UNIT 15 : POPULATION GROWTH AND EDUCATIONAL DEVELOPMENT

UNIT STRUCTURE

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15.1 LEARNING OBJECTIVES

After going through this unit, you will be able to—

- describe the meaning of population growth
- discuss the nature and causes of population growth
- explain the relationship between population growth and quality of education
- discuss the impact of adult education on population growth
- analyze the relation between population growth and vocational education
- explain the relation between population growth and non-formal education
- explain the impact of population education on population growth.

15.2 INTRODUCTION

By now, you must have realized that the size, quality, density and growth rate of population impacts various aspects of life. But the dynamics of population is inevitable. It is a continuous process. When the growth rate is very high, it leads to population explosion. So, it is important to control the population growth rate. To prevent or to remedy population explosion, it is important to maintain the rate of population growth. The United Nations (2015) states that "Between 1950 and 2015, the world's population has nearly tripled, from around 2.5 billion in 1950 to almost 7.3 billion in 2015". According to United Nations estimates, the population growth rate at present hangs around 2.5 per cent annually. The rate of increase is a matter of concern. In the present unit we will discuss the concept of population growth, its causes and consequences, particularly on education. The Unit also discusses the role of adult education, non-formal education, vocational education and population education on control of population growth.

15.3 POPULATION GROWTH

Before we explore the relationship between population growth and some aspects of education, as mentioned in the Unit Structure, it is necessary for us to understand the concept, nature and the causes of population growth. Let us first look at the concept and nature of population growth.

15.3.1 Concept of Population Growth

Population is a very familiar term for you. Just for recap, population is the number of units (human beings) living in a region at a particular time. In this section, we will understand the concept and nature of population growth. Population growth refers to the change in the number of units in a population at a particular time at a particular place. Population growth is the function of mainly three aspects—fertility, mortality and migration. The growth rate of population is

determined by counting the number of births and deaths. It is important that the number of births, deaths, immigration and emigration remains balanced. Increased rate of population growth puts pressure on the resources available and thereby affects the living standard of people. The world's population, which numbered around 7.8 billion in 2020, has been growing rapidly and is expected to continue to grow in the coming decades, albeit at a progressively slower pace (United Nations, 2021). Population growth is related to social issue, climate change issue, food security issue, conflict issue, gender issue, economic issue, health issue, environmental issue and overall developmental issue.

15.3.2 Causes of Population Growth

As you have read in earlier section, growth of population is affected by birth rate, death rate and migration. So, when these factors are not in balance, population grows in a steady rate leading to population explosion. Now, we have to understand the reasons which impact these factors. Here we need to contextualize ourselves as these reasons may vary in different contexts. We will discuss the reasons in Indian context particularly.

- **Increased Birth Rate:** One of the factors leading to population growth is increased birth rate. The infant mortality rate and the pre-natal death rate have declined due to improved medical sciences. Also, the public health services have improved and have become easily accessible than earlier. People prefer medical help for delivery which results in healthy birth.
- **Decline in Death Rate:** The decline in death rate is also due to improved medical science and public health. With this improvement, various deadly diseases like, tuberculosis, cholera, malaria, small pox etc. were controlled successfully. There is better facility for control of epidemics and previously incurable diseases. The improvement in accessibility of quality health services so that it reaches to all the people has also a

positive effect towards this. Various steps were taken to make the people conscious about health and health services. The standard and coverage of primary health services were improved in the rural areas. The attitude of people towards medical treatment has changed and more people now go for scientific treatment rather than hesitating.

- **Migration:** With industrial revolution, liberalization of trade policies, people migrate from one place to another. In India, immigration of people from other countries acts as a serious factor in population growth. This leads to over-population especially in urban areas in the country and create problems like scarcity of resources, low quality of life and social evils etc.

Some other causes of population growth are—

Poverty: Another cause of population growth is poverty. There is a cyclic relation between poverty and population growth. Poverty is both the cause and effect of population growth. People remain poor because there is lack of adequate resources due to over-population. They increase the family size as an attempt to fight poverty by sending the children to work for income. So poverty causes population growth and population growth causes poverty.

Illiteracy: We also find a close relation between illiteracy and population growth. Illiteracy keeps people in ignorance. It makes it difficult for the people to understand the necessity of birth control or importance of small family norms. It is observed that the states where the literacy is very low particularly among females the birth rate is very high.

