

# DEVELOPING VALUE INTEGRATED CHEMISTRY LEARNING PACKAGE SPICED WITH HOLY VERSES FOR FOSTERING SOCIAL SKILLS IN SECONDARY SCHOOL STUDENTS

Rosy Tintu M.P, M.Sc., M.Ed.

## Abstract

Education helps the child to acquire new skills and knowledge that will impact development in life. Kerala Secondary School Curriculum gives due importance to Science education. Normally the content selected is taught by linking it with its scientific value. Education in Kerala, give importance to religion together with science learning. Considering Science and religion separately, promotion of Science is considered as the duty of teachers in the school while value inculcation is considered as the responsibility of religious people. This responsibility sharing actually supporting the social life of people in Kerala. But the investigator as a religious preacher and as a Chemistry teacher was always attracted with the studies related to inculcation of social values and social skills in schools through the learning of various school subjects. If the Value Integrated Chemistry lessons are planned in an intellectually honest manner, it will help in promoting Social Skills in secondary school students. Here comes the importance of Value Integrated Chemistry Learning Package. Hence the present study aims to develop a Value Integrated Chemistry Learning Package Spiced with Holy verses for Fostering Social Skills in Secondary School Students. The investigator employed experimental method and the design used was pre-test post-test single group design. The population of the study consists of secondary school students of Kerala state syllabus and the sample of the study was 35 students from one secondary school in Ernakulam district. The findings of the study highlight the fact that the developed learning package is helpful in fostering Social Skills in secondary school students.

Key Words: Value Integrated Chemistry Learning Package, Holy verses, Social Skills.

## Introduction

Today when individuals have a large way of life, a greater variety of choices than any time in the past, the formation of appropriate character, has always become an important aspect as far as the purpose of education is concerned. Schools seem to be considered as institutions of formal learning whose concern is to communicate a certain prescribed knowledge, by keeping aside the issue of value. Schools are expected to bring about the inculcation of the cultural, aesthetic and social value for the young generation. This important aspect needs more attention in the present system of education. Through value education the whole personality of an individual is developed physically, intellectually, morally, logically, socially, aesthetically and spiritually. When society gives due importance to scientific innovation and take benefit out of it, a proportionate appreciation for Science and Life value become an identity of an educated person. In practical integrating Science and life Value is a herculean task. But it can be simplified by integrating Social values through Science teaching. The current study made an attempt to develop a Value Integrated Chemistry Learning Package Spiced with Holy Verses for fostering Social Skills in Secondary School Students.

### Background of the problem

Science is a subject which is so closely associated with our daily life and the world which surrounds us. It is as useful to an individual as well as to a community as a whole that it cannot be avoided from the school curriculum. In teaching of Science it can be used to awaken students to the scientist's devotion to truth, perseverance and sacrifice the significance of scientific theories and inventions in eradicating irrational practices, the insignificance of the ego and the significance of humility in everyday life. Developing social Values/social skills in students and preparing them for a lifetime of healthier interactions in all aspects of life is one of the important aims of education. Helping students to develop important skills requires a different set of strategies at each stage of development. If it could provide with integration of various subjects, then it is more practical and meaningful endeavor. The Holy Scriptures of Hinduism mainly Holy Bhagavad Gita, that of Christianity Holy Bible and Islam Holy Quran mainly upholds many universal human value. The need of the hour is to explore these values and incorporate these in education. By the discussion of verses of Holy books we can motivate and convince students about how to be a good human being,

how to develop a happier society what Holy Scriptures says about various social values. These observations and prior knowledge gives the researcher a motivation to do an investigation relating to correlation of Science teaching, value inculcation and Holy Scripture, for developing value integrated Chemistry lessons, which acted as a background for the present study.

### **Need and significance of the study**

Kerala Secondary School Curriculum gives due importance to Science education. Normally the content selected is taught by linking it with its scientific value. Education in Kerala, give importance to religion together with science learning. Considering Science and religion separately, promotion of Science is considered as the duty of teachers in the school while value inculcation is considered as the responsibility of religious people. This responsibility sharing actually supporting the social life of people in Kerala. But the investigator as a religious preacher and as a Chemistry teacher was always attracted with the studies related to inculcation of social values and social skills in schools through the learning of various school subjects. If the Value Integrated Chemistry lessons are planned in an intellectually honest manner, it will help in promoting Social Skills in secondary school students. Here comes the importance of Value Integrated Chemistry Learning Package. Hence the present study aims to develop a Value Integrated Chemistry Learning Package Spiced with Holy verses for Fostering Social Skills in Secondary School Students.

