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ABSTRACT

Investigated was whether retarded readers make more gain in reading achievement when taught by the regular classroom teacher using prescriptions written by the diagnostic teacher than they had under the traditional basal reader approach. Subjects were 17 fifth graders in the lowest reading group in a public school classroom. Subjects were tested to determine reading related strengths and weaknesses, skill deficiencies, and dominant learning channel. Materials were prescribed for each child to remediate his deficiencies. Children, taught for 1 year using the prescriptions, were pre and posttested with the vocabulary and comprehension subtests of the Iowa Test of Basic Skills. Reading progress was charted on a semi-logarithmic chart. It was found that prescriptive teaching was as effective as, but not superior to the basal reader approach in vocabulary building. In comprehension building, prescriptive teaching was superior. (Author/KW)

AN ANALYSIS OF THE EFFECTIVENESS OF THE TEACHING OF READING BY INDIVIDUAL PRESCRIPTIONS

A Thesis

Presented to

the Faculty of the Graduate School

Moorhead State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Education

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by

Norma A. Thiel

May 1972

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Chapter 1

INTRODUCTION

It is a well accepted fact that the teaching of reading is no easy task. It is also a well accepted fact among school administrators that far too many children fall below their particular grade levels on end-of-the-year achievement tests in reading vocabulary and reading comprehension. There seems to have been no established best method or best materials to teach reading. This was documented by Chall's extensive three year study culminating in her book, Learning to Read: The Great Debate (Chall, 1967).

With these three thoughts in mind, a rural Minnesota Public School instituted a program of reading in which children's reading difficulties would be diagnosed and an individual prescription written for each child in the low reading group of each grade.

Each grade of approximately eighty students was divided into three groups, according to ability in reading. Ability in reading was determined by Iowa Basic Skills Test scores and teacher judgment. These judgments were made on recommendations of the previous year's teacher. The three

teachers of each grade were free to decide among themselves which group each would teach. The groups for which prescriptions were written ranged in number from twelve to twenty-two students.

The teacher selected to do the diagnostic testing and to write the prescriptions was an experienced elementary teacher with training in special learning disabilities. It was necessary for the diagnostic teacher to be proficient in administering and interpreting diagnostic tests. It was also of the utmost necessity that the writer of the prescriptions be thoroughly acquainted with a large number of materials including: many series of books, trade books, workbooks, games, machines, skill development kits and audio-visual aids of all types. Rapport and an ability to communicate well with the regular classroom teacher were other characteristics that were absolutely essential for the diagnostic teacher since the actual teaching was done by the classroom teacher. This author was the diagnostic teacher and did the prescription writing.

The greatest burden of this reading program was carried by the regular classroom teacher and therefore the greatest impact on the child was assumed to have been made by that teacher.

IMPORTANCE OF THE STUDY

With the growing awareness of individual differences in children's capabilities and learning styles, teachers are looking for methods of individualizing the teaching of reading. The purpose of this study was to determine whether children would progress more rapidly when taught by the classroom teacher using individual prescriptions written by a diagnostic teacher than they had when taught by the traditional basal approach. There is a paucity of literature on reading taught by prescriptions; therefore it was felt that this study would contribute to the resources available to professionals involved in the teaching of reading.

THE PROBLEM

This study was an analysis of whether or not children who were retarded readers made more gain in reading achievement when taught by the regular classroom teacher following prescriptions written by a diagnostic teacher than they had made under the traditional basal approach.

Answers to two selected questions were sought through analysis of the data in order to pursue the basic problem. The questions were:

1. Would there be any change in children's reading progress when taught by the individual

prescription as compared to his progress when taught by the traditional basal method?

2. Did the prescriptions written by the diagnostic teacher make individualizing of reading instruction easier for the teacher?

DELIMITATIONS OF THE STUDY

The sample was made up of seventeen children in the low group of the fifth grade in a public school. This was a small number of subjects. These children, however, were the only children who had had a full year under prescription teaching.

There was no control group with which to compare the experimental group because the study was done within one school system only. This made it necessary to compare data on each child against the data on that same child in previous years. This was not a concern to the school since it was the child's progress compared to his previous progress that was desired. It does, however, make conventional statistical comparison impractical.

Only beginning and end of the year scores were available for charting the child's progress. When using the semi-logarithmic system of charting progress it would have presented a more accurate and more readily visible

view if weekly scores had been kept. The mean progress line from one point to the next point implies a steady and even progression. This, in fact, would not be true. Scores would tend to fluctuate.

In order to make individualization easier, the classroom teacher had the help of a co-teacher who shared in all of the responsibilities of teaching reading. This person was not a tutor, but a fully certified teacher.

Due to the short duration of the study, one year, it was difficult to ascertain how much effect must be attributed to maturation or possibly the Hawthorne effect.

DEFINITION OF TERMS USED

Basal Approach--That method of teaching using a published text book--usually with the whole class divided into three groups, each group being at a different place in the same text, or sometimes a group might be in a higher or lower text of the same series.

Celeration--Movement up or down on the chart.

Celeration Line--On the graph each line represents mean progress of the charted behavior (learning) during that particular period of time.

Channel--An avenue of learning such as visual, auditory, tactile or kinesthetic.

Contract--A written sheet for each story in the basal reader including new vocabulary, purposes for reading, assignment to be read and several activities for follow-up.

Diagnostic Teacher--The teacher, trained in elementary education and learning disabilities, who did the testing and prescription writing.

Hawthorne Effect--The temporary effect of improved performance brought about by any change of situation or as a result of special attention.

Independent Level--That level at which a child can read with 99 per cent accuracy and 90 per cent comprehension.

Instructional Level--That reading level at which a child can read and comprehend with some teacher help. Comprehension should be at least 75 per cent and word recognition 95 per cent accurate.

Prescription--A paper written by the diagnostic teacher to a classroom teacher stating her findings on the tests, interpreting the test scores, telling the child's strengths and weaknesses, telling what he is deficient in, stating his instructional level, and prescribing materials (with page numbers) to be used to remediate those deficiencies.

Rate of Acceleration--The degree of progress each child has made as measured by the acceleration finder by Behavior Research Company, Kansas City, Kansas.

Retarded Readers--Those children reading below their particular grade level.

Slope of the Line--An index of achievement that reflects degree of movement. The rate of acceleration is read from the slope of the line.

Trade Books--Any book other than a text book. In this paper the words are used to denote those books written especially for the retarded reader. The books are written on a high interest level, but on easy reading levels.

Chapter 2

REVIEW OF THE LI. URE

INTRODUCTION

In 1909, when Thorndike presen.e his andwriting scale, the scientific measurement of edu atic was officially launched. Very soon after th , various other tests started to appear. The first rea ng test, the Gray Oral Standardized Reading Paragraphs, was published in 1915 (Smith, 1965, p. 157). These, and other tests which were developed soon after, very clearly showed that, indeed, there were individual differences in the way children learn to read. Much to the agitation of teachers and administrators, alike, there seemed to be even more differences in the amount of reading gains children achieved in a year's time. Ever since that time there has been research going on throughout schools and clinics to solve the controversy over which methods produce the most gains in reading achievement. So far the controversy has not been resolved, but many of the reading experts are saying that to really meet the needs of each child we must individualize.

In this chapter, literature on the following will be reviewed: individualized reading, basal rea[illegible] and combination programs.

INDIVIDUALIZED READING

Davidoff (1971, p. 1-9) reports on a study undertaken with disadvantaged children in Philadelphia, Pennsylvania. Emphasis in the experimental groups was on individualized instruction with a large variety of materials. Scores for these children were compared with scores for children in the traditional reading program. Significant gains were made in vocabulary and comprehension. In this study, the experimental group of children were individually diagnosed and specific prescriptions were written for each child. The conclusion of the study was that this combination plus a large variety of materials was a successful way to counteract underachievement in reading.

Davis and Lucas (1971, p. 743) found similar results in their study at Santa Clara, California. Individualized reading proved superior to the traditional basal method when used with their randomly selected groups of seventh and eighth graders. Conclusions were based on pre and post testing with Gates McGinitie Reading Tests. In this study the children had free selection of their own reading

materials and conferences were held regularly with the teacher. Actual prescriptions were kept to a minimum and used only for specific problems in the experimental groups.

An experimental study by Teigland (1971, p. 5) compared the individualized approach with the basal approach in grades one and two. One hundred thirty-four children were the subjects. The California Reading Test was used for comparison. The individualized approach was significantly superior for comprehension gains. Vocabulary gains were also higher for the individualized group, but not significantly so. There was no difference in attitude toward reading for either group. Quantity, variety and difficulty of books read overwhelmingly favored individualized reading.

Part of the controversy has revolved around the advantages as opposed to the disadvantages of individualized reading. In a paper presented at the International Reading Association Conference, Harry W. Sartain (1968, p. 195-236) brought out these factors:

Advantages:

1. The reading program can use the best children's literature rather than a limited set of textbooks.
2. The reading program can capitalize on the individual child's interests.

3. The child can progress at a comfortable rate.

4. The teacher can adapt materials to the child's best mode of perception or channel of learning.

5. The skills program can be adapted to the child's needs.

6. There is no need for busy work. The child can always be working on his special needs.

7. Child can be busy all the time. No time need be wasted waiting for his turn to recite or read.

8. Individual conferences are personalized. They provide opportunity to develop human traits and values by personal interaction.

9. Children seem to read more books.

10. The more mature and able students can be used to teach the less able.

Disadvantages:

1. Individualized reading requires a large amount of materials which becomes a budgetary problem.

2. Children may have difficulty selecting books of appropriate difficulty to stimulate progress.

3. There is no opportunity for teacher to develop readiness for reading a new selection: motivation, background information and new words. It is commonly believed that a child can read about one grade level higher with instructional preparation than without it.

4. There is no systematic procedure for developing and repeating controlled vocabulary and concepts.

5. A large number of teachers do not have enough knowledge of reading skills so they can teach them without the guide of a manual.

6. Teachers have trouble finding time for all the conferences.

7. There is some doubt about the adequacy and performance of skills learning that is developed in brief, infrequent conferences.

8. There is too little opportunity for group interaction to develop critical thinking.

9. Those who learn slowly often become restless and do not make good use of their time.

10. Teachers' time and energy are quite inefficiently used by teaching skills over and over as each child is ready.

Klosterman (1970, p. 159-162) recently experimented with a diagnostically structured reading program. Teacher trainees tutored individually and in small groups, fourth grade children from three low socio-economic schools. One more school acted as a control. Student teachers were taught to diagnose reading difficulties and which materials to use for remediation. Children were tutored four days a week during a six month period. The control students received regular classroom instruction. The program was

based on "diagnosis, direction and discovery" rather than the "seeking, self-selection and self-pacing" commonly used in individualized reading. Children were evaluated by the California Reading Test.

The results of this study showed the diagnostic, structured program to be significantly superior for comprehension, vocabulary and total reading achievement for individually tutored children. For the small group it was significantly superior for comprehension and total reading, but not for vocabulary.

Very few people would deny that individualization of reading is more work for teachers than the traditional group method. Odam (1971, p. 404) states, "The initiation of individualized reading takes a very expert teacher with much energy, patience and exceptional organizational ability". Barbe (1961, p. 227-228) has said,

> ...Successful teaching will require, above all other factors, a sensitive and resourceful teacher. She must be trained in understanding the philosophy of teaching reading, teaching each child at his level, the need for sequential skill development, and effective classroom management... The success or failure of reading instruction depends to a large extent upon the teacher herself. Her attitude and skills are both major factors in determining the level of success she will have...

Goldberg (1966), Harris (1966) and Sartain (1968) agree that the teacher is more important than the method as a key factor to progress. For a teacher to make

individualized reading a success, knowing it is going to be more work, she must be completely convinced of the values of the method.

BASAL READING

The basal reading approach has been highly effective for teaching the majority of readers for many years and probably will continue to be effective for many years to come. There are many different series of basal text books using various approaches. Each series provides reading textbooks, manuals for the teacher and supplemental materials covering all grade levels.

One of the major advantages of a basal series is the carefully controlled vocabulary from book to book and the sequential skill development provided. (Smith, 1963, p. 99-100). The basal is especially useful for the beginning teacher until she has become thoroughly acquainted with methods of teaching reading since the manuals give such explicit directions for procedure.

Gray (1960, p. 35) made this statement regarding basal reading series:

> Reading series have suffered by mis-use--by being used as the whole reading program instead of part of it, by being misapplied to a child of lower reading level than the book, by being used w hout regard to manual, lesson plans and individua needs.

From the Harvard Report (Austin and Morrison, 1963, p. 87-94) comes evidence of mis-use of the basal approach:

> Visits to classrooms brought to light actual practices not advocated either by administrative personnel or in curriculum guides and of which administators and supervisors, at all levels, may be unaware...The most prevalent is having the entire class reading from the same page of the same book at the same time.

This may be the reason some experts have said that the basal should be eliminated and an individualized program adopted.

COMBINATION PROGRAMS

Most authorities agree that there is no one best method of teaching reading. As the literature has pointed out, there are advantages and disadvantages to be found in both the traditional basal program and the individualized program. One approach which has been tried by teachers is a combination of the two programs. It is easier to begin with a structured program and gradually add individualized reading in various ways. By combining the two programs teachers can capitalize on the advantages of each program and eliminate many of the disadvantages.

In the twenty-fourth yearbook of the National Society of the Study of Education (1923) the Committee on Reading recognized two extreme positions being proposed for the method of teaching reading--mass instruction and

individualized instruction. The committee, at that time, advocated a classroom organization that allowed for both group and individualized instruction.

Lazar (1957, p. 79) felt that individualized reading was a way of thinking about reading--an attitude toward the place of reading in the total curriculum. She did not think of it as an alternative method.

Sartain (1960, p. 281) made a careful and detailed study of several individualized reading programs. His conclusion:

> Individualized method did not produce better reading gains than a strong basal program, therefore, there is no reason to forfeit the advantages of a well planned basic system. Instead, the benefits of individual conferences could be obtained by their addition to the basic reader plan.

Evans (1962, p. 583), Stauffer (1960, p. 381) and McCormick (1965, p. 73) agree that the most effective results are accomplished by using a combination of basal and individualized reading.

