CHAPTER 3

RESEARCH DESIGN OF STUDY

This chapter explains the methodology used in gathering the information necessary for the study. An appropriate research design is used to structure the research properly. The present study is an experimental study, which explores the effect of an instructional programme on SEL of elementary school students.

Research design includes research methodology and methods applied in the current piece of work to answer the research questions and to achieve the research objectives. It begins with the study variables, research design, population and sample of the study, sources of data and the research instrument.

Research Paradigm

The research paradigm refers to the manner in which the world is described by the researcher on the basis of the philosophical assumptions. Specification of the research paradigm forms the first step in deciding the appropriate approach towards the systematic inquiry. The main types of research paradigms include positivism or post positivism, constructivism, transformative and post-colonial indigenous research paradigms (Rehman & Alharthi, 2016).

For the purpose of the present study the researcher has employed the positivism research paradigm approach. The following approach has been employed because it was based on the precise observation along with the verification measurement of the independent variables. This helped the researcher in evaluation of socio-emotional learning programs effect on the socio-emotional competencies of the elementary school students.

Variables of Study

In present study, the independent variable is Instructional programme and dependent variable of the study is socio-emotional learning of the students. For measuring the skills the researcher used self-made pre-test and post-test questionnaire on seven-point scale consisting of five dimensions of SEL- self-control, self-management, social awareness, relationship skills and responsible decision. The questionnaire is based on the chapters of the English text book of Eighth class.

Research Design

In the present study, mixed method is used for collecting data as the purpose of the study is to explore the socio-emotional learning level of elementary school students. It is based on representative samples using pre-test post-test equivalent/control group design and the data obtained are subjected to quantitative as well as qualitative analysis. The design provides equal chance to all subjects of being selected in experimental and control group. Here the assumptions are of equivalent and no difference in both groups. The subjects are randomly assigned by matching substitute (age, sex, intelligence level, marks obtained) (Mangal & Mangal, 2013). The evaluation of SEL intervention programme provided a good opportunity of mixed method to contribute to learning about implementation and effectiveness of SEL programme for achieving the outcomes. In the current study embedded design is used which includes randomized and controlled trial. It includes QUAN pre-measure and QUAN post-measure, and qual during intervention. In this study, the researcher provided the intervention to the students through self constructed instructional programme in order to examine and explore the SEL skills. It helps in the systematic combination of qualitative and quantitative data within a single research. The present study is the project of exploring pedagogical dimensions for developing SEL and

inclusion of SEL in curriculum.

Randomization

Randomization minimized the variability by avoiding confounding factors. It creates balance in groups, provides success of treatment and minimizes the selection bias. To provide the unbiased evaluation, the researcher used simple randomization using flipping a coin, where head meant intervention and tail meant control (Suresh, 2011). Students were divided into three groups on the basis of their previous year academic marks. The first group was formed of 30% - 50%, the second group of 50% - 70% and the third group was above 70%. Then a coin was filliped for every student in each group to provide equal chance of being selected. Those students fell under the head of the coin were selected for intervention and those fell under tail of the coin were selected for control group. The research design of the study is as under

Table 3:

Research design

Study Design	Experimental Design
Population	All students of class VIII (age group 12-14 years) of Government school and Private school at Rewari block of Rewari district in Haryana.
Sampling Technique	**Selection of Rewari district**: Convenient sampling technique **Selection of Block:** Simple random sampling using lottery system (Rewari block among five blocks) **Selection of Schools:** Simple random sampling using lottery system (selecting two schools among 296 schools: school 1- Government, & school 2- Private) **Selection of students:** random assignment and using simple randomization (flipping a coin)
Variables	Independent variable – Instructional Programme Dependent variable – Socio-emotional learning

Table 4:

Research timeline and sequence of intervention

Preparatory Module	SEL Intervention Module					
	Pre-test	**Phase1** (GSSS Padaiwas)	**Post-test**	**Pre-test**	**Phase 2** (Ahir Modern Public school)	**Post-test**
Aug. 2018	Sep. 1, 2018	Sept. 2 to Nov. 29, 2018	Nov. 30, 2018	Dec. 3, 2018	Dec. 4, 2018 to March 28, 2019	March, 29, 2019
Approval from both schools	Administered pre-test in both experimental and control group	Provide intervention to experimental group through SEL module using story-telling, group discussion, group work, role play and drawing.	Administered post-test in both experimental and control group	Administered pre-test in both experimental and control group	Provide intervention to experimental group through SEL module using story-telling, group discussion, group work, role play and drawing.	Administered post-test in both experimental and control group

Research Instrument

The researcher used self-constructed questionnaire for collecting data regarding pre-test and post-test. The test includes 30 items covering five dimensions of SEL.

