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SUMMARY AND CONCLUSIONS

In the preceding chapters, introduction to the problem, development of tools, methods of the study and interpretation of the results were discussed. The present chapter has been devoted to the summary and conclusions of the study. For providing the background of the findings a brief description of the purpose, design and procedure, along with the conclusions and suggestions for further research have been presented in the following paragraphs.

Communication is not a panacea for the problems linked to failure to understand the intricacies and complexities inherent in the nature of human communication. But even then we can only say that it is the only essential thing, which can maximize rewarding experiences in the classroom. The quality of interactive behaviour in a given environment is fundamentally related to the quality of life of an individual in that environment. But in reality, it is not wise to assume that this assumption always holds good. The humans have limited information about themselves while engaging in the variety of interactive activities. Consequently, rather than improving the quality of the environment, mere interaction will distract the quality of life. Here the person’s ignorance about transactional behaviour that gets influenced by the quality of the environment, will inevitably lead to conflict and will ultimately terminate the interaction process with others.

There is a misconception that anyone can communicate because the person has the ability to speak or talk. But to communicate well, an understanding of higher level is required. The absence of getting an opportunity to put that understanding to work is a serious obstacle. The multidimensional aspect of human communication also influences teacher’s communication behaviour in the classrooms.

The teacher exerts a great deal of influence on the pupils. Pupil’s behaviour is affected to a great extent by the type of teacher’s behaviour hence we can call it as a teacher’s influence exhibited on pupil (Anderson and others, 1946). A teacher who organizes a set of learning tasks that he wants to accomplish effectively in the classroom settings is in the search of an appropriate way to transact it. In a normal classroom situation it is verbal communication, which is predominant. Along with the use of spoken language, there is the presence of the non-verbal gestures in the classroom. Verbal
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behaviour can be observed with higher reliability than most non-verbal behaviour and also it can reasonably serve as an adequate sample of the total communication behaviour in the classroom. But, we normally assume that verbal statements of a teacher are consistent with his non-verbal gestures and, in fact, his total behaviour. This assumption was found sustained in terms of experience in Minnesota Studies (Flanders, 1966). The fact is that teacher begins to start communicate, the moment he comes into the sensory range of his students.

Effective communication is best achieved through simple planning and control and Barnlund’s Transactional Model of Communication (BTMC) is one of the most systematic functional models of communication where transactional approach was taken as an important variable in the communication process. Transactional approach concentrates on the styles/messages and content of communication. It attempts to reduce the acts of miscommunication in which the intent or full meaning of the message is obscured.

One of the most striking features of Barnlund’s Transactional Model of Communication (BTMC) is the absence of any simple or linear directionality in the interplay between self and the physical world. The model recognized that both the sender and receiver are important in the transactional process of communication. The notions of encoding and decoding emphasized the efforts one will have to do in translating or transforming his own thoughts into words or other symbols and in interpreting the words or symbols of others into terms, which both receiver and sender can understand in equal capacity.

In Barnlund’s Transactional Model of Communication (BTMC), the functions of encoding and decoding of messages are continuous, unrepeatable and irreversible. The directionality in the model suggests that meaning is actively or attributed to messages rather than simply passively received. The model assumes that it is only through the right meaningfulness that persons will understand each other’s messages. This right meaningfulness can be achieved only through the proper procedure of encoding and decoding. As per this model, any one of three signs (+, 0 or -) or cues (public, private, verbal or non-verbal behavioural) elicits a sense of meaning. Public cues (C_{pu}) derive from the existing environment. They are both natural and part of the physical world, or artificial and man-made. Private objects of orientation (C_{pr}) are a second set of cues as they go beyond public inspection or awareness. Both public and private cues may be verbal or non-verbal in nature and they are outside the direct and deliberate control of the
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interactants. The third set of cues is deliberate: they are the verbal and non-verbal behavioral cues ($C_{behv}$ and $C_{behv}$) that a person initiates and controls himself. The process involving deliberate message cues is reciprocal and the number of available cues is probably without limit. The valence signs ($+, 0, -$) that have been attached to public, private and behavioural cues indicate the potency or degree of attractiveness associated with the cues. But each cue can differ in degree of strength as well as in kind.

In Barnlund’s Transactional Model of Communication (BTMC), transactional communication is reciprocal, that is, two-way, where feedback process will be going simultaneously. For example, sometimes this may be very direct, as when one talks in direct response to someone. Other may be completely indirect (or we can say where time span is long). For example, teachers can measure their abilities to get the material across in a particular test by seeing how many students scored high marks.

The process of human communication is transactional in nature, that is, people adapt and change their own communication behaviour to reach out to the common zone of understanding. As a teacher transaction in communication means to adjust to the characterization of his students so that communication with student improves. Teaching is a large part of the creation of common meanings between teachers and students. And, good teaching clearly requires something more of the communication process. Being a teacher one has to stick to somewhat artificial beginning in that process. The merit of Barnlund’s Transactional Model of Communication (BTMC) lies in the fact that it can be used effectively in the educational system also.

With the help of BTMC a teacher can communicate his ideas more clearly and can stimulate interest in the subject/activity. The teacher can organize the subject matter adequately and can also present his material in a pleasing tone/voice, with careful articulation and the accepted intonation of language. He will be able to stimulate discussion and conversation, leading those who are reticent or not accustomed to entering into transactional communication.