Because reading is such a complicated process, both to learn and to teach, no one method so far has been found to be the perfect, infallible way. Individualized reading, while highly effective when taught with expertise, does have its disadvantages. It is not a method for the inexperienced, the insecure or unorganized teacher. It involves more teacher hours of preparation. The basal

method often does not take into account individual differences, even when grouping is done. The competent, really concerned teacher will probably take a combination of the basal method and the individualized method and make a success of it, finding it most rewarding to himself and to each student.

Chapter 3

PROCEDURE AND DATA

INTRODUCTION

This study was designed to analyze the gain or loss in reading achievement made by retarded readers when taught by the regular classroom teacher, with prescriptions written by a diagnostic teacher as compared to the gain or loss made when these same children were taught by the traditional basal reading method.

Areas discussed in this chapter are: description of subjects, description of prescriptions, description of prescription implementation, description of materials prescribed, collection of the data and treatment of the data.

DESCRIPTION OF SUBJECTS

The subjects were seventeen fifth grade students who comprised the low group of the three fifth grade reading groups in a public school in a rural Minnesota town. These children were selected for the low group by their previous year's teachers. The teachers' judgments were based upon the children's reading ability and progress

during the school year and in part, on their scores on the Iowa Test of Basic Skills from the spring of grade four.

This was the second year that these children had been divided into reading groups according to reading ability, but it was the first year that diagnostic testing had been done or prescriptions had been written for them.

The group consisted of seven girls and ten boys. All of the children had been in the school system from the beginning of the third grade until the end of fifth grade, but several had not started school in the system.

The children's socio-economic backgrounds ranged from upper-lower class to upper-middle class according to Warner's (1949) criteria.

The subjects' I.Q. scores ranged from 85 to 109, as obtained from the Lorge-Thorndike Intelligence Test (See table in Appendix A).

DESCRIPTION OF PRESCRIPTIONS

The diagnostic teacher used various instruments to determine the child's best channel of learning, his strengths and weaknesses, his instructional level and the particular reading skills in which he was deficient. Diagnostic instruments used were: Peabody Picture Vocabulary Test to determine the child's ability to use word meanings; Wide Range Achievement Test to determine

sight word knowledge; Durrell Analysis of Reading Difficulty to determine the child's instructional level, silent reading level, listening level, analysis deficiencies, visual memory and phonetic spelling ability.

After testing was completed the diagnostic teacher wrote a prescription. The prescription interpreted specific materials to correct dificiencies and further develop the child's reading abilities. A copy of the prescription was given to the classroom teacher, the principal and the teacher helper. One copy was kept in the diagnostic teacher's file.

The prescription was written to span the full year, but the diagnostic teacher was always available for consultation with the classroom teacher. If some material did not seem to be working, needed adjustments were made. The diagnostic teacher was always on hand to find new or additional materials for the classroom teacher to use.

No particular method or methods were prescribed except in exceptional cases. The teacher was left to use whatever methods he or she had found successful before. The diagnostic teacher would suggest specific methods if the teacher asked for that type of help.

Following is an example of a typical prescription:

Prescription for subject number 3.

_____ was referred by her reading teacher, Mrs. _____, for evaluation.

Tests given were: the Peabody Picture Vocabulary Test, Wide Range Achievement Test, Durrell Analysis of Reading Difficulty and an informal word perception test.

According to the score on the Peabody Test, _____'s language ability falls in the middle average range. Use of word meanings is adequate.

Wide Range Achievement scores were as follows:

Reading-- Grade 4.8
Spelling- Grade 4.2

According to the Durrell Analysis of Reading Difficulty:

Oral reading is at middle third grade. Errors were not too prevalent, but comprehension was poor above the third grade level. Comprehension of 85% was obtained at the third grade level. 85% is adequate for the instructional level. Comprehension at the fourth grade level of difficulty was only 70%.

Silent reading also fell at middle third grade level as far as speed and accuracy were concerned, and comprehension was adequate at the high third grade level.

Listening level (85% comprehension of what the person hears when read to) is third grade which is low for her ability.

Word recognition is middle fourth grade and analysis is low fifth grade.

Analysis needs are:

1. rule for hard and soft g and c
2. practice using the two long vowel rules
3. vowel digraphs oo, aw, oy, ou, au, ow
4. short u
5. suffix--tion
6. syllabication

Visual memory for words and letters is poor. Visual memory for numbers is somewhat better, but far from good. Ability to hear and use sounds in words is good. _____will find it very difficult to learn through the visual channel so strengthening of phonetic skills is imperative.

She stated that her biggest problem is remembering what she has read. This is what the tests show and the teacher already knew, but if the child is aware of it, it's much easier to work on it. Part of the problem is due to poor visual memory. She is aware of this and says she likes to read out loud when trying to comprehend something.

Recommendations:

1. To build comprehension and also gain needed analysis skills a high third grade instructional level is recommended.
2. SRA Power Builders--Green

3. SRA Listening Skill Builders
4. New Practice Readers--Book B
5. Reader's Digest Skill Builders--level 3
6. Dr. Spello--pp. 12-13(g&c), pp. 16-20(long vowels), pp. 28-31 (digraphs), pp. 48-60(syllabication).
7. Have her read a selection into the tape recorder, then listen, then answer questions on it. This would be especially helpful if she could do this in the subject areas. She would be utilizing auditory memory in two ways by this method, when she reads it aloud and again when she listens to the tape.

DESCRIPTION OF PRESCRIPTION IMPLEMENTATION

The regular classroom teacher carried the greatest responsibility for the implementation of this reading program. To help make the process of individualization somewhat easier, two fully certified teachers were employed to assist the regular classroom teachers. These people worked as co-teachers in the classrooms during the reading period. They were not tutors, but shared all of the responsibilities of teaching reading with the regular classroom teacher. One of these people worked with the first, third and fifth grades while the other person worked with the second, fourth and sixth grades. Some part of each reading period was to be used for planning between the two teachers in the classroom while the children were doing independent work.

The teachers were given the responsibility of the actual teaching of skills. They also did the record keeping to determine when a child had mastered various

remedial and developmental skills. The diagnostic teacher retested selected children at the request of the classroom teacher. For the purpose of this study the fifth grade children were retested at the end of the school year for evaluation of the program.

A reading consultant was available three days each two weeks on a regularly scheduled basis. He helped the teachers with any aspect of the program for which they felt the need of assistance.

DESCRIPTION OF MATERIALS PRESCRIBED

Since the purpose of individualized, prescription teaching of reading is to diagnose the child's difficulties, his channel strengths and weaknesses, and then to provide a prescription of materials to utilize that diagnosis, it is imperative that there be a large variety of materials available to the classroom teacher. Materials must be available so that the child can use them at his appropriate instructional and independent levels. Further, materials must be varied according to the wide gamut of interests displayed by elementary children. Allowing a child to have some free choice of materials which teach the same skill is a motivating factor. If the child was found to be an auditory learner, then materials utilizing that channel of learning had to be provided, e.g., tapes, records, phonetic

worksheets, etc. The same was true if the child was found to be a visual learner, e.g., flash cards, worksheets using configuration and texts using the whole word approach. For some children who had no dominant channel, materials and methods had to employ the multi-sensory approach utilizing visual, auditory and kinesthetic channels together.

Scott Foresman's Open Highways textbooks were used for all children at their particular instructional levels. The teachers made contracts for each selection in the Open Highways book and the children progressed through them at their own rates. The children were brought together in small groups from time to time to discuss the stories.

The other materials prescribed for most children fell within three general categories: comprehension building, phonetic analysis building and listening skill building. Specific materials within these categories were:

1. Comprehension Building--SRA Power Building, New Practice Readers by Webster, Webster Skill Cards, Reader's Digest Skill Builders, Charles Merrill Uncle Funny Bunny, Educational Development Laboratories Controlled Reader stories, grades three and four, Macmillan Reading for Different Purposes, Educational Sensory Programming Vocabulary Tapes, Barnell Loft materials, Webster's Conquests in Reading, Language Master Vocabulary Cards.

2. Phonetic Analysis Building--Webster's Dr. Spello, Webster Word Wheels, Lyons and Carnahan Phonics We Use, Language Master Phonics Program, Reader's Digest Practice Pad, Continental Press Phonics and Word Analysis, Phonics games.

3. Listening Skills Building--SRA Listening Skill Builders, Wilma Herr's Auditory Awareness Tapes, Educational Development Laboratories stories on tape.

The children were scheduled so that they knew on which day they should be working on each particular material that had been prescribed.

COLLECTION OF THE DATA

The data for this study were collected through the administration of the following instruments:

Intelligence scores for each child were obtained from the Lorge-Thorndike Intelligence Tests. These tests are group tests. They were part of the school's testing program and were administered by the principal. The Lorge-Thorndike Intelligence Test yields both a verbal I.Q. score and a non-verbal I.Q. score which can be converted to a full scale score. In this study the full scale score was used to determine the child's reading expectancy according to the Bond (1957, p. 57) formula. (See table in Appendix A).

The vocabulary and comprehension sub-tests of the Iowa Tests of Basic Skills were used to measure each child's achievement in those areas. These tests were also a part of the school's testing program. These tests were administered by the children's home room teachers each fall and spring. The scores were used to show the children's progress from the beginning of grade three to the end of grade five.

A questionnaire was developed by the author and sent to each of the teachers who was involved in implementing the prescriptions in each of the six grades. (See sample questionnaire in Appendix B).

TREATMENT OF THE DATA

In order to compare each child's gain in achievement under prescription teaching with the gain he had made previously without prescriptions, some standard had to be formulated as a basis for comparison. To do this, the Bond (1957, p. 79) formula for reading expectancy was used. The formula is: number of years in school (not counting kindergarten) times the child's I.Q. plus 1.00. This formula was applied for each child at each grade level, grade three through six. The results of these computations were plotted on a semi-logarithmic chart (Lindsley, 1971). The slope of the resulting mean expectancy line on the

chart was the basis for comparison in the analysis of the class' progress.

Each child's vocabulary scores from the Iowa Test of Basic Skills were plotted on the same chart as the mean expectancy line was plotted on. These scores were from tests taken at the beginning of grade three through the end of grade five. A line representing the mean progress for grades three and four was drawn on the chart as was a line representing the mean gain for grade five. Position of the mean lines was determined by the error lines of standard deviation of the means. The slope of each mean line was read from the acceleration finder (Behavior Research Co., 1971). (See Appendix D). The slope of the mean progress line for grades three and four was then compared to the slope of the mean progress line for grade five. If the slope of the mean progress line for grade five was equal to or greater than the slope of the mean progress line for grades three and four prescription teaching was considered equal to or superior to the traditional basal reading method. If the slope for grade five was less than the slope for grades three and four prescription teaching was considered less effective than the traditional basal reading method.

The same technique was applied to the comprehension scores for each child at each grade level, grades three

through five. The same criteria were used.

If the slope of the mean progress line was greater than the slope of the mean expectancy line then the lines could be expected to intersect at some point in space and the class would have reached its average reading expectancy. If the progress line were approaching the expectancy line at a steeper angle during grade five than it had during grades three and four prescription teaching would be considered successful.

This same data for each individual child was plotted on individual charts and can be seen in Appendix C.

The responses to the teachers' questionnaire were used to answer the second question. This question was: Did the prescriptions written by the diagnostic teacher make individualizing easier for the teacher? The questionnaire sought answers to the following questions: how much preparation time is devoted to reading in comparison to total preparation time; how does reading preparation time this year compare to last year when using prescriptions; did the prescriptions help for individualization; how did the prescriptions help?

A subjective analysis of the responses to question number nine, "Did you feel the prescriptions helped you

last year? Please comment as to how they helped, if they did." and spontaneous comments written on the questionnaire provided the answers to the second question of this study. An analysis of the answers is recorded in Chapter Four.

Chapter 4

ANALYSIS OF THE DATA

INTRODUCTION

This study was designed to analyze the rate of progress in reading achievement made by retarded readers when taught by the regular classroom teacher, by prescriptions written by the diagnostic teacher. This was compared to the rate of progress these same children made when taught by the traditional basal reading method.

Areas discussed in this chapter are: analysis of the class' progress in vocabulary, as measured by the Iowa Test of Basic Skills, under both methods; analysis of the class' progress in comprehension, as measured by the Iowa Test of Basic Skills, under both methods; and analysis of the teachers' questionnaire.

ANALYSIS OF PROGRESS IN VOCABULARY

Figure 1 illustrates the comparison of the class' progress in vocabulary as measured by the Iowa Test of Basic Skills, for grades three through the end of five, with the class' reading expectancy. The slope of the mean reading expectancy line for this class was 1.3. This

means that the expectancy increases 1.3 times more than a level line. (See illustration of celeration multipliers in Appendix E). The slope of the mean progress line for vocabulary during the non-treatment period was 1.4. The slope of the mean progress line for vocabulary during the prescription period was also 1.4. While this does not show prescription teaching to be superior, it does show that it is as effective as the traditional basal reading method. If one examines Figure 1, he notes that the slope of the line (1.6) from grade three to grade four was greater than the slope (1.3) from grade four to grade five. This indicates that the class was decelerating in its progress in vocabulary learning. During the prescription teaching from grade five to grade six the slope of the line (1.4) began to rise again. While the progress line does not intersect the expectancy line at the end of the treatment period a smaller discrepancy existed between actual performance and expectancy than existed before the treatment period.

ANALYSIS OF PROGRESS IN COMPREHENSION

The slope of the mean reading expectancy line for this class was 1.3. This means that the expectancy increases 1.3 times more than a level line. (See

illustration of celeration multipliers in Appendix E). The slope of the mean progress line for comprehension during the non-treatment period was 1.3. The slope of the mean progress line for comprehension during prescription teaching was 1.4. This indicates that prescription teaching was more effective for increasing comprehension than was the traditional basal reading method. If one examines Figure 2 he will note that the slope of the mean progress line (1.4) from grade three to grade four was greater than the slope of the mean progress line (1.2) from grade four to grade five. This indicates that the class was decelerating in its progress in compre nsion building. During prescription teaching the slope of the mean progress line (1.4) began to rise again. While the mean progress line did not intersect the mean expectancy line at the end of the treatment period, the discrepancy between actual performance and expectancy is smaller than existed before the treatment period.