Early age of marriage for girls: Early marriage of girls is another cause of population growth. Even though legal age for marriage of girls is 18 years and that of boys is 21 years, many girls particularly in rural areas are married during the age group of 15-20 years and this increases their reproductive years.

Lack of Awareness: Lack of awareness about population

issues, consequences of uncontrolled population growth, family planning, etc. among the people is another cause of population growth. They do not understand its need and importance. The use of family planning methods is still unknown to some people. The absence of family planning habit among rural and low income urban families also acts as a cause of high population growth.

Socio-Cultural influence: Socio-cultural factors influence family size and consequently affect population growth rate. As a part of culture, religion has a profound effect on family planning. Many religions promote large families and strictly prohibit artificial means of birth control. The other socio-cultural factors include restricting education and employment opportunities to women, preferring boy child than girl child, etc. When women are educated and they can gain economic security, they will definitely make appropriate decisions regarding limiting the family size.



CHECK YOUR PROGRESS

Q 1: State the three main factors effecting population growth.

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Q 2: How is illiteracy and population growth related?

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15.4 QUALITY OF EDUCATION AND POPULATION GROWTH

The consequences of population growth have great impact on education system, economic development, and employment opportunities and over all environment of the country. You will find it interesting that the relationship between quality of education and population growth is intertwined. The impact on education however is of more concern because education is a factor which can help in controlling population growth. One of the most

powerful tools in stemming population growth will be education, says Mark Montgomery, an economics professor at Stony Brook University and a researcher at the Population Council (Murray, 2015). Many studies have proved that education has direct impact on family size and fertility aspects.

The Constitution of India envisages quality education for all. Here, quality education refers to education of a certain standard. A quality education is one that focuses on the whole child—the social, emotional, mental, physical and cognitive development of each student regardless of gender, race, ethnicity, socio-economic status, or geographic location (Slade, 2021). Educational development of a country, as measured by its adult literacy rate and school enrollment ratio, is found to be associated with certain demographic characteristics. It is shown that those countries most advanced educationally tend to have lower rates of population growth. Countries least advanced educationally are observed to have higher rates of population growth; their birth rates, already high, are tending to rise further. Countries at intermediate levels of educational development also show intermediate characteristics of population growth. Look, if quality of education is high, population growth remains stable and if population size is under control, it is possible to make quality education available for everyone. The quality of education of any nation determines the overall development of that nation. Quality education is directed towards all round development of the individual as well as well the society. It enables people to reach their optimum potential and become a productive member of the society. Quality education caters to local, regional, national and global developmental needs. Actually, education works as an instrument for reducing population growth. It can make people aware of the problems that arise due to population explosion, the importance of following the population policy of a nation, the ways to control population, etc. Educated women are empowered to take decisions in various matters including family matters. This has great impact on population control. Education is also helpful in removing superstitious beliefs, customs and social taboos regarding birth control. Research has proved that women who are better educated are more knowledgeable about the importance of and scientific ways for limiting fertility and spacing of child

birth. Women with higher levels of education desire smaller families (United Nations, 2003). Small families can provide quality education and better resources and environment to their children. Due to rapid growth of population in India, education has become costly. A large section of people is deprived of quality education. Fast growth of population has resulted into more students in small classrooms, indiscipline, lack of quality education, wastage and stagnation, etc.

Various countries have used different measures for controlling population growth like legislative measures, educational measures, social measures, etc. But education has always proved to be sustainable measure for controlling population growth. A comprehensive, inclusive and quality education system is capable of controlling the growth rate of population. For example, it is more effective to empower women through quality education about reproductive health, legal age of marriage, making themselves self-sufficient than to enforce legislative measures on them.

