Chapter 5

SUMMARY AND CONCLUSIONS
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5.1 Introduction

This study was to assess the impact of Holistic Education on Value Preference, Social Competence and Leadership Skills of Engineering Students. As Russel and Yao, (1997) states, “an engineer is hired for her or his technical skills, fired for poor people skills, and promoted for leadership and managerial skills”. Colleges and universities are criticised by the practising professionals very often saying that “educational institutions are producing engineers who are intellectually and technically gifted, however, not equipped for real world engineering life” (Bakos, 1997; Nair, 1987). There is less training for a living or training for life. The first year of college or university life is the transition period when one moves from adolescence to adulthood. During this time students have many expectations like emotional autonomy, self-direction, increased freedom of choice, choose friends and activities, making plans for employment, and dreams for an independent family life. Proper guidance and intervention programmes at this point in life may prevent unhealthy decisions in one’s life and redirect the youth to develop healthy practices in life for a better future (Crockett, & Crouter, 1995). Crossing this transition stage in the late adolescence period systematically amidst the highly competitive world one must develop intra and interpersonal skills and competencies. This study was made to understand various competencies required for an adolescent during the transition period to adulthood and attempted to assess the efficacy of a specific intervention programme. Specifically, students could have a Holistic Education Program included in their training period to have better value preference, social competence, and leadership skills. So far there are no research studies available on Holistic Education with respect to value preference, social competence and leadership skills of engineering students. Hence, the present study was conceptualised. The researcher hopes that this study will fill the gap and give a substantial contribution in this field.
5.2 **Statement of the Problem**

The impact of Holistic Education on value preference, social competence and leadership skills of engineering students.

5.3 **The Objectives of the Study**

The study has the following purposes in its various phases of implementation:

1. To develop a curriculum on Holistic Education Programme for Engineering students
2. To implement the curriculum of Holistic Education Programme for Engineering students
3. To assess the impact of Holistic Education Programme on students’ value preference
4. To assess the impact of Holistic Education Programme on students’ social competence
5. To assess the impact of Holistic Education Programme on students’ leadership skills
6. To assess whether branch of study has any influence on the impact of Holistic Education Programme
7. To assess whether gender has any influence on the impact of Holistic Education Programme
8. To assess whether religion has any influence on the impact of Holistic Education Programme
9. To assess whether the kind of stay has any influence on the impact of Holistic Education Programme
10. To assess whether the region one comes from has any influence on the impact of Holistic Education Programme

5.4 **Variables of the Study**

5.4.1 **Dependent Variables**

1. Value Preference
2. Social Competence
3. Leadership Skills

5.4.2 Independent Variable

Holistic Education Programme

5.4.3 Biographical Variables

1. Branch of Study
2. Gender (Male or Female)
3. Religion (Hinduism, Christianity or Others)
4. Kind of Stay (Home or Hostel)
5. Region (South or North)

5.5 Operational Definitions

In the present study, the variables Holistic Education Programme, Value Preference, Social Competence and Leadership Skills have been operationally defined as follows:

5.5.1 Holistic Education Programme

Holistic Education Programme in the present research refers to an instructional programme carried out using various classroom training modules and structured outside activities by the researcher.

5.5.2 Value Preference

Values are principles or qualities that an individual considers of intrinsic worth, and they are desirable goals or guiding principles in an individual's life. (Rokeach, 1973; Schwartz, 1992; Kluckhohn, 1951). In the present study, value preference refers to the preference of engineering students on the ten values suggested by Sherry and Verma (2012).
5.5.3 Social Competence

In this study, social competence is defined as the effectiveness of one’s coping with, and performance in, everyday real life social situations. The main components of social competence under this study are school competence, team organising competence, peer socialisation competence, social cognition competence, social forethought and compassion competence, Social competence related to home, social-emotional competence, and social flexibility competence (Devassy & Raj, 2012).

5.5.4 Leadership Skills

In this study leadership skills refers to the skills exhibited by the students as measured by Leadership Skill Inventory (LSI) developed by Karnes and Chauvin (2000) which was adapted and standardised for the Indian population by Devassy and Raj (2012).