ANALYSIS OF TEACHER QUESTIONNAIRE

An analysis of responses on the questionnaire answered by one hundred per cent of the eight teachers who were involved in the prescription teaching follows. This analysis provided the answer to the following question: Did prescriptions written by a diagnostic

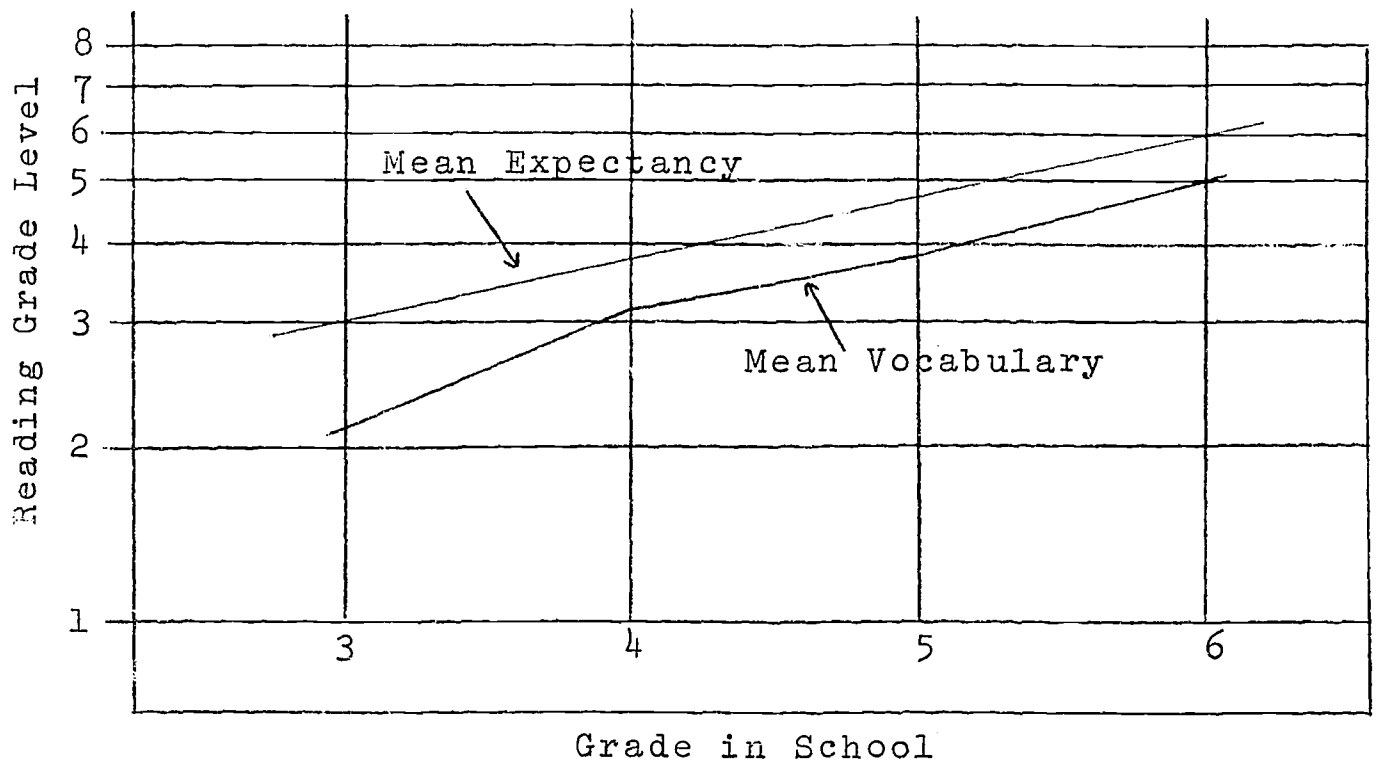

Figure 1

Mean Vocabulary Gain Compared to
Mean Reading Expectancy

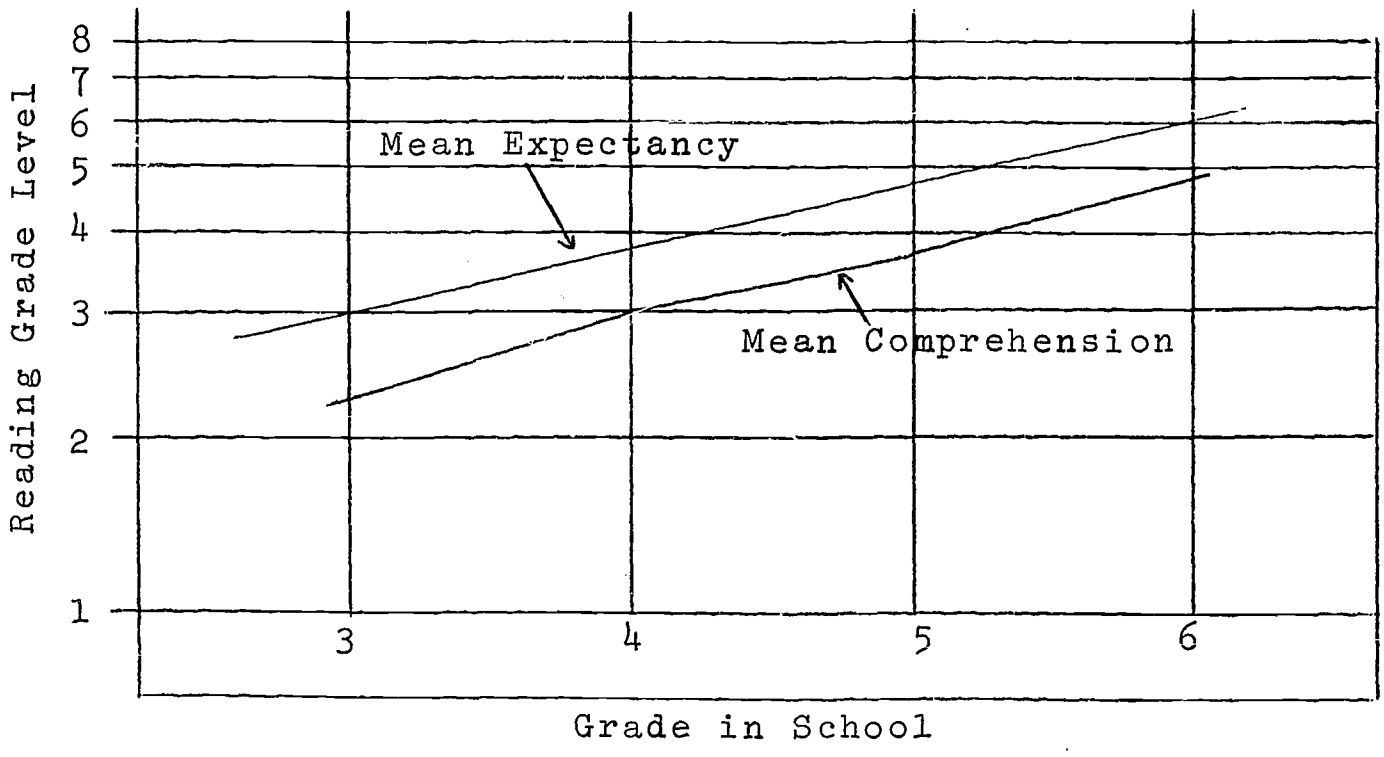

Figure 2

Mean Comprehension Gain Compared to
Mean Reading Expectancy

teacher make individualizing of instruction easier for the teacher?

Table 1 shows that one hundred per cent of the teachers answered, "yes", to the question, "Did you feel that the prescriptions helped you last year?" None of the teachers felt that individualization was easier than the traditional basal reading method, but they all indicated that the prescriptions did make individualization easier than it would have been without them.

Table 1

Teachers' Response to Questionnaire Item
Did Prescriptions help Individualize

Subject	Yes	No
1	x	
2	x	
3	x	
4	x	
5	x	
6	x	
7	x	
8	x	

The help that the teachers said they received from the prescriptions fell into two main categories. The first mentioned by most teachers was that of time saving. The other was the way the prescription helped them improve

instruction and meet each child's needs. Table 2 shows the teachers' responses to how the prescriptions helped them.

Table 2

Teachers' Responses Showing How Prescriptions Helped

Subject	Time Saving	Improved Reading Instruction
1		x
2	x	x
3	x	x
4	x	x
5	x	
6	x	x
7		x
8	x	x

The following are some quotations from the teachers' questionnaires which indicate their feelings about the prescriptions.

> The classroom teacher certainly has no time for diagnostic testing and the help given me in finding materials and in the recommendations was very valuable and extremely profitable.

> It cut preparation time a great deal. Prescriptions are not used this year and it requires more planning time.

> It saved us time and frustration.

> Prescriptions, for which I could not find time to do myself, made me feel that for the first time in my life I was able to reach each child's individual needs.
>
> They (the prescriptions) made me more aware of specific reading problems and gave me suggestions for materials to use.
>
> We were more confident having someone familiar with diagnostic work write the prescriptions. It also was nice to be able to turn to someone with the "know-how" right when the problem or question arose.

Analysis of the data does show that prescriptions made individualization of instruction easier for the teacher.

Chapter 5

SUMMARY, CONCLUSIONS, OBSERVATIONS AND SUGGESTIONS FOR FURTHER STUDY

INTRODUCTION

This study was made to assess the effectiveness of a program of individualization in reading instruction. It is well known that every school has more retarded readers than its staff feels it should have. Teachers are continuously looking for ways in which to better meet each child's individual needs and hopefully decrease the number of students who are reading at a level which is below their reading expectancies. Prescription teaching is one way that the school in this study tried to meet those needs and goals.

Areas discussed in this chapter are: summary of the study, conclusions, observations of the writer and suggestions for further study.

SUMMARY OF THE STUDY

The purpose of this study was to determine whether or not children who were retarded readers made more or less gain in reading achievement when taught by the regular

classroom teacher following prescriptions written by a diagnostic teacher than they had made via the traditional basal approach.

Answers to two selected questions were sought through the analysis of the data. The questions were:

1. Would there be any difference between children's reading progress when taught by individual prescription and their progress when taught by the traditional basal method?
2. Did the prescriptions written by the diagnostic teacher make individualizing of reading instruction easier for the teacher?

To answer question number one the subjects were seventeen fifth graders who were considered retarded readers. Each student acted as his own control. The data for the treatment year were analyzed and compared against the data gathered from the two previous years. The vocabulary and comprehension scores of the Iowa Test of Basic Skills and the reading expectancy, figured by Bond's formula, served as the data base for analysis.

To answer question number two the subjects were the eight teachers who were involved in teaching by prescription. Analysis of their responses to items on a questionnaire answered the question.

CONCLUSIONS

1. Analysis of the data revealed that the prescription teaching was as effective as, but not superior to the traditional basal approach in vocabulary building as shown by an acceleration rate that was exactly the same during the treatment period as during the non-treatment period.

2. Analysis of the data showed the prescription teaching was superior to the traditional basal approach in comprehension building. This was shown by an acceleration rate greater during the treatment period than during the non-treatment period.

3. Further analysis of the data revealed that during the year preceding prescription teaching the class progress in both vocabulary and comprehension had decelerated. During the treatment period learning began to accelerate at a more rapid rate. While the class' average reading expectancy was not reached, a smaller discrepancy existed between actual performance and expectancy.

4. One hundred per cent of the eight teachers involved in prescription teaching felt that the prescriptions did make individualization of reading instruction easier.

Further, prescriptions saved them time and made them feel more confident that they were meeting each child's needs.

OBSERVATIONS OF THE WRITER

The following observations were suggested by the study, but were not necessarily substantiated by it:

1. The slopes of the progress lines for both vocabulary and comprehension during the treatment period were greater than the slope of the expectancy line. Assuming all other factors would remain the same it could be predicted that if the prescription teaching continued the line would intersect and the children would be reading at their potential level.

2. The review of the literature seems to bring out the agreement among writers that the teacher is the most important factor in how successful any program of reading instruction will be. All of the teachers involved in this study felt that prescriptions saved them time and made them more confident in their teaching. Prescriptions should, then, be a beneficial tool for the improvement of reading teaching.

SUGGESTIONS FOR FURTHER STUDY

The writer would like to emphasize that the results of this study are limited to one group of students at one

grade level. Duplication of this program will not necessarily duplicate the results. Further studies are needed to validate the effectiveness of this procedure. Following are suggestions for further study:

1. Since the number of subjects in this study was small, the writer suggests that the study be replicated with a larger group of subjects utilizing control and experimental groups.

2. The writer suggests that a replication of this study be made using the semi-logarithmic chart to keep data on a weekly basis instead of using only beginning and end of year scores.

3. For better predictive results, the writer recommends a longitudinal study of a group using prescription teaching, beginning at first grade and continuing through grade six.

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APPENDIX A

Table of I.Q. Scores

Table 3

LORGE-THORNDIKE IQ SCORES FOR SEVENTEEN FIFTH GRADE STUDENTS

Student	Verbal IQ	Non-verbal IQ	Full-Scale IQ
1	82	94	88
2	87	96	91
3	91	90	90
4	92	91	91
5	99	100	99
6	105	104	104
7	101	98	99
8	88	97	92
9	93	108	100
10	96	118	107
11	102	107	104
12	90	97	93
13	88	87	87
14	98	120	109
15	83	93	88
16	69	104	86
17	87	83	85
Median	91	97	92

APPENDIX B

Letter of Transmittal

Questionnaire

APPENDIX B

Questionnaire for Teachers: Teaching Individualized Reading by Prescriptions Written by a Diagnostic Teacher

1. How many years teaching experience in elementary school have you had, including the year 1971-72? (Check one)

_____ 1 year _____ 2 to 5 years _____ 6 to 10

_____ 11 to 20 years _____ over 20 years

2. How many college courses have you had in reading methods? _____

3. How recent was your last reading methods course?

_____ in the past year _____ 2 to 5 years ago

_____ 6 to 9 years ago _____ 10 or more years ago

4. How many non-school hours per day do you normally spend in preparation for the next day's school work?_____

5. Approximately how much of the above preparation time do you spend on preparation for reading class?_____

6. How many hours per day must you spend in keeping your household functioning well or on other out-of-school obligations?_____

7. How many students in your reading group this year?_____ last year?_____

8. How does the amount of preparation time you spend for your reading class <u>now</u> compared with the amount you spend <u>last year</u> when teaching by prescription? _____more _____about same _____less

   If more or less, will you please comment as to why it is more or less?

9. Do you feel the prescriptions helped you last year?_____ Please comment as to how they helped, if they did.

10. Are you able to individualize as well this year without the diagnostic help? ____yes ____no ____about the same

11. Please add comments you feel would be of value to anyone reading about the program using prescriptions written by a diagnostic teacher. Positive or negative comments will be appreciated.