15.5 POPULATION GROWTH AND ADULT EDUCATION

An adult is a person who is 19-21 and above years of age. Adult education refers to education of those adults who did not get the opportunity either to attend or to complete the formal education. Education is a lifelong and continuous process. It starts from birth and continues till death. The basic aim of education is to develop the individual's innate power, develop their physical, mental, moral, spiritual and emotional ability. The education which provides for development of adult's talent and expertise at work, is known as adult education. It is a community based activity. Therefore it is local-based in nature, i.e., the programme is designed on the basis of the needs of the prospective participants. In India, adult education has been closely linked to literacy. Adult education is a practice in which adults engage in systematic, sustained, self educating activities in order to gain new forms of knowledge, skills, attitudes or values. It aims to provide self reliance, confidence and self dependence to the adult learners. The purpose of adult education is to increase the literacy rate and to put the illiterate people further

on the path of knowledge. Adult education also contributes towards social and economic development.

While imparting population education to adult learners, it is important to be sensitive. The sermonic way of preaching does not yield effective results. The adults have already developed their own notions about issues like birth control, family planning, growth of population, etc., so it is difficult to change their ideas, attitude and values. Therefore, it is important that population education is integrated with the contents of adult education and literacy materials. You have already read in the previous section that one of the causes of population growth is illiteracy. So, adult education helps in controlling population growth by increasing literacy rate. Through adult education people can be made aware about small family norm, benefits of controlling family members, health condition of mother and child, economic prosperity of the family, proper education of their children and maintenance of standard of living. Adult education can reduce superstitions and wrong conception regarding fertility and birth control.

Government of India launched National Adult Education Programme in 1978. The aim of this programme was to educate non-literate adults within five years. The Population Education Project in Adult Literacy and Continuing Education was launched in 1986. The Directorate of Adult Education executed the project. It was implemented through the state and regional resource centres, which provide technical and academic support to literacy programmes in the states. The National Literacy Mission, launched in 1988, was not confined to spreading literacy but it also included issues like family welfare, immunization, mother and child health care, conservation of environment etc. Literacy enables a person think rationally and be aware of own responsibilities. The biggest achievement of adult education is the empowerment of women, which have far reaching effect on population growth. The NEP 2020 has envisaged strong and innovative government initiatives for adult education to accelerate the aim of achieving 100% literacy. For this, an adult education curriculum framework, suitable infrastructure, training of the instructors/educators by the National, State, and district level resource support institutions, ensuring the participation of community

members in adult education, improving the availability, affordability and accessibility of books, quality technology-based options for adult learning such as apps, online courses/modules, satellite-based TV channels, online books, and ICT-equipped libraries and Adult Education Centres, etc. will be developed. Thus, adult education plays an important role in controlling population growth.



CHECK YOUR PROGRESS

Q 3: How does education of women help in control of population growth?

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Q 4: Why is it sensitive to impart population education to adult learners?

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Q 5: What are the different aspects of adult education highlighted by the NEP 2020?

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15.6 POPULATION GROWTH AND VOCATIONAL EDUCATION

Vocation is related to employment and employment is related to population growth. A vocation is 'a person's employment or main occupation, especially regarded as worthy and requiring dedication'. Vocational education is a type of training, usually in the form of courses and hands-on training that teaches students the specialized skills required to perform a specific job. Vocational education aims at training people for suitable jobs, in regard to the abilities, aptitudes, physical and emotional aspects of individual.

Now, let us try to understand the relationship between population growth and vocational education. Population size is related to employment opportunities and both are related to the economy of the country. If the

population growth rate is very high, the problem of unemployment arises. Due to rapid growth of population young people do not get opportunities for employment. In formal system of education there is rarely any provision for vocational education. Through vocational education, people become self-reliant and also support their families. Vocational education guides the young people for their self employment or to choose their career wisely. Moreover, vocational education produces skilled workforce which helps in increasing productivity. Increased productivity is helpful in supporting the growing size of population. Thus vocational education helps in curbing some menaces created by increasing size of population.

The Indian government has taken various steps regarding vocational education. In 1988, the Population Education Project in Vocational Training was started by the Ministry of Labour in vocational training institutes, mostly Industrial Training Institutes (ITIs). The National Education Policy, 2020 also recognizes the crucial role of vocational education in building the Indian demographic dividend. The policy aims to ensure that by 2025, at least 50% of the learners across schools and higher education systems have exposure to vocational education. In this regard, the policy notes the need to effectively integrate vocational education into mainstream education across all educational institutions in a phased manner using various measures which include—facilitating collaboration with local industries, establishment of incubation centres or skill laboratories and the conduct of short term certificate courses. To facilitate such integration, the policy also calls for the creation of a National Committee for the Integration of Vocational Education **(NCIVE)**, consisting of experts in vocational education and representatives from ministries in collaboration with industry.

