

A COMPARISON OF
ORAL READING FLUENCY
AND SILENT READING RATE

THESIS

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Abstract

The purpose of this study was to determine the relationship between silent reading rate and oral reading fluency in upper elementary students.

The subjects were twenty-seven sixth grade students attending a suburban school, who were reading at or above grade level. Each student's words-per-minute rate was determined by a timed silent reading of a passage at the student's independent reading level. Each student's fluency score was determined by averaging the three scores obtained from the three raters who had listened to a recorded oral reading of the same passage used in the words-per-minute check. These scores were chosen from a fluency scale compiled by the researcher.

Table of Contents

| Chapter | Page |
|--|------|
| I. Statement of the Problem | 1 |
| Purpose | 1 |
| Question to Be Answered | 1 |
| Need for the Study | 1 |
| Definition of Terms | 3 |
| Limitations of the Study | 4 |
| Summary | 4 |
| II. Review of the Literature | 5 |
| Purpose | 5 |
| History | 5 |
| Physical Limitations | 8 |
| Reading Rate | 11 |
| Oral Fluency | 14 |
| Repeated Reading | 16 |
| Summary | 18 |
| III. Design of the Study | 20 |
| Purpose | 20 |
| Hypothesis | 20 |
| Methodology | 20 |
| Analysis of Data | 21 |
| Summary | 22 |
| IV. Analysis of Data | 23 |
| Purpose | 23 |
| Findings | 23 |
| Interpretation of Data | 24 |
| Summary | 24 |
| V. Conclusions and Implications | 25 |
| Purpose | 25 |
| Conclusions | 25 |
| Implications for Research | 26 |
| Implications for Classroom Practice | 26 |

Table of Contents (Con't)

| | Page |
|-------------------------------------|------|
| References | 28 |
| Bibliography | 31 |
| Appendices | |
| A. Copy of Reading Passage | 33 |
| B. Copy of Oral Fluency Scale | 34 |
| C. Statistical Table | 35 |

Chapter I

Statement of the Problem

Purpose

The purpose of this study was to determine the relationship between oral reading fluency and silent reading rate in average and above average sixth graders.

Question to Be Answered

What is the relationship between silent reading rate and oral reading fluency in upper elementary students of average to above average reading ability?

Need for the Study

Oral reading fluency is a combination of correct pronunciation of words, proper intonation, clear enunciation, adequate volume, and appropriate rate.

"Some of the best silent readers are poor oral readers because they process thoughts faster than they process individual words" (Guszk, 1972, p. 67). The slower the rate, the harder it is to hear the similarity between familiar words and the reader's own vocalizations (Guszk, 1972). If the rate is slow it makes it more

difficult to discover rules and gain meaning. As speed increases, the dependency on memory should decrease. By this time, some rules are unnecessary and others have become automatic, which reduces memory overload (Smith, 1971).

Efficient reading is necessary to keep up with school- and work-related reading. Inefficient and slow reading skills make gathering information a time-consuming chore (Cohen & Poppins, 1984). According to Smith (1971), the reader must be fast, selective, and be able to use prior knowledge.

Lack of oral reading fluency is a major descriptor of poor readers, and yet students beyond the lower primary grades are rarely expected to read aloud except when they are being tested (Allington, 1983). Guszak (1972), Monroe, DeVoss, and Kelly (1917), Smith (1971), and Vincent and Cresswell (1976) all equate fluent reading with fast reading. This study hopes to show that there is a relationship between silent reading rate and oral reading fluency. Knowledge of such a relationship, be it positive or negative, could help to determine possible remediation techniques.

Definition of Terms

Oral Reading Fluency - a combination of correct pronunciation of words, proper intonation, clear enunciation, adequate volume, and appropriate rate.

Silent Reading Fluency - a combination of rate and comprehension.

Independent Reading Level - "minimum word recognition of 99%, minimum comprehension of 90%, rhythmical, expressive oral reading, accurate observation of punctuation, acceptable reading posture, silent reading more rapid than oral, response to questions in language equivalent to author's, no evidence of: lip movement, finger pointing, head movement, vocalization, sub-vocalization, anxiety about performance" (Johnson & Kress, 1965, p.6).

Limitations of the Study

This study was limited to 27 sixth grade children of average and above average reading ability in a single suburban elementary school.

