

CHAPTER – V

*SUMMARY AND CONCLUSIONS*

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SUMMARY AND CONCLUSIONS

### INTRODUCTION

Cognitive development is one of the most important characteristics in human beings. Cognitive development incorporates perception, memory, reasoning etc.

In the field of cognitive development various theories have been developed. Among these, the most systematic and comprehensive is the theory of Jean Piaget.

Education is nothing but the all round development of the individual. However, education in schools today caters mostly to the intellectual/ cognitive development of the individual. According to Jean Piaget, human development is a process of continuous interaction between environment and organism. He has the stages in the intellectual development of children. The stages indicate the sequential emergence of various abilities in a fixed orders. The child will not reach the stage of formal operations unless he has had the experience of the earlier stages.

According to Piaget's theory, for the development of cognition not only maturity but also the experiences provided



through education with the world of objects is essential or goes a long way.

From the educational point of view the first stage deals more with physical maturity for the development of cognition and it is in the later three stages that the education can play a constructive role to enhance cognition.

The stages and the functions/ operations that occur in the stages are given in brief ahead.

I. Sensory Motor stage (0 to 2 years)

In this stage the child performs motor actions through trial and error, the child modifies his actions throughout this period, the child's action are tied to immediate situation. Mental operations are not bound during this stage.

II. Pre-operational stage (2-7 years)

In this stage, objects gradually take on symbolic signs. The child cannot reverse the process in his mind and perceive the unchanging quantity.

III. Concrete-Operational Stage (7 to 11 years)

During this stage child performs true operations. Conservation, seriation and classification abilities develop during this stage.

#### IV. Formal Operational Stage (11 Onwards)

In this stage the child acquires a capacity for abstract thought and he can know how solve the problems mentally. The ability to state and test hypotheses are the two very important schemes of thought that occur only during the formal operational stage.

By the age of 14 years in an ideal situation the children are expected to reach the formal operational stage. However, researches undertaken in various countries revealed that only a fraction of the students operate at the formal level and the researches on college students (graduates) have also indicated that all do not operate at the formal level.

In this research, the student teachers (B.Ed. students) have been purposely chosen to study their cognitive developmental level, because they constitute a very important component in the educational process. They are the future teachers who will be required to teach the adolescents in schools who are in the age group of 12+ years to 14+ years, who if trained to think properly, can become formal operational thinkers- as envisaged in the Piagetian Cognitive theory.

Two important schemes of thought stating of hypothesis and testing of hypotheses of the formal operational stage of student-teachers was probed in this study.

## **THE STUDY**

### **Statement of the Problem**

**“EFFECT OF MEDIUM OF INSTRUCTION ON THE DEVELOPOMENT OF FORMAL REASONING ABILITY AMONG STUDENT-TEACHERS – A STUDY”**

### **SIGNIFICANCE OF THE STUDY**

As far as the knowledge of the investigator goes, no similar study has been conducted earlier in this geographical area of Belgaum district.

Findings of the study will be useful to educators and student-teachers.

Hence, this piece of research work is important in the field of educational psychology and in particular, cognitive psychology.

### **LIMITATIONS OF THE STUDY**

1. Only two schemes of formal operational thought was measured, i.e. stating of hypothesis and testing of hypothesis in this study.

2. The present study is restricted only one year B.Ed. students of the 2000-2001 academic session belonging to the Government College of Teacher Education and Private Non-aided College of Education.

## **OBJECTIVES OF THE STUDY**

### **Major Objectives**

1. To investigate formal reasoning ability of student-teachers from Piagetian perspective.
2. To compare the formal reasoning ability of the Kannada medium and English medium student-teachers.

### **Minor Objectives**

1. To compare the formal reasoning ability of student-teachers of Government College of Teacher Education and Private Non-aided College of Education.
2. To find out the difference in the stating of hypothesis ability of student-teachers of the Government College of teacher education and private non-aided college of education.
3. To find out the difference in the testing of hypothesis ability of student-teachers of the Government college of teacher education and private non-aided college of education.