Name_____

APPENDIX B

Dumont, Minnesota
January 3, 1972

Dear Mrs. _____,

I am writing my thesis at Moorhead State College on the individualized reading program which includes prescriptions written by a diagnostic teacher. Since you taught from these prescriptions, I would like to have your opinions on the difficulties, the time used and the effectiveness of this method.

Please give me your frank and honest opinions. I want the study to be as scientific as possible, whether pro or con. I want your answers to be useful to my readers.

Thank you for your time and effort. You may be assured that your answers will appear anonymously in my report.

Please return by January 10.

I sincerely hope you are having a pleasant and satisfying school year.

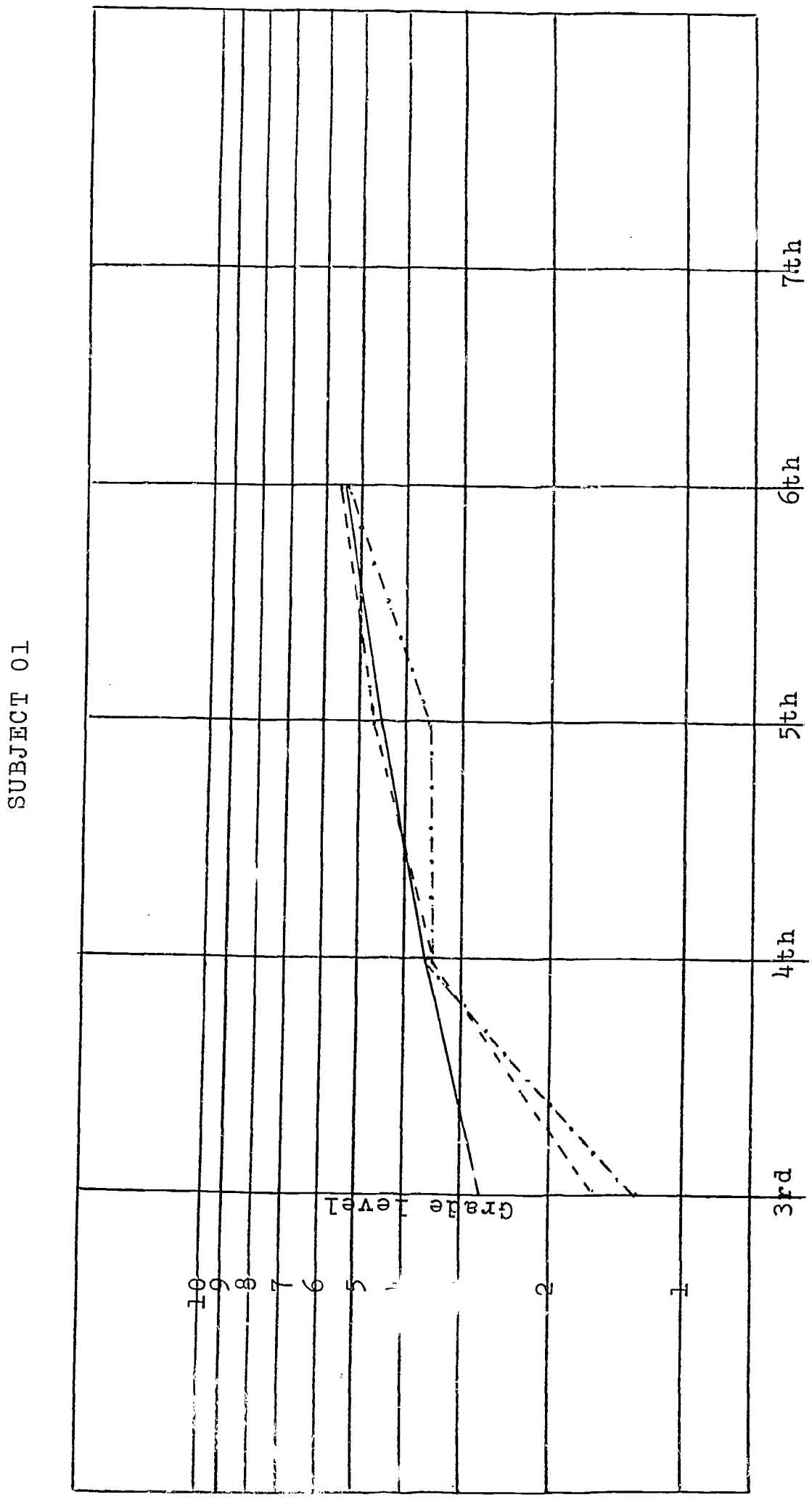
Sincerely yours,

Norma Thiel
Dumont, Minnesota

Enc. self-addressed envelope

APPENDIX C

Individual Progress Charts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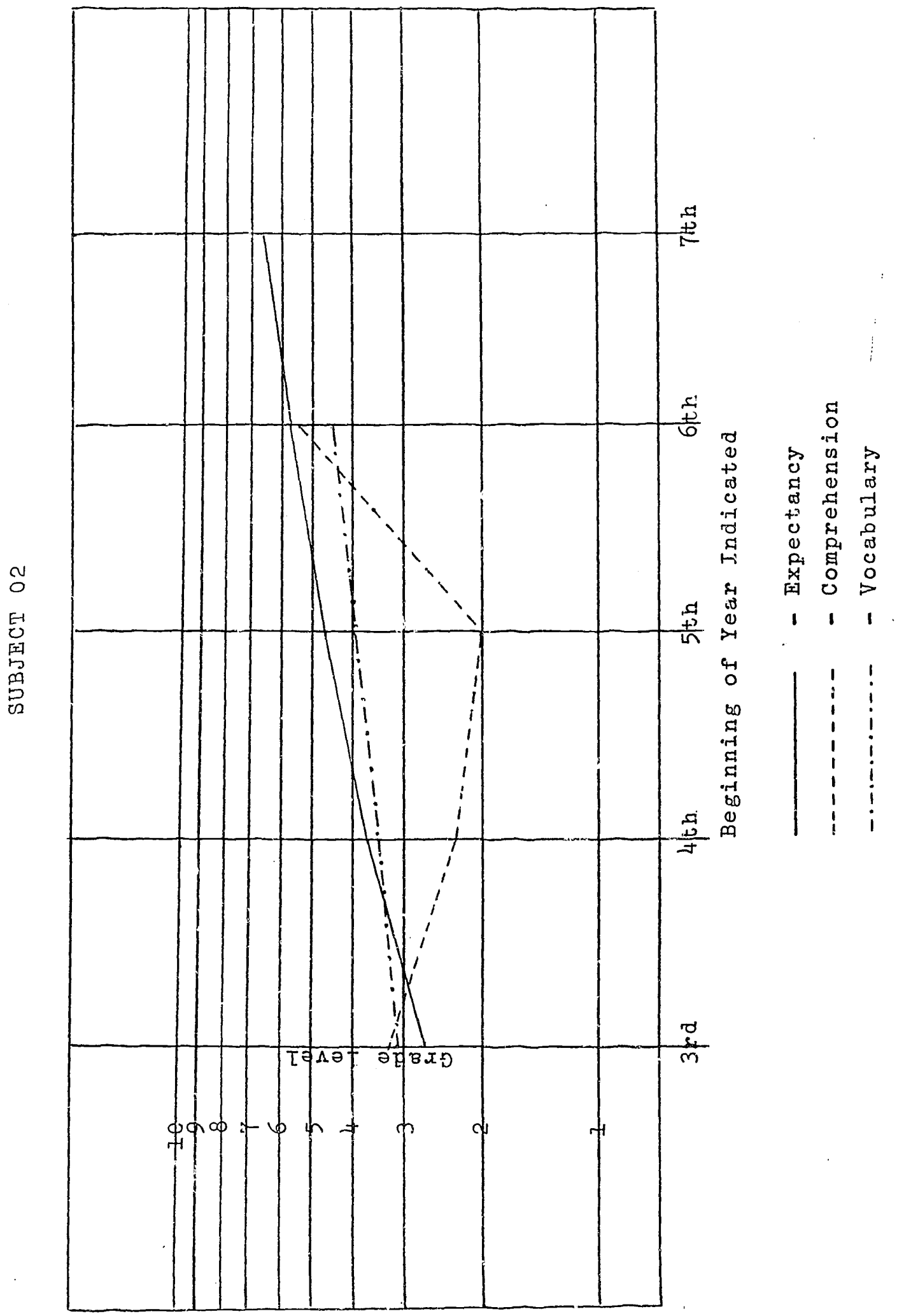
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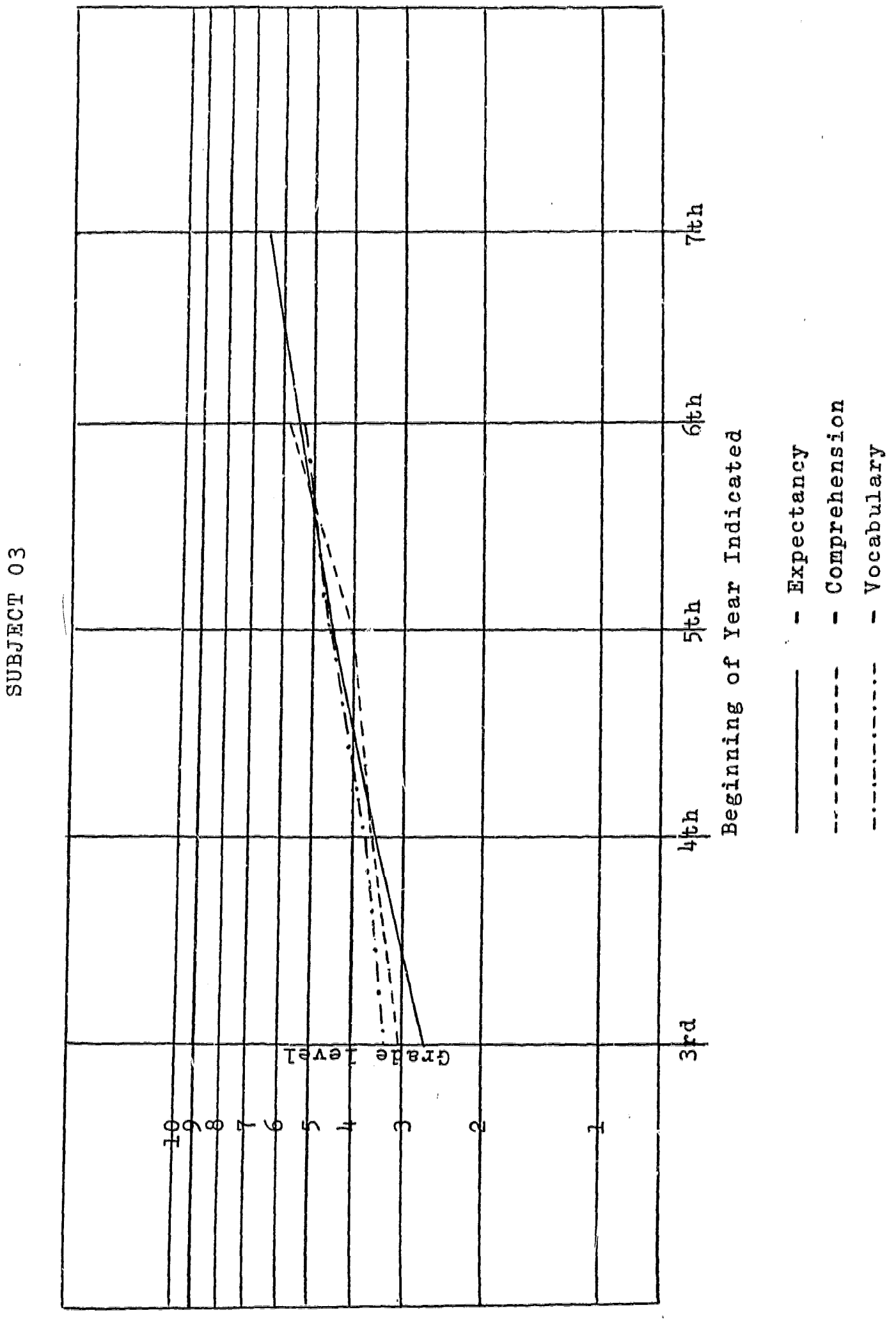
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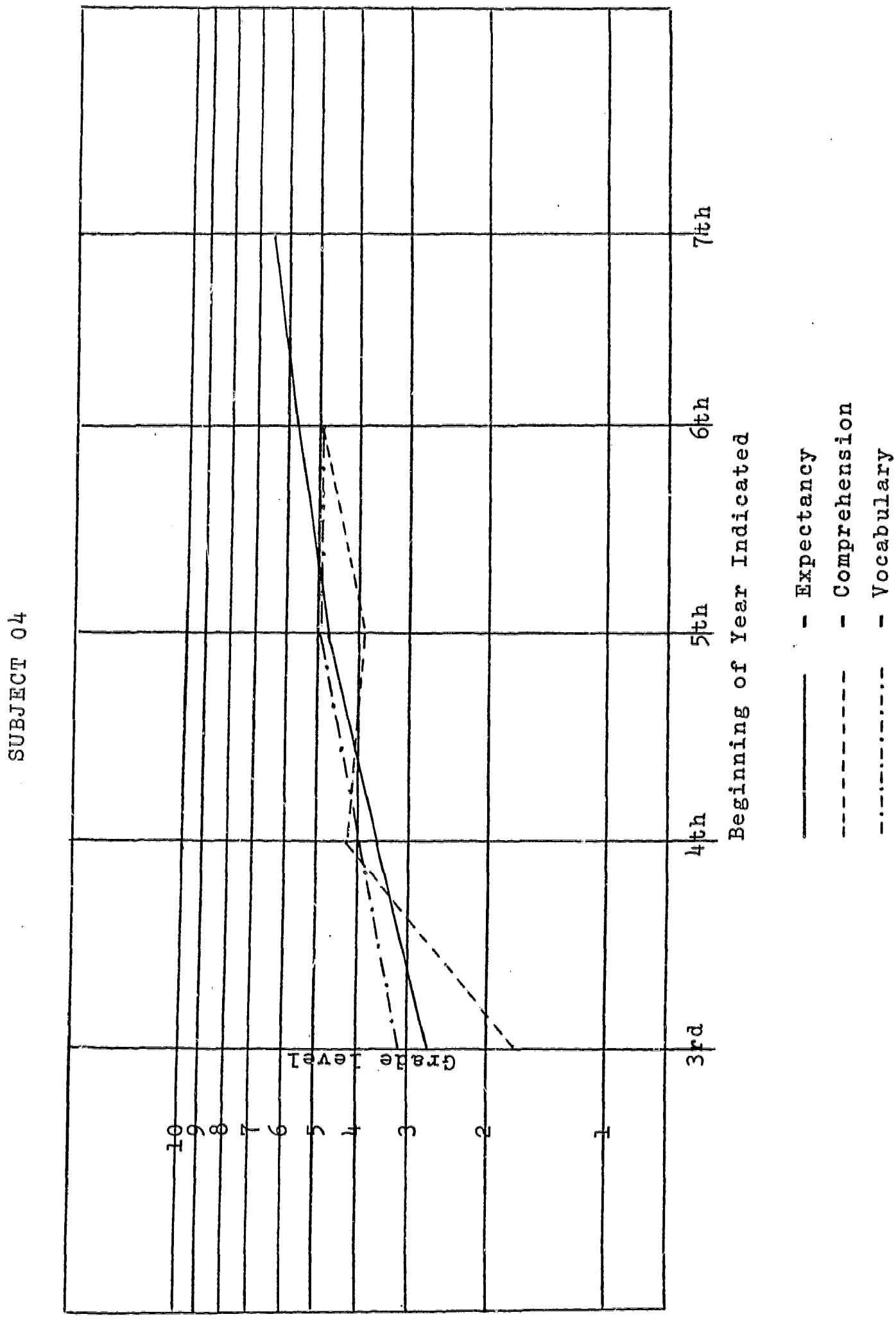
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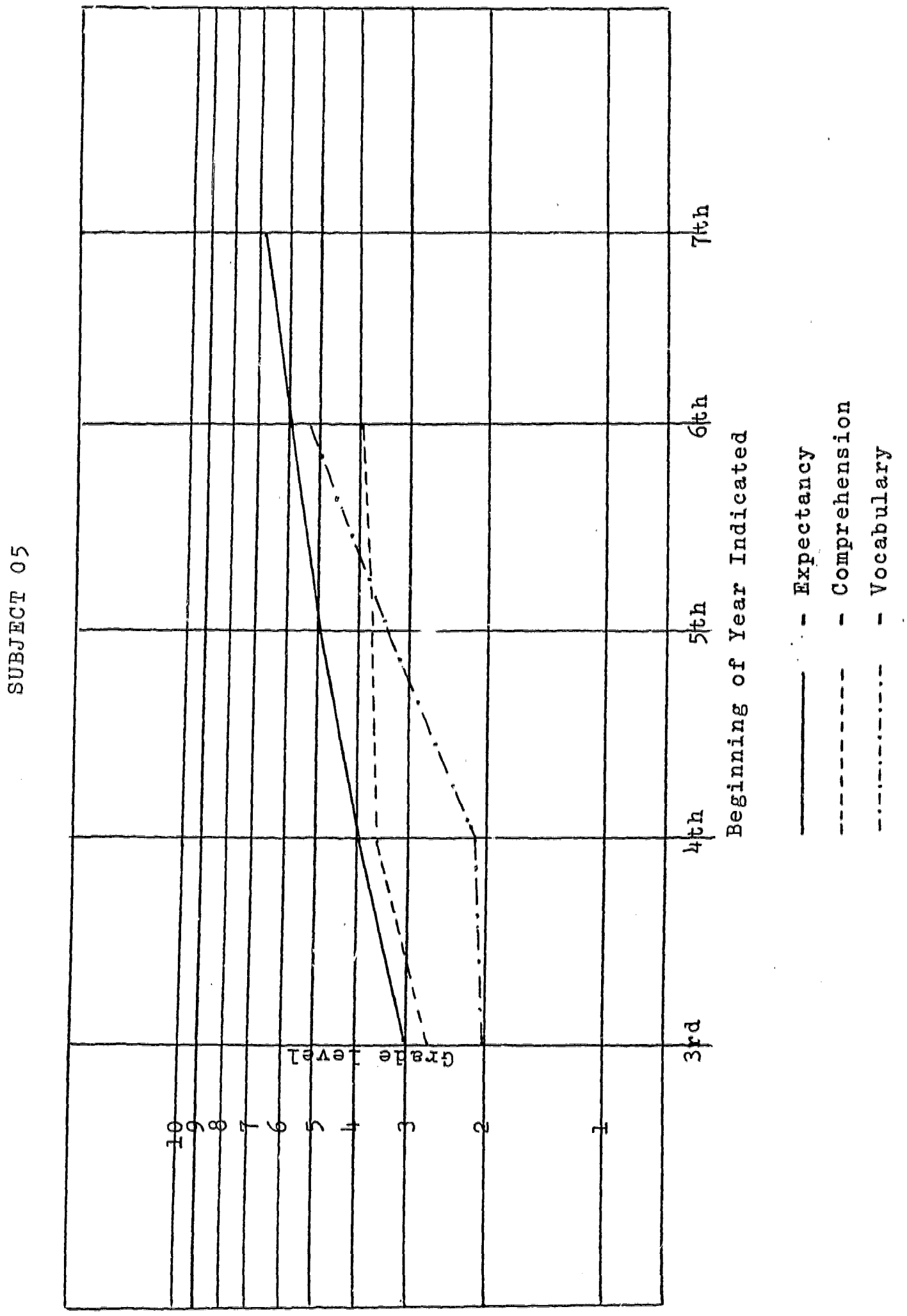