5.6 Major Hypotheses

Hypotheses have been categorised under three sets.

5.6.1 Pre-intervention Period

1. There is no significant difference in the value preference, social competence and leadership skills of students based on their branch of study.
2. There is no significant difference in the value preference, social competence and leadership skills of students based on their gender.
3. There is no significant difference in the value preference, social competence and leadership skills of students based on their religion.
4. There is no significant difference in the value preference, social competence and leadership skills of students based on their kind of stay.
5. There is no significant difference in the value preference, social competence and leadership skills of students based on the region they hail from.
5.6.2 Post-intervention Period

1. There is no significant impact of the Holistic Education intervention on the value preference of students in the pre-test, post-test and delayed post-test phases.

2. There is no significant difference in the value preference of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their branch of study.

3. There is no significant difference in the value preference of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their gender.

4. There is no significant difference in the value preference of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their religion.

5. There is no significant difference in the value preference of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their kind of stay.

6. There is no significant difference in the value preference of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their region they hail from.

7. There is no significant impact of the Holistic Education intervention on the social competence of students in the pre-test, post-test and delayed post-test phases.

8. There is no significant difference in the social competence of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their branch of study.

9. There is no significant difference in the social competence of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their gender.

10. There is no significant difference in the social competence of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their religion.
11. There is no significant difference in the social competence of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their kind of stay.

12. There is no significant difference in the social competence of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their region they hail from.

13. There is no significant impact of the Holistic Education intervention on the leadership skills of students in the pre-test, post-test and delayed post-test phases.

14. There is no significant difference in the leadership skills of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their branch of study.

15. There is no significant difference in the leadership skills of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their gender.

16. There is no significant difference in the leadership skills of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their religion.

17. There is no significant difference in the leadership skills of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their kind of stay.

18. There is no significant difference in the leadership skills of students in the pre-test, post-test and delayed post-test phases of the Holistic Education intervention with respect to their region they hail from.

5.6.3 Delayed post-intervention period

1. There is no significant relationship between post-test and delayed post-test scores of value preference of students.

2. There is no significant relationship between post-test and delayed post-test scores of social competence of students.

3. There is no significant relationship between post-test and delayed post-test scores of leadership skills of students.
5.7 Tools Used in the Study

The following instruments were used to assess the value preference, social competence and leadership skills of the engineering students.

5.7.1 Value Preference

The value preferences of students were measured by the Personal Values Questionnaire (PVQ) constructed and standardised by Sherry and Verma (2012). The scale consists of 40 items measuring religious, social, democratic, aesthetic, economic, knowledge, hedonistic, power, family prestige and health values.

5.7.2 Social Competence

The social competence of students was measured by Adolescent Social Competence Scale (ASCS) developed and standardised by Devassy and Raj (2012). This scale has 37 items, and it measures various dimensions of social competence.

5.7.3 Leadership Skills

The leadership skills of the students were measured by the Leadership Skill Inventory (LSI) developed by Karnes and Chauvin (2000) which was adapted and standardised for the Indian population by Devassy and Raj (2012). This scale has 125 items.

5.7.4 Holistic Education Programme

The intervention used in the present research to enhance the value preference, social competence and leadership skills was Holistic Education Programme designed and validated by Thomas and Swamy (2013). It included 20 sessions of 2 hours each in the classroom, a one-day outing to an amusement park and two days and one night stay in a village. The researcher developed a questionnaire to measure the knowledge of the students in Holistic Education.
5.8 **Design of the Study**

The researcher used a single group Pre-test – Post-test – Delayed Post-test experimental Design to find the impact of Holistic Education on engineering students.

5.9 **Population of the Study**

The population of the present study consists of first year engineering students of a University in the district of Bengaluru, Karnataka, India.

5.10 **Sample and Sampling Technique**

To construct and validate the Holistic Education Programme 139 students were selected from the first-year undergraduate Engineering program of a university in Bengaluru using random sampling. The sample included male and female students representing various branches of the engineering program. In the second phase, 55 students from the first-year Engineering programme of a university in Bengaluru were selected for the intervention study using stratified random sampling technique. The students included 31 males and 24 females from all specialisations and representing various religions and other demographic features. Informed consent was taken from the students, the dean and the coordinator of the Programme.