Table 5:

Items of Socio-emotional learning

SEL	No. of Items
Self-awareness	5
Social awareness	6
Self-management	6
Relationship skills	6
Responsible decision making	7

Reliability

The reliability or internal consistency of the questionnaire was checked with Cronbach's alpha to examine the adequacy of the information collected through the survey. The result is:

Table 6:

Reliability of tool

Cronbach's Alpha	Spilt Half
0.947	0.92

The value of α is 0.947 for the questionnaire having 30 factors. As the amount is more significant than 0.9, i.e., $0.947 > 0.9$, thus the test used for collecting the information from the students regarding their socio-emotional competency is adequate. Hence, the results derived from the analysis of the dataset collected through the given questionnaire would be consistent and would provide sufficient and reliable results.

Validity

The validity of the tool was quite satisfactory using experts' advice. In the present study content validity is used that refers the items of the tool are fairly representative to the all five domains the test designed to measure. Content validity is assessed the contained items by the experts. It is an assurance of informed items to content domains.
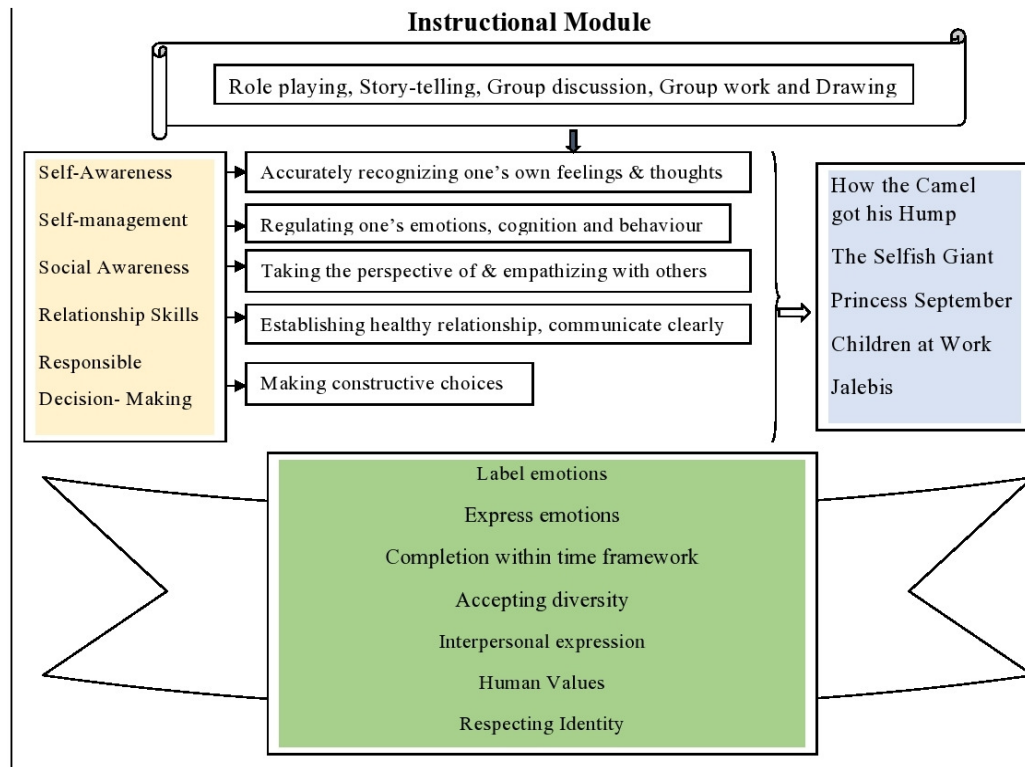
Table 7:

Scoring pattern for positive & negative items

Response	Strongly Disagree						Strongly Agree
Positive items	1	2	3	4	5	6	7
Negative items	7	6	5	4	3	2	1

It is a self reporting scale. There are statements followed by five alternatives and the students have to mark the most suitable alternative against each statement. The scores are awarded in a very simple manner as mentioned above. The maximum score for positive statement is 7 and minimum is 1, vice-versa for negative statements.

Along with questionnaire, the researcher provided intervention through SEL Module:

Instructional Module

Role playing, Story-telling, Group discussion, Group work and Drawing

Self-Awareness	→ Accurately recognizing one's own feelings & thoughts
Self-management	→ Regulating one's emotions, cognition and behaviour
Social Awareness	→ Taking the perspective of & empathizing with others
Relationship Skills	→ Establishing healthy relationship, communicate clearly
Responsible Decision- Making	→ Making constructive choices

How the Camel got his Hump

The Selfish Giant

Princess September

Children at Work

Jalebis

Label emotions

Express emotions

Completion within time framework

Accepting diversity

Interpersonal expression

Human Values

Respecting Identity

Population

Population of the study consist the students of elementary (eighth class) level of Govt. and Private schools of Rewari block in Haryana. The researcher took the Rewari district using convenient sampling and selected Rewari block among the five blocks using simple random sampling (lottery system).