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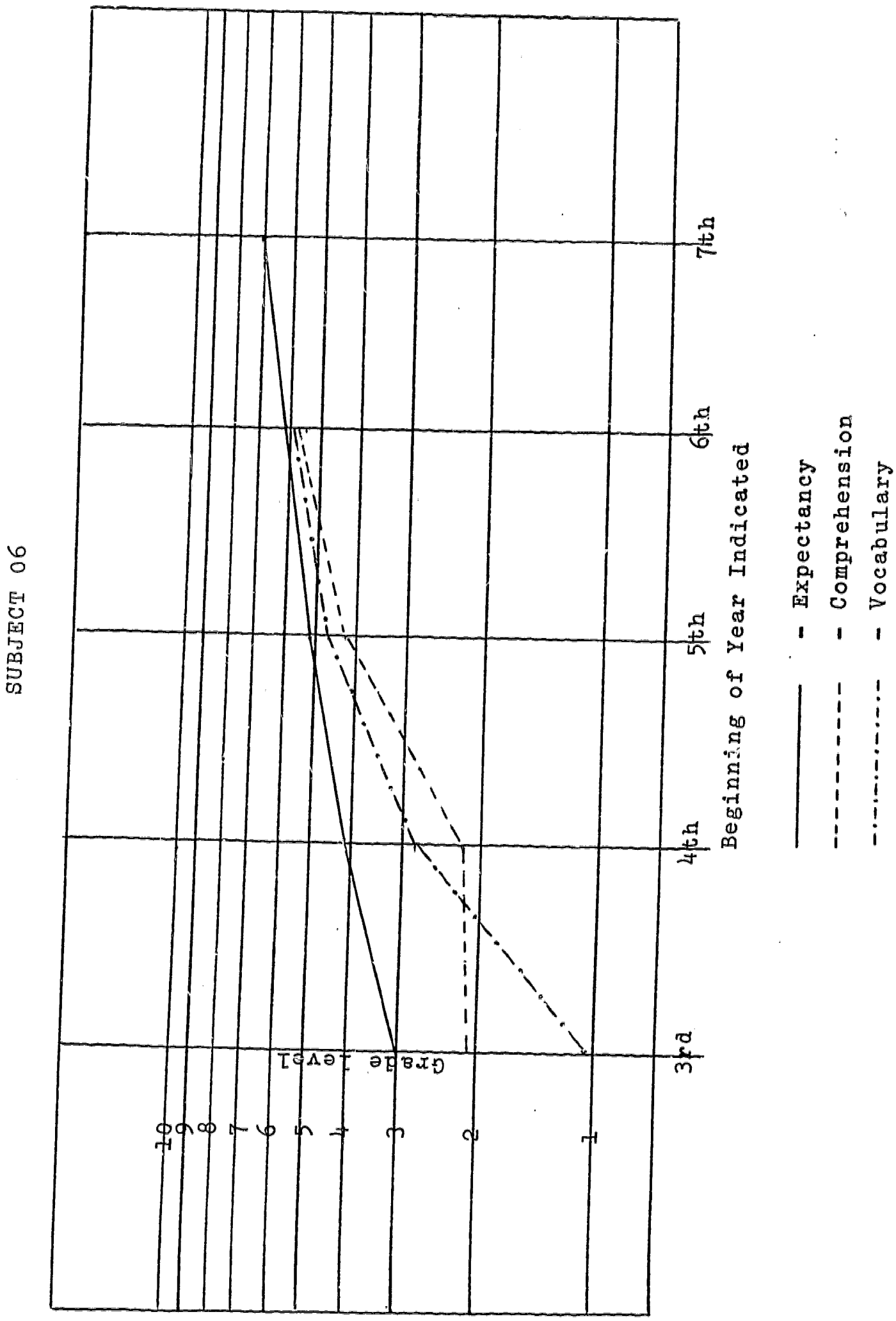
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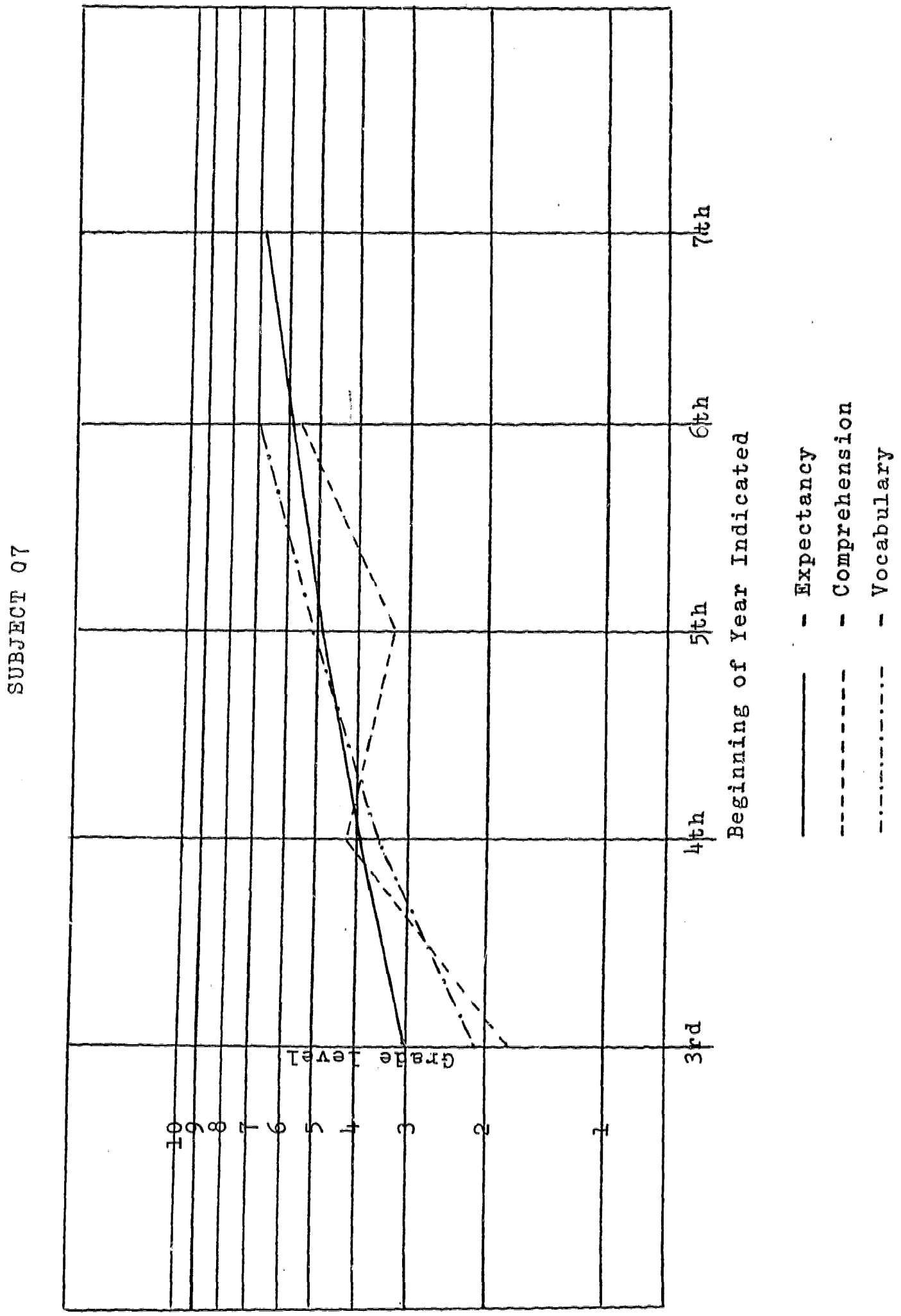
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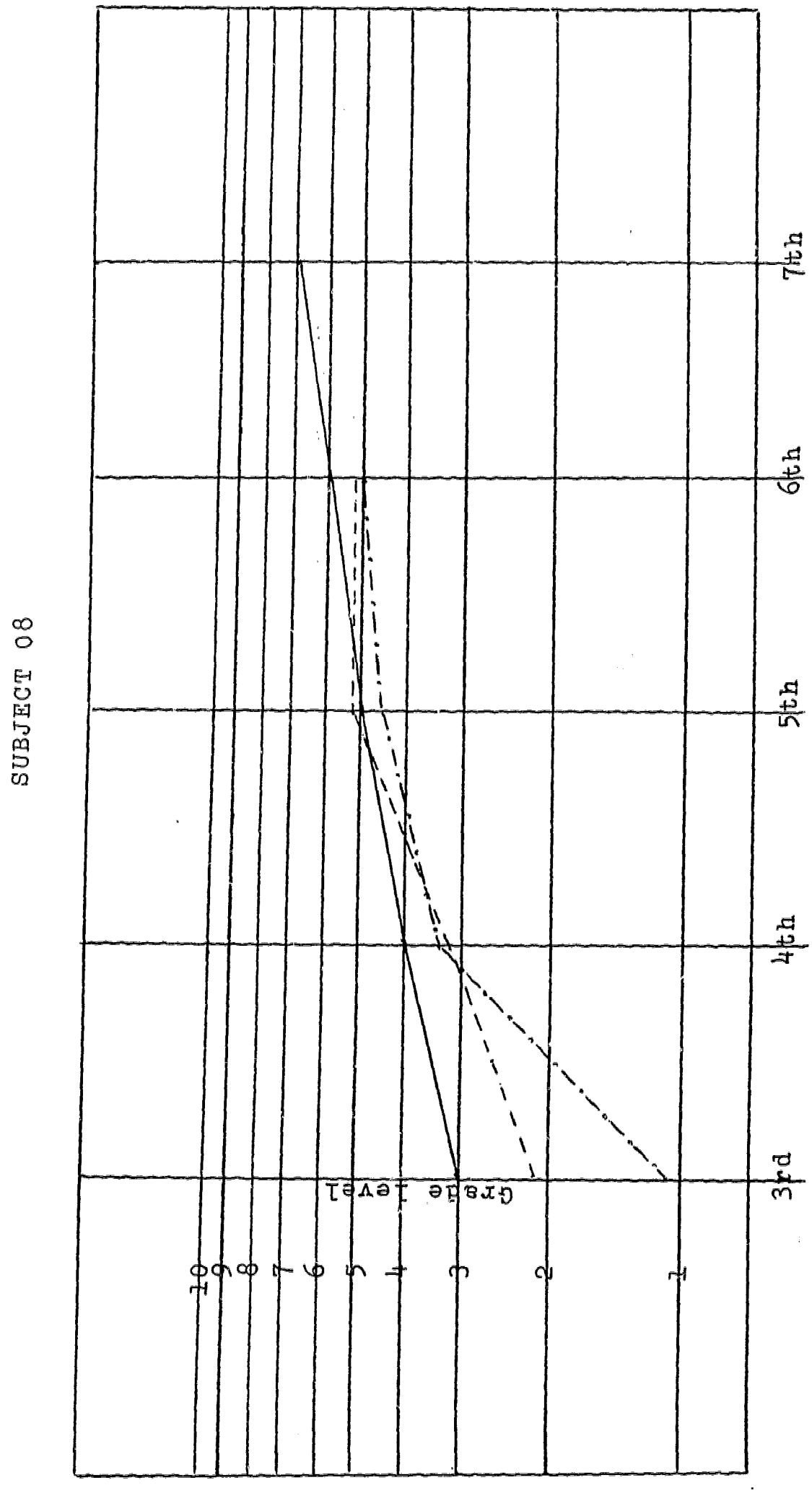
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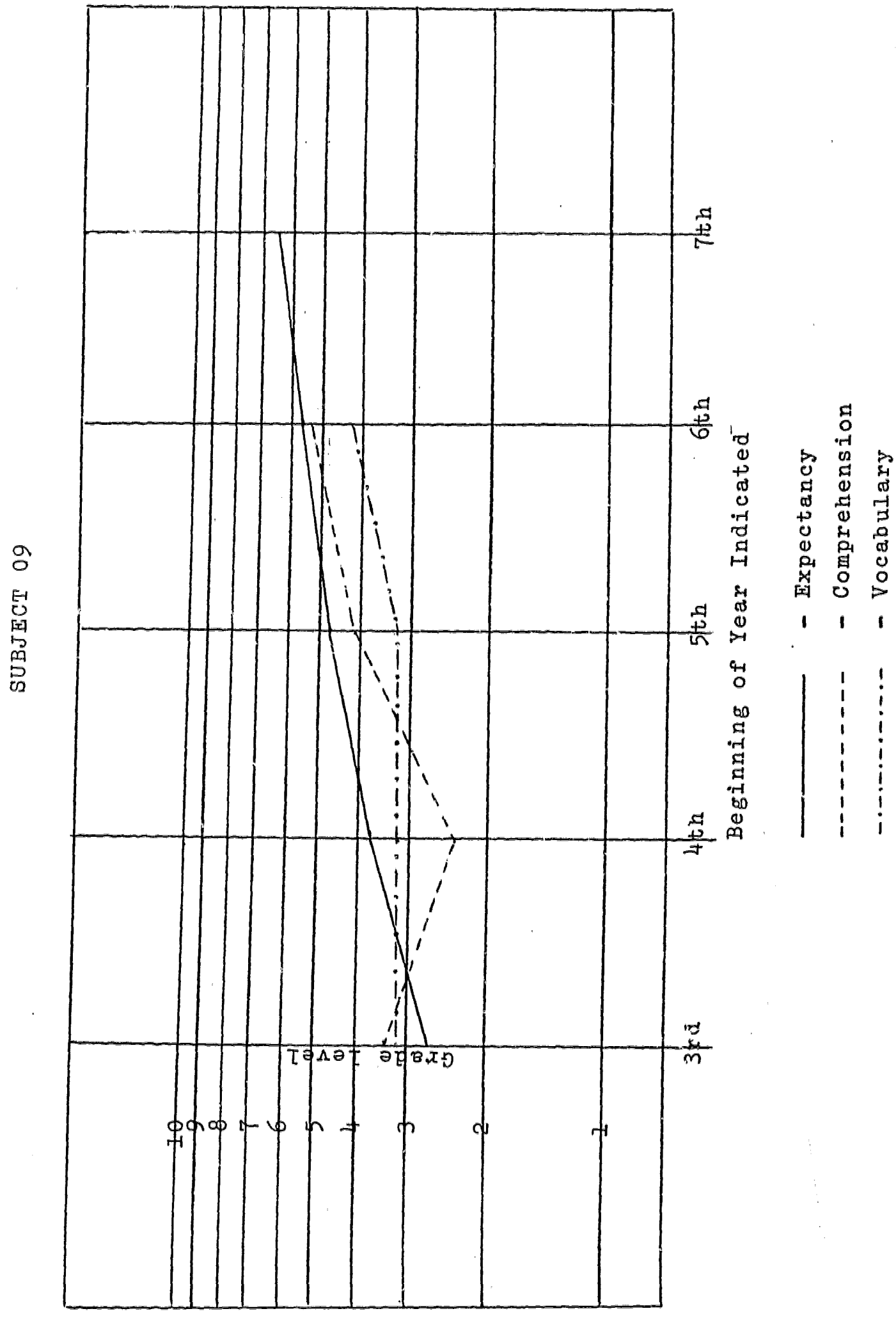
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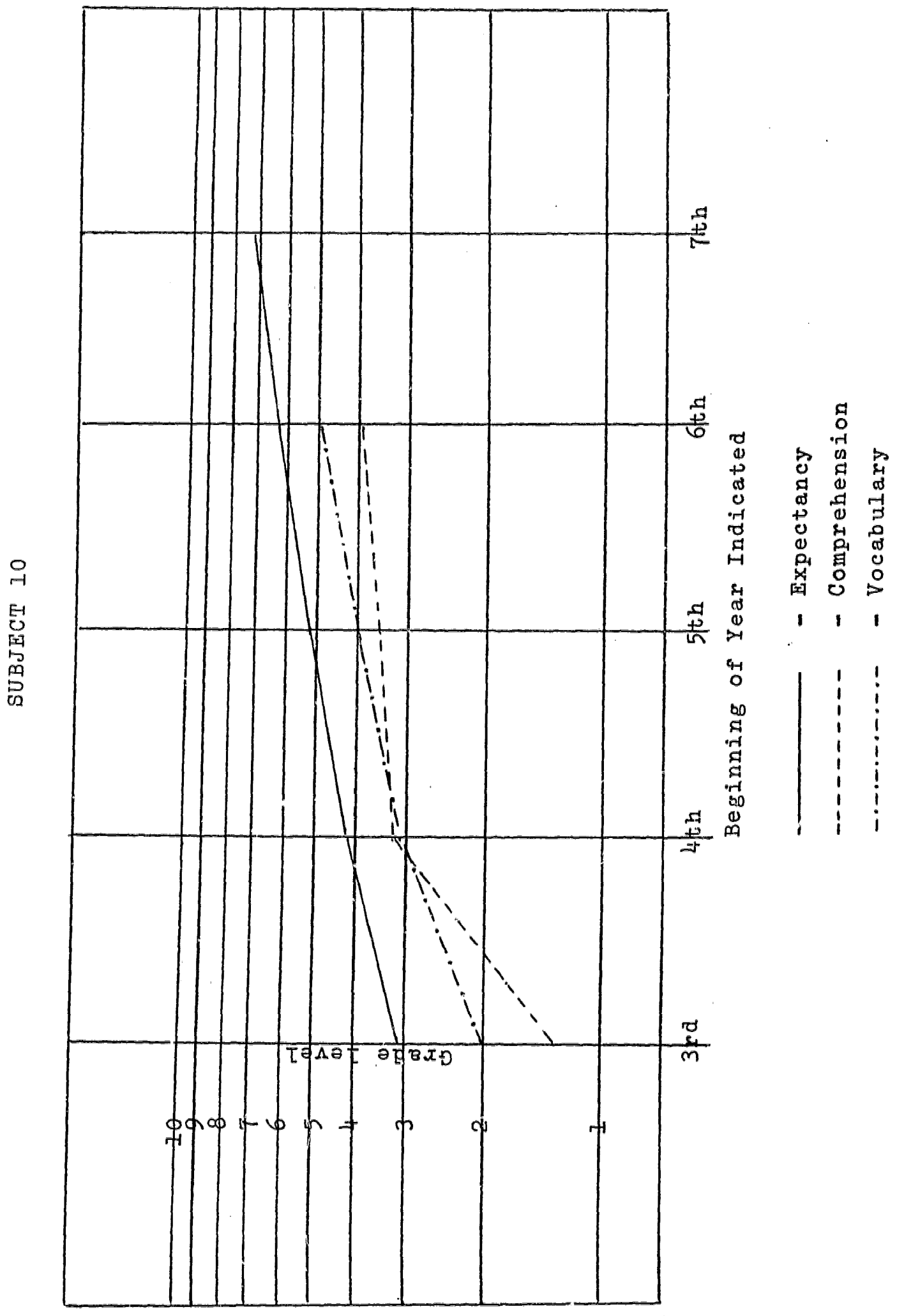
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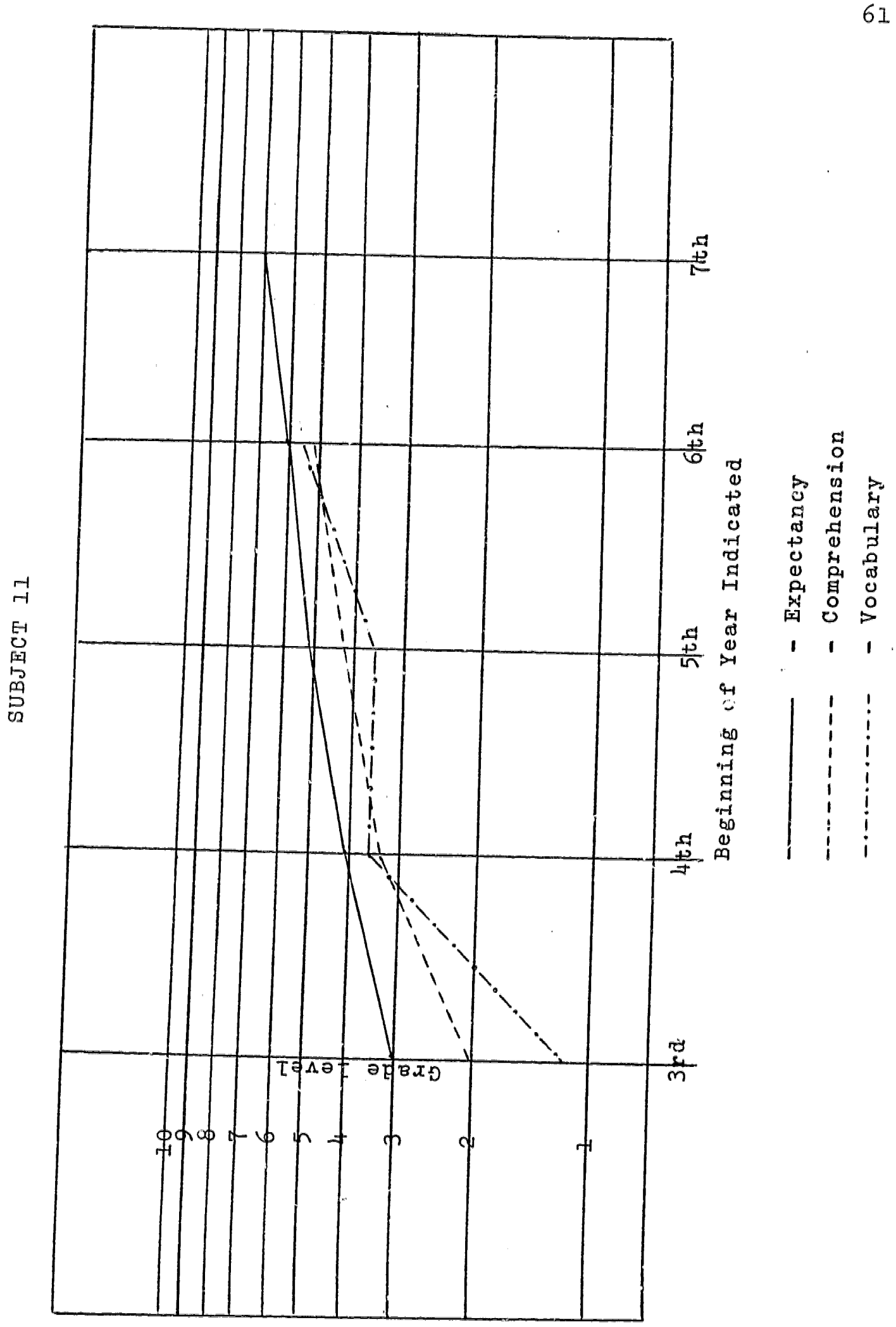
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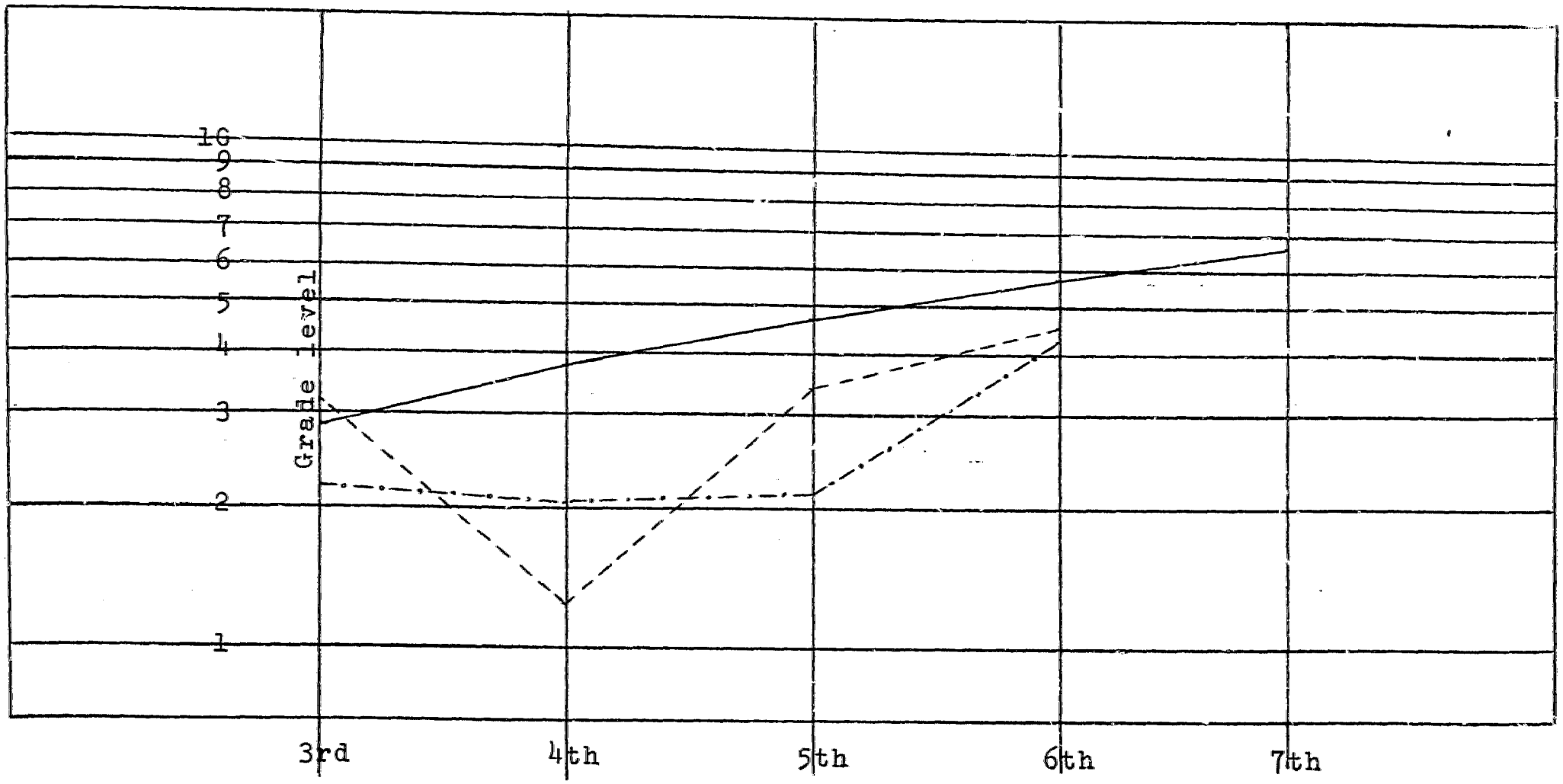