All over the world, the adolescents have emerged as a vital age group calling for special attention. The World Health Organization (WHO) defines them as the young people in the age group of 10-19 years. This age group faces special problems and special needs requiring immediate interventions to address and fulfill the same. Their concerns vary in terms of gender issues, family value system, cultural considerations, socio-economic background, rural and urban orientations. Their vulnerability level goes high
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due to declining family values, excessive exposure to mass media, materialism, competition and lack of awareness towards life skills.

A WHO document defines life skills as *abilities for adaptive and positive behaviour that enable an individual to deal effectively with the demands and challenges of everyday life*. It is the planned, systematic teaching of the specific behaviours needed and desired by the person in order to function in a rational way in the complex situation of life. Life skills differ across cultural and situational settings. However, there are a set of life skills, which are necessary for the promotion of psychosocial well being in children and adolescents. These skill include: decision –making, communicating, building self-esteem, developing relationships, dealing with conflicts, problem solving, self-awareness and assessment, pressure resistance, critical thinking and coping with stress and emotions.

The present study focused on selected life skills viz: skill of Acquiring Knowledge, skill of Critical Thinking, skill of Decision-Making and Communication Skill. It aimed to provide non-academic linkage in learning experiences that encourage and integrative life skills. The study also served to enlarge the scope of learning experiences for the students by providing knowledge, information and support and lay the foundation of positive achievement towards life skills. We must also realize that these goals are to be closely related to the learning.

True learning will certainly not occur unless the act of communication has succeeded in making a permanent and meaningful impact on student’s learning behaviour. Moreover learning is concerned with pupil, whereas teaching is concerned with pupils and teacher. Over the last decade, the researchers were looking every dimension of the learning process. The most important finding to come out of these researches was that there was a mismatch between students and teachers outlook towards learning. As most of the teachers use a variety of instructional methods to make the learning happen among students. These methods include lecture, independent study, problem–based learning and discovery learning etc. which may be used individually or in combination with one another. On the other hand, students prefer taking information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analyzing and visualizing, steadily and in fits and starts.

Using students’ experiences of learning as the focus of studies, some researchers have explored the relationship between Approaches to Learning and other variables in the teaching and learning context. It was the work conducted by Marton and Saljo.
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(1976), which identified two levels of learning processing: Deep and Surface. A Deep Approach is the result of critical analysis of ideas, linking them to already known concepts and principles. Deep Approach leads to understanding and long-term retention of concepts so that they can be used for problem solving in unfamiliar contexts. In contrast, Surface Approach of learning is the tacit acceptance of information and memorization in the form of isolated and unlinked facts. It leads to superficial retention of material for examinations and does not promote understanding or long-term retention of knowledge and information.

The present study therefore was an attempt to see our reliance on Barnlund’s Transactional Model of Communication (BTMC) over Conventional Group of Learning (CGL) where students’ learning and other selected life skills were assessed in respect of students Learning approaches. The study therefore was stated as follows:

STATEMENT OF THE PROBLEM

IMPACT OF BARNLUND TRANSACTIONAL MODEL OF COMMUNICATION ON LIFE SKILLS OF SECONDARY SCHOOL CHILDREN IN RELATION TO THEIR LEARNING APPROACHES

DELIMITATIONS OF THE STUDY

➢ Only the model schools were selected which are situated in the Union Territory of Chandigarh.
➢ The investigator for the present experimental study chose only one teaching subject, i.e. Economics only.
➢ Students of only Xth grade were selected for the study.

OBJECTIVES OF THE STUDY

➢ To study the impact of Barnlund’s Transactional Model of Communication (BTMC) on selected life skills of secondary school children, viz: skill of Acquiring Knowledge, skill of Critical Thinking, skill of Decision–Making and Communication Skill.
➢ To study the impact of learning approaches on selected life skills of secondary school children, viz: skill of Acquiring Knowledge, skill of Critical Thinking, skill of Decision–Making and Communication Skill.
To study the impact of Bamlund’s Transactional Model of Communication (BTMC) and learning approaches on selected life skills of secondary school children, viz: skill of Acquiring Knowledge, skill of Critical Thinking, skill of Decision-Making and Communication Skill.

**HYPOTHESES**

The study was designed to test the following hypotheses:

- **Ho.1**: BTMC and CGL will yield equal level of gain mean scores for skill of Acquiring Knowledge.
- **Ho.2**: Two learning approaches Deep and Surface (DA/SA) will result in equal levels of gain means for skill of Acquiring Knowledge.
- **Ho.3**: Instructional modes (BTMC/CGL) and learning approaches (DA/SA) do not interact with each other to yield significantly different mean gain scores for skill of Acquiring Knowledge.
  - **Ho.3 (a)**: Through BTMC: Deep and Surface Learning Approach (DA/SA) will yield equal gain means of students for skill of Acquiring Knowledge.
  - **Ho.3 (b)**: Through CGL: The gain means of students with Deep and Surface Learning Approach (DA/SA) will not differ on scores for skill of Acquiring Knowledge.
  - **Ho.3 (c)**: For Deep Approach (DA): The gain means of students for skill of Acquiring Knowledge for BTMC and CGL will not be different.
  - **Ho.3 (d)**: For Surface Approach (SA): The gain means of students for skill of Acquiring Knowledge for BTMC and CGL will not be different.
  - **Ho.3 (e)**: The gain means on skill of Acquiring Knowledge will not be different for BTMC/DA and CGL/SA.
  - **Ho.3 (f)**: The gain means on skill of Acquiring Knowledge will not be different for BTMC/SA and CGL/DA.
- **Ho.4**: BTMC and CGL will yield equal level of gain mean scores for skill of Critical Thinking.
- **Ho.5**: Two learning approaches Deep and Surface (DA/SA) will result in equal levels of gain means for skill of Critical Thinking.
- **Ho.6**: Instructional modes (BTMC/CGL) and learning approaches (DA/SA) do not interact with each other to yield significantly different mean gain scores for skill of Critical Thinking.
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- **Ho.6 (a):** Through BTMC: Deep and Surface Learning Approach (DA/SA) will yield equal gain means of students for skill of Critical Thinking.
- **Ho.6 (b):** Through CGL: The gain means of students with Deep and Surface Learning Approach (DA/SA) will not differ on scores for skill of Critical Thinking.
- **Ho.6 (c):** For Deep Approach (DA): The gain means of students for skill of Critical Thinking for BTMC and CGL will not be different.
- **Ho.6 (d):** For Surface Approach (SA): The gain means of students for skill of Critical Thinking for BTMC and CGL will not be different.
- **Ho.6 (e):** The gain means on skill of Critical Thinking will not be different for BTMC/DA and CGL/SA.
- **Ho.6 (f):** The gain means on skill of Critical Thinking will not be different for BTMC/SA and CGL/DA.

