RECONCEPTUALIZING EDUCATION FOR SUSTAINABLE DEVELOPMENT: ANALYSING THE IMPACT OF INTERVENTION PROGRAM TOWARDS FOSTERING GLOBAL COMPETENCE FOR TRANSFORMATION TOWARDS SUSTAINABILITY

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Abstract:

Global Competence is the ability to examine local, global and intercultural issues, ability to understand and appreciate diverse perspectives and world views, ability to have successful and respectful interaction with people and to take responsible action towards sustainability and collective well-being. The main aim of the research was to analyze the impact of an intervention program. For the present study the researcher has used experimental method. The design selected for the study was quasi experimental Pre-test – Post-test Non-Equivalent Group Design. The sample consist of an intact class of grade IX school students. The Control group and Experimental group were both from Government aided English medium schools from Mumbai, Maharashtra. The tools used for the study was Global Competence scale, designed and tested for validity and reliability. The reliability score of Cronbach's alpha was found to be 0.93 which is considered to be a good score. The result of the study shows a significant difference in the post-test of control group and experimental group on global competence for sustainability. The findings of the study reveal no significant difference in the pre-test scores of control group and experimental group on global competence for sustainability but still greater mean scores of experimental group proves that students of experimental group were more globally competent compared to students of control group. The study also shows a moderate effect of intervention program on the dependent variable.

Keyword: *Intervention Program, Global Competence, Sustainability*

Introduction:

Today's learner is living in a world which is quite unpredictable and erratic compared to the stable world in which their elders used to live. Rapid change is observed in almost all sectors like science & technology, economy, agriculture, medicine, environment as well as in society in which man lives. These changes benefits humans but at the same time brings unprecedented challenges. Accelerating rate of globalization, increased population growth, mass migration, shortage of food, poverty, global warming and climate change etc are triggering new concerns which are endless. Due to erratic changes the future is uncertain and unpredictable and demands for a new kind of education. Education needs to be redefined as per the changing requirements and concerns of the world (Boix Mansilla & Jackson, 2013) The new education should enhance knowledge and understanding of the learners beyond the bookish knowledge. The main role of novel education is to prepare

learners to be successful not only in their studies but also in their real lives. To achieve success in this new global age, learners need capacities that go beyond reading, writing, science and mathematics. They need to be more knowledgeable and curious about the world and real-world issues and develop attitude and skills required to solve real issues. The concept of Global competency involves mobilization of knowledge, skills, attitude and values to meet complex demands of the changing world. Global Competence is a multi- dimensional construct. A globally competent individual possesses, knowledge, skills, attitudes and values and can effectively apply these to solve Global problems and issues that the world is facing today.

DIAGRAMATIC REPRESENTATION OF THE RESEARCH THEME

Adapted from https://link.springer.com/chapter/10.1007/978-3-030-77414-1_8#Fig1

Review of Literature:

Global Competence as defined by PISA, 2018 is the ability to examine local, global and intercultural issues, ability to understand and appreciate diverse perspectives and world views, ability to have successful and respectful interaction with people and to take responsible action towards sustainability and collective well-being. The study conducted by Hinton and her team gathered data from teachers and students from 147 schools, in 34 countries across 6 continents. The study explored statistical correlation between 5 learning activities with multiple global competencies. Along with quantitative analysis the study also carried out qualitative analysis in order to glean insights about the effective implementation of the learning activities towards development of global competence. In alignment with the studies conducted by Hinton and her team, an exploratory descriptive case study conducted by Billian, (2014) also tried to analyze the definition of global competence. The conclusion drawn from review of literature done by her highlight the fact that there is no common definition for global competence as the competencies varies for various institutions. Todd, (2017) constructed a preliminary survey in order to create baseline information regarding global competence. The study analyzed various definitions and developed its own definition and theoretical framework for global competence. In concordance with the study of Todd, (2017), a SERU Survey was administered by (Shcheglova et al., 2017) on undergraduate students via

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online mode in order to self-assess global competency. Students' participation in globally oriented activities was found to be significantly related with increased sense of global competence with variation patterns. By the same token (Schenker, 2019) foster global competence through a short term summer program for 4 weeks in US and 4 weeks in Germany. The results revealed that for increasing global awareness group projects and assignment should distinctly focus on cultural comparisons and global issues. With the help of semi-structured interviews and multiphase thematic coding, Tamerat, (2020) built a conceptual model in which students funds of knowledge was leveraged in achieving global competence within the conceptual third space. Skill development, Substantive knowledge of global topics, Action and Disposition were four selected global competence domain of interest which was placed as the central component of the model. For easy emergence of the notion of global competence, methods and contexts for educational pathways for pre-service teachers were also identified by the results of the study conducted by Parmigiani et al., (2022).

