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1.1.0 Introduction

Speed has been a working force in the rocket age. One whose speed is more he/she can achieve the determined development. Now delay or slackness is not affordable in each field of life over and above the examination.

There is a famous proverb – "Laziness is the tomb of an alive person."

"Patience gives you sweeter fruits." – This proverb is the contribution of the fatalists. This means that when the matter is not in our hands, there the patience is needed for having consolation.

The story of 'Tortoise and Rabbit', it is seen that continuity wins rather than speed. If the speed is more, but in the pride of the speed, if idleness comes in then one cannot be the winner. Here, 'Slow and steady wins the race' proves its significance. But still in the present rocket age, speed with accuracy is more important. In this story the determined speed in a proper direction is the latent message.

If the speed is not in the proper direction, we can go far away from our destination instead of reaching closer to it. If the direction is proper but there is no accuracy, mistakes will happen. Due to this wrong decisions will be taken and the expected results cannot be gained. In the present age, there is a competition of the speed going on. In this competition, only the speed will not work but only if the speed is specific and properly directed, the expected results can be gained and the desired goals can be achieved. In this way, the proper speed and accuracy are just like two sides of a single coin because the speed is for the achievement of a specific goal; Speed without proper accuracy is mere wastage of energy. If the work which was intended to be fulfilled is not done, then the speed will only be considered as a foolishness. If the literate persons do such mistaken than, it can be said they have studied the book but not learnt them, i.e. only possess the bookish knowledge.

The accidents in the present time are the examples of speed without proper accuracy. Because of such event, many precious human lives are victimized. We daily read about such accidents in the newspaper, and therefore there are
signboard of 'Better Late than Never' are put up on the Highways which means that it is better that we reach a little late to our destination than we die in an accident and reach never. This is a fact in the case of life and death, but we have to reach as early as possible with safety. Therefore one has focus on both the speed and accuracy.

Speed and accuracy are important in the examination and in each field of life. The one who has well-directed speed will be able to achieve the desired results and stays ahead in his/her life. It is not important that how many hours one has studied, but how or with which kind speed and accuracy he has studied is more important. The speed without proper direction will prove to be useless exercise.

In the 19th century, the industrial revolution took place in England and along with that many new researches came out in the field of Science. The living standard of the people had changed. In the age of Science and Technology, today's discovery becomes out of date tomorrow, therefore in the age of Science and Technology, the speed and accuracy become very essential factor. In the normal computer being used today. Ten thousand calculations can be conducted in just one second, therefore after the entry of computer, the speed and accuracy becomes very important aspect of any work. In today's modern age, a person can be successful only when he / she has the virtues of speed and accuracy and both these qualities are to be acquired. They can be attained and made a part of life by constant attempts or efforts. 'A tender plant can be molded in whatever way you want'. In the same manner such virtues can be implanted in the child from the very beginning so that they become a part of one's nature.

As per the current education system there are three main streams in which education is given at Higher Secondary Level.

1. **Science Stream**: In which the students with higher intelligence quotient and having interest in Maths – Science will take admission.

2. **General Stream**: In which Commerce and Arts, are two Sub-streams.

3. **Vocational Stream**: Training for any specific vocation or Occupation is given in this type. For Example : Steno, Typing, Electronics etc.

In the Science stream, the subjects like Mathematics, Physics, Chemistry, Biology are taught. The main objective teaching such subjects to the students is that they are to be prepared as doctors, scientists, technicians etc. The
subjects of the Science stream develop unique type of skills, attitude and habits among the students. From the students of Commerce stream, the expectation is kept that the expertise in the management and commercial communication.

There is a hypothesis that the student of Science Stream having the Scientific approach acquires high level of speed and accuracy along with educational achievement. It becomes very important and interesting to know if the gender gets changed whether there was any change happening? or if the educational achievement of a student is high or low, does it affect the speed and accuracy of the students?

1.2.0 Rationale of the Study:

In the changing age, if a person does not have the quality like speed and accuracy, it becomes very difficult to bring about efficiency in the work. After the efficiency comes in daily work, speed becomes natural. For example, the Bank employee can easily calculate a bunch of currency notes and at the same time can identify the duplicate and torn out notes from the bunch. The person doing the Steno or Typing course can type a lot of material using very specific symbols with clarity and accuracy. The students of Science and Commerce acquire special aptitude with the help of speed and accuracy. By assessing this aptitude, the development of the logical and Mathematical ability can be brought about in the present study.