Sample

For present research a sample of 113 school children (Boys 64, girls 49) was selected from two schools of Rewari block, Haryana using simple random sampling. Rewari block has 17 clusters and 296 total schools. Out of 296, number of government schools are 62 and private schools are 234. The researcher selected one school from the total number of government schools and one school from total number of private schools. The selection of schools was done using simple random

sampling (Tippet system).The sample of 59 students (boys 29, girls 30) was taken from GSSS Padiawas, and 54 students (boys 35, girls 19) were taken from Ahir Modern Public school,MajraSheoraj. The sample was divided into two groups on the basis of their scores of previous class. The experimental group consisted of 17 boys and 15 girls from govt. school and 16 boys and 9 girls from private school. The control group consisted 12 boys and 15 girls from govt. school and 19 boys and 10 girls from private school. The participants are randomly assigned.

Two groups

Experimental Group   Control Group

Girls   Boys   Girls   Boys

15   17   (Govt.)   15   12

9   16   (Private)   10   19
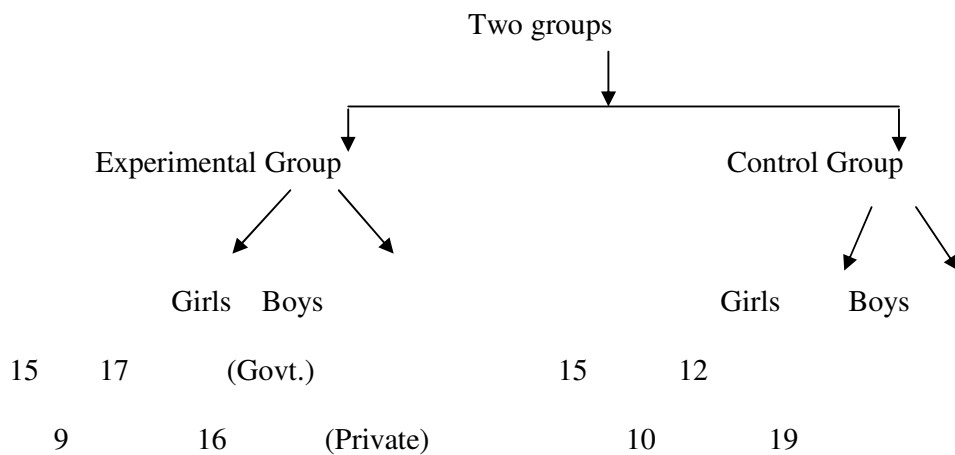
Ethical Considerations

The researcher followed the principles of ethical considerations. Before experiment, the researcher provided the information about the experiment to the participants and assured them to keep the data and their identity confidential. They were also intimated to discontinue the experiment at any time. The researcher took the consideration of students' understanding and willingness. For taking the approval for conducting the research, the researcher visited personally to the concerned schools and submitted the research proposal and took the approval from the head of the school.

Minimizing Hawthorne Effect

Hawthorn effect is "when there is a chance in the subject's normal behavior, attributes to the knowledge that their behavior is being watched or studied" (Oswald, 2014). It is the tendency of changing behavior of the participants under the process of observation. In the present study, the participants mitigated Hawthorn effect through self-reported diaries. Writing self-reported diaries allowed learning natural behavior and personal relationship. The continuous observation of diaries promoted self-discovery and reflections on feeling, behavior and habits.
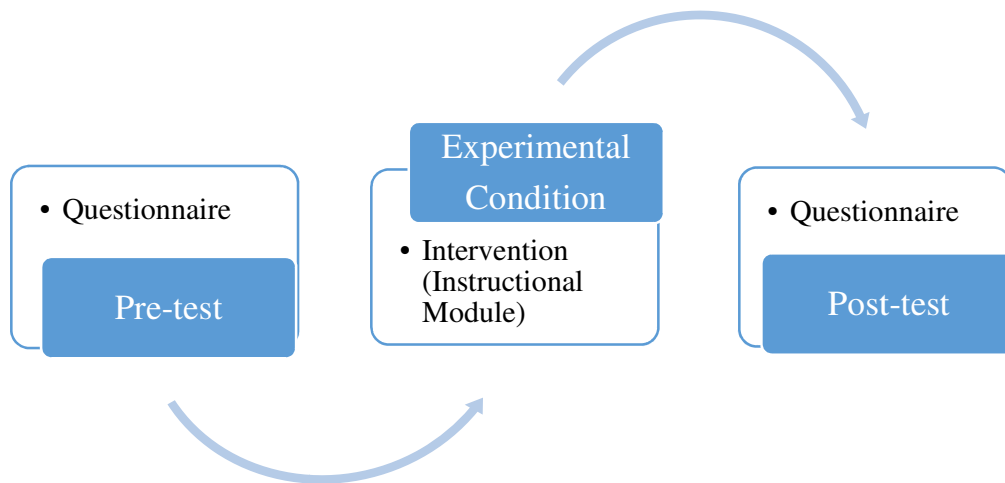
Administration Procedure