5.11 **Procedure of the Study**

- Step 1. Developed a course curriculum for holistic education. After the relevant literature review and the experts’ opinion, the curriculum was developed and standardised.
- Step 2. Selected a sample class from the first-year engineering students using stratified random sampling method.
- Step 3. Administered pre-test on the selected sample. The value preference, social competence, and leadership skills of the students were measured using various standardised tools.
- Step 4. Implemented Holistic Education Programme developed by the researcher to the sample group of students (Treatment period).
- Step 5. Conducted a post-test using the same tools among the students who participated in the Holistic Education Programme.
• Step 6. Conducted a delayed post-test using the same tools after a month from the intervention period.

• Step 7. Did a data analysis to find out the impact of Holistic Education Programme on value preference, social competence, and leadership skills of students by comparing the pre-test, post-test and delayed post-test scores.

5.12 Procedure of Intervention

The researcher explained the purpose of this study in detail to the participants and the university authorities. Informed consent was taken from the students with the approval of the University authorities. The measures of social competence, value preference, and leadership skills were given to the participants on the first day of interaction itself. The next day onwards six sessions of two hours each on social competence were administered to the students. After that, a unit test was conducted. Then six sessions of two hours each on leadership skills were conducted to the students. Another unit test was administered again. Six sessions of two hours each on various values were discussed the following days. A unit test for those sessions was conducted again. A one-day excursion was planned after that. The researcher gave the objectives of that tour, and the students made all the arrangements and went to an amusement park in Bengaluru. Then the researcher conducted a session on rural India and the students organised two days and a night stay in a village in Bengaluru. In the concluding session of the intervention, feedback was taken from the participants about the programme and the measures of social competence, value preference, and leadership skills were administered. After one month of the intervention, the participants gathered again, and the measures were re-administered for a delayed post-test.

5.13 Procedure of Data Collection

There were four phases in data collection. They are:

• Phase 1. The pre-test was conducted on the selected sample.

• Phase 2. The researcher administered Holistic Education intervention on the sample of students. An examination was conducted for their knowledge in the Holistic Education.
• Phase 3. A Post-test was administered immediately after the intervention.
• Phase 4. A delayed post-test was conducted after one month of the treatment period.

Data was collected in each phase and analysed using appropriate statistical tools.

5.14 Statistical Techniques Used

A normality test was conducted on the data. The important statistical tools used in the analysis of the data are:

• Arithmetic Mean
• Standard Deviation
• Karl Pearson’s Product Moment Coefficient of Correlation
• t-test
• Chi-square test
• Mann-Whitney U Test
• Kruskal-Wallis ANOVA
• Shapiro-Wilk test
• One-way ANOVA
• Two-way ANOVA
• Repeated Measures of ANOVA
• Friedman’s two-way ANOVA

5.15 Major Findings of the Study

5.15.1 Pre-Intervention Period

1. The gender has no influence on the value preferences and leadership skills of students. However, gender influences the social competence of students in the pre-intervention period.
2. The branch of study influences the value preference of students. However, it has no influence on social competence and leadership skills of students in the pre-intervention period.
3. The religion influences the value preference of students. However, religion has no influence on social competence and leadership skills of students in the pre-intervention period.

4. The kind of stay has no influence on the value preference and leadership skills of students. However, it has an influence on social competence of students in the pre-intervention period.

5. The region (south or north) of birth influences the value preference of students. However, it has no influence on the social competence and leadership skills of students in the pre-intervention period.

5.15.2 Post-Intervention Period

1. There is a significant impact of Holistic Education Programme on some of the value preferences of students. The social, economic, hedonistic, and health value preferences of students changed after the intervention ($F = 6.724, \ p < .05, 7.827, 8.998, 9.114, p < .01$).

2. There is a significant impact of Holistic Education Programme on some of the value preferences of students based on their gender. The democratic, economic, and health value preferences of female students changed. The hedonistic value preference of male students also changed.