15.7 POPULATION GROWTH AND NON-FORMAL EDUCATION

You are well aware that education has three forms—formal, informal and non-formal. Non formal education is the alternative of formal system of education. It lies outside the formal system of education but at the same time, it is organized and systematic with well defined objectives. It provides

wider learning opportunities. The distinctive feature of this system of education is its flexibility and low cost. The target groups of non-formal education are those people who were not able to join or to complete the formal elementary school due to one or the other reason. For example, the school drop-outs, neo-literates, working people and disadvantaged group of the society. It complements the formal education system and acts as an instrument to achieve 100% literacy. It provides opportunities for employment as well as scope for professional development. It is an organized programme of learning.

Non formal education is a strong agency for eradication of ignorance, superstition from the society as it targets those people who actively or passively designs the social norms through participation. Another important aspect of non formal education is that one of its target groups is women. Education empowers the women. They become conscious about their rights, duties, health, child care, benefits of bearing fewer children. This has direct impact on population issues. Thus non-formal education helps to develop equality, economic status, specific needs and empowerment. It plays a crucial role regarding control of population growth.

In a developing country like India, we already have mismatch between the size of population and the resources available. The formal education system alone cannot cater to the educational needs of fast growing population with diverse needs. From time to time, the government of India has taken various initiatives for non-formal education. For instance, Education Guarantee Scheme, Alternative Schooling Programme, Shiksha Karmi Project, National Institute of Open Schooling, State Institutes of Open Schooling, etc. are non-formal education initiatives taken either by state govt. or central govt. These programmes aim at making education accessible to everyone in a flexible way. This results in more people getting education and thus helping in spreading awareness, knowledge, attitude and skills of population control. Recently, the NEP 2020 has suggested for expansion and strengthening of Open and Distance Learning (ODL) Programmes offered by the National Institute of Open Schooling (NIOS) and State Open Schools. It has suggested various new programmes to be offered by these

institutions. It highlights that the focus will be to have less emphasis on input and greater emphasis on output potential concerning desired learning outcomes. Efforts will be made to involve community and alumni in volunteer efforts for enhancing learning. Making non-formal education more accessible to the people means making it easy for the people to understand issues of population growth. Thus non formal education acts as a strong instrument for control of population growth.



CHECK YOUR PROGRESS

Q 6: In which year the Population Education Project in Vocational Training was started?

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Q 7: Name any two govt. of India initiatives for non-formal education.

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15.8 POPULATION GROWTH AND POPULATION EDUCATION

Though you might be familiar to the term population education, it is a relatively new field of study. Also the concept is dynamic, i.e. it keeps changing according to the changing needs, requirements and emerging issues and concerns. Population education refers to change in the attitude and behaviour patterns of the individual in regard to population issues. It is an educational process to create awareness in the people regarding causes and consequences of population growth. It aims at presenting to the learners the multi-faceted aspects of population situation at micro and macro levels with clear-cut emphasis on cause and effect relationship between different aspects and factors of population. It enables people to make rational decisions regarding issues like family planning, birth control methods, sustainable use of resources, standard of living, quality of life, etc. Population education is a comprehensive programme which includes the nature, causes, changes, characteristics, distribution, and consequences of

population change and control aspects of human population.

Properly planned population education programmes at all the stages of education are important to make people aware of the responsibility towards future generation and the society. Population education prepares young people for adult roles in future. It imparts education on family planning. Family planning is an attempt by the individual to choose the number and spacing of children and to make reproductive behaviour responsible. This is directly related to population control. Population education also helps people recognize and define the nature of problems which have population components. It helps them realize better, how problems arise and what consequences their decisions and action will have. Population education also aims at enabling people to contribute towards solution of population related problems.