Summary

Research shows that fluent reading is generally equated with fast reading. Literature indicates that efficient readers should be both fast and fluent. However, there is little research showing what the relationship is between speed and fluency. This study was designed to investigate the relationship between the two.

Chapter II

Review of the Literature

Purpose

This study was proposed to examine the relationship between silent reading rate and oral reading fluency in average and above average sixth grade students.

A review of related literature includes the topics of: History, Physical Limitations, Reading Rate, Oral Fluency, and Repeated Reading.

History

In the early part of the 20th century most reading instruction in schools consisted of oral expression. Monroe, DeVoss, and Kelly (1917) claimed that this overemphasis on oral fluency would hinder the reader's ability to obtain meaning from the text.

Children who read orally fluently are found often to master a rather meager portion of what they read. In fact it is believed that habits of reading which are established by the too exclusive use of the oral type of reading frequently work to prevent the adequate development of silent reading ability (Monroe et al., 1917 p.96).

They worried that readers would tend to form the habits of watching for words they couldn't pronounce and moving

their lips during silent reading, both of which would considerably slow down reading rate.

Many men and women of mature years are still paying the price of those habits fixed in youth. They read but little faster silently than they can pronounce the words orally, because their speech organs make all the motions of the successive words as the reading proceeds (pp. 99-100).

Monroe et al. divided silent reading two ways. The first was the ability to read and know the meaning of the words read. The second was the rate of reading and degree of comprehension. Unlike most thought of the time, they stated that meaning should be stressed at the expense of fluency. However, they did indicate that both were important. Their suggestions for the upper primary grades included oral reading that would be new to the listeners and which the listeners would not have in front of them. In this way, both would concentrate on meaning. The reader would need to be fluent to be understood. They also suggested increasing the availability of interesting reading that would be easy enough for the students.

According to Stauffer, Abrams, and Pikulski (1978) the work of Javal at the University of Paris in 1879 revealed that "superior and efficient readers [sic] eyes

make only a few fixations" and that superficial observation of slow readers shows their eyes stopping many times, regressing and the like" (p.277). Early crude methods of measuring eye movements revealed "good readers made three to five pauses per line....Subsequent refined eye-movement cameras merely confirmed these findings" (Stauffer et al., 1978, p.277).

Studies using tachistoscopes in the 1890's found that the "eye had to be exposed to visual stimuli for very much less time than generally thought" and "what could be perceived in a single brief presentation depended on what was presented and on the viewer's prior knowledge" (Smith, 1971, p.91). Studies done sixty years later found that the limit on reporting was determined by processing speed or the capacity of short-term memory (Smith, 1971).

Smith (1958) found the chief value of machines used in training to be two-fold. "They motivate attempts to read faster, and they show a person how fast he really can read when he is forced" (p.366). However, care needs to be taken to ensure transfer to natural reading.

The drawback of machines is that they are set at a particular speed and cannot vary once a speed is set.

Efficient readers adjust their rate while reading (Cohen & Poppins, 1984). Wilhelm and Wolter (1978) stated that rate flexibility is more important than a high rate of speed. Rate should be adjusted to the circumstances.

Since about 1920, there has been continuing emphasis in the classroom on improvement of the rate of reading. But often there has been an unfortunate emphasis upon increasing rate at the sacrifice of instruction in the more fundamental reading skills (Tinker & McCullough, 1968, p.254).

Physical Limitations

There is a limit to reading rate due to the physical limitations of the eye. The eye does not move smoothly, but in saccades. Average readers exhibit about four fixations per second while very good readers exhibit about five fixations per second. The skilled reader needs fewer fixations because he gets more information at each fixation. "The way in which information from a single glance can be utilized depends on the knowledge of the reader" (Smith, 1971, p.102). Smith indicated that fluent readers need less visual information because experience builds a store of knowledge. "More alternatives are eliminated by what he knows about the nature of language than by the actual visual information that he gets from the page" (p.221).

According to Smith, the beginning reader gets meaning from the surface structure while the fluent reader uses surface structure to confirm meaning.

Smith (1958) looked at photographic reproductions of eye movements of eight adults of varying ability and found that "the eye movements are simply symptoms of the mental processes which a person uses while reading" (p.21). Span of recognition is that portion of the sentence perceived in one glance and while "good readers grasped a large meaningful unit of thought at each fixation...poor readers fixated each time upon a single letter or a small group of letters which had little or no meaning itself" and it was necessary for them to constantly regress (p.21).