Education for sustainability is an integral component of quality education (Hamón et al., 2020). The result of study conducted by (Hamón et al., 2020) shows that University has sustainable campus, university promotes research pertaining to sustainability, university also includes content where sustainability is being taught in inclusion and university also have programs for sustainable development and they plan to implement those programs for improvising knowledge, to bring in positive attitude and change in behavior pertaining to embed sustainability in the life of student for a longer period of time. Furthermore Sadeghinia, (2021) conducted an investigation on the effectiveness of global competency based program modules. The study also concluded that most of the student perceived UN SDGs was important and was related for a fulfilling basic need and also for decent standard of living. Global Education Activities which were focused on Global issues like SDGs and Migration, Climate change etc had significant positive effects on variables such as emotions associated with teaching, attitude about sustainability, mitigation of negative attitude for migrants etc. Baumber, (2022) conducted a case study on incorporating urban sustainability into various courses run by transdisciplinary school at university of technology in Sydney, Australia. The case study stated the significance of student's obtaining transdisciplinary skillsets via education and educators adopting transdisciplinary approach for curriculum design. In alignment with the case study conducted by Baumer, (2022) on incorporating sustainability Sommier et al., (2022) also conducted a similar case study. The study highlighted the need for structural support in order to integrate sustainability in a more meaningful way in the curriculum of higher education and also while teaching. Furthermore, Liu et al., (2022) also conducted a case study on Integrating Sustainability themes in order to enhance interdisciplinarity in teaching and learning in course of study. The implication of the study shows a compatible relationship between sustainability and interdisciplinarity in order to rethink and present an innovative approach in teaching & learning at higher education and due to this learner's try to construct future in a sustainable way. Recently last year (Corazza et al., 2022) designed a study in which the researchers have applied a critical approach on education for sustainable development (ESD) activity.

Aim of the Study:

The main aim of the research is to analyse the impact of intervention program towards fostering global

competence for transformation towards sustainability.

Objectives of the Study:

To achieve the aim, following objectives were formulated:

i. To compare pre-test scores of control group and experimental group on global competence for sustainability.

ii. To compare post-test scores of control group and experimental group on global competence for sustainability.

iii. To compute the effect size of the treatment on global competence for sustainability.

Hypotheses of the Study:

To achieve the objectives of the study following null hypotheses had been formulated:

i. There is no significant difference in the pre-test scores of control group and experimental group on global competence for sustainability.

ii. There is no significant difference in the post-test scores of control group and experimental group on global competence for sustainability.

iii. There is no significant difference in the effect size of the treatment on global competence for sustainability.

Research Design and Methodology:

The study undertaken by the researcher makes use of experimental method and the design selected for it is quasi experimental design. It is described as follows:

a.) Pre-test – Post-test Non-Equivalent Group Design

O1 X O2

O3 C O4

Where O1 and O3 are pre-test

O2 and O4 are post-test

X- Experimental group (Treatment given)

C- Control group (No treatment given)

Sample and Sampling:

The sample for the study was an intact class of students of standard IX of English medium Government aided school from Mumbai. One school was selected as control group and another school from the same area was selected as an experimental group. The researcher had used Simple Random sampling technique for the selecting the schools for the present study.

Tools for the Study:

The tool used by the researcher was 'Global Competence Scale' which was made by herself. The validity and reliability were ascertained by taking the feedback of experts in the educational field. Global Competence Scale consists of 20 items for sustainable futures and 60 items for other dimensions. The total Cronbach's alpha was 0.93 which is considered as a good scale.

Data Analysis and Hypothesis Testing:

Testing of Hypothesis 1: The null hypothesis states that there is no significant difference in the pre-test scores of control group and experimental group on global competence for sustainability. The technique used to test this

hypothesis was Independent two-sample t-test. The t-ratio for comparison of pre-test scores of control group and experimental group on global competence for sustainability is not significant because the p-value is 0.09 which is more than 0.05 hence the null hypothesis is accepted.

