

Development of Reading Fluency from the Perspective of Automaticity Theory

Sadiki Moshi Feruzi 

Department of Languages and Linguistics, Muslim University of Morogoro, Tanzania

✉ **Corresponding Author:** Sadiki Moshi Feruzi, **E-mail:** sadikimoshi@yahoo.co.uk

ARTICLE INFORMATION

Received: August 11, 2021

Accepted: September 18, 2021

Volume: 3

Issue: 9

DOI: 10.32996/ijels.2021.3.9.3

KEYWORDS

Reading fluency, automaticity, practice, repetition

ABSTRACT

Reading fluency has been a persistent problem among learners. A couple of experimental studies reveal the existence of this problem in many primary and secondary schools as well. In the past century, experimental psychologists have popularized automaticity theory as a relevant paradigm in developing children's reading fluency. The theory identifies four important aspects that feature automaticity, which are speed, autotomy, effortlessness, and lack of conscious awareness. This study adopted a documentary review where various studies were collected, thoroughly reviewed and finally examined for qualitative analysis. The study aimed at expanding understanding of reading fluency by examining roles played by teachers in the development of child's reading fluency basing on automaticity theory. There were similar findings related to reading fluency and automaticity theory from various publications reviewed. However, this study considered three of them, which have shown significant information across the topic and have been cited in various books and world-class journals.

1. Introduction

Reading is a cognitive process that involves decoding words from printed words and producing them orally. According to Alyousef (2005), reading is defined as an interactive process between a person reading and a text that results in automaticity. Some earlier scholars like Huey defined reading as the choice from what is printed, suggesting a continuous sensation of values in all effective reading (Huey, 1908). The interpretation of Huey's definition is that there is a mechanical process involved in the mind when taking information from the printed pages (Glazer et al. 1990). This implies that reading is an activity that requires visual and cognitive processes, while interpretation of orthographic symbols comes as a result of such a process.

Reading is a long process that begins from an informal environment to a formal environment where the teaching and learning process occurs. Various circumstances support children learning to read the language. They learn through listening to their parents, peer, or other people around them. The difficulties they encounter solicit their sense of struggle to well interact with whom they meet. When these children start to read in a formal stage (in a classroom), they already acquire a large amount of vocabulary, a set of language structure, and realize some clues related to discourse (Nation, 2009).

Reading fluency refers to automatic reading of printed text where a reader can connect words into meaningful expressions faster and effortlessly (Corcorn, 2005). The National Reading Report (2000) asserts that reading fluency is a capability of an individual person to read a text with appropriate speed, accuracy and expression. It is that stage of accuracy and speed where decoding is automatic, quite effortless. Reading is smooth, accurate and appropriate prosody while attention is focused on comprehension (Wolf & Katzir-Cohen, 2001). Reading fluency is an important skill considered a prerequisite for reading comprehension, as stated by Tinda et al. (2016) and Rasinski (2014). They argue that fluency as skill plays a significant role in comprehension, which is basically the ultimate purpose of reading. Precisely, reading fluency denotes the accuracy and speed at which learners expressively read a given text (Francis et al., 2008; Harn et al., 2008; Hasbrouck & Tindal, 2006; Jenkins et al., 2007). Fluent reading is also defined by Hudson, Mercer & Lane (2000), as reading a connected a printed text at a conversational speed by

appropriate expression. It is argued that once fluency is acquired, it takes a long time to demise even without practice and normally generalize across various texts. A fluent reader is hardly distracted by external factors and reads the text automatically and effortlessly. Normally, a fluent reader recognizes the words at hand and at the same time understands the author's intended message. However, poor reading fluency is a basic predictor of a reading comprehension problem (Stanovich, 1991). Less fluent readers put much effort into figuring out the words and text at large, leaving little attention for comprehending the text (Armbruster et al., 2001; Perfetti, 1999). If a reader frequently stops to find out words unclear to him, most likely the reader will not remember or comprehend what is reading (Perfetti, 1985, 1999; Pikulski & Chard, 2005; Samuels & Flor, 1997). This implies that there is a close relationship between reading fluency and reading comprehension. It is reported that about 90% of comprehension difficulties among students are rooted in a deficiency in reading fluency (DiSalle & Rasinski, 2017). Therefore, if a student fails to acquire fluency at the early stage of his academics he is likely to continue suffering in his learning which means this particular learner will not be able to make meaning from the books (Pahamzah, et al., 2021).

2. Literature Review

The nature of learning, in general, is basically determined by the cognitive capability of a learner, where memory takes a central role in the process. To help readers establish and apply this body of knowledge from literature, the author has adopted and discussed automaticity theory as a guiding frame of this study.

2.1 Automaticity Theory

Automaticity theory takes its root from the word automatic, which means a person's ability to recognize and process information with fewer efforts. According to Samuels (2007), automaticity theory has been used in reading fluency to determine the ability of a student to look at words and read them without thinking. The key point that the theory stresses is word recognition which should be developed through using easier texts for students who have reading problems. Moors & DeHouwer (2006) asserts that a reader is considered to have acquired fluency if the reading process takes place automatically and must have attained appropriate reading speed, lack of conscious awareness when reading and no efforts applied in reading. When a learner's automaticity develops, the performance becomes accurate along with speed. The Automaticity theory emphasizes repeated performance or practices because grasping new words and staying in the learner's mind requires successive exposures. LaBerge & Samuels (1974) insisted on repetition to enhance automaticity with the argument that sounding spelling forms generally becomes automatic through repetition of visual as well as articulatory sequences.

2.2 The Mechanisms of Automatic Theory

Most often, automaticity theorists assert that automatic processes do not require attention nor efforts in reading and it develops by continuous repetition of activity, leading to a gradual breakaway of attention and efforts from the given task. According to Logan (1988) automatic process is determined exclusively by the working memory. This means that automaticity directly utilizes target information stored in the memory without any mechanical steps. Logan claims that complex tasks are basically processed using fundamental procedures where later particular solutions for specific problems are adopted and kept in memory. Response to any problem of which a solution is already stored in memory is easily retrieved. Consequently, the use of procedures for a particular problem is withdrawn and retrieval of a particular solution from memory transforms to a central response to that particular problem. Over a period of time, automaticity is transformed from the procedure (algorithm) grounded responses to memory grounded responses in such a way that the process of retrieving responses then becomes completely automatic, or exclusively memory grounded. In respect to this view, it is evident that the theory is much linked with the development of fluency as opposed to Pikulski & Chard (2005), who see the theory as useful when finding learners with problems in reading speed. However, some theorists have challenged this theory for ignoring memory deficit. In fact, there is no human being whose memory is completely perfect. There are so many reasons for memory damages leading to deficit such as illness or information we take in our life experiences are anguishing our memory in one way or another. Another criticism about this theory is an insufficient explanation about prosody, one of the most important components of reading fluency. The claim that the theory relies on practice and drilling methods that consume a lot of time is undoubtful genuine, considering that every lesson is bound to specific time, but that should not stand as the fundamental reason to overlook all other significant roles plays. The strategies proposed by the theory (repetition or practice) are very significant in developing learners' reading fluency as it is all known that practice makes perfect. The more you read, the better you become.

3. Methods of the study

This study is based on a documentary review which was designed to explore the relationship between automaticity theory and reading fluency among learners of lower classes. Document review is one form of collecting information based on qualitative research whereby a researcher interprets a wide array of documents and analyse them accordingly (Brown, 2009). So far, the documents reviewed hereunder are considered as respondent of which relevant data were collected. The first activity was to identify prominent academic resources search engines where refseek (<https://www.refseek.com>); Google Scholar

(<https://scholar.google.com>) and Research Gate (<https://www.researchgate.net>) were selected. These search engines were used by allocating related articles: oral reading fluency, assessment of oral reading fluency and automaticity theory. Studies that appeared consistently in all search engine results or two were considered the best resource for the current study. Similarly, studies that were given first consideration were those conducted at an international setting showing the wide range of assessment norms.

4. Results and Discussions

The following studies report significant information on reading fluency basing on the theory of automaticity. Although the author reviewed a number of publications, the following studies are considerably significant across the topic and they are discussed to represent views of other studies.

4.1 The study by Logan (1988)

Samuels (LaBerge & Samuels, 1974) developed the theory of automaticity when he was proposing a repeated reading strategy. At this point, Logan conceptualized the idea of automatization as an important distinct unit in explaining the reading process. Logan (1988) argued that every experience and task place a separate memory hint that can be retrieved if that specific task is repeated. Logan argues that automaticity is attained when a cognitive activity has been executed with enough time so that retrieving information stored in the memory is processed faster than applying rules in solving a given problem (Rodgers, 2011). Logan's theory so far is based on memory retrieval (Rodgers, 2011).

The theory discussed reading as a mechanism that memory plays a central position. The more practice trials a person makes about activity-related knowledge; the more memory growth it creates. When there are several practices, mechanical processing of retrieving relevant solutions to the problem by reasoning declines to automatic processing. The automatic processing leads to a faster and effortless performance since retrieving information from memory is quick and involves less. The theory is based on speeding up the reading process through task practices by paying more attention to an activity. It is clear from the theory that practise and repetition are necessary conditions for developing reading fluency skills. Although there are arguments that automatic reading can take place in the first trial or instance of learning, the chance to exist for a long time without practice is very limited. Usually, automaticity takes place in piece meals through practice. As more and more activities get added into memory, the reaction of memory to accustomed context gains strength. The role of a teacher is to lead learners to repeat a single activity several times and set a context that is relevant to the activity in practice. When a learner read a text repeatedly, the time bond required to read declines as the function repetition periods. According to Levy, Di Persio & Hollingshead (1992), there is a rapid decrease in the reading time frame at the beginning of the first few readings, while with prolonged practice, the improvements become less dramatic.