Grace Fernald also indicated that eye-movements are a symptom and that eye-movement training was "unproductive mechanistic training" (Stauffer et al., 1978, p.277). But, she felt that subjects should know about eye movements because it made them more likely to be cooperative, understanding subjects who would work harder.

Stauffer et al. (1978) cite Miles Tinker who, in 1962, discovered that eye movements take only about 6 percent of the entire reading time and fixation pauses

(the period of clear vision) average about 94 percent of the time.

"As reading ability increases, there are fewer fixations per line, fewer regressions, and shorter duration fixations. Eye-movement patterns become more regular with increasing reading ability" (Harris & Sipay, 1985, p.556). According to Harris and Sipay, attempts to increase the amount seen in a fixation is a waste of time. Perceptual spans differ little between good and poor reader, and very skilled readers take in only one or two words in a fixation.

Oral reading rate is affected by eye-voice span. Eye-voice span is equal to four to five words, which means the eye is four to five words ahead of the voice. This is approximately the same capacity as that of short-term memory (Smith, 1971). Harris and Sipay (1985) state that eye-voice span "is controlled somewhat by the grasp of meaning" (p.91). They also indicate that it tends to increase with age and is affected by the meaningfulness of the material.

Slow readers sometimes become bored, lose their concentration and must reread, slowing them down even more. Backtracking slows rate and can become a habit (Brozo, Schmelzer, & Andrews, 1984).

Reading Rate

Reading rate is the common denominator of both silent and oral reading. Guszak (1972) indicated that by the third reader level, a student's silent rate should be significantly higher than his oral rate, at the independent level of reading. McCracken, in 1966, suggested minimum speeds in both oral and silent reading for each grade level (Guszak, 1972). There appears to be no difference in the first two grades with an approximately 10-word-per-minute rate increase between oral and silent minimums. A greater increase is shown in the third grade with the greatest increase in the silent rate. In the fourth through the seventh grades the difference in rate of increase jumps. The oral rate increases by sixty words per minute but the silent rate increases up to the possibility of 300 words per minute. Spache in 1963 and Taylor in 1960 found other, quite a bit lower, rates for the upper elementary students (Guszek, 1972). There appears to be agreement that reading rate is affected by purpose, experiential background, the nature of the material, and motivation, and that rate should vary according to the purpose (Guszak, 1972; Hess, Shafer, & Morreau, 1975; Rauch &

Weinstein, 1968; Smith, 1958; and Stauffer et al., 1978).

Breznitz (1987) conducted "four experiments to determine the effects on decoding mistakes and comprehension of test passages at fastest and slowest reading rates" (p.236). The subjects were Israeli and American first graders. Results "indicate that prompting first graders to read faster than their normal pace increases their comprehension, whereas slowing them down decreases it" (p.241). Making subjects read both faster and more slowly than usual, reduced reading errors. "It is conceivable that the slow-paced condition allowed subjects time for rehearsal and self-correction before oral reading. By contrast, the fast-paced condition may have increased reading accuracy by increasing comprehension" (p.241).

Reading and listening speeds appear to be roughly the same in most people. According to Smith (1971), the average reading speed of 200 words per minute is "probably rooted in the childhood emphasis on oral reading" (p.45). Two hundred words per minute is the average speaking rate.

According to Guszak (1972) silent reading fluency is a combination of rate and comprehension. It uses the

same skills as oral reading except for articulation. Vincent and Cresswell (1976) stated that a reader's intonation and stress provide indications of comprehension. Mechanical rate relies on fluency of oral reading and doesn't answer how well the student understood. Wilhelm and Wolter (1978) indicated that increasing rate can sometimes decrease comprehension temporarily. Regular practice will bring comprehension back up. Tinker and McCullough (1968) stated that speed without comprehension is meaningless and that "the reading should be as fast a rate as the material can be adequately comprehended" and it should be "comprehended as rapidly as possible" (p.238).