In India, imparting population education is a little challenging because of the diverse social and cultural norms associated with family, family planning, birth control, etc. However, various measures have been taken in this regard. It is more effective when the future parents can be educated at their young age. The Indian education system got serious about population education when a National Seminar was organized on Population Education in the year 1969. It led to launching of the National Population Education Project in 1980 with the help of United Nations Fund for Population Activities (UNFPA). This project was launched to introduce population education in formal education system. The UNFPA recognizes that young people's concerns extend beyond the issues of reproductive health and include issues related to their education, livelihood and citizenship. Broad strategies include supportive policy making, provision of gender sensitive, life skills education linked with youth-friendly sexual and reproductive health services driven by young people's leadership and participation. The Population Education Project in Higher Education started in 1986 with financial assistance from United Nations Fund for Population Activities (UNFPA). The major objectives of incorporation of Population Education within the University and from there to the Community are both academic and social. The commitment of the UGC to population education at the university and college levels goes back

to 1983 when 92 universities and 1300 college were provided financial support to organize population education activities through Population Education Clubs both for college youth on campus and through them to the community. Since 1986 the PE program has been implemented by establishing Population Education Resource Centers (PERCs) in the Department of Adult Continuing Education and Extension in twelve universities, namely, Jammu, Delhi, Gujarat Vidyapeeth, SNDT Women's University, Poona, Madras, Kerala, Vikram, Burdwan, Ranchi, NEHU and Gandhigram Rural University. Thus we can see that population education has been incorporated in different stages of education in specific ways.



15.9 LET US SUM UP

- Population growth refers to the change in the number of units in a population at a particular time at a particular place. It is the function of mainly three aspects—fertility, mortality and migration.
- Growth of population is affected by increased birth rate, declining death rate, migration, poverty, illiteracy, early age of marriage for girls, lack of awareness and socio-cultural influence.
- The most educationally advanced countries tend to have lower rates of population growth. Least educationally advanced countries are observed to have higher rates of population growth.
- If quality of education is high, population growth remains stable and if population size is under control, it is possible to make quality education available for everyone.
- Education makes people aware of the problems that arise due to population explosion, the importance of following the population policy of a nation, the ways to control population, etc.
- Educated women are empowered to take decisions in various matters including family matters. Small families can provide quality education

and better resources and environment to their children.

- Various measures for controlling population growth have been adopted like legislative measures, educational measures, social measures, etc. But education has always proved to be sustainable measure for controlling population growth.
- While imparting population education to adult learners, it is important to be sensitive as they have already developed their own notions about issues like birth control, family planning, growth of population, etc.
- Government of India launched National Adult Education Programme in 1978. The Population Education Project in Adult Literacy and Continuing Education was launched in 1986.
- The National Literacy Mission, launched in 1988, was not confined to spreading literacy but it also included issues like family welfare, immunization, mother and child health care, conservation of environment etc.
- The NEP 2020 has envisaged strong and innovative government initiatives for adult education to accelerate the aim of achieving 100% literacy.
- Vocational education is a type of training, usually in the form of courses and hands-on training that teaches students the specialized skills required to perform a specific job.
- If the population growth rate is very high, the problem of unemployment arises. Through vocational education, people become self-reliant and also support their families.
- Vocational education produces skilled workforce which helps in increasing productivity. Increased productivity is helpful in supporting the growing size of population.
- In 1988, the Population Education Project in Vocational Training was started by the Ministry of Labour in vocational training institutes.
- The NEP 2020 aims to ensure that by 2025, at least 50% of the learners across schools and higher education systems have exposure to vocational education.
- Non-formal education helps people in getting education and thus helping

in spreading awareness, knowledge, attitude and skills of population control.

- The NEP 2020 has suggested for expansion and strengthening of Open and Distance Learning (ODL) Programmes offered by NIOS and State Open Schools.
- Population education refers to change in the attitude and behaviour patterns of the individual in regard to population issues.
- Population education helps people recognize and define the nature of problems which have population components. It helps them realize better, how problems arise and what consequences their decisions and action will have and how they can contribute towards solution of the problems.
- The National Population Education Project was launched in 1980 to introduce population education in formal education system.
- The Population Education Project in Higher Education started in 1986 to incorporate Population Education within the University and from there to the Community.



15.10 FURTHER READING

1) Aggarwal, J. C. (2010). Theories and principles of education. New Delhi: Vikas Publishing House.
2) Aggarwal, J. C. (2009). Population education. New Delhi: Shipra Publications.
3) Gupta P.K (2012). Population education. Meerut: R.Lall Book Depot.
4) Ministry of Human Resource Development, GoI (2020). National Education Policