

## Study of the relationship between phonological awareness and rapid automatized naming and reading in first grade students in Yazd city

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### Abstract

Reading is one of the human's communicative skills that it is necessary literacy. Phonological awareness and rapid automatized naming are parts of the person's linguistic knowledge. Research in different languages and communities suggest that there is a relation between phonological awareness, rapid automatized naming and reading. The aim of this study was to survey these relations in Persian language. In this study ۱۳۰ male students from the first class were selected. They were normal in IQ, visual and hearing status. Language development was also normal in these children. Reading test (Shirazi & Nilipour) and rapid automatized naming test (Barkhardar) were performed in the subjects. This study was a cross-sectional one. Pearson correlation coefficient and linear regression test were used to analyse data. Pearson correlation coefficient between phonological awareness and reading is direct and is respectively ۰/۸۶. Pearson correlation coefficient between rapid automatized naming and reading is indirect that equals - ۰/۸۷. Investigating the relation of three variables simultaneously with reading we conclude that the relation between phonological awareness, rapid automat zed naming and reading is statistically significant ( $P < ۰/۰۰۰۱$ ).

**Keywords:** Phonological awareness, Reading, Rapid automatized naming



## Introduction

Reading is one of human acquisition skills which is based on primary language skills. Actually there is ۴ main pillars in each language which could be classified by reading and hearing as an input or received skill, and speaking and writing as an output or expressive skills. One of the result of this classification in teaching is that emphasize on the necessity of data and internal experiment before effective action of external skills.(۱)

Recently many of researches point to the role of phonology awareness and rapid naming in reading although there is a contradiction between the results of different research. In past ۲۰ years phonology awareness has been attended by researcher. Because of these it's efficacy and correlation with the other skills has studied. Teroya (۱۹۹۴) knows phonology awareness as a term which is describe a group of languages skill like awareness of speaker sound and usage skill ability. (۲،۳)

Skills of phonology awareness include rime, combine, comparison, deletion, replacement and overturn. Children with the age of ۲ to ۴ can perception rime, congruence and between ۴ to ۶ years old can separate, combine, compare and elder children have the ability to deletion replacement and overturn. He believe that those children who can do these skills perfectly would be good reader. Inverse those who are weak to do these skill or who use them difficulty are weak in reading. Application of phonology awareness could be the best forewarning at the first and second grade of primary school. Stuart (۱۹۹۵) has shown that at the end of first class those children who use the process of phonology in compare with children who are learning the process, show more improvement. (۴)

DankenSimora and Hill (۲۰۰۰) show that in the first year of learning, small unites which based on phoneme and characters are the basis for action and in the second year there is more attention on the section of rhyme word while reading. Using the analogy of word for reading is an evidence of this claim. The tendency to rhyme strongly related to the age. Result of this study say that during growth, phoneme approach goes to the long units. (۳،۴)

Results of Soleymani (۱۳۷۹) research shows that syllabic skills exist either in pre-school children and school children. But phonological awareness skills were seen just in children who had received formal education of reading and were not seen in pre-school student. The results of this research also show the effect of education reading on phonological awareness. (۵)

The other factor which is effective in reading and also different research referred to rapid automatized naming. Rapid automatized naming means that a person can name familiar visual symbols in period of time like things, colors, numbers and letter. For differentiating good reader from weak reader, rapid naming can be used from childhood till adulthood. Different descriptions have been presented to show the relation between rapid naming performance and training reading. At first rapid naming has been known as a part of phonological processing which shown that effectiveness recovery of phonological password. (۶،۷)

Anyway some studies have shown the rapid naming, has an independent role in relation with reading. It means reading is apart from phonological awareness and memory. Those who are weak in reading may be have defects in phonological processing, rapid naming or both of them. If both of problems exist, children are detected double deficit. It seems that this defects increase and when those together create in a child, more problem would be created. (۸)

Wolf, Bower (۱۹۹۸) reported defect of rapid naming may be show defect in the speed of information processing based on neurology. Other researcher believe that defects of rapid naming and phonological awareness is a wider automatized defect. Defect in cerebellum is known as a source of this defect. (۷)



Crista, Rieger's research determine that there is significant relation between accessing to reading skills with phonological awareness, rapid naming and visual word. Children with the defects in rapid naming and phonological awareness, have more delay in reading skills in compare with children without these problem. Mother's training to these children had significant effect in their success. Phonological awareness of these children is a good provident for their performance of reading. It seems that rapid naming independent of intelligence is on of children language abilities. (۹)