According to Goodman (1968), "reading is not reading unless there is some degree of comprehension and therefore at all stages of instruction there must be concern for ultimate decoding of written language" (p.26). Decoding, or getting meaning, is necessary even at the lowest proficiency level. For accurate oral reading, "the reader must be able to change his normal pace and his mode of information processing to encode orally at the same time he is decoding" (p.20). Many proficient adults have never acquired this oral skill, and it is possible to become an efficient recoder

without understanding the meaning of what is being read. It appears that, to Goodman, encode and recode both mean the ability to translate from written to oral language, but recoding does not necessitate gaining meaning.

Oral Fluency

"While memory determines how much you recall from a book, your background heavily influences how much you understand while reading" (Cohen & Poppins, 1984, p.38). With the fluent reader, meaning usually precedes word identification (Smith, 1971).

Taylor and Connor (1982) found that it is likely that young children may need to hear themselves in the early stages of reading. Leidholdt (1988) used taped recordings of students' oral reading to improve their fluency. She found the method to be highly motivating and self-perpetuating, as well as successful. "Students at low reading achievement levels could read as fluently as students at higher levels" (p.180). She felt that reading without interference or correction was important because corrective procedures impair rate and interrupt concentration.

Poe (1986) described a 4th grade language arts class which used simultaneous, paired reading to improve

fluency. Reading in pairs removed the emotional stress of reading before a large group. Poe found a large number participated in group discussion and there was high-quality participation, as well as good comprehension scores.

According to Allington (1983), lack of oral reading fluency is a major characteristic of poor readers, yet oral reading seldom appears as an educational objective.

Rasinski (1989) found the following methods useful in incorporating fluency into the classroom: repetition, modelling, direct instruction and feedback, support during reading, text unit, and easy materials.

A common thread through all the literature on oral fluency is that before reading orally, the reader should first read the selection silently (Allington, 1983; Harris & Sipay, 1985; Johnson & Kress, 1965; Pikulski, 1983; Taylor & Connor, 1982; Tinker & McCullough, 1968). Johnson and Kress (1965) state that oral rereading "provides...an index of his ability to profit from his previous visual contact with the material and thus improve - essentially in accuracy and rhythm - his oral reading performance over his oral reading at sight" (p.39).

Repeated Reading

Dowhower's (1989) definition of Repeated Reading is to "reread a meaningful passage until oral production is fluid, flowing and facile" (p.504). Repeated Reading helps both mature and beginning readers by increasing oral speed and accuracy and it seems to improve expression. It helps to build a bank of quickly identified words. Dowhower found that the research into Repeated Reading falls into two categories: 1) assisted or read-along which uses a live or audiotaped model, and 2) unassisted or independent practice which does not use a model. Modelling "gives the children support and a sense of the proper phrasing and speed of fluent reading" (p.505). But once speed is gained (over 60 WPM), Dowhower feels there should be more practice than support.

Chomsky (1976) used tape-recorded stories with eight children of normal intelligence and with no apparent problems, but who were reading one to two years below grade level. "They set their own pace, reading and listening repeatedly to the same story until fluency in oral reading was achieved" (p.289). Over several months "their passivity about reading declined dramatically, confidence increased, and they began to

pick up new books of their own choosing" (p.296).

In 1987, Dowhower studied the effect of repeated reading procedures on second-grade students' reading performance. The results "showed transitional readers' rate, accuracy, comprehension, and prosodic reading (reading in meaningful phrases) with practiced and unpracticed passages were significantly improved by repeated reading" (p.402).

Herman (1985) conducted a study with nonfluent, less able readers to determine if fluency could be improved through the use of repeated readings. He also wanted to identify those aspects of reading fluency that would change with repeated practice and to see if the improvements were limited to practiced material or would transfer to new material. "Results indicate that rate and scores that reflected comprehension increased significantly and the total number of miscues decreased significantly not only within practiced passages but also between passages. The number of speech pauses remained fairly constant from passage to passage" (p.553).

Dahl and Samuels, in 1974, compared a high-speed word recognition program and two other instructional treatments and found that Repeated Reading focused on

developing oral speed and fluency "produced better achievement than did the program that developed automatic word recognition" (Allington, 1983, p.557).

According to Harris and Sipay (1985),

rereading provides a background of relevant knowledge that effectively improves use of context and ability to anticipate what comes next. With each rereading an improvement in fluency and accuracy is likely. As the child finds himself reading easily and fluently, his self-confidence and motivation are bound to be favorably affected. This procedure is particularly important with primary-age children, who generally enjoy hearing the same story over and over, but it can be effective at any age (p.547).

