

ENHANCING SOCIAL COMPETENCE OF ENGINEERING STUDENTS THROUGH HOLISTIC EDUCATION

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ABSTRACT

A student is much more than just his/her intellect. A true education is one which caters to the development of cognitive, affective and psychomotor domains of an individual. Many profound thinkers and educators accept this holistic view of education. There is abundant research done to capture the various dimensions, depth and impact of holistic education in the development of various aspects of an individual - physical, emotional, mental, psychological, environmental, social and economical. The need, importance, dimensions, value and impact of social competence in the overall development of an individual through education is deconstructed in this paper. An attempt is made to present the outcome of an experimental research on holistic education and its impact on the social competence of engineering undergraduate students. The research design was single group pre-test, post-test and delayed post-test experimental design. The sample was drawn from the students pursuing first year engineering programme from a University in India. Statistically significant impact was observed on the social competence of the students after the holistic education training intervention. The findings of the present research have implication for education and training of emerging adults.

Key words: *Holistic Education, Social Competence, Social Competence Scale*

I. INTRODUCTION

Higher education institutions should strive to realize the holistic and integrated development of students. Integral formation, involves complete and solid formation of every aspect of a student's personality, to form an essential component of fundamental and distinctive educational philosophy. Higher education has undergone a lot of changes these days. The ultimate goal of education is not in just preparing students to get good placement with a good salary package. Instead, it should aim at developing various kinds of competencies. According to Devassy, (2012) the relentless search for truth, meaning, human dignity and values has been almost scratched from the primary objective of higher education[1]. Thapan (2001) speaks about the philosopher J. Krishnamurti's vision that "education cannot be only about reading and learning from books, but about the whole of life, and should prepare students to meet the challenges of living in a complex social world" [2]. True education for human beings is not only conveying and transmitting knowledge but also cultivating the intellectual, moral, and spiritual realm beyond one's physical body.

For this study, a small survey was conducted among 538 students studying in Christ University, Bangalore in India by Devassy (2012) [3]. Among the students who responded to the survey, there were five top perceived priorities for higher education. They are; ethical and moral development, social skills, personal skills, academic excellence and carrier development. Thus, keeping the expectations of stakeholders in mind the study was taken to experiment on developing a training program in the name of holistic education to enhance social competence and other skills in engineering students.

II. HOLISTIC EDUCATION

Holistic Education deals with the growth of every person's intellectual, emotional, social, physical, artistic, creative and spiritual dimensions. It actively engages students in the intellectual development process and encourages personal and collective responsibility. Its aim is to nurture healthy, whole, curious persons who can learn whatever they need to know in any new situation. Hare J. (2010) uses Miller's words to describe the features of holistic education. Miller has proposed that holistic education nurtures the broad development of the students and focuses on their intellectual, emotional, social, physical, creative or intuitive, aesthetic and spiritual potentials. It promotes the importance of relationships at all levels within a learning community in which the educator and student work together in an open and collaborative relationship [4]. The goal of holistic education is to nurture individuals to be intellectually competent, spiritually mature, morally upright, psychologically integrated, physically healthy and socially acceptable (CMI Vision, 1991) [5]. Hence, the focus is to enable an individual to go beyond the acquisition, generation and application of knowledge but to transcend to higher level of human understanding and service that one is capable of. Eisler gives three goals that are fundamental to education for the 21st century. They are (a) helping children grow into healthy, caring, competent, self-realized adults (b) providing them with the knowledge and skills that can see them through this time of environmental, economic, and social upheavals (c) equipping them to create for themselves and future generations a sustainable future of greater personal, social, economic, and environmental responsibility and caring (Eisler, 2005) [6].

According to Kim (2010) certain higher-order skills are critical to the development of human capital and citizenship in the twenty-first century. We have to learn to use our critical thinking and analytical reasoning skills to assemble and reconcile seemingly contradictory information to deal with problems that are not easily defined. We must be able to cogently communicate with others as we together solve the problems we share. Higher education must include teaching students how to access data, to judge what is most useful and appropriate, to think critically, and to write cogently and coherently [7].

III. SOCIAL COMPETENCE

According to Goldfriend & D'Zurilla (1969) social competence is "the effective response of the individual to specific life situations. Socially competent person manages well the circumstances which they encounter daily and possesses a judgment which is accurate in meeting occasions as they arise and rarely miss the expedient course of action" [8]. The socially competent individual is one who is able to make use of environmental and personal

resources to achieve a good developmental outcome (Waters & Sroufe, 1983) [9]. In a study of several hundred parents of high school-aged students, Krumboltz, Ford, Nichols, and Wentzel (1987) [10] found that social competence in the form of cooperation, respect for others, and positive interpersonal relationships were selected by almost all parents as an essential outcome for students to achieve, over and above academic accomplishments. In the same study, the teachers have also stated the 'ideal' students as having these following desirable outcomes besides other performance oriented and motivational qualities-socially assimilative characteristics such as sharing, being helpful to others and adhering to rules (Wentzel, 2000) [11].