### **Statement of the problem**

How can we correlate Science and Value inculcation? Can Social Value and Social Skills be promoted through Chemistry learning? Can we develop a Value Integrated Chemistry Learning Package? Were the Problems addressed in this study. Hence the study is entitled as **DEVELOPING VALUE INTEGRATED CHEMISTRY LEARNING PACKAGE SPICED WITH HOLY VERSES FOR FOSTERING SOCIAL SKILLS IN SECONDARY SCHOOL STUDENTS.**

### **Definition of key terms**

**Developing:** Developing implies the preparation and testing of learning designs (Cambridge dictionary)

## Value Integrated Chemistry Learning Package

**Value:** How useful or important something is (Cambridge dictionary). Here the term value is being used for social value like Basic manners, Verbal communication, Non-verbal communication, self control, Relationships and Self care that should be worth for leading good quality social life (Operational definition).

**Integrated:** The word means that two or more things are combined in order to become more effective (Cambridge dictionary). The word integrated is used to indicate that value is being added into Chemistry lessons in such a way that the Chemistry content and Value merging is done intelligently so that the separation cannot be easily recognized (Operational definition).

**Learning package:** Learning package is a collection of lesson plans and supporting learning materials like various learning activities, pictures, cards, images and role play dialogues etc. that helps in the realization of specified learning outcomes (Operational definition).

### Spiced with Holy Verses

**Spiced:** Here the word spiced is used to explain that something is added for support to give added authenticity or value for the prepared material (Operational definition).

**Holy Verses:** In this study, by the term Holy verses, investigator means inclusion of Verses from Holy Scriptures like Holy Bhagavad Gita, Holy Bible and Holy Quran (Operational definition)

**Fostering:** To encourage the development or growth of ideas or feelings (Cambridge dictionary).

**Social Skills:** The skills that are necessary in order to communicate and interact with others (Collins dictionary). In this study by using the term Social Skills the Investigator tries to include promotion of skills like basic manners, verbal communication skills, non-verbal communication skills, self control, relationships and self care (Operational definition).

**Secondary School Students:** Students who are studying in the 8<sup>th</sup>, 9<sup>th</sup> & 10<sup>th</sup> standard following the Kerala Secondary School Curriculum (Operational definition).

## Objectives of the study

1. To analyze chemistry text books of standard 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> for identifying topics suitable for inculcation of social values.
2. To identify social values that will be promoted by the learning of the above content.
3. To identify verses from Holy Bhagavad Gita, Holy Bible and Holy Quran that supports the inculcation of the above selected social values.
4. To frame value integrated lesson plans to teach the selected topics in chemistry.
5. To prepare learning package constituting Chemistry, Social Values and Holy Verses.
6. To validate the developed learning package by collecting expert opinion.
7. To test the effectiveness of learning package in fostering social skills by experimental try out.

## Research Questions

1. Are chemistry topics suitable for value inculcation?
2. Can the selected topics and values be correlated with versus from Holy Scriptures?
3. Will it be possible to develop learning packages including Chemistry content, Social Values and supporting Holy Scriptures?
4. How far the developed learning package will help in fostering social skills?

## Hypotheses of the study

The prepared learning package will be effective for fostering social skills in secondary school students.

There will be significant difference in the opinion of experts regarding the quality of value integrated learning package.

There will be significant difference in the pre-test and post-test scores of secondary school students with respect to their social skills.

## Methodology

This study was qualitative cum quantitative in nature. Therefore the data collection was carried out with the help of both qualitative and quantitative methods and techniques. The present study proceeded through five stages that were Content Analysis of Chemistry Text Books, Identifying and listing of Social Values and Social Skills, Identifying Holy Verses from the Holy Scriptures, Preparation of Lessons and Learning Package and finally the validation of the learning package and experimental try out. Content analysis, Scripture reading, web based inquiry, Interview and normative survey and experimental method were the various methods adopted for the present study. The design selected for the study was one group pre test - post test design. The variables of the study were Value Integrated Chemistry Learning Package as the independent variable and Social Skills as the dependent variable. The tools used for the collection of data were Check list on fostering of social skills for ninth standard students, developed by the Investigator, Rating scale developed by the investigator for collecting expert's opinion, Learning Package integrating chemistry lessons, Social Skills and Holy scriptures. The population of the study consists of secondary school students of Kerala state syllabus and the sample of the study was 35 students from St. Joseph's HSS Koonammavu in Ernakulam district. The investigator used t-test to find out the effectiveness of Value Integrated Chemistry Learning Package for fostering social skills on secondary school students.