A study was conducted by Di Fillipo and his colleagues in ۲۰۰۶, reader with problem in rapid automatized naming test, did worse than the controlled group. There were no difference in production rate between ۲ groups speed of reading was related to rapid automatized naming. Especially in the group with the trouble these relation was significant. In a study which was done by Penny and his colleagues in ۲۰۰۵, the role of information processing defects was studied. Person who had good ability in reading performed better in rapid naming number test. But they showed no significant difference in measuring phonological awareness and ethnographic processing with those who had weak performance of reading. (۱۰)

Ashtari in the year ۱۳۸۳, in study and comparison of phonological awareness skills and rapid naming in dyslexic and normal children showed significant difference in the mentioned skills between dyslexic a normal children. Dyslexics were weaker in both skill. Also in this research there were no significant solidarity between phonological awareness skill and rapid naming. (۱۱)

There are many studies in non- person language about phonological awareness, rapid naming. In person language little research has been done. But these research are done about phonological awareness. There is a research about rapid naming in which compared dyslexic in the second grade of primary school. The validity of rapid naming of this research has not been studied. Therefore this research intends to study the relation of phonological awareness and rapid naming with reading in person language in male student from first grade primary school of Yazd to determine which one have effective role on reading. (۱۲)

## Methods

This research is a cross-sectional sample include ۱۳۰ male student from the first grade which are chosen from ۵ geographical area of Yazd (North, South, East, West and Center). ۵ primary school from each area and ۵ student from each school (totally ۲۶) were chosen randomly. The research was done at Ordibehesht because students learned all letters.

Phonological awareness and rapid naming and reading is a part of language skill development require special conditions such as normal hearing, intelligence, vision, normal speech.

These conditions were studied before the test and to choose subject. So subjects should be innocent of problems of hearing, intelligence, speech, learning and vision. To understand the problem of hearing, vision, intelligence and learning, children's file and their teacher were useful. Auditory discrimination test was used for examination hearing. This test include ۴۰ pair words with ۱۰ pair of similar word and ۳۰ different pair word. Subject after hearing a pair of word make decision about similarity of them. It would be normal if subject answer ۳ or ۴ case of test correctly. But for study production and language problems an unofficial test was used in which series of picture were shown to children and asked them to explain about that.



Tab<sup>1</sup>: central index and studied variables distribution in sample

	Average	Standard deviation	Less value	The most value
Score of reading	-۰,۸۱	۱,۰۸	-۳,۴۱	۰,۷۱
Phonological awareness	۴۹,۸	۹,۴۱	۲۶	۶۷
Rapid automatized naming	۲۲۰,۳۲	۴۳,۰۱	۱۷۲,۳۱	۳۵۲,۴۲

During the reading test, child situation was investigated again as if there was a problem appear sample were deleted.

After choosing subject, sample data extracted from their file and then the steps below was done on child. After that phonological awareness test was done. The following id the part of phonological awareness of Soleymani (۱۳۸۱).

The test contains ۷ parts which are: naming and deletion the same early phoneme, naming and deletion the terminal phoneme, identify different words with the same terminal phoneme, identify different word with the same terminal phoneme. Deletion central phoneme and phoneme combination and phoneme segmentation. Each part had ۱۰ section and ۱۰ score. If there were a wrong answer in each section, one was deducted.

Barkhordarrapid naming test was used to evaluate the rapid naming. (۱۳) This test contain ۴ section, numbers, words, pictures and colors. Subject become acquainted with the test by an example of the first of each test before doing each section. Next child shouldname each part of test loudly. The time of naming was recorded for each part of test. After that by collecting the times of child naming in the ۴ parts, the resulting data was the score of child in rapid naming test also for evaluation reading. Reading test (shirazi&Nilipour, ۱۳۸۴) was used. The text of (jouje) of this test has been used in this research which is contain ۵۰ words. (۱۴,۱۵) Child reading was recorded and then the data related to child reading extracted. First by deducting the wrong answer from score ۷۰, score of reading was calculated and the standard score of child reading obtained by deduction ۱۷,۶ rom reading score and divided that by ۳,۴. Child performance while doing homework recorded by mp۳ and then its data extract. Finally data were analyzed by the help of version ۱۱,۵ of spss and Pearson correlation coefficient and linear regression.

## Result

Research finding presented in both descriptive and analytic. The average of reading score in male student at first grade school of Yazd was -۸۱ (۱,۰۸). Also the average of phonological awareness score and rapid atomized naming of these student respectively were (۴۹,۸) and ۲۲۰,۳۲ (۴۳,۱).