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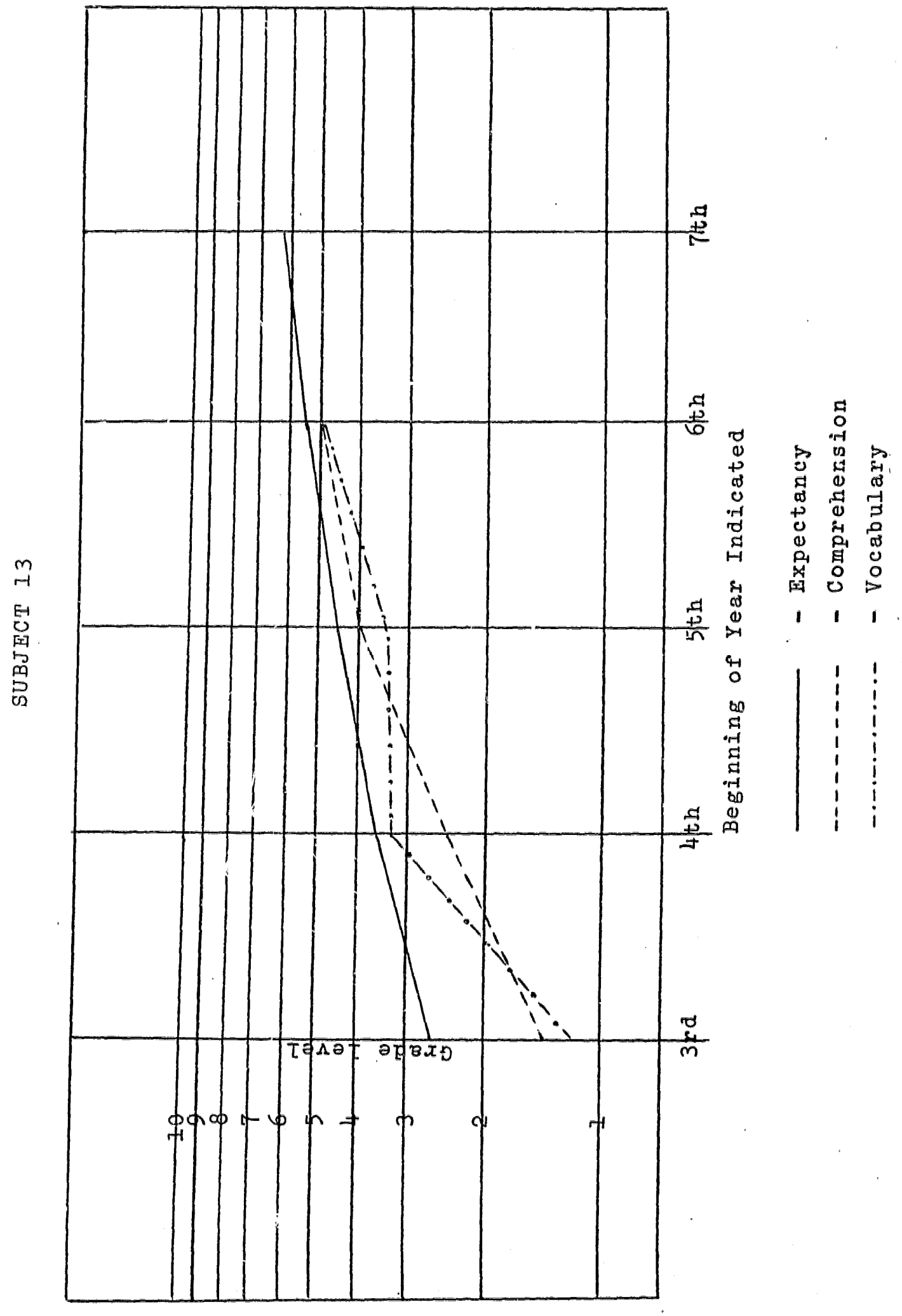
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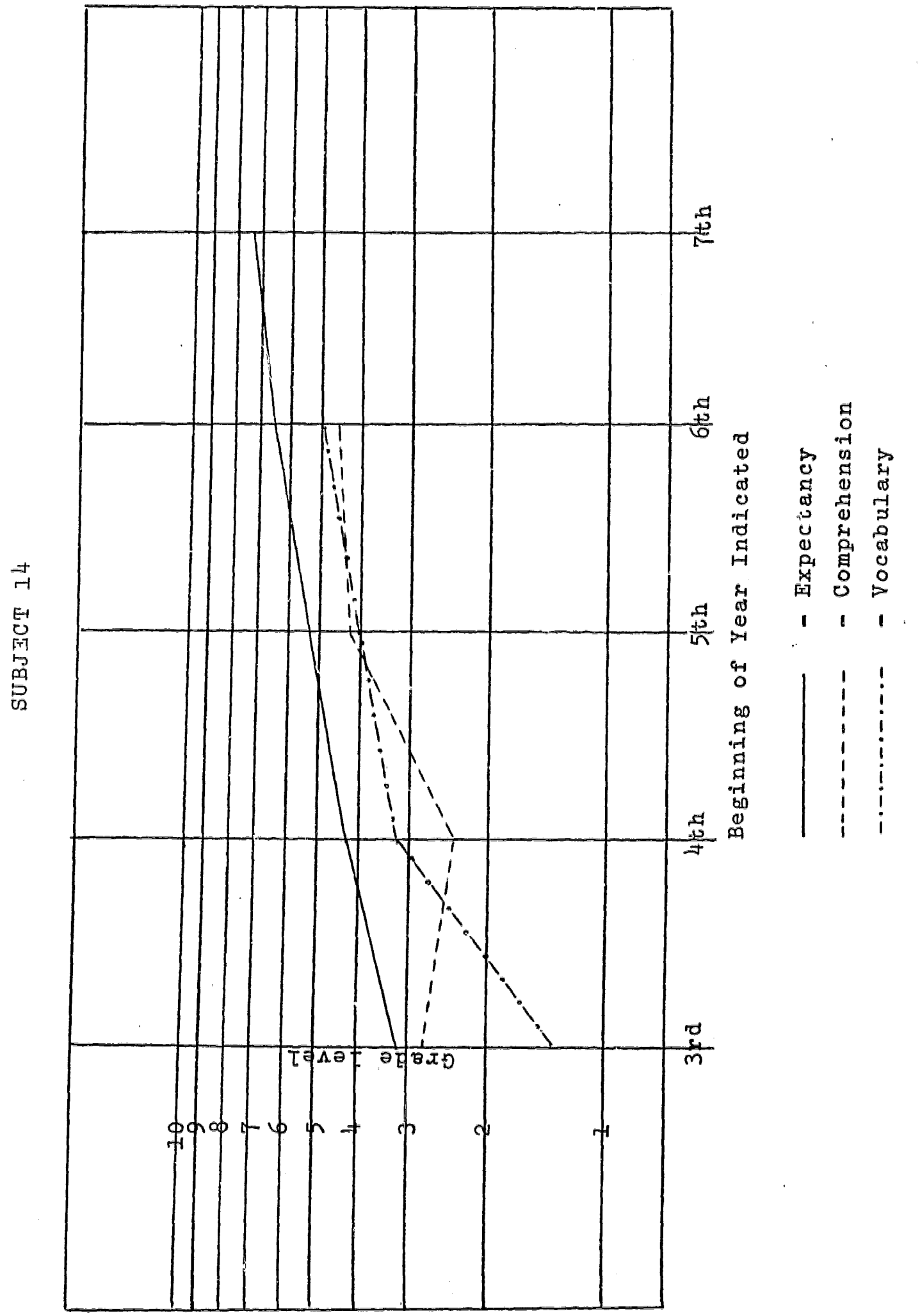
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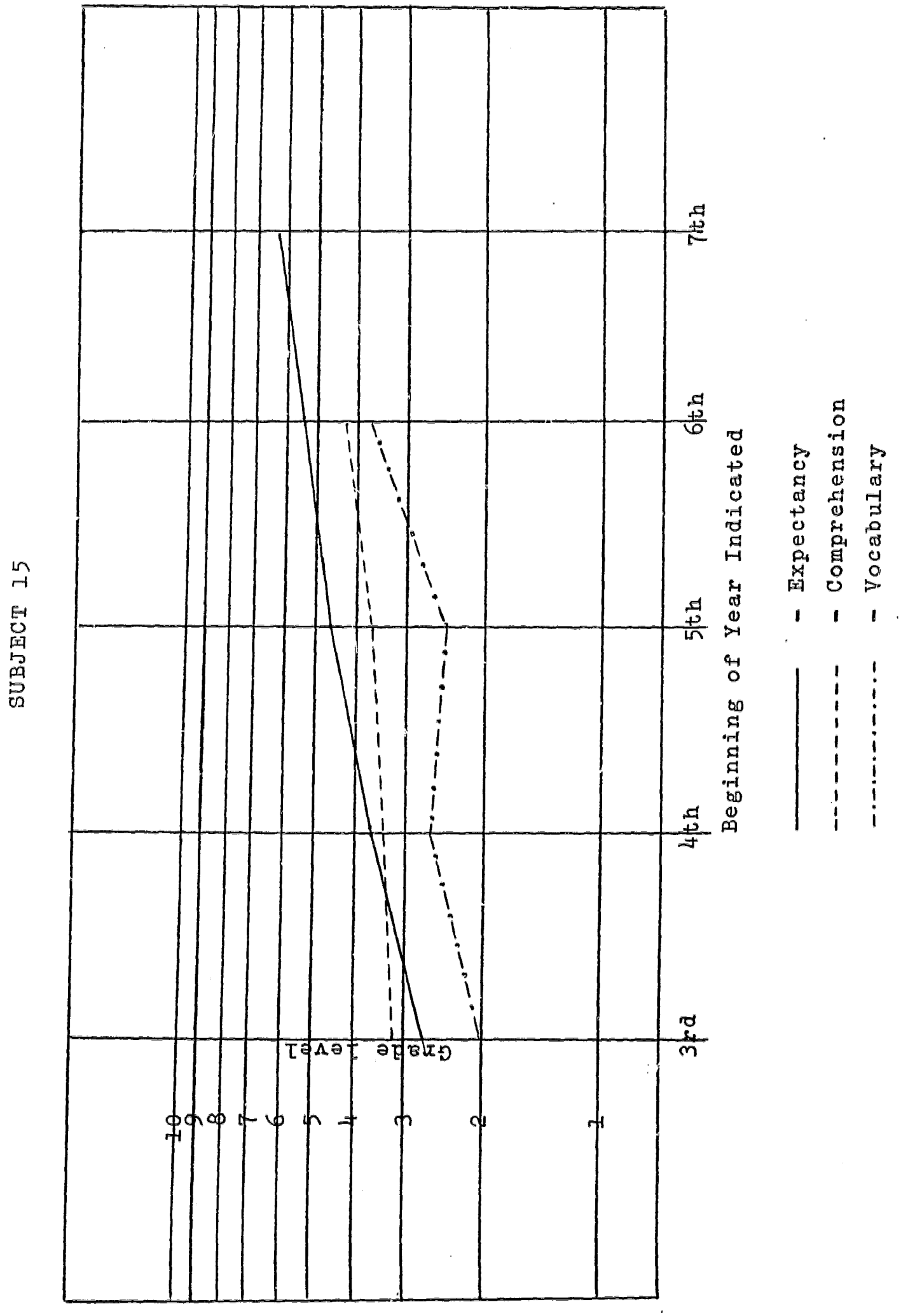
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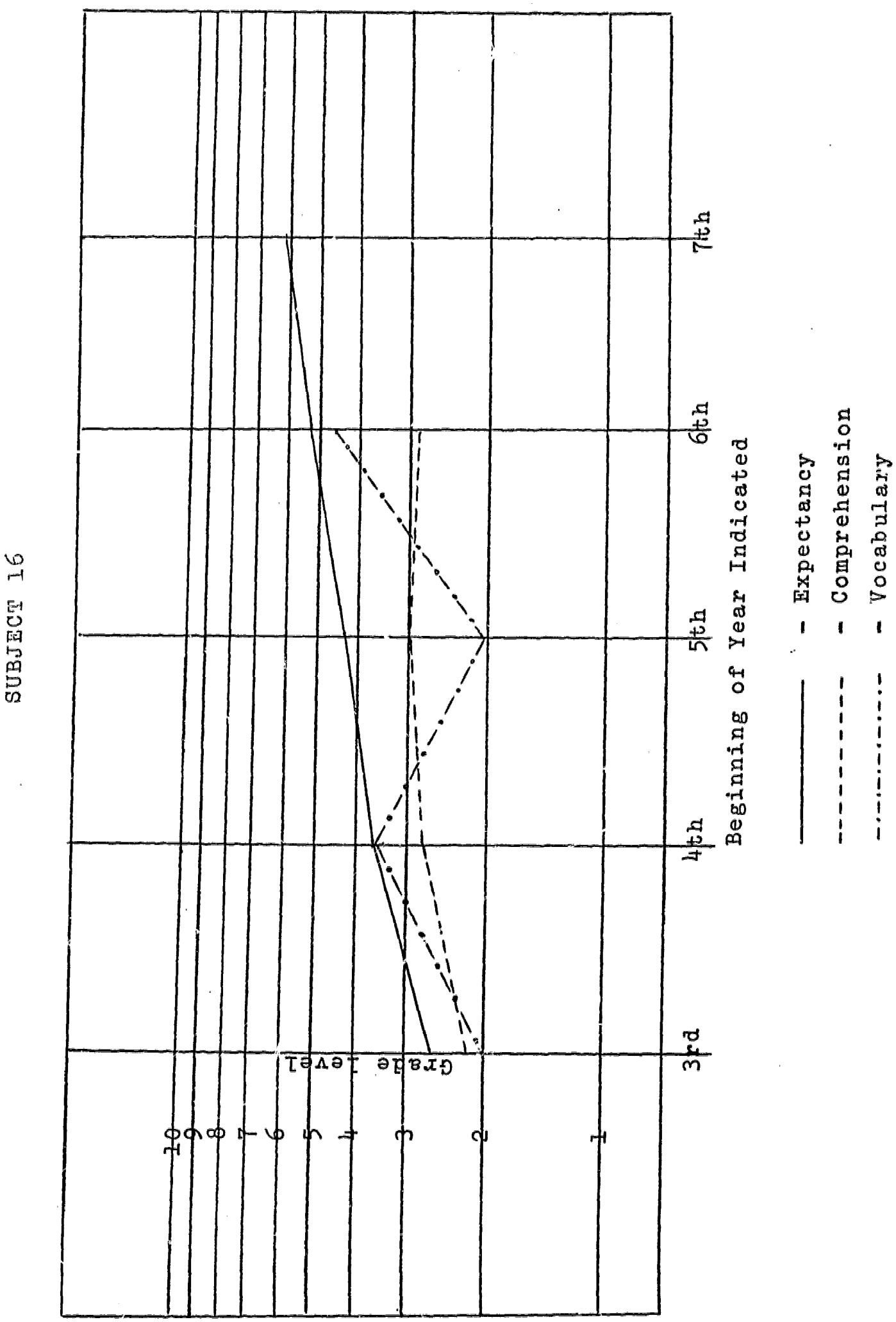
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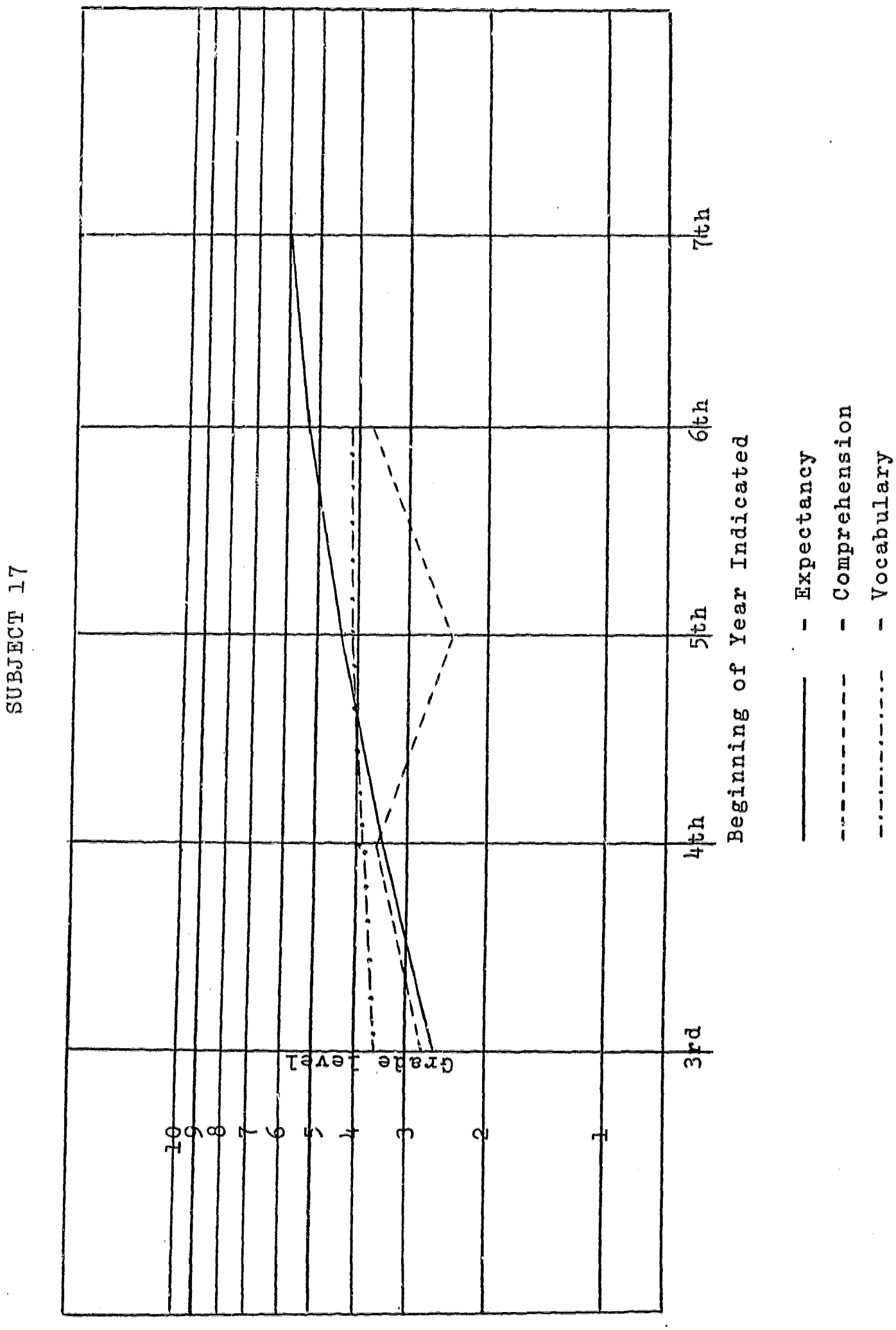
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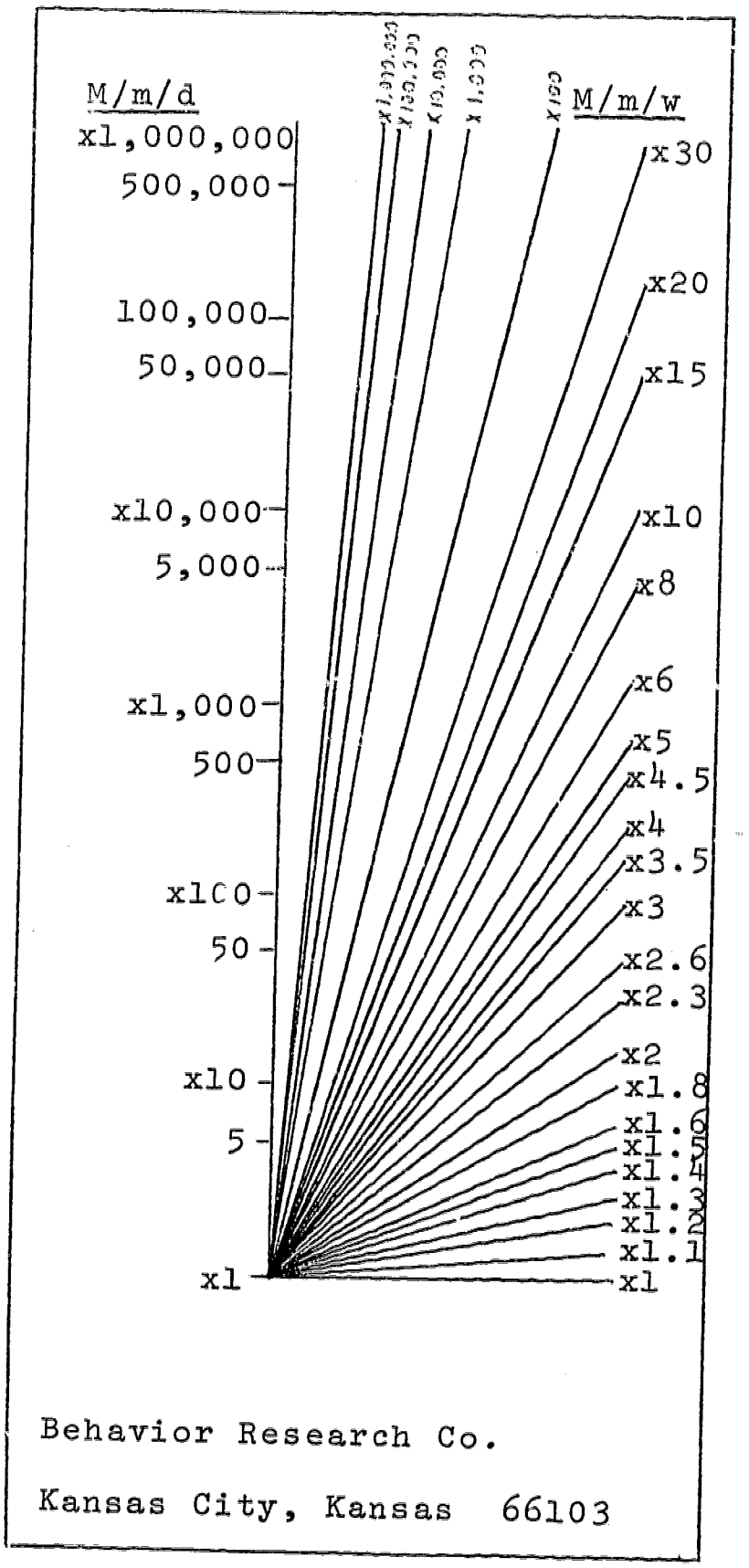
APPENDIX D