TABLE 1: RELEVANT STATISTICS OF PRE-TEST ON GLOBAL COMPETENCE FOR SUSTAINABILITY

Sr No.	Variable	Group	N	Mean	S. D	t	P (two tailed)	LOS
1.	Global Competence for Sustainability	CG	53	68	7.40	-1.69	0.09	NS
		EG	47	73	7.53			

Testing of Hypothesis 2: The null hypothesis states that there is no significant difference in the post-test scores of control group and experimental group on global competence for sustainability. The technique used to test this hypothesis was one-way ANCOVA. Table 2 shows that the $P = 0.003$ which means $P < 0.05$ which implies that a significant difference is found between control group and experimental group. Thus, the null hypothesis is rejected.

TABLE 2: ANCOVA FOR POST-TEST MEAN OF GLOBAL COMPETENCE FOR SUSTAINABILITY OF CG AND EG

Sources of variation	SS	df	MS	F-ratio	P
Adjusted Means (A)	518.27	1	518.27	9.21	0.00309
Adjusted error (B)	5459.3	97	56.28		
Adjusted total (A+B)	5977.58	98			

Testing of Hypothesis 3: The null hypothesis states that there is no significant difference in the effect size of the treatment on global competence for sustainability. The technique used to test this hypothesis was calculating wolf's coefficient which is used to measure the impact of the treatment in fostering global competence for transformation towards sustainability. After calculating wolf coefficient value is 0.7 which as per the table of wolf's chart shows the intervention program has moderate effect on developing competences for sustainability.

Findings of the Study:

The findings of the study reveals that there is no significant difference in the pre-test scores of control group and experimental group on global competence for sustainability but still greater mean scores _(Mean = 73)_ of experimental group proves that students of experimental group were more globally competent compared to

students of control group *(Mean = 68).* The findings of the study also show a significant difference in the post-test scores of global competences for sustainability from control and experimental group. The mean global competence score of EG is significantly greater than that of CG after partial out the effect of pre-test of global competence for sustainability. The findings also revealed that the effect size of the treatment on global competence for sustainability was found to be 0.67 which is rounded off to 0.7 which is moderate in magnitude.

Discussion:

The findings show that there was a significant difference in the post-test of global competence for sustainability of the experimental and control groups. This may be because of the implementation of intervention program which was conducted on experimental group. The intervention program was activity based including charts and puzzles for raising awareness about SDGs this was found to be in alignment with the studies conducted by (Hinton, n.d.) ; Sadeghinia, (2021) and Corazza et al., (2022) Learners enhanced their communication skills, reflective skills while discussing about global issues such as global warming, climate change, pollution etc this was in agreement with the studies conducted by Tamerat, (2020). In concordance with the study conducted by (Hamón et al., 2020) the students were developing positive attitude towards sustainability and appreciating 3R sustainable practices at individual level, in their home, at school etc. Learners developed knowledge and understanding in learning global topics, calculating ecological footprints while studying ecosystem was also observed in the study conducted by Tamerat, (2020); Sommier et al., (2022) ; Liu et al., (2022). Last but not the least in order to develop positive attitude and to construct permanent behavioral change towards sustainable life, small actions were implemented during the intervention like switching off the fans when not in use, use of cloth bags instead of plastic bags, planting tree in school campus etc these actions were also highlighted in the study conducted by (Hamón et al., 2020)

Conclusion:

Education in schools should be transformed and more focused on developing global competence in students which includes attainment of knowledge & understanding about global topics and developing positive attitudes towards sustainability. Teachers should motivate the students to actively participate in promoting awareness on global problems, arrange sessions with fun filled and recreational activities where they can enjoy and at the same time learn to solve global problems at individual level. Integrating classroom learning with global issues can further enhance student's knowledge on real world problems. School can promote sustainability by conducting activities like best out of waste, DIY art & craft which further integrates the 3R (Reduce, Recycle, Reuse) approach at student level which helps in enhancing the sustainability skills of the students. Furthermore, the schools can arrange for skill-based competitions like painting, drawing, poster making, collage making, elocution, debate based on themes highlighting global issues like climate change, global warming etc. Once in a week schools can arrange for thought provoking activities like role play, skits, drama, field visits, etc to inculcate values and principles for leading life in a sustainable way.

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