As cited by Devassy and Raj (2012), social competence could be subdivided into eight dimensions expressing various skills. They are (a) School Competence - It refers to a student's ability to cope with academic, social and interpersonal contexts of the school or college. (b) Team Organizing Competence - it refers to the confidence with which a student can form teams. It also includes the acceptance in the team, emerging as a leader in the team, success in giving an identity for the team and readiness to take up leadership roles in school/college and elsewhere for a social cause. (c) Peer to peer social competence - It refers to the ability of the adolescent to initiate positive interactions, form affiliations to peer groups. It is the ability to easily make friends, keep friends, make new friends, being accepted by friends, and interact with friends socially. (d) Social Cognition Competence - It is the ability of a student to respect and promote the rights of others including those older to them and those who stand against them and resolve to promote and protect social equality and growth. In other words it is one's capability to respect the other in any circumstance. (e) Home related Social Competence - The ability to develop positive, holistic, open interactions with parents and siblings, to relate to all at home freely and feel free to express the emotions. (f) Socio-Emotional competence - It is the ability of the student to manage, balance, regulate and express emotions in the right proportions, correctly and effectively in social situations and interactions. (g) Social forethought and Compassion - compassion, empathy, forgiveness, caring, altruism are all considered dimensions of social competence. It covers the ability of the student to be sensitive to and understand the needs of others, to care for them, be non-judgmental, be non-violent in social interactions and interact with an attitude of forgiveness and empathy. (h) Social Flexibility- It is the ability to adapt smoothly and speedily to diverse social contexts and demands. The ability to manage conflicts in day to day life also comes under this component [12].

IV. NEED AND SIGNIFICANCE OF THE STUDY

Mentoring the students in the initial stages of their college life is indispensable. Students face difficulties in their first year of University on many issues. They join for higher studies with a lot of dreams and expectations. They come from wide range of educational backgrounds: some from International Baccalaureate program, honors program, State syllabus, Central syllabus and so on. There are cases where high school success or failure doesn't apply to college. This is the time one begins the transition into adulthood. The decisions that a student makes and the actions he or she takes during the first year of college will have a major impact on the rest of his or her college experience and the future career.

Adolescence is the period of growth. It is a challenge to grow in competencies, leadership skills, personal and interpersonal skills and various other skills. It is the period of human development during which a young person must move from dependency to independence, autonomy and maturity. However, adolescents have frequently been called “the terrible teens” (Hurlock 1981) [13]. This is the most formative and impressionable age when the maximum amount of physical, psychological and behavioral changes take place. The very young adults in colleges need proper support and guidance from the elders during their transition stage. During this period the role of the educational institution in nurturing, facilitating and enhancing the competence, and various life skills is very important. Though, there is an increased awareness about the need and scope of holistic education in the institutions of higher learning, there is shortage of trained professionals and teaching materials.

There is a tendency among technical students, especially engineering students, to spend most of their time and energy to acquire technical knowledge than developing a good personality. In the present technological and mechanistic society an engineering student tries to learn to be a good computer or a good machine. There is less training for a living or training for life. Thus, students need to have holistic education program included in their training period to have better values and skills. So far, there are no research studies available on holistic education in relation to social competence of engineering students. The researcher hopes that this study will fill the gap and give a substantial contribution in this field. This research will create a greater awareness among the academicians, administrators and managers of technical educational institutions about the need for a mandatory course in holistic education, which will enhance social competencies.

V. OBJECTIVES

1. To measure social competence of engineering students.
2. To develop a package on holistic education.
3. To find out the impact of holistic education on social competence.

VI. HYPOTHESIS

There is no significant impact of holistic education on social competence of engineering students.

VII. METHOD

7.1 Tool for Data Collection

The social competence of students was measured by the Adolescent Social Competence Scale (ASCS) constructed and standardized by Devassy and Raj (2012) [13]. The scale with 37 items in five-point scale in the line of Likert Scale, measures eight dimensions of adolescent social competence.

7.2 Participants

Fifty five students in the age group of 17 to 18 attending first year engineering program from a University in Bangalore were selected for the present research. All these students participated in the intervention programme. Among the participants 31 were males and 24 were females. They belong to different branches of engineering and

represent various states of India. Informed consent was taken from the students, the dean and the concerned coordinator of the programme.