After going through the available literature, five core dimensions were selected of SEL. The items of the scale were drafted on the basis of those dimensions. The first draft of the scale consisted 50 items. Then the draft was sent to the expert suggestions to various universities for content validation of the scale. On the basis of experts' suggestions the second draft was consisted 35 questions. That scale was tried out on the sample of 700 hundred elementary school students of Rewari district. On the basis of the pilot study, reliability was found. After the try out, necessary modification was done and the scale was finalized with 30 items for pre-test and post-test.

For the final data collection, the investigator visited the schools of the area personally and contacted the head of the schools. All the information and knowledge about the experiment was given to them. After obtaining due permission from the head, the researcher started the collection of data with their signed consent form. First the investigator provided the complete information about the experiment and conducted pre-test of both the groups. Then provide intervention to the experimental group with the help of SEL module for 3 months in each school. After conducting

intervention successfully, post test was administered in both groups. At the end the investigator thanks the participants, teachers and head of the school.

Data Collection

The present study used primary data sources. For the collection of primary data the researcher used pre-test post-test equivalent/control group design of experimental method. The researcher provided an intervention programme through self constructed module on various dimensions of socio-emotional learning for 6 months. The intervention programme was conducted into two phases. In first three months, the intervention was given to government school students and during the last three months, intervention was given to the students of private school. The duration of intervention was from Sep 2018 – Nov 2018 in GSSS Padaiwas and from Dec 2018 - March 2019 in Ahir Modern Public School, MajraSheoraj.Prior to data collection, proper meeting with the school authorities was arranged to get authentication. Many schools did not allow the experiment to be conducted in their school. So, the data was collected from the agreed schools.

- Questionnaire

Pre-test

Experimental Condition
- Intervention (Instructional Module)

- Questionnaire

Post-test

	Phase I	Phase II	Phase III	Phase IV
Phases of method execution	Pre-test	Application of stimulus (Govt. school)	Application of stimulus (Private school)	Post -test
Sample Technique	Close-ended questions	Experiment/ Observation	Experiment/ Observation	Close-ended questions
Sample Questions	During last month, I fight many times with my friends in school campus (etc).	While I was reading this story I wondered… (etc)	The part of the story I like the best was...(etc)	During the past 30 days, I came in school with enthusiasm (etc).
Analysis Techniques	Inferential analysis/ descriptive analysis	Discourse analysis/Textual or contextual analysis	Discourse analysis/Textual or contextual analysis	Inferential analysis/ descriptive analysis

(Note. Experimental qulitative technique, hybrid method design (robinson & mendelson, 2012, p.6)

Techniques used for analysis

For the analysis of the data, mean, percentage, standard deviation, t-test, correlation, and regression were conducted. Here the methodology used to describe selection of variables, research design, procedure of data collection, sampling, and various quantitative methods. The research before conducting the finally quantitative analysis first conducted the pilot test. The pilot test is defined as the small study that helped the researcher in testing the validity and the reliability of the data collection instruments, research protocols, research technique and the strategy. The researcher in order to first examine the adequacy of the information that has been collected through the questionnaire, checked the reliability or the internal consistence of the questionnaire through the help of the Cronbach's alpha (0.94) and split half (0.92). Further, to check the validity of including the factors for measuring socio-emotional competency of the students, the correlation and regression analysis was done.

Further in order to conduct the quantitative analysis the researcher used the mixed method approach that includes experimental method and pre-test and post-test equivalent group design. The treatment was given to the experimental group using the socio emotional learning module. Following the implementation of the pre-test and post-test, the scores were calculated and analyzed using the SPSS. The mean and the independent sample t-test were used to compare the mean scores of the two groups.

For analyzing the qualitative data open coding and thematic analysis was performed. The researcher used the instructional modules that were based on the following dimensions: self-awareness, self-management, social awareness, relationship skills and the responsible decision-making. The girls and boys of the private and government school were then asked regarding the different values or the understanding they gained from the story telling module.