According to Pearson correlation analysis, it's seen that correlation between reading score, phonological awareness (۰,۷۹) and reading score and rapid naming (-۰,۹۹) is significant. It's also seen that the relation between reading score and phonological awareness is liner which means increasing phonological awareness causes the re of reading to increase. But the relation between score of reading and rapid automatized naming is inversely. Also result of multivariate analysis which is used for simultaneously investigate phonological awareness and rapidautomatized naming on reading score showed that when phonological awareness and rapid automatized naming enter to regression model, it means the effect of each variable in the presents of ۷ other variable on reading was seen. This showed that there is a significant relation between phonological awareness and rapid automatized naming ( $P < ۰,۰۰۰۱$ ). So that for every increase in each unit of phonological awareness , score of reading increase ۰,۰۴۴ and this is a



liner relation, also see that for every increase in rapid naming, reading score decrease to  $-0.011$ , the relation is revers.

### Discussion

The results of this research show that there is a significant relation between phonological awareness and score of reading. Also the result of Mc Dugal (۱۹۹۴) Hulme and catts (۲۰۰۲) and Mc Bride show children who are weak in reading and got low score in reading test would be poor performance in phonological awareness. In the other words their phonemic awareness skills are weak. (۱۴)

Studies of DankenSimor and Hill (۲۰۰۰) also showed that phonological awareness score is the best predictor for reading skills. Studies which is done by Shirazi (۱۳۷۵) and Solzeymani (۱۳۷۹) also confirmed the relation between phonological awareness and reading. (۹،۱۱)

Results of this research are aligned with those studies so that increase phonological awareness score of child in the test, increased the reading score. It means there is a liner relation between phonological awareness and reading.

In samples and according to researches there is a significant relation between rapid automatized naming which is reverse. Mc Bride (۱۹۹۴), Catts (۲۰۰۲) Penney (۲۰۰۵) also with comparison rapid automatized naming in two groups of dyslexic and normal children showed that those who read well had better performance in rapid automatized naming than weak reader and this relation is revers. In other word by increasing reading score, rapid automatized naming decrease it means time of naming the visual stimulation, in children with high score in reading is less. (۱۵)

Difillpo and his colleagues also found that weak reader are weaker in the rapid automatized naming than the controlled group. Also the showed that speed of reading is related to rapid automatized naming, especially this relation is more in dyslexic. Ashtari ۱۳۸۴ in a Persian research among ۲ group of dyslexic and normal children conclude that dyslexic had bad performance in rapid automatized naming than normal group and there is a significant relation between reading and rapid atomized naming. In this research was seen no significant relation between rapid automatized naming and phonological awareness while significant relation was seen between rapid atomized naming and phonological awareness. The research of this can be explained that he used an unofficial test in rapid naming whereas the validity and credibility of used test in this research have determined in Barkhordar study (۱۳۸۳). Correlation between phonological awareness and reading was the subscribe result of this research and Ashtari research. (۱۶)

According to the result of this study, there is a significant relation between phonological awareness skill and rapid automatized naming. Catts and his colleagues showed that there is correlation between phonological awareness and rapid naming, so that the better speed of naming the higher phonological awareness. Also studies show that increase of defects in phonological awareness lead to defects in the speed of naming. (۱۷،۱۸)

What is done in this research show that reading is affected by many of basic language skills. Children are influenced by language environment around them, before starting to learn reading and writing. Depending on how many stages of language learning pass by child and how much child's basic language skills growth, his reading would be different.

Phonological awareness and rapid automatized naming are ۲ basic language skill which have an important role in reading. Children those have proper functioning in basic language skills and gain high score in this test, their reading naturally would have high score. Phonological awareness has direct relation with reading. In other word as the increase children phonological awareness, their reading would be better. When phonological awareness and rapid automatized

naming put into regression model, actually the effect of each variable in the present of ۲ other variable on reading is studied. It's seen that if rapid automatized naming be more (spend more time on naming) his score in reading decrees. Rapid automatized indicant the ability of person in language processing external driving which he should name them. However ability of Pearson in naming external visual symbols (pictures, numbers, letter and colors) his ability to decoding written word in text would be more. Phonological awareness skills, rapid automatized naming also have correlation. In other word children who have good phonological awareness, their performance in rapid automatized naming also would be appropriate.

#### Result

This research shows that there has been relation between phonological awareness and rapid automatized naming with reading of Persian children like other language skill. It's possible to increase the ability of children to reading by strengthening this skills.

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