**Ho.7:** BTMC and CGL will yield equal level of gain mean scores for skill of Decision Making.

**Ho.8:** Two learning approaches Deep and Surface (DA/SA) will result in equal levels of gain means for skill of Decision Making.

**Ho.9:** Instructional modes (BTMC/CGL) and learning approaches (DA/SA) do not interact with each other to yield significantly different mean gain scores for skill of Decision Making.

- **Ho.9 (a):** Through BTMC: Deep and Surface Learning Approach (DA/SA) will yield equal gain means of students for skill of Decision Making.
- **Ho.9 (b):** Through CGL: The gain means of students with Deep and Surface Learning Approach (DA/SA) will not differ on scores for skill of Decision Making.
- **Ho.9 (c):** For Deep Approach (DA): The gain means of students for skill of Decision Making for BTMC and CGL will not be different.
- **Ho.9 (d):** For Surface Approach (SA): The gain means of students for skill of Decision Making for BTMC and CGL will not be different.
- **Ho.9 (e):** The gain means on skill of Decision Making will not be different for BTMC/DA and CGL/SA.
- **Ho.9 (f):** The gain means on skill of Decision Making will not be different for BTMC/SA and CGL/DA.
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Ho.10: BTMC and CGL will yield equal level of gain mean scores for Communication Skill.

Ho.11: Two learning approaches Deep and Surface (DA/SA) will result in equal levels of gain means for Communication Skill.

Ho.12: Instructional modes (BTMC/CGL) and learning approaches (DA/SA) do not interact with each other to yield significantly different mean gain scores for Communication Skill.
  - Ho.12 (a): Through BTMC: Deep and Surface Learning Approach (DA/SA) will yield equal gain means of students for Communication Skill.
  - Ho.12 (b): Through CGL: The gain means of students with Deep and Surface Learning Approach (DA/SA) will not differ on scores for Communication Skill.
  - Ho.12 (c): For Deep Approach (DA): The gain means of students for Communication Skill for BTMC and CGL will not be different.
  - Ho.12 (d): For Surface Approach (SA): The gain means of students for Communication Skill for BTMC and CGL will not be different.
  - Ho.12 (e): The gain means on Communication Skill will not be different for BTMC/DA and CGL/SA.
  - Ho.12 (f): The gain means on Communication Skill will not be different for BTMC/SA and CGL/DA.

TOOLS USED

For the present investigation the following tools were employed for collecting the data:
- Instructional packages on Barnlund’s Transactional Model of Communication (developed and validated by the investigator)
- Entry Behaviour Test (developed and validated by the investigator)
- Formative Unit Tests (developed and validated by the investigator)
- Summative Test (developed and validated by the investigator)
- Life Skills Questionnaire (adopted from Botvin’s LST Program, 1985 and validated by the investigator)
- Revised Two – Factor Study Process Questionnaire for Learning Approaches (developed and standardized by Biggs, J., 2001).
SAMPLE

The sample in the present investigation was drawn at two levels:

- The School Sample.
- The Student Sample.

The School Sample:

The school sample was drawn from the representative Secondary Schools of the Union Territory of Chandigarh where the medium of instruction was English and schools were of co-educational type. In order to satisfy the real effort in experimental research, the logical statistical inference of random sampling was initially employed.

The schools were compared with regard to following criteria: schools had almost the same classroom climate, physical facilities, teacher – taught ratio, sex ratio etc. For selecting the schools for the control group the same criteria were adopted. Thus, four schools were randomly selected out of the list of schools, which fulfilled the criteria. The Principals of these four schools were approached for seeking the permission to conduct the experiment.

The Student Sample:

The study was initiated on 336 Xth grade secondary school students studying in the Union Territory of Chandigarh. These were English medium, co-educational schools, affiliated to the Central Board of Secondary Education (C.B.S.E.), New Delhi. Most of these students belonged to middle class families. A list of the schools under the administration of the Union Territory of Chandigarh was procured from the Director Public Instructions (Schools) through the District Education Office and four schools were selected randomly for the present investigation.

Out of the four selected schools, two schools (selected randomly) were considered for conducting experiment and the remaining two were selected for the control group. Intact sections of Xth grade students in all four schools were taken as such. The structure of the final sample comprised of N=296 based on Deep and Surface learning approach where the experimental and control group comprised of N=139 and N=157 respectively.