4. To investigate the difference in stating of hypothesis of Kannada and English medium student-teachers.
5. To investigate the difference in testing of hypothesis of Kannada and English medium student-teachers.
6. To determine the sex difference on the formal operational reasoning ability of Kannada and English medium student teachers.

#### **NULL HYPOTHESIS**

1. There is no significant difference in the formal operational reasoning ability of student teachers of Government college of teacher education and private non-aided college of education.
2. There is no significant difference in the stating of hypothesis ability of student-teachers of Government College of teacher education and private non-aided college of education.
3. There is no significant difference in the testing of hypothesis ability of student-teachers of Government college of teacher education and private non-aided college of education.
4. There is no significant difference in the stating of hypothesis ability of Kannada medium and English medium student-teachers.



5. There is no significant difference in the testing of hypothesis ability of Kannada medium and English medium student-teachers.
6. There is no significant difference in the stating of hypothesis ability of Kannada medium and English medium student-teachers of Government college of teacher education.
7. There is no significant difference in the testing of hypothesis ability of Kannada medium and English medium student-teachers of Government college of teacher education.
8. There is no significant difference in the formal operational reasoning ability of Kannada medium and English medium student-teachers of Government college of teacher education.
9. There is no significant difference in the stating of hypothesis ability of Kannada medium and English medium student-teachers of private non-aided college of education.
10. There is no significant difference in the testing of hypothesis ability of Kannada medium and English medium student-teachers of private non-aided college of education.
11. There is no significant difference on the formal operational reasoning ability of Kannada medium and English medium student-teachers of private non-aided college of education.

12. There is no significant difference in the stating of hypothesis ability between the Kannada medium and English medium total male student-teachers.
13. There is no significant difference in the testing of hypothesis ability between the Kannada medium and English medium total male student-teachers.
14. There is no significant difference in the formal operational reasoning ability of Kannada medium and English medium male student-teachers.
15. There is no significant difference in the stating of hypothesis ability of Kannada medium and English medium total female student-teachers.
16. There is no significant difference in the testing of hypothesis ability of Kannada medium and English medium total female student-teachers.
17. There is no significant difference in the formal operational reasoning ability of Kannada medium and English medium female student-teachers.

## **RESEARCH DESIGN**

The investigation being a descriptive research, survey method will be used to collect data.

## SAMPLE DESIGN

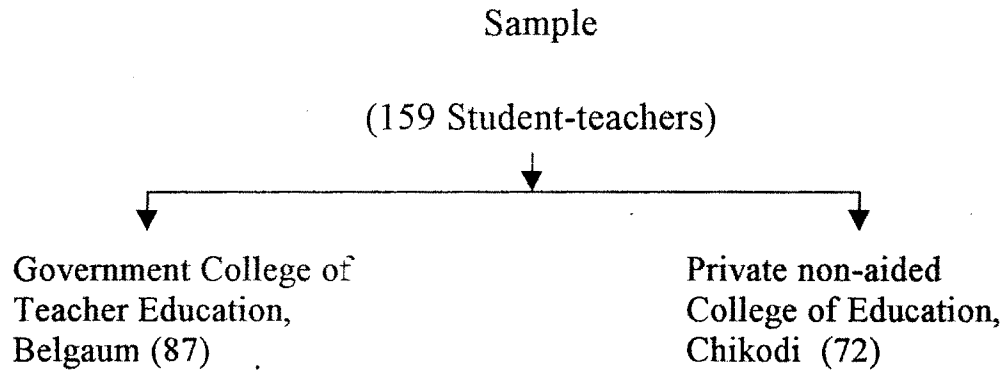
In Belgaum district there are four B.Ed. Colleges of which one is Government College of teacher Education and other three are private non-aided colleges of education. In each college 100 student-teachers are admitted. All four colleges are co-educational and have both English as well as Kannada medium student-teachers.

Hence there were in all 400 student teachers of both the sexes from the following four colleges.