7.3 Research Design

The research design employed in the present study was one group pre-test post-test delayed post-test experimental design. Standardized tool on social competence was administered before giving the intervention and the same was administered immediately after the intervention program. After four weeks of intervention the same tool was re-administered again. Normality of scores is tested with Shapiro Wilk test of normality. Significance of the differences at various phases of the research is tested with repeated measure of ANOVA and Friedman's ANOVA. Partial eta squared and Kendall's coefficient of concordance was used as a measure of effect size.

7.4 Procedure

Initially, informed consent was taken from the participants and the university authorities. The measure of social competence was given to the participants for self rating. After that, the treatment was given in four units. The first unit had six sessions; Social Competence- Introduction, Adaptability and Adjustability, Relationships, Emotions, Art of Forgiving and Self Esteem of two hours each emphasizing the social competence aspect. The second unit also had six sessions; On Leadership Skills, Followership and Leadership, Goal Setting, Communication Skill, Critical/creative thinking and Decision making, Humility and Self Assertion of two hours each Emphasizing more on leadership skills. The third unit consisted of five sessions; Introduction on Values, Personal Values –I, Personal Values –II, Social Values and Spiritual Values of two hours each concentrating on personal values. The fourth unit consisted mainly of outdoor activities; Rural Camp/ Village Exposure for two days and one night. One day tour was also organized to an Amusement Park. They spent one full day in developing confidence, team work and other skills.

Each unit is reviewed through case studies, worksheets, questionnaires, quizzes, role-plays, poster and collage making and a unit test. There was a comprehensive written exam after all the sessions on Holistic education. The tool of social competence was administered after the completion of the intervention programme. After four weeks of intervention, once again the tool was administered to find the sustainability of the impact of the programme.

VIII. RESULTS

Summary of Repeated measure ANOVA and Friedman's ANOVA performed for social competence is presented below.

Table 1

Social competence at pre test, post test and delayed post test phases with all components

Variables	Phases						χ^2	Sig.
	Pre test		Post test		Delayed post test			
	M	SD	M	SD	M	SD		
School	27.16	3.617	35.02	2.343	35.35	2.171	98.452	.000
Team	17.91	3.966	24.40	2.506	24.87	2.365	100.615	.000
Peer	18.57	2.722	23.98	1.408	24.02	1.446	103.714	.000
Cognition	11.19	1.395	14.16	.834	14.29	.737	102.583	.000
Home	15.03	2.575	19.40	1.075	19.40	1.029	104.733	.000
Emotional	10.14	1.801	13.00	1.257	13.29	1.301	94.640	.000
Forethought	14.84	2.024	18.97	1.154	19.15	1.113	105.653	.000
Flexibility	13.09	2.550	17.71	1.140	17.80	1.238	98.982	.000
Total	127.93	12.311	166.62	7.909	168.16	7.797	96.185	.000

Friedman's ANOVA presented in the Table 1 indicates that scores of social competence increased significantly from pre-test to post-test phase and post-test to delayed post- test phase of the research for all sub variables under this study namely school social competence, team organizing social competence, peer to peer socialization competence, social cognition competence, home related social competence, socio-emotional competence, social forethought and compassion competence, and social flexibility competence. The total of Friedman's ANOVA presented in the table 1 shows that scores of social competence increased significantly from pre-test to post-test phase and post-test to delayed post- test phase of the research, $\chi^2(2) = 96.185, p = .000$. It is observed that the effect size of the intervention on social competence is 87.4 percentage and $W = .874$.

IX. CONCLUSIONS

This experimental research was aimed at finding the impact of Holistic Education on the social competence of Engineering students. A null hypothesis was formulated and tested for its statistical significance. The results show that the Holistic Education intervention has impacted the social competence of engineering students and hence the null hypothesis was rejected. Also, it is observed that holistic education has enhanced significantly all the important eight components of social competence of the students.

The intervention study was limited to a small sample. Hence, it may not be concluded that Holistic Education can positively impact the social competence of all engineering students, though the intervention in the present study had positive impact. This intervention study was conducted in only one particular university. The results may not be also generalized to other populations. The result may vary based on the socio-economic condition of students and the culture and value system of each university or college.

X. IMPLICATIONS

The study has implications for both practice and further research. The intervention can be incorporated in engineering education and training to enhance various competencies of students. The researcher recommends the course curriculum developed for holistic education to all technical institutions in India and abroad. Further research could be done to find the impact of Holistic education on other students of non technical back grounds. We could also include some more modules to improve other skills and competencies of students. It would be desirable to make a comparative research to find the difference in the impact of Holistic Education in various colleges and universities with different specialization of study. The same research can be extended on a larger population for better generalization of the results.

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