DESIGN OF THE STUDY

The present study employed an experimental method with a 2 x 2 factorial design. Computational procedures were followed according to the techniques given by Garrett.
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Woodworth (1966) and Broota (1989). In a 2 x 2 factorial design, instructional strategies and learning approaches were two independent variables. Out of these two independent variables, Instructional Strategies were studied at two levels viz:

♦ Barnlund’s Transactional Model of Communication (BTMC)
♦ Conventional Group Learning (CGL)

Whereas the second independent variable, Learning Approaches was studied at two levels viz:

♦ Deep Approach (DA)
♦ Surface Approach (SA)

The dependent variables in the present study were Life Skills viz:

♦ Skill of Acquiring Knowledge
♦ Skill of Critical Thinking
♦ Skill of Decision-Making
♦ Communication Skill

PROCEDURE OF THE STUDY

Procedure of the experiment comprised of two main stages, which were:

- Selecting the sample.
- Conducting the experiment.

Stage I Selecting the sample

The sample was selected at two levels: The School Level and the Student Level. Four schools with 336 students were selected randomly for conducting the experiment. The procedures adopted for the selection of sample have already been discussed under the heading Sample.

Stage II Conducting the experiment

The experiment was conducted in five phases as stated below:

- Phase I: Administration of the Entry Behaviour Test.
- Phase II: Administration of the Pre-test, Criterion Test and tools for Life Skills. 298
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- Phase III: Implementing the instructional programme: Implementing the Bamlund’s Transactional Model of Communication (BTMC)
- Phase IV: Administration of the Post-tests: A Criterion Post-Test and Post – tests of Life Skills tools.
- Phase V: Scoring, tabulation and analyses of data.

**Phase I: Administration of the Entry Behaviour Test.**

Before implementing the Bamlund’s Transactional Model of Communication (BTMC) to the experimental group, all the 336 students were given an Entry Behaviour Test (EBT). Scores of this test were used to determine whether or not the students had adequate entry behaviour required for the instructional treatment. The investigator provided full cooperation to the students who did not fulfill the condition of Entry Behaviour, as the subject of the Economics was new to them. An orientation was provided to all the students by the investigator to bring students at par with respect to their entry behaviour status.

**Phase II: Administration of the Pre-test, Criterion Test and tools for Life Skills.**

In this phase, all the students of both the groups were given Pre-test, the Criterion Test (Summative Test). The required time was provided to complete the tests. Scoring was done to obtain the information regarding pre- treatment knowledge of the students on the selected content. During this phase, Life skills questionnaires were administered to all the students of the total sample. The students were given required time to record their responses. The response sheets were collected after each student had filled it up. The investigator herself monitored this process. The response sheets were scored according to the prescribed scoring keys.

The sixth tool, the questionnaire of Revised Two- Factor Study Process was administered to students to identify the students with Deep and Surface learning approach. The scores arrived at, after scoring against prescribed keys, were used and students were categorized according to their Learning Approaches at the initial step of the descriptive analysis of the data.
Phase III: Implementing the instructional programme: Implementing the Barnlund’s Transactional Model of Communication (BTMC)

The experimental group learnt through Barnlund’s Transactional Model of Communication (BTMC) and control group was taught through Conventional Group Learning (CGL). The experimental group had gone through 10 Instructional Units of BTMC Instructional Packages prepared and validated by the investigator (as explained in the Chapter II). So instructional treatment was imparted to 163 students who were further classified for the purpose of descriptive analysis of the data on the basis of their learning approaches at the later stage.

The instructional strategy based on the BTMC was administered according to the following steps:

- **Step I:** Students were *motivated to communicate their ideas and feelings*. In this step, the investigator ensured that the students would learn best when they receive proper attention and care from her. The best way was to motivate them for appropriate verbal responses, which reinforce their performance level to the desired behaviour of learning. This step was followed so that the students should have the basic skills necessary for the correct encoding and decoding of their messages.

- **Step II:** Students were *initiated to communicate through supporting / briefing /contradicting the statements* made by the investigator. The assumption underlying here was that if students know what is to be done, they can better assess their own ability to communicate it and can judge the likelihood that they will be able to communicate it through supporting / briefing /contradicting the statements made by the investigator. For example, the classroom meeting was a time when students and investigator joined, in an open-ended, non-judgemental discussion on academic or current issues of economics. In this open-ended meeting, students discussed thought provoking questions related to the concerned subject matter. When the experiment was going on, students frequently initiated the discussion by eagerly sharing something they read, saw or observed. There were number of examples of the students of experimental group who responded to the questions of the investigator with an interest in the subject, which led to a discussion on the matter very interestingly. To quote some: *Can we say that...*
clothes are directly manufactured from villages? How will you sort out that the three sectors of an economy are interdependent? Is the vice-versa case existing? (Lesson II) what do the crops need the most to grow? There is one very basic thing without the help of which crops will not grow? (Lesson III). Do you think population is a concern for any country? (Lesson IV). How we can come to know that shopkeepers cheat us? (Lesson X).