1. Government College of Teacher Education, Belgaum.
2. Krantiveer Sangoli Rayanna College of Education, Belgaum  
(Private non-aided College of Education)
3. Chauson College of Education, Chikodi (Private non-aided  
College of Education)
4. Bail-hongal College of Education, Bail-hongal, Belgaum  
(Private non-aided College of Education).

The Government College of Education, Belgaum is one of the oldest institution in Belgaum district. established in 1972. The other three colleges of education (private non-aided colleges of education) established after 1980.

For the purpose of this study one Government college of teacher education and one private non-aided college of education (Chauson College of Education) out of three was randomly selected and tools of research will be admitted to 200 student-teachers in all.



#### **TOOLS USED FOR THE STUDY**

1. Stating of hypcthesis questionnaire  
(English version) Dr. M. S. Padmini
2. Testing of hypothesis questionnaire  
(English version) Dr. M. S. Padmini
3. Stating of hypothesis questionnaire  
(Kannada version) Dr. M. S. Padmini and P.B. Kadam
4. Testing of hypothesis questionnaire  
(Kannada version) Dr. M. S. Padmini and P.B. Kadam

#### **COLLECTION OF DATA**

The stating and Testing hypothesis questionnaire which tests

the effect of medium of instruction on the formal reasoning ability was administered to 200 student-teachers of both colleges. First the stating of hypothesis questionnaire was administered and they were asked to answer, testing of hypothesis questionnaire the next day. In this way data was collected.

### **TECHNIQUES USED FOR THE ANALYSIS OF DATA**

Statistical measures such as Mean and standard deviation were computed in pursuance of objectives, Appropriate 't' Test was employed in order to test hypothesis 1 to 17.

### **CONCLUSIONS**

1. Student-teachers of Government College of Teacher Education and Private non-aided college of education are differ in the formal operational reasoning ability.
2. Student-teachers of Government College of Teacher Education and private non-aided college of education are differ in the ability of stating hypothesis.
3. Student-teachers of Government College of Teacher Education and private college of Education are differ in the ability of testing hypothesis.

4. Kannada medium student-teachers and English medium student-teachers do not differ in the ability of stating hypothesis.
5. Kannada medium student-teachers and English medium student-teachers are differ in the ability of testing hypothesis.
6. Kannada medium student-teachers and English medium student-teachers of Government college of teachers education do not differ in the ability of stating hypothesis.
7. Kannada medium and English medium student-teachers of Government college of teachers education do not differs in the ability of testing hypothesis.
8. Kannada medium and English medium student-teachers of Government college of teacher education do not differ in the formal operational reasoning ability.
9. Kannada medium and English medium student-teachers of private non-aided college of education do not differ in the stating hypothesis.
10. Kannada medium and English medium student-teachers of private non-aided college of education are differ in the ability of testing hypothesis.

11. Kannada medium and English medium student-teachers of private non-aided college of education do not differ in the formal operational reasoning ability.
12. Kannada medium and English medium total male student-teachers do not differ in the ability of stating hypothesis.
13. Kannada medium and English medium total male student-teachers are differ in the ability of testing hypothesis.
14. Kannada medium and English medium at male student-teachers do not differ in the formal operational reasoning ability.
15. Kannada medium and English medium total Female student-teachers do not differ in the ability of stating hypothesis.
16. Kannada medium and English medium total Female student-teachers do not differ in the ability of testing hypothesis.
17. Kannada medium and English medium Female student-teachers do not differ in the formal operational reasoning ability.

### **SUGGESTIONS FOR FURTHER RESEARCH**

Every research has its limitations. Any investigation answers only a few questions. It cannot be complete in itself. And when the growth of formal operational reasoning ability is being investigated,

the conclusions drawn for further studies arise. Following are some of the suggestions for further research.

1. Present research problem can be studied in depth and in detail by increasing Geographical area.
2. Present research problem can be useful for other medium of instructions (Other Language).
3. Present research problem can be replicated on other samples such as non-professional college students.