With the help of the speed and accuracy, we should make the maximum efforts to overcome the limitations of the tools and workload. Today, human being is to be replaced by the machine. The machines do calculations and analyse the data but if the wrong data is entered or feeded, then the results will be wrong because the first condition for such machine is proper data entry. If the data feeder is accurate, than and than the machine gives correct result. It is necessary to know that how a student can fulfil his work with how much speed and accuracy before the time.

In the present age, education is very important. The ultimate aim of education is to nurture the useful life skills. The subjects taught at various levels of education and the lifelong useful skills woven into them are to be developed by the student. During Science experiment, if the students do not keep speed and accuracy of measurement or if may not be aware about proportion, it will result into failure. The student of Mathematics has to perform accurate calculation and the student of
language has to develop vocabulary and the effectiveness of expression. The individual who has developed the skill of speed and accuracy there are few chance for mistakes. It is necessary to know whether a students has made any development in these skills or not? And what is the level of these skills among the students of higher secondary schools? The present examination system don’t provide such out-put, therefore the investigator felt that the time has come to study the ability of speed and accuracy scientifically. It may be possible that the present study can give the answers to the following questions:

1) Why the students cannot select appropriate career for themselves?

2) Why the students cannot fulfil their work on time?

3) Why there the difference is found between the working style of the boys and the girls?

4) Why the special aptitude/ability of the students is not found?

5) Why similar skills cannot be developed in all the students?

There are no specific answers to the questions mentioned above because at the higher secondary level there are no such researches available. Therefore the investigator had selected the present problem. By the present study, a humble attempt has been made to add a drop in the sea of the educational research. The title of the problem selected was as follow:

1.3.0 Statement of the Problem :

"A Study of Speed and Accuracy of the students of Higher Secondary Schools in the Context of some Variables"

1.4.0 Objectives of the Study :

Every work has its own aims or objectives. Hence, one has to decide his/her objective/aims materialized the research work.

According to Sanskrit saying : “Even a foolish person without the objectives do not do anything.”
According to Patel (1989),

"Objectives are such a point in whose direction the work is being done".

The present study was divided into two main sections:

**Section-I : Construction and Standardization of the Test**

For that, two objectives were framed and they were as below:

1) To construct a test to measure Speed and Accuracy of the students.

2) To standardize the test of Speed and Accuracy (SA)

**Section-II : Effect of various independent variables on the level of Speed and Accuracy**

For that, seven main objectives were framed out. They were as below:

1) To decide the level of Speed and Accuracy (SA) of the students in context to various variables under the investigation.

2) To decide the effect of their residential area on the level of Speed and Accuracy (SA) of the students.

3) To decide the effect of gender on the level of Speed and Accuracy (SA) of the students.

4) To decide the effect of stream on the level of Speed and Accuracy (SA) of the students.

5) To decide the effect of standard on the level of the Speed and Accuracy (SA) of the students.

6) To decide the effect of father’s occupation on the level of Speed and Accuracy (SA) of the students.

7) To decide the effect of strata of educational achievement on the level of Speed and Accuracy (SA) of the students.

**1.5.0 Hypotheses of the Study :**

The hypotheses are considered as the pole bearer in the process of the research. Hypotheses are the eyes of research problem. With the help of the
hypotheses, there comes an insight of the problem in the research. The direction of work or the aim of any research or study is its hypotheses.

According to Sukhia – Mehrotra (1966)²,

"A hypotheses is a shrewed juessor inferences that is formulated and provisionally adopted to explain observed facts or condition and to guide in further investigation."

According to Kerlinger (1989)³,

"A hypotheses is a conjectural statements of the relation between two or more variables."

The hypotheses are framed at the beginning of the research process and they are assessed on the basis of the data collected in the process of research. The following are main hypotheses were framed for the present research.

Ho₁ There would be no significant effect of an area on different levels of speed and accuracy of the students.

Ho₂ There would be no significant effect of gender on different levels of speed and accuracy of the students.