4.2 The study by Samuels and Flor (1997)

From the year 1974, when LaBerge and Samuels proposed automaticity theory, more scholars have emerged, improving and developing new models to explain how fluency develops. For example, Perfetti (1985) and Logan (1997) have given a deeper explanation of automaticity theory affirming the memory retrieval process to function in reading fluency. Essentially, automaticity theory is part of information processing theory based on a cognitive paradigm that regards reading fluency as a complex process. The study insists that learners have to practice reading until the upper level of accuracy is attained. However, being accurate does not mean automaticity is already acquired. A learner may not be automatic because she is unable to decode and comprehend at the same time. The study reveals that automaticity develops along with repetition and practices over a given period of time of which during the course of practices, significant changes related to accuracy and attention occur. The level of accuracy on the one hand increases while attention on the other hand decreases. Therefore, Samuels and Flor's automaticity theory of reading attempts to understand the cognitive endeavors involved in learning to read. Learners must use the available cognitive space to decode words of a given text, of which only a little space is left for comprehension as a result when beginners are asked, for example, to tell what is all about the text they just have read. The learners will often fail to state what the text means accurately. So, automaticity theory explains how to move from processes to the automatic level where cognitive ability is freed up for parallel performance through practice.

4.3 The Study by Tavakoli (2019)

Taking a psychological perspective, Tavakoli defines it as a capacity to perform tasks with less or no conscious effort in processing information (Tavakoli, 2019). The task performance is also marked with moving away from sequential processing to parallel processing. In second language learning, especially at earlier stages of learning, the language processes are quite controlled and therefore becomes challenging to run diverse processes concurrently without assigning some sort of pressure on another process (Skeham, 2009). This is the point where the idea of automaticity turns into key to the development of reading skills then gradually changes due to practices and repetitions to become a fluent reader. It is important to understand that automaticity is not just an accelerated practice of faster performance of the same activity after a period of time of practice but a

qualitative transformation in a process that is performed effortlessly at time. In this case, two aspects are normally used to determine automaticity; reaction time and error rate. The amount of time required to perform a certain task and an average error made in performing that particular task. Essentially, automaticity as a theory stresses more repetition of a task by learners for a certain period of time to help their memory hold it for permanent use and develop fluency production. Repeated reading activity plays the most significant influence on reading fluency and comprehension as well (National Reading Panel, 2000). Therefore, learners should be exposed to repeated reading that involves reading a short passage repeatedly while receiving assistance from the instructor to fix errors immediately as learners make mistakes. However, repetition may be less useful if learners don't pay the required attention and concentration. These two aspects affect cognitive processing. As a result, there will be no changes in task processing time despite several repetitions.

Based on the analysis made from various studies, it is clear that reading fluency is built on different factors, including practices proclaimed by automaticity theorists such as Samuels and Logan. Many teachers pay more attention to teaching reading skills in the early years of primary education and ignore developing fluent reading skills. However, practically many teachers find it difficult to implement repetitions that are considered a core point of developing fluency. As a result, learner becomes handicapped not only in terms of reading fluency but also comprehension levels.

5. Conclusion

Several researchers in the reading study are concerned with the process and performance in reading while sparing little attention on fluency which is an important component of reading development. The purpose of this study was to examine the role of teachers in the development of child's reading fluency. The major findings from the literature reveal that reading fluency develops over time as learners continuously practice reading the simple text through the guidance of teachers who have to set learners' cognitive construction to accomplish the task. In line with automaticity theory, teachers have to use pictures, illustrations and drawings to support learners to create an actual schema. The schema construction will help learners develop concepts for words and put them in memorable patterns stored in memory, leading to the gradual development of automaticity. Basic skills such as decoding take place as learners continue to practice until reading becomes automatic. In this regard, it is clear that the development of reading fluency is an outcome of a cognitive process that involves a series of practices of which overtime shifts from a mechanical process to automatic. It goes without saying that practice makes perfect. However, the practices must be consistent and well-controlled by teachers to lead to automaticity acquisition. Once automaticity is attained, learners will certainly develop reading speed which fosters accuracy development as well.

The study is deemed to help teachers on the best practice that would promote learners to develop reading fluency. Furthermore, the findings presented in this study awaken teachers and all other instructors to understand that learning as do reading fluency takes time and therefore, learners will never develop automaticity just overnight. Therefore, teachers need to employ various teaching strategies and deliver well-coordinated reading activities.

The limitation of theoretical analysis of automaticity in developing learners' reading fluency is that extensive drilling and practice tasks often lead to boredom, decreasing learners' learning motivation. The author hopes that language teachers should find appropriate teaching strategies such as gamifying those learning activities to mitigate boredom situations.

This study recommends that research be carried out in the future to test the relevance of other theories such as Information Processing theory or Ehri and McCormick Word Learning theory on reading fluency. Finally, by considering that acquisition of reading fluency differs from one language to another, other researchers could develop their proposals of reading fluency using specific languages.

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