acquisition between the pre and post-test, but the difference was clear in terms of understanding and production of the language considering functionality, semantics and pragmatics approaches of the language. The learners showed good understanding of the meaning and were able to interact with the topics automatically. Implicit teaching is more effective than explicit teaching on meaning-based language features and explicit teaching is more effective than implicit teaching on form-based language features in terms of reaction time. Only a few studies (Robinson, 1996; de Graaff, 1997) compared the reaction time under implicit training and explicit training and have not shown any advantage of one over the other.

If the situation and the material permit using automaticity with the pupils, any pupil or average people can acquire the grammatical rules effectively as they all have the innate ability to learn the language. Therefore, the method of automaticity was proved to be an effective method to be used.

In addition to the above discussed result, it has also been observed that the pupil's comprehension abilities have developed to start linking meaning with function and usage.

Recommendations

- 1.The traditional method of teaching grammatical rules to pupils of L2 is recommended to be used to help them acquire the language. Further studies are recommended to be conducted on the grammatical method.
- 2.The method of automaticity was proved to be an effective method to be used
- 3.More studies are recommended to be conducted to compare and contrast between the traditional grammatical method and the automaticity method.

The fast rhythm of life and the fast development that is going on in the world, besides having many inventions and tools for education, show the need to find fast ways to acquire or learn languages in a short time. This can enable pupils to master the new language better and faster to keep up with the fast rhythm of life. Therefore, automaticity is one of the methods that can help pupils master the language in a natural way through everyday practice. It may be an alternative of the traditional classroom.

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