Ho₃ There would be no significant effect of stream on different levels of speed and accuracy of the students.

Ho₄ There would be no significant effect of standard on different levels of speed and accuracy of the students.

Ho₅ There would be no significant effect of father’s occupation on different levels of speed and accuracy of the students.

Ho₆ There would be no significant effect of an educational achievement level on different levels of speed and accuracy of the students.

Here, the test was divided into two subsections. The researcher has also divided the speed and accuracy into three levels say: High, Medium and Low. According to that above hypotheses were divided into (4x3x6=72) sub-hypotheses which are listed in detailed in chapter – VI.
1.6.0 Importance of the Study:

The importance of the present study can be described in many ways. In the present study, a study of the speed and accuracy of students was assessed in the context of some variables. In the curriculum of the Higher Secondary schools, subjects like Mathematics, Science, Elements of Accountancy, Statistics, Logic, Economics, Psychology, and Business Organisation and Management are taught. To achieve efficiency in each subject, students have to learn some special skills in each subject. If the students of the Science stream do not take care about the speed and measurement or are not aware about the proportion of quantity of the things, then many dangerous results can be merced in the future. The student of Mathematics has the understanding or calculate time and situation. A student of Mathematics has to know that in how much time and by how much efforts the desired results can be obtained. The person who has developed the skill of speed and accuracy, will not commit any mistake or tolerate any mistake. It would be important to know that whether there is improvement achieving in this ability every year or not? The present examination system is not able to find out such situations, say such abilities, therefore its assessment was made to be possible by this research.

The main objective of the research was to assess the concrete of the problem. The main objective of the present study was to prepare the standardised speed and accuracy measurement test therefore this test for the speed and accuracy would be useful to the students, parents, teachers, principals, etc. in the following manner.

The present study would be useful to know the speed and accuracy of the students studying in Std, 11 and 12 in the Arts, Commerce and Science stream. With the help of this test an assessment scale would be available for the classification of the students on the basis of their speed and accuracy with the help of this test. The educational objectives could be assessed and necessary feedbacks or directions could be provided to the persons associated with education field. The parents who want to know the level of their wards about the speed and accuracy level. In this way they would be able give proper guidance to their children regarding the selection of their future education line. The teachers could select appropriate students for any project work. It will help the teacher to forecast. The success of that project work. By assessing the students knowledge with the help of their speed and accuracy,
appropriate recommendations and educational guidance could also be given by the principals, parents, trusties. Proper guidance could be given to the weak students in terms of their speed and accuracy ability. Depending on that one could be know which type of changes could be made in the curriculum and school activities.

Thus, according to the investigator, the present research became important as it would be useful to identity the skills in the students of Arts, Commerce and Science stream and to avoid the discrepancies in that and also to decide the guidelines in this context.

1.7.0 Definition of the Key Words :

Only the operational definitions of the problem are given but a detailed discussion of the theoretical definition of these terms are given in chapter-2.

1) Students :

The boys and girls studying in the Arts, Commerce and Science stream in Std. XI & XII are considered as the students in the presents study.

2) Speed :

The time taken to complete any work was considered as the speed.

3) Accuracy :

The ability to do any work without any mistake is called accuracy.

4) Speed and Accuracy :

For completing any task or for achieving goals successfully, the true capacity in living being, the time taken for completing the task and the ability to do the work faultless was called the Speed and Accuracy.

Operational definition : True score earned on the developed and validated test of Speed and Accuracy was treated as Speed and Accuracy of the Students.
5) **Variable**:

Anything, incident or situation which is existent and measurable or which has existence in the natural behaviour is called variable.

In present study, Residential area, gender, stream of the study, standard of the school, type of parents occupation and level of educational achievement were selected. From these the parents' occupation and level of educational achievement are defined as given below.

6) **Father's Occupation**:

- **Service**: Occupation where some fixed income the person gets for some certain time in the Government or Private institution. e.g. The worker working in the bank, driver, peon etc.

- **Self-employment**: Occupation in which the income is being generated by one's own skill. e.g. Painter, Carpenter, Tailor, Masonry, Doctor.

- **Agriculture**: Occupation in which the person is working as a farmer was treated as the occupation of Agriculture.