One thing that is generally agreed upon as helping oral fluency and reading rate is practice (Anderson, 1980; Dowhower, 1989; Rauch & Weinstein, 1968; Smith, 1958).

Summary

Since the beginning of the 20th century emphasis has fluctuated between oral reading and silent reading. Due to physical limitations, reading rate can be increased just so far. Research generally tends to equate fluency with rate, however oral fluency also includes articulation. Reading rates should vary according to purpose. Most recent research focuses

on Repeated Reading as a method for improving reading rate and oral fluency.

Chapter III

Design of the Study

Purpose

This study examined the relationship between oral reading fluency and silent reading rate in average and above average sixth graders.

Hypothesis

There is no statistically significant relationship between oral reading fluency and silent reading rate in average and above average sixth graders.

Methodology

Subjects

The subjects of this study were twenty-seven sixth grade students attending a suburban public school in Western New York. All of the students were reading at or above grade level.

Instruments

Three separate raters, including the researcher, listened to the tape-recordings and rated for fluency using a scale of 1 to 5 with 5 being very fluent. The

fluency scale was compiled using information found during a review of the literature (Allington, 1983; Johnson & Kress, 1965; Tinker & McCullough, 1968). The scale can be seen in Appendix B. "There exists no efficient scale with demonstrated reliability for quantifying oral reading fluency" (Allington, 1983, p.560).

Procedures

Testing took place during the students' regular reading class period, but out of the classroom. The testing took a total of three class periods over a one week span.

A timed silent reading of a short passage, at each student's independent reading level, was administered to the entire group to determine each student's silent reading rate. When time was called, the students were asked to circle the last word read and then on the back of the paper write a two to three sentence summary of what they read. The reading passage can be seen in Appendix A. Each student, one at a time, then read the same passage aloud into a tape recorder.

Analysis of Data

The three oral fluency scores were averaged to

obtain one oral fluency score for each child. The silent words-per-minute rate for each child was compared to the fluency score by obtaining a Pearson Product Moment correlation.

Summary

Average and above average sixth graders were timed while reading silently to determine their words-per-minute rate. Tape recordings of their oral reading were rated for fluency. The fluency scores and WPM rates were compared in order to determine what the relationship is between oral reading fluency and silent reading rate.

Chapter IV

Analysis of Data

Purpose

The relationship between silent reading rate and oral reading fluency in average and above average sixth graders was examined in this study.

Findings

The null hypothesis was: there is no statistically significant relationship between oral reading fluency and silent reading rate. To answer the hypothesis the three oral fluency scores were averaged to obtain one oral fluency score. The silent words-per-minute rate for each child was compared to the fluency score.

Table 1

Correlation Between Oral Reading Fluency and Silent Reading Rate

| factor | r*(Pearson Product Moment) |
|----------------------------|----------------------------|
| fluency x rate (n = 27) | 0.48 |

*critical r ($p < .05$) = 0.3609

Interpretation of Data

A correlation of 0.48 was obtained using the Pearson Product Moment (two-tailed test). The critical value for the correlation coefficient for 27 was equal to 0.3609. Analysis of the data would lead to rejection of the null hypothesis. There is a statistically significant relationship between silent reading rate and oral reading fluency.

Summary

Data correlated through the Pearson Product Moment showed oral reading fluency increased as silent reading rate increased in the average and above average sixth graders examined in this study.

Chapter V

Conclusions and Implications

Purpose

This study examined the relationship between oral reading fluency and silent reading rate in sixth graders of average and above average reading ability.

Conclusions

A majority of the research and literature read for this study equated oral fluency with reading rate. The faster readers were assumed to be the better readers. However, very little was found in the research that showed what the relationship was between the two factors and if this was a valid assumption. These assumptions may be justified since a statistically significant positive relationship between oral reading fluency and silent reading rate was found among the subjects in this study.

Harris and Sipay (1985) state that nervousness and self-consciousness can cause a lack of ease and thereby a lack of smoothness in oral reading. The subjects of this study met the examiner for the first time at the

time of testing. Perhaps familiarity with the examiner would have made them more relaxed and affected the scores. Much of the research indicates that readers should have a chance for rehearsal before reading orally. The only chance the subjects had to read the passage, prior to reading orally, was when they were being time tested. These are both factors which may have affected the oral fluency scores.