- **Step III:** The investigator ensured proper decoding and encoding of messages. Here the investigator found rapidly the success of attempted decoding and encoding of messages. It was assumed that the closer the approximation of the desired outcome, the greater would be the understanding of the content matter. For example, when expressing feelings and thoughts the following things were considered by the investigator:
  - Be clear about what is to be expressed.
  - Giving a specific description of the feeling thought or message.
  - Specifying about the degree to which feelings, thoughts or particular emotions felt.
  - In case of mixed feelings, then expressing each feeling and explaining what each feeling means to the investigator.
  - Using *I feel* statements for those situations that are clear and simple.
  - Expressing oneself (investigator) without the buildup of negative feelings in the students while talking or interacting with students, that is, by not using attacking language or by hurting their self-esteem.
  - Using *I believe/think/suggest* for those situations that were more complex to clarify the selected messages.

While listening effectively, the investigator considered the following things:
  - Focus on the speaker and listening actively.
  - Avoiding competing for response time.
  - Avoiding formulating and listening to one’s own rebuttal while the speaker was talking.
  - Avoiding making evaluations and judgements about the speaker or their messages being communicated by them.
  - Asking for a clarification when the messages sent by students were not understood.
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- **Step IV**: Non-verbal behaviour of investigator was supportive to transactional process of communication. *Movements and gestures* by the hands, arms, legs and other parts of the body and face are the most pervasive types of non-verbal messages and the most difficult to control. Even then the investigator tried her best so that non-verbal behaviour could serve as supportive element to transactional process of communication. This was done by avoiding the non-verbal body language that contradicts messages-for example, smiling when irritated.

The investigator ignored non-verbal cues that show aggressive style.
- Pointing, shaking fingers.
- Frowning.
- Squinting eyes critically.
- Glaring.
- Staring.
- Rigid posture.
- Critical, loud, yelling tone of voice.
- Fast, clipped speech.

Non-verbal cues which show assertive style of communication, like:
- Open, natural gestures.
- Attentive, interested facial expression.
- Direct eye contact.
- Confident and relaxed posture.
- Vocal volume appropriate, expressive.
- Varied rate of speech.

The investigator used the assertive style at certain times such as
- When a decision has to be made quickly.
- During emergencies.
- When it was known to the investigator that she was right while making any statement and that the fact was critical.
- Stimulating discussion for better communication among students.
Step V: Communication process was explored with the *supporting enrichment* material. The supporting enrichment material was used wherever required to explore the transactionality in communication behaviour (see Appendix A-3). For example, in Lesson II, a chart showing different sectors of an economy was used, along with the flow chart, which reflects the inter-dependency between the sectors. In Lesson III, not only the charts were shown to reflect the data related to irrigation in India but maps were also effectively used. Wherever the data was required in the lessons, the same were appropriately shown to students (Lessons III, IV, V, VI, VII, VIII, & IX). Other lessons, which used maps, were concerned with *Three sectors of an Economy, Irrigation in India, Population, Human development* etc. (Lessons II, III, V & IX). Lesson Plan X, which was based on *Consumer Exploitation*, used real life articles for demonstration purpose.

Step VI: Each lesson based on the Barnlund’s Transactional Model of Communication has been fully described and given in Appendix A-2. The basic structure of *lesson content remained the same* for all the ten lessons. However, slight modifications were made wherever required. For example, lessons based on *Economic Activities, Irrigation in India, Features of Indian Economy, Population* were of those type where the students get involved themselves spontaneously in the transactional process of communication as the topics were of easy nature. But, some of the lessons like *Three Sectors of an Economy, Price Rise, Economic Development, Human Development* were of typical type where concept clarification was first of all sought out by the investigator before initiating the discussion in the classroom. Because of transactional nature of communication, students might not always be aware of the immediate learning experiences that they were having. Thus, the investigator played an important role in raising students’ consciousness about the concepts and principles by underpinning the messages and their encoding –decoding procedures. During the lessons, the investigator presented, explained and discussed the topic to be explored and participated to obtain the feedback from students simultaneously. Misconceptions were also clarified along with positive stimulation.

Step VII: The *enrichment material* was employed throughout the 10 units for the treatment group. For the description of this step refer Appendix A-3.
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➢ Step VIII: Unit-wise criterion tests were administered at the end of each unit. Ten unit-wise criterion tests administered at the end of each unit (refer Appendix A-4). This was done to get the feedback from the students and for remedial measures.

➢ Step IX: Remedial prescription was used via more appropriate selected messages, which were decoded properly for student’s clarification. This step involved the *individual attention paid to the students* who lacked the proper mechanism of decoding and encoding process in the classroom.

➢ Step X: The investigator herself, taught the group following the guidelines developed in the lessons earlier (These have been discussed in detail in Chapter II).

➢ Step XI: The sequence of all the steps for the BTMC strategy was almost the same for all the ten lessons. However, necessary variation was done where the lesson / content had any demand for that.

➢ Step XII: A *Summative* Test was administered at the end of ten instruction units (see Appendix A-5).

THE INSTRUCTIONAL STRATEGY BASED ON THE CONVENTIONAL GROUP OF LEARNING (CGL) WAS ADMINISTERED ACCORDING TO THE FOLLOWING STEPS:

➢ Step I: This group was taught by their Social Studies (Economics) teachers in the conventional manner. It generally refers to reading out the content by the students or some explanations by the teachers and providing notes on certain important questions.

➢ Step II: Objectives and content of ten lessons were provided to the teachers of the control group.

➢ Step III: No unit criterion test was conducted after the completion of each unit.

➢ Step IV: The time schedule followed for this group was similar to that of the other experimental group.

After completion of all the ten lesson units, the criterion post – test (Summative Test) was administered to all the students of the experimental and control group. Answer sheets were scored and analyzed. Similarly, Life Skills questionnaire was administered to analyze the gain scores on life skills of both the groups.