- **Others**: Occupation except the above mentioned three types were considered as the 'other' occupation.

7) **Educational Achievement**:

The percentage of total marks obtained in the board examination of Std. X, by the students of Std. XI and the percentage of total marks obtained in the final examination of Std. XI by the students of Std. XII were treated as the Educational Achievement of the student. The educational achievement level was decided as follows:

- Higher Level - 75% or more than that
- Average level - 55% to 74%
- Low level - less than 55%

1.8.0 **Variables Under the investigation**:

The main aim of education is to have overall development of the students. The students' success depend upon their gender, stream, area of residence...
and their speed and accuracy which can be assessed in the context of various variables and specific findings can be found about and their solutions can be applied. The independent, dependent and controlled variables and their levels were as follow:

- **Dependent Variable**: Speed and Accuracy (SA) of the students was treated as dependent variable.

- **Independent Variables**: Area (Rural, Urban), Gender (Boys, Girls), Stream (Science, Commerce, Arts), Standard (Std. XI, Std, XII), Occupation of father (Service, Self-employed, Agriculture, Other occupation) and Educational Achievement (High, Average, Low) were treated as Independent variables.

- **Controlled Variable**: Medium of the instruction: say Gujarati medium was considered as controlled variable.

**1.9.0 Limitations of the Study**

Research is a continuous process and therefore its scope is very wide. If one wants to understand it deeply, then it becomes very important to limit any research problem in terms of its scope.

According to J.W. Best & J.V. Kahn (1992)\(^4\),

> "Limitations are those condition beyond the control of the researcher that may place restrictions on the conclusion of the study and their applications to other situations."

According to Sukhia & Mehrotra (1966)\(^5\),

> "A recognition of the limitations of the study helps to focus attention of valid objectives and helps minimize the danger of over generalization."

The following were the limitations of the present study:

1) The present study was limited to the students studying in Higher Secondary schools of Gujarat state.

2) The present study was limited to the students studying in Higher Secondary Schools of Gujarati medium.
3) The present study was limited to the students studying in Higher Secondary Schools having all the three streams e.g. Science, Commerce and Arts.

The students studying in the other streams like Basic (Uttar Buniyadi), Vocational streams were not included in the present study.

4) The study was limited to the normal students only and the abnormal like Deaf, Dumb, Blind and Physically handicapped students were not included in this study.

1.10.0 Planning of the following Chapters:

There are total 7 chapters in this research.

In chapter-2, It deals with theoretical perspectives. In which the meaning of Speed and Accuracy, definitions, obstructing factors, remedies and recommendations are discussed. A review of the related literature is also done in this chapter.

In Chapter-3, the design of the research, population, sample selection, selection of the tool, research method, data collection, method of data analysis, are discussed in detail.

In Chapter-4, a discussion regarding the preparation of the items, editing of the items, different tryouts say pre-pilot, pilot, first and final run of the test. Item analysis after first three try outs and finalisation of the speed and accuracy test.

In Chapter-5, the concept of reliability, the methods of estimating reliability like Test-Retest Method, Half Split Method, Rulon Formula, Flenegal Formula, Logical method, Coneback Alpha method are discussed. This chapter also deals with the concept of validity, the methods for finding validity, Face validity, Congruent validity, Concurrent validity, Construct validity are discussed. Besides this necessary norms were established.

In Chapter-6, the data classification, analysis and interpretation is done in the light of the objectives of part-2. The hypotheses of the study were assessed using appropriate statistical methods.

In Chapter-7, the research summary, findings and educational implications are described.
1.11.0 Conclusion:

In the present chapter, the investigator has discussed the background for the selection of this study then the statement of the problem, objectives of the study, limitations of the study, variables, importance of the study, etc are discussed. At the end of the chapter the planning of the following chapters is also given. The second chapter deals with theoretical perspective of the study and review of the related literature.
References

1) A. M. Patel (1989), Key for successful in B.Ed. Practical lesson given work. (Vallabhvidhya nagar), p. 20
2) Sukhia and Mehrotra (1966); Elements of Educational Research, (Bombay : Allied Publication Pvt. Ltd.) p.73
3) F.M. Kerlinger (1989); Foundation of Behavioural Research, (2nd Ed), (New York : Surject Publication) p.108