3. There is a significant impact of Holistic Education Programme on some of the value preferences of students based on their branch of study. The democratic and economic value preferences of Computer Science and IT students changed after the intervention. The value preference of other branch students remains the same.

4. There is a significant impact of Holistic Education Programme on some of the value preferences of students based on their religion. The democratic value preference changed for Christian students. The health value preference changed for Hindu students. The social value preference changed for students from other religions.

5. There is a significant impact of Holistic Education Programme on some of the value preferences of students based on the region they hail from. The knowledge, hedonistic, and power value preferences of students from South
region changed after the intervention. The value preference of students from the North remains the same.

6. There is a significant impact of Holistic Education Programme on some of the value preferences of students based on their kind of stay. The democratic and knowledge value preferences of the students who come from home changed. The social and hedonistic value preferences of hostel students changed after the intervention.

7. There is a significant impact of Holistic Education Programme on the Social Competence of students in all the dimensions namely school competence, team organizing competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence ($\chi^2 = 98.452, 100.615, 103.714, 102.583, 104.733, 94.640, 105.653, 98.982, 96.185, p < .01$).

8. There is a significant impact of Holistic Education Programme on the Social Competence of students irrespective of their branch of study namely school competence, team organizing competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence.

9. There is a significant impact of Holistic Education Programme on the Social Competence of students irrespective of their gender in all the dimensions namely school competence, team organizing competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence.

10. There is a significant impact of Holistic Education Programme on the Social Competence of students irrespective of their religion in all the dimensions namely school competence, team organizing competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence.
11. There is a significant impact of Holistic Education Programme on the Social Competence of students irrespective of their kind of stay in all the dimensions namely school competence, team organising competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence.

12. There is a significant impact of Holistic Education Programme on the Social Competence of students irrespective of their region they hail from in all the dimensions namely school competence, team organising competence, peer social competence, social cognition competence, home related social competence, social-emotional competence, social forethought and compassion, and social flexibility competence.

13. There is a significant impact of Holistic Education Programme on the Leadership skills of students in all the dimensions namely fundamentals of leadership, decision making skills, character building skills, group dynamics skills, planning skills, personal skills, problem solving skills, speech communication skills, and written communication skills ($F = 250.327, 279.327, 223.085, 224.004, 251.674, 284.757, 235.013, 368.455, p< .01, \chi^2 = 102.878, 101.799, p< .01$).

14. There is a significant impact of Holistic Education Programme on the Leadership skills of students irrespective of their branch of study in all the dimensions namely fundamentals of leadership, decision making skills, character building skills, group dynamics skills, planning skills, personal skills, problem solving skills, speech communication skills, and written communication skills.

15. There is a significant impact of Holistic Education Programme on the Leadership skills of students irrespective of their gender in all the dimensions namely fundamentals of leadership, decision-making skills, character building skills, group dynamics skills, planning skills, personal skills, problem-solving skills, speech communication skills, and written communication skills.

16. There is a significant impact of Holistic Education Programme on the Leadership skills of students irrespective of their religion in all the dimensions namely fundamentals of leadership, decision-making skills, character building
skills, group dynamics skills, planning skills, personal skills, problem-solving skills, speech communication skills, and written communication skills.

17. There is a significant impact of Holistic Education Programme on the Leadership skills of students irrespective of their kind of stay in all the dimensions namely fundamentals of leadership, decision making skills, character building skills, group dynamics skills, planning skills, personal skills, problem solving skills, speech communication skills, and written communication skills.

18. There is a significant impact of Holistic Education Programme on the Leadership skills of students irrespective of the region they hail from in all the dimensions namely fundamentals of leadership, decision-making skills, character building skills, group dynamics skills, planning skills, personal skills, problem-solving skills, speech communication skills, and written communication skills.