Acceleration Finder

Celeration Multipliers

Appendix D

Acceleration Finder



Behavior Research Co.

Kansas City, Kansas 66103

Appendix D

Explanation of Celeration Multiplier

The slope of the line on the semi-logarithmic chart is read from the Acceleration Finder. Both the chart and the Acceleration Finder have been standardized by the Behavior Research Company, Kansas City, Kansas under the supervision of Ogden R. Lindsley.

The numbers read from the Acceleration Finder are frequency multipliers. For example, if the slope of a progress line is 2.0, then progress was two times what the progress would have been if the line were level (child was just holding his own). To find the difference between progress slopes we use the following formulae:

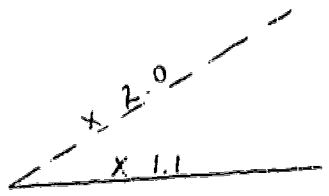
If progress is in the same direction:

Divide the largest reading by the smallest reading and give the sign of change (X) or (÷). Acceleration is (X). Deceleration is (÷).

$$\frac{\times 2.0}{\times 1.1} = \times 1.8$$

$$1.1 \overline{)2.0} \quad 1.8$$

The experimental group accelerated so the frequency multiplier is x 1.8 or 1.8 times more progress than had been made previously.

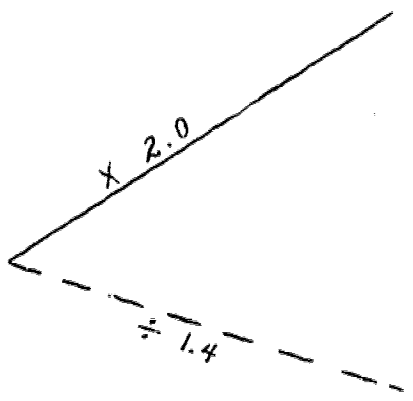


= ÷ 1.8

The experimental group decelerated so the frequency multiplier is ÷ 1.8 or 1.8 times less progress than had been made previously.

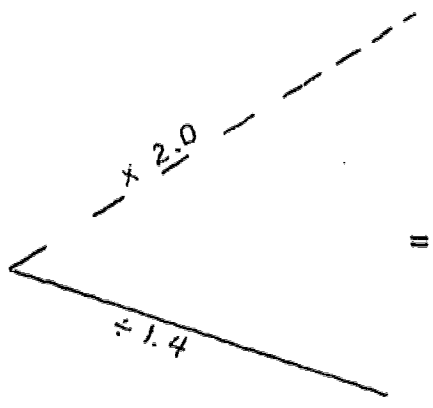
If progress is in the opposite direction:

Multiple the two readings and give sign of change, X for acceleration, ÷ for deceleration.



= x 2.8

The experimental group accelerated so the frequency multiplier is X 2.8 or 2.8 times more progress than had been made previously.



= ÷ 2.8

The experimental group decelerated so the frequency multiplier is ÷ 2.8 or 2.8 times less progress than had been made previously.