Phase V: Scoring, tabulation and analyses of data.

All the tools were scored according to their prescribed scoring keys and the data thus obtained were subjected to statistical analyses.

STATISTICAL TECHNIQUES

The following statistical techniques were used to test the various hypotheses based on the objectives of the study: -

- Mean and Standard Deviations were used whenever required.
- Graphical presentations: Bar diagrams, Line graphs, frequency curves were drawn.
- Two – way ANOVA on gain scores of
  - Skill of Acquiring Knowledge (Achievement)
  - Skill of Critical Thinking
  - Skill of Decision Making
  - Communication Skill

Significant F- ratios were followed by T-test wherever required.

FINDINGS

In the light of the analyses and interpretation of the data, as reported in Section I, II, III and IV of the preceding chapter, the following conclusions were drawn on the basis of analyses related with skill of Acquiring Knowledge, skill of Critical Thinking, skill of Decision Making and Communication Skill.
SECTION I
ANALYSES BASED ON SCORES OF SKILL OF ACQUIRING KNOWLEDGE

❖ Conclusions drawn on the basis of Post Criterion Test Scores:

- **For BTMC with Deep Approach:** In BTMC group with Deep Learning Approach under the skill of Acquiring Knowledge, 75% of the students’ attained equal or more than 56% of scores. About 50% of the students attained equal or more than 66.5% of scores and 25% of the students’ attained equal or more than 78% of scores.

- **For BTMC with Surface Approach:** In BTMC group with Surface Learning Approach under the skill of Acquiring Knowledge, 75% of the students attained more than 54% of scores. About 50% of the students attained equal or more than 63% of scores and 25% of the students attained more than 68% of scores.

- **For CGL with Deep and Surface Approach:**
  - Approximately 75% of the CGL group adopting either Deep or Surface Learning Approach attained equal or more than 10.5% of scores for skill of Acquiring Knowledge.
  - About 50% of the CGL group with Deep and Surface Learning Approach attained equal or more than 14% and 15.5% of scores respectively on skill of Acquiring Knowledge.
  - About 25% of the CGL group under the skill of Acquiring Knowledge, with Surface Approach of learning attained more than 25% or more scores compared to the Deep Approach i.e. CGL (DA) which attained more than 22% of scores.

- The gain means on skill of Acquiring Knowledge were invariably higher for students of experimental group (BTMC) with both the approaches of learning (DA and SA). Although students of control group i.e. CGL having Surface Approach of learning scored higher than their counterparts with Deep Approach of learning yet gain means of students of experimental group with Surface Approach was higher than that of control group students with DA or SA. But it was interesting to note that students of control group with Surface Approach (SA) achieved higher gain mean scores than those with Deep Approach. It implies that Conventional Group Learning may be considered better for students with Surface Approach for skill of Acquiring Knowledge.
Conclusions drawn on the basis of 2 x 2 ANOVA on gain scores for skill of Acquiring Knowledge

- Students studying through BTMC achieved higher gain means than those who were studying in a Conventional Group Learning situation, on skill of Acquiring Knowledge.
- Students with Deep and Surface Learning Approaches scored equal levels of gain means of total scores for skill of Acquiring Knowledge.
- Students with Deep Approach of learning and those with Surface Approach of learning getting instructions through BTMC, achieved equal gain means for the skill of Acquiring Knowledge.
- CGL failed to yield significant differences in gain mean scores for students adopting Deep Approach (DA) and Surface Approach (SA) for skill of Acquiring Knowledge.
- Students adopting Deep Approach of learning scored higher gain means on skill of Acquiring Knowledge when studying through BTMC as compared to those with DA studying through CGL.
- With Surface Approach also, BTMC yielded higher gain means for skill of Acquiring Knowledge than the CGL group.
- For Deep Approach students of BTMC group gain means were higher on skill of Acquiring Knowledge as compared to that of CGL group students with Surface Approach of learning.
- Students with Surface Approach and studying through BTMC achieved higher gain means for skill of Acquiring Knowledge as compared to students with Deep Approach of CGL group.

SECTION II
ANALYSES BASED ON SCORES OF SKILL OF CRITICAL THINKING

Conclusions drawn on the basis of Post Criterion Test Scores:

- For BTMC with Deep Approach: In BTMC group with Deep Learning Approach under the skill of Critical Thinking, 75% of the students’ attained equal or more than 12% of scores. About 50% of the students attained more than 16.5% of scores and 25% of the students’ attained equal or more than 24% of scores.
Summary and Conclusions

- **For BTMC with Surface Approach:** In BTMC group with Surface Learning Approach under the skill of Critical Thinking, 75% of the students attained more than 8% of scores. About 50% of the students attained equal or more than 12% of scores and 25% of the students attained more than 22% of scores.

- **For CGL with Deep and Surface Approach: CGL (DA) and CGL (SA)**
  - Approximately 75% of the CGL group adopting either Deep or Surface Learning Approach attained more than 4% of scores for skill of Critical Thinking.
  - About 50% of the CGL group with Deep and Surface Learning Approach attained equal or more than 4.5% of scores on skill of Critical Thinking.
  - About 25% of the CGL group under the skill of Critical Thinking, with Deep and Surface Approach of learning attained more than 5% or more scores.