5.15.3 Delayed post-intervention period

1. There is a sustained impact for the Holistic Education Programme with respect to value preferences of students \( (\rho = .999, .995, .990, .981, .999, .991, .997, .988, .995, .991, p < .01). \)

2. There is a sustained impact for the Holistic Education Programme with respect to social competence of students \( (\rho = .962, .948, .955, .901, .983, .894, .951, .934, .979, p < .01). \)

3. There is a sustained impact for the Holistic Education Programme with respect to leadership skills of students \( (\rho = .997, .994, .983, .991, .991, .985, .990, .950, .989, p<.01). \)

5.16 General Conclusions

In the pre-intervention period, it is found that value preferences of students vary depending on their branch of study. However, the branch of study has no influence on social competence and leadership skills of students. While gender influences the social competence of students in the pre-intervention period, it has no influence on value preference and leadership skills. Religion and region influence the value preference of students, but they have no influence on social competence and

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leadership skills. The kind of stay has no influence on value preference and leadership skills of students whereas it has an influence on social competence.

Data analysis during the post-intervention period shows that some of the value preferences of students have been changed because of the Holistic Education intervention. The intervention had an impact on social value, economic value, hedonistic value and health value preferences of students. It is observed that some of the value preference changes occurred irrespective of their gender, branch of study, religion, kind of stay and region they come from.

There is a significant impact of the intervention on social competence of students in all dimensions namely, school competence, team organizing competence, peer socialization competence, social cognition competence, social forethought and compassion competence, social competence related to home, socio-emotional competence, and social flexibility irrespective of their gender, branch of study, religion, kind of stay and region they come from.

Similarly, results indicate a significant impact of Holistic Education Programme on the leadership skills of students irrespective of their gender, branch of study, religion, kind of stay and region they come from in all the dimensions namely fundamentals of leadership, decision-making skills, character building skills, group dynamics skills, planning skills, personal skills, problem-solving skills, speech communication skills, and written communication skills.

The results of delayed post-intervention period proved that there is a sustained impact for the Holistic Education Programme with respect to value preference, social competence, and leadership skills of students.

5.17 Educational Implications

The investigation results revealed that there is a significant difference after the intervention of Holistic Education program on value preference, social competence, and leadership skills of engineering students. While in India, the education focuses more on academic achievement compared to other skills like social competence, and leadership skills (Chakrabarti & Tiwari, 2006) Holistic Education program could be
included in the curriculum of students to develop their competencies to make them productive citizens of the society.

This study indicates that value preference of students could possibly be changed with proper training in value concepts. Development of personal values is important to be discussed in the classroom. A mind map could be drawn in the classroom with the help of students to highlight the factors responsible for the formation of personal values. Clarification of values through various worksheets could be done. The facilitator could divide the class into groups and elicits the things that shape the values of youths today such as music, the internet, movies, advertisements, media, friends, radio and video games. Ethics and its importance in life could be a discussion point with the implications of unethical behaviour. The rights and responsibilities of ethical behaviour could be elaborated upon and could explain its impacts on one’s personality. The need for social values could be discussed. The importance of faith in the Supreme Power and the power of prayer could also be taken up for the study. Spirituality, its definition, its dimensions and the paths to spirituality all could be discussed in detail. Ideas on inculcating spiritual values could also be shared and discussed with students.

In college or university, a student’s values will be influenced by peer interaction and other heroes in their lives. It is a must to include a module in the first year of their college or university life to reinforce the importance of ‘Positive Values’ in Life. The most critical values broadly classified and universally practiced such as Religious value, Social value, Democratic value, Aesthetic value, Economic value, Knowledge value, Hedonistic value, Power value, Health value, Family prestige value, etc. (Sherry & Verma, 2012) could be discussed in the class in detail to make them understand their value preference in life. Thus, the value concept is a powerful tool, and it could be employed at societal, institutional, and individual levels.

The results of this study support the proposition to make the students aware of their current value system through various case studies and workshops. Their concept of God and the need for a prayer life could be discussed in the class. Their priority in decision making when some social causes are involved could be tested using some games or case studies. The value preference of the students who consider money and
pleasure as the main goals of life could be changed through some exercises on social values and narrating the life history of a few role models of the world.