## Major findings and conclusions

1. It is possible to correlate Chemistry Contents from text books of 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> standards with Social Skills and Holy verses.
2. The developed learning package that is chemistry contents correlated with social skills and verses from Holy Scriptures in its experimentation shows a significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skills Basic Manners, Verbal Communication Skills, Nonverbal Communication Skills, Self Control, Relationships, Self Care.
3. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Basic Manners.
4. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Verbal Communication.
5. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Non Verbal Communication.
6. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Self Control.
7. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Relationship.
8. There is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Self Care.
9. The opinion of experts regarding the quality of Value Integrated Learning Package with respect to the interview and rating scale is that it is helpful in fostering Social Skills in secondary school students.
10. The majority of the experts opined that the topic Electronic Configuration & Stability helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal

11. The majority of the experts opined that the topic Ionic bonding helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
12. The majority of the experts opined that the topic covalent bonding helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
13. The majority of the experts opined that the topic Electro negativity & Polar nature helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
14. The majority of the experts opined that the topic Valency helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
15. The majority of the experts opined that the topic Oxidation & Reduction helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
16. The majority of the experts opined that the topic Oxidation & Reduction helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
17. The developed learning package is helpful in fostering Social Skills in secondary school Students.

### Tenability of hypotheses

The Hypothesis formulated for the study is tested for tenability in relation to the findings of the study.

**Hypothesis:** The prepared learning package is effective for fostering social skills in secondary school students.

1. Table t- value 4.9631 indicates that there is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Basic Manners.
2. Table t- value 8.1104 indicates that there is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Verbal Communication.
3. Table t- value 9.2613 indicates that there is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Non Verbal Communication.
4. Table t- value 8.825 indicates that there is significant difference in the pre test and post-test scores of secondary school students with respect to the Social Skill Self Control.
5. Table t- value 9.9059 indicates that there is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Relationship.
6. Table t- value 8.9301 indicates that there is significant difference in the pre-test and post-test scores of secondary school students with respect to the Social Skill Self Care.
7. The majority of the experts opined that the topic Electronic Configuration & Stability helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
8. The majority of the experts opined that the topic Ionic bonding helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
9. The majority of the experts opined that the topic covalent bonding helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.

10. The majority of the experts opined that the topic Electro negativity & Polar nature helps to foster social skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
11. The majority of the experts opined that the topic Valency helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
12. The majority of the experts opined that the topic Oxidation & Reduction helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self Care.
13. The majority of the experts opined that the topic Oxidation & Reduction helps to foster Social Skills namely Basic Manners, Verbal Communication, Non Verbal Communication, Self Control, Relationship Skills and Self care

All the above results proved that the developed learning package is helpful in fostering Social Skills in secondary school students. *Hence the declarative hypothesis: The prepared learning package is effective for fostering social skills in secondary school students is accepted.*

### **Educational implications**

In the present study, the investigator examined the effectiveness of Value Integrated Chemistry Learning Package in Fostering Social Skills among students at secondary level. The major implications deduced from the findings of the study are the following.

1. The Value Integrated Chemistry Learning Package Developed by the investigator is a major contribution for chemistry learning at high school of Kerala.
2. The Value Integrated Chemistry Learning Package developed by the investigator is very helpful to foster Social Skills in Secondary School Students.
3. The Package including various learning activities will be helpful to Chemistry teachers as

a reference material for fostering Social Skills while teaching chemistry topics.

4. The Scope of the Learning Package is for socializing the learner.
5. The lesson plans included in the learning package can be used for enhancing student's interest.
6. Ability of learning package is to arouse student's Social Skills while learning Chemistry and it acts as a guide for socializing the students.
7. The ability of various learning activities to ensure students participation in a maximum manner.
8. The Learning Package is a good educational contribution for creative teaching.

### Suggestions for further research

1. A Comparative study could be carried out for the same.
2. The study may be replicated for various standards in schools and for different content areas in other subjects.
3. An intensive study on the same topic on a large sample may be attempted.
4. Studies can be extended to the students at primary and higher secondary level.
5. Provision should be made by the educational authorities for providing outdoor facilities for schools in order to facilitate more social interactive mode of learning.
6. Similar studies can be conducted for larger samples, longer period of time under carefully controlled conditions.

## Conclusion

The most important aim of education is to make the teaching-learning process meaningful enjoyable and memorable. The modern system of education encourages the development of different learning strategies so as to enhance the learning potential of the learners. A more organized and systematic form of instruction is the need of the hour to fulfill this educational aim. The researcher investigated into the fact that teaching chemistry through various instructional methods at the secondary level would enable the students to practice social skills in daily life. This endeavor would help to analyze the effectiveness of Value Integrated Chemistry Learning Package. In the present study the investigator has made an attempt to ascertain the effectiveness of Value Integrated Chemistry Learning Package Spiced with Holy verses for Fostering Social Skills in Secondary School Students.

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