- The gain means on skill of Critical Thinking were invariably higher for students of experimental group (BTMC) with both the approaches of learning (DA and SA). The gain scores on skill of Critical Thinking of students with Deep Approach were close to that of students with Surface Approach of learning. Although, it was the case with the control group also where the gain scores for Deep Approach students was higher than that of the students with Surface Approach, yet the difference seemed to be of marginal significance. Overall comparison of the two groups revealed that the scores of students of control group were much lower compared to their counterparts in the experimental group.

- **Conclusions drawn on the basis of 2 x 2 ANOVA on gain scores for skill of Critical Thinking**
  - Students studying through BTMC achieved higher gain means than those who were studying in a Conventional Group Learning situation, on skill of Critical Thinking.
  - Students with Deep Approach of Learning scored higher levels of gain mean scores than those with Surface Approach of Learning for skill of Critical Thinking.
  - Students with Deep Approach of learning and those with Surface Approach of learning getting instructions through BTMC, achieved equal gain means for the skill of Critical Thinking.
Summary and Conclusions

- CGL failed to yield significant differences in gain mean scores for students adopting Deep Approach (DA) and Surface Approach (SA) for skill of Critical Thinking.
- Students adopting Deep Approach of learning scored higher gain means on skill of Critical Thinking when studying through BTMC as compared to those with DA studying through CGL.
- With Surface Approach also, BTMC yielded higher gain means for skill of Critical Thinking than the CGL group.
- For Deep Approach students of BTMC group gain means were higher on skill of Critical Thinking as compared to that of CGL group students with Surface Approach of learning.
- Students with Surface Approach and studying through BTMC achieved higher gain means for skill of Critical Thinking as compared to students with Deep Approach of CGL group.

SECTION III
ANALYSES BASED ON SCORES OF SKILL OF DECISION MAKING

Conclusions drawn on the basis of Post Criterion Test Scores:

- **For BTMC with Deep Approach:** In BTMC group with Deep Learning Approach under the skill of Decision-Making, 75% of the students attained more than 5% of scores. About 50% of the students attained equal or more than 8% of scores and 25% of the students attained more than 14% of scores.
- **For BTMC with Surface Approach:** In BTMC group with Surface Learning Approach under the skill of Decision Making, 75% of the students attained more than 4.5% of scores. About 50% of the students attained more than 7% of scores and 25% of the students attained more than 11% of scores.
- **For CGL with Deep and Surface Approach:**
  - Approximately 75% of the CGL group adopting either Deep or Surface Learning Approach attained more than 4% of scores for skill of Decision Making.
  - About 50% of the CGL group with Deep and Surface Learning Approach attained equal or more than 4.5% of scores on skill of Decision Making.
Summary and Conclusions

- About 25% of the CGL group under the skill of Decision Making, with Deep and Surface Approach of learning attained more than 5% of scores.
- The gain means on skill of Decision Making were invariably higher for students of experimental group (BTMC) with both the approaches of learning (DA and SA). Although students of experimental group – BTMC having Deep Approach of learning scored higher than their counterparts with Surface Learning Approach yet gain means of students of experimental group with SA was higher than that of control group students with DA or SA. It was interesting to note that students of control group with Surface Approach (SA) achieved higher scores than those with Deep Approach for skill of Decision Making. It implies that Conventional Group Learning may be considered better for students with Surface Approach for skill of Decision Making.

❖ Conclusions drawn on the basis of 2 x 2 ANOVA on gain scores for skill of Decision Making

- Students studying through BTMC achieved higher gain means than those who were studying in a Conventional Group Learning situation, on skill of Decision Making.
- Students with Deep and Surface Learning Approaches scored equal levels of gain means of total scores for skill of Decision Making.
- Students with Deep Approach of learning and those with Surface Approach of learning getting instructions through BTMC, achieved equal gain means for the skill of Decision Making.
- CGL failed to yield significant differences in gain mean scores for students adopting Deep Approach (DA) and Surface Approach (SA) for skill of Decision Making.
- Students adopting Deep Approach of learning scored higher gain means on skill of Decision Making when studying through BTMC as compared to those with DA studying through CGL.
- With Surface Approach also, BTMC yielded higher gain means for skill of Decision Making than the CGL group.
- For Deep Approach students of BTMC group gain means were higher on skill of Decision Making as compared to that of CGL group students with Surface Approach of learning.
Summary and Conclusions

- Students with Surface Approach and studying through BTMC achieved higher gain means for skill of Decision Making as compared to students with Deep Approach of CGL group.

SECTION IV
ANALYSES BASED ON SCORES OF COMMUNICATION SKILL

- Conclusions drawn on the basis of Post Criterion Test Scores:
  - For BTMC with Deep Approach: In BTMC group with Deep Learning Approach under the Communication Skill, 75% of the students attained more than 8% of scores. About 50% of the students attained more than 12% of scores and 25% of the students attained more than 15% of scores.
  - For BTMC with Surface Approach: In BTMC group with Surface Learning Approach under the Communication Skill, 75% of the students attained equal or more than 5.8% of scores. About 50% of the students attained more than 8% of scores and 25% of the students attained more than 14% of scores.
  - For CGL with Deep and Surface Approach:
    - Approximately 75% of the CGL group adopting either Deep or Surface Learning Approach attained more than 4% of scores for Communication Skill.
    - About 50% of the CGL group with Deep and Surface Learning Approach attained equal or more than 4.5% of scores on Communication Skill.
    - About 25% of the CGL group under the Communication Skill, with Deep and Surface Approach of learning attained more than 5% or more scores.
  - The gain means on Communication Skill were invariably higher for students of experimental group (BTMC) with both the approaches of learning (DA and SA). Although students of control group i.e. CGL having Surface Approach of learning scored higher than their counterparts with Deep Approach of learning yet gain means of experimental group with SA was higher than that of control group students with DA and SA. It was again interesting to note that students of control group (CGL) with Surface Approach (SA) achieved higher gain mean scores than those with Deep Approach for Communication Skill. It implies that Conventional Group Learning may be considered better for students with Surface Approach for Communication Skill.
Summary and Conclusions