Since the study reveals that there is a significant effect of the holistic education on the value preference of engineering students it is necessary that engineering colleges and universities realize that policies are to be introduced so that along with the core engineering curriculum holistic education curriculum is introduced and the students are given opportunities to engage in humanitarian services, that could focus on the needy and the affected of their misery. Similarly, they need to realize that the right attitude is developed as a trade-off between the capacity to earn money, material gain and develop consideration for the welfare of the society and the progress of the country.

It is also necessary that the students are taught to sacrifice unnecessary pleasures. They need to be taught the right attitude towards the normal and accepted ways of enjoyment and to seeking pleasures. Besides it is important that while students engage in serious academic work, they are to be reminded that they should not neglect their health with regard to proper diet, healthy lifestyles, managing stress, adequate rest as the key to an overall plan of the educational and academic outcome.

In this study, it was found that social competence of the students could possibly be enhanced through Holistic Education. The various dimensions of social competence such as school, team organising, peer socialisation, social cognition, social forethought and compassion competence, home related, socio-emotional, and social flexibility competence could be included in the training programme.

Hence educational institutions to achieve the goals of quality and excellence in education there is an urgent need to develop and broaden the vision of educational goals, to facilitate holistic ways, to integrate educational content, in developing capacities and competencies essential for engineering students required through the curriculum.

In an information and technology driven age, education is mandated to respond to demands in two directions: on the one hand, it must transmit an increasing amount of constantly evolving knowledge and know how to adapt to a knowledge driven civilisation while keeping personal and social development as its end in view.
Therefore, the students are to be exposed to the bright career in the engineering profession in future. In preparation, the educational institutions should insist on the organised life of their students during their campus life. They must be guided to use their time effectively to maintain a healthy relationship with others, peers, teachers and parents and follow the academic requirements. Being part of a team, taking up leadership roles are critical skills to be developed. An environment through peer education to develop healthy peer relationship and the mutual success of each other are to be made conscientious.

Engineering students should be made to realise that to be successful in their careers and life, the awareness of the rights of others, promoting equality for the growth of the society and respecting elders are necessary for their lives. They are to be taught to understand others, respect failures and success and the art of forgiving. Besides relating well with parents and siblings should be the goal they reflect the four pillars of learning, as proposed by the International Commission for the Twenty-first Century, in its Report (Delors, 1996) to UNESCO, ‘Learning: The Treasure Within’, around the four pillars of learning: ‘learning to know, learning to do, learning to live together, and learning to be’ as it is essential from the context of the present study. The development of such qualities as: knowledge and understanding of self and others; appreciation of the diversity of the human race and an awareness of the similarities between, and the interdependence of, all humans; empathy and cooperative social behaviour in caring and sharing; respect of other people and their cultures and value systems; capability of encountering others and resolving conflicts through dialogue; and competency in working towards common objective are critical. Besides interpreting the pillar on ‘Learning to be’ emphasised that: to be Human through the acquisition of knowledge, skills and values conducive to personality development in its emotional intellectual, moral, cultural and physical dimensions.

Engineering colleges and universities have to include modules in the curriculum of students to comprehend and appreciate adaptability and living in a community, to comprehend the importance of relationships, to improve interpersonal and societal skills and commitment, to know and prize oneself to build emotional competence and self-regulation, to develop empathy and learn the art of forgiving, and to become aware of the importance of self-esteem.
Students could learn that social responsibility and social competence would give an obligation to act to benefit society at large. Students could be helped to develop sensitivity toward social, cultural, economic and other environmental issues during their education period itself. Students could be motivated to use their social competencies for the benefit of the public through personal initiatives, focusing on quality of life through activities such as legal awareness, energy conservation, and judicial use of resources, go green, zero waste campus, water harvesting, and recycling and so on.

This study emphasises the fact that a village exposure programme, to understand the country better, would improve their awareness about the environment they live in. Students would be exposed to the rural realities that prevent common people from attaining self-reliance, have a firsthand experience of the difficult circumstances of the rural poor, be enabled to reflect and internalize their own role as agents of change to change the adverse situations that they would come across in their future, inculcate a simple lifestyle with genuine values as found in rural communities, understand and attempt to develop appropriate mechanisms to lead a life with limited accessibilities and resources, demonstrate responsible behaviour and empathy for others, and comprehend the challenges faced by rural population. All universities shall adopt a programme in their curriculum to improve the social competence of students, and it should be evaluated systematically.