Implications for Research

This study used only twenty-seven sixth graders of average and above average ability. This study could be replicated using a larger group, different age groups and/or ability ranges, or with children that speak non-standard dialects or English as a second language. A study investigating the efficacy of fluency training is another possibility. It would be interesting to see what happens when the upper limits of reading rate are reached. Would fluency then decrease?

Implications for Classroom Practice

Rereading passages until oral reading is fluid, expressive, and flowing is a practice known as Repeated Reading. Most of the literature on oral

fluency dealt with Repeated Reading as a way to increase oral fluency and reading rate. "Repeated reading allows children time to integrate the reading skills to which they have already been exposed and to recognize words with greater speed" (Herman, 1985, p.563). Repeated Reading provides the needed practice to improve reading rate and oral fluency without requiring large amounts of the teacher's time. Teachers can also suggest this technique to parents as something that can be done at home to reinforce classroom work.

Koskinen and Blum (1986) describe a method of Paired Repeated Reading which students are able to use independently after a brief introduction. This method has proved effective and practical.

Tape-recordings can be used for modelling fluent reading behavior. Reading poetry aloud and converting stories into plays to be read aloud are other ways of increasing fluency that can be used in the classroom.

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Appendix A

The Mole had long wanted to make the acquaintance of the Badger. He seemed, by all accounts, to be such an important personage and, though rarely visible, to make his unseen influence felt by everybody about the place. But whenever the Mole mentioned his wish to the Water Rat he always found himself put off. "It's all right," the Rat would say, "Badger'll turn up some day or other--he's always turning up--and then I'll introduce you. The best of fellows! But you must not only take him as you find him, but when you find him."

"Couldn't you ask him here--dinner or something?" said the Mole.

"He wouldn't come," replied the Rat simply.

"Badger hates Society, and invitations, and dinner, and all that sort of thing."

"Well, then, supposing we go and call on him?" suggested the Mole.

"O, I'm sure he wouldn't like that at all," said the Rat, quite alarmed. "He's so very shy, he'd be sure to be offended. I've never even ventured to call on him at his home myself, though I know him so well. Besides, we can't. It's quite out of the question, because he lives in the very middle of the Wild Wood."

"Well, supposing he does," said the Mole. "You told me the Wild Wood was all right, you know."

"O, I know, I know, so it is," replied the Rat evasively. "But I think we won't go there just now. Not just yet. It's a long way, and he wouldn't be at home at this time of year anyhow, and he'll be coming along some day, if you'll wait quietly."

The Mole had to be content with this. But the Badger never came along, and every day brought its amusements, and it was not till summer was long over, and cold and frost and miry ways kept them much indoors, and the swollen river raced past outside their windows with a speed that mocked at boating of any sort or kind, that he found his thoughts dwelling again with much persistence on the solitary grey Badger, who lived his own life by himself, in his hole in the middle of the Wild Wood.

Appendix B

ORAL FLUENCY SCALE

- 1 Reads word by word, poor enunciation, inadequate volume.
- 2 Reads partly word by word and partly in phrases, pronounces some words correctly, poor enunciation, inadequate volume, sometimes inadequate stress in relation to syntax.
- 3 Reads primarily in phrases, with little word by word, pronounces many words correctly, enunciation varies, generally monotone, sometimes inadequate volume, uses little expression.
- 4 Reads primarily in phrases, pronounces most words correctly, good enunciation, adequate volume, uses terminal punctuation but ignores some internal punctuation, inconsistent expression.

- 5 Reads in phrases, pronounces all words correctly, good enunciation, appropriate volume, uses all all punctuation, expression approximates normal speech, uses appropriate semantic and syntactic emphasis for purposes of dramatization.

Appendix C

Table 2

| | <u>Fluency</u> | <u>Words-per-Minute</u> |
|-------------------------------|----------------|-------------------------|
| Mean | 3.56 | 207.59 |
| Median | 4.00 | 198.00 |
| Standard Deviation | 0.85 | 52.96 |
| Standard Error of Measurement | 0.16 | 10.19 |
| Range | 4.00 | 232.00 |