❖ Conclusions drawn on the basis of 2 x 2 ANOVA on gain scores for Communication Skill

- Students studying through BTMC achieved higher gain means than those who were studying in a Conventional Group Learning situation, on Communication Skill.
- Students with Deep and Surface Learning Approaches scored equal levels of gain means of total scores for Communication Skill.
- Students with Deep Approach of learning and those with Surface Approach of learning getting instructions through BTMC, achieved equal gain means for the Communication Skill.
- CGL failed to yield significant differences in gain mean scores for students adopting Deep Approach (DA) and Surface Approach (SA) for Communication Skill.
- Students adopting Deep Approach of learning scored higher gain means on Communication Skill when studying through BTMC as compared to those with DA studying through CGL.
- With Surface Approach also, BTMC yielded higher gain means for Communication Skill than the CGL group.
- For Deep Approach students of BTMC group gain means were higher on Communication Skill as compared to that of CGL group students with Surface Approach of learning.
- Students with Surface Approach and studying through BTMC achieved higher gain means for Communication Skill as compared to students with Deep Approach of CGL group.

EDUCATIONAL IMPLICATIONS OF THE RESULTS

The result of the present study supported that the Barnlund’s Transactional Model of Communication (BTMC) may be used to enhance the performance of the students in the Economics subject at the secondary level as compared to the traditional method of teaching. It is evident from the results that if teachers try to switch over to BTMC strategy, achievement of students will improve but will also enhance their life skills. Barnlund’s Transactional Model of Communication (BTMC) was found more effective as compared to Conventional Group Learning (CGL), irrespective of the fact which learning
approach was followed by the students. It may be suggested that teachers should be given orientation in the development of instructional material in that form which can be communicated easily to students. The teachers can adopt BTMC for teaching students with different learning approaches.

It has been realized by educationists worldwide that quality of education be raised by incorporating activities, which boost various life skills of students. The difference among the gain means of the two instructional strategies BTMC and CGL group as measured by scores on skill of Acquiring Knowledge and other selected life skills like skill of Critical Thinking, skill of Decision-Making and Communication Skill suggested that instructions through BTMC result into improvement of other life skills too.

The results may be of significant help for curriculum planners to view various activities that may develop Critical Thinking, Decision-Making and also their Communication Skills. The model is transactional in nature and most of the components of these life skills got impetus through the BTMC model.

The results can also be useful for school administrators to have mixed groups of students adopting Surface or Deep Learning Approaches since BTMC has proved to enhance all life skills of students whether they adopt Deep Approach or Surface Approach learning. Normally Surface Approach students were found to do better only in Conventional Group Learning.

The results of the present investigation have encouraging solution for administrators in a way that students with Deep Approach of learning, who have normally a high potential for long-lasting learning, may satisfy their Deep urge through BTMC with equivalent impact on Surface Approach students as well.

Present day scenario of Indian Education system puts more emphasis on levels of achievement hence the classroom interactions remain passive for learners. The teacher dominated classroom environment with maximum focus on content may be eased through teaching with BTMC which would not only make class climate lively and participative but will also help in encouraging motivation, critical thinking and decision making. All these will prepare our students for meeting the challenges of life courageously and successfully.

**SUGGESTIONS FOR FURTHER STUDY**

On the basis of experiences and findings of the present study, the following suggestions are made for the further research in this area:
Summary and Conclusions

- The impact of other communication models can be explored by implementing them in the classroom situations and comparative studies may be taken up.
- A similar study may be replicated with other Subject Areas. Impact of BTMC on other subjects may be studied.
- Various other life skills may be studied through similar experimental studies at different levels of education.
- Role of non-verbal communication behaviour in the classrooms may also be taken for the experimental study, along with the impact of BTMC.
- The interactional effect of learning approaches and life skills can be reconsidered.
- Various observation tools may be developed and validated for use of observational techniques designed to catch the verbal and non-verbal communication behaviour of both the teachers and students, with special reference to communication models.
- The Barnlund's Transactional Model of Communication (BTMC) may be seen with respect to the other life skills, like Interpersonal Relationships, Self-Esteem, Self-Awareness, Positivism etc.
- Further research should be conducted involving other instructional strategies.
- School administrators, guidance and counseling workers, teachers and students can take cues from the results of the study for the advantage of the learners and society as a whole.
- The studies may be planned and conducted by involving more organismic and environmental variables, instead of Learning Approaches other characteristics of learners viz: confidence level of learners, attitudes of learners, their entry behaviour status, motivational level and other environmental variables like barriers of communication etc. can be studied.
- Further studies may be conducted to see the effect of other communication models and the need for other good–support materials. The implications of the research in these areas will not only influence the formulation / modulation of more communication models but also the appropriate methodology built upon these strategies.
- Studies may be undertaken to investigate the main effects of any component of communication viz. source, message, receiver, sender, feedback, noise etc. separately.
Indian classrooms are stress-prone especially at secondary stage. This transactional model of communication be tried to express the possibilities of dissipating stress, especially Academic stress and Achievement stress.