Through this study, it is understood that the leadership skills of students could be improved by systematic training. Every university curriculum shall include modules to understand the concept of leadership, to comprehend the various approaches to leadership, to appreciate the skills required for effective leadership such as effective followership, good communication, goal setting, effective decision making, critical thinking, humility and self-assertion. This kind of training will help the students to develop an in-depth understanding of leadership concepts and will develop a better understanding of good leadership behaviour as a skill set that can be practised and improved upon.

Students could go on a tour as part of leadership skill training wherein they participate in all the activities and have fun doing so. During the trip, students learn to interact with each other. They imbibe and practice the values of discipline, safety,
cooperation, trust, faith, tolerance, adjustability, empathy, consideration, and understanding. They also build self-confidence and leadership while enjoying themselves. They will learn how to inculcate values of discipline, adjustability, and co-operation and will demonstrate leadership in different situations. During the entire trip, different student leaders shoulder various responsibilities; demonstrate situational leadership, camaraderie, adjustability, and co-operation. During the tour, the trainer could monitor the behaviour of the students inside the vehicle, at the venue and during various activities with gentle reminders on appropriate social behaviour and safety norms.

This study shows the importance of Holistic Education Programme to initiate a meaningful and creative learning environment in the campus and classrooms. All the educational institutes and policy makers shall encourage the concept of introducing Holistic Education programme in the classroom and workplace. It would be advisable that the policy makers like University Grant Commission (UGC), National Assessment and Accreditation Council (NAAC) and National Council for Teacher Education (NCTE), make the decision to implement Holistic Education Programme in all colleges and universities. Finally, it is suggested that these Holistic Education Programme developed by the researcher could be used in the training of teachers and all the principals and policy makers in the field of higher education. Thus, the present research has considerable implications for education in which the basic objective is integral development or whole person education of a student.

5.18 Limitations of the Study

1. The sample of the study is restricted to one engineering college of a University. The differences in the university background, culture, core values, or ambience may affect the variables.

2. The sample is selected from the city of Bangalore only. Universities from various metropolitan cities, and other small towns, or in the rural or urban background could have affected the variables.

3. The impact of Holistic Education could not be exclusively attributed to the intervention. Other training and programmes of the university could have made some impact on the variables.
4. This research study considered only three dependent variables and one independent variable. Holistic development may be influenced by many other variables as well such as meaning in life, responsiveness to the environment, awareness of the cultural heritage and so on.

5. The Holistic Education Programme was administered by one instructor. Depending on the passion and enthusiasm of the instructor the impact also may vary a certain extent.

5.19 Suggestions for Further Research

This study has suggested the need for further research in the following areas:

1. The study could be extended to a larger sample. Future research could include different types of colleges and universities with different kinds of management such as Government, Government-aided, private and various minority institutions.

2. The population and sample could include other deaneries like Arts, Commerce, Science, Medicine, Law, etc.

3. For a better generalisation of findings, the research could be extended to other levels like High school, Secondary School, graduate and post graduate students of different age groups.

4. The length of intervention could be spread out, at least, one year to bring in desired change and effect size of the intervention.

5. The sample could be drawn from various cities and states of India and abroad.

6. Exploration of other variables would increase the scope of the study.

7. An experimental and control group design also could enhance the authenticity and generalisation of results.

8. The impact of Holistic Education Programme on the achievement scores, specifically on the academic grades of students, could be tested.

5.20 Conclusion

The present study has contributed to the knowledge-base on the likely impact of Holistic Education Programme on engineering students. It provides a curriculum for the integral growth of an individual to the educational institutes. The results of the study support the need for introducing similar interventions in the regular academic
programmes. The conclusions drawn indicate the direction and the need for further study on Holistic Education Programme and its impact on various personal, interpersonal and societal skills of students. The research questions generated after the study, open up avenues for more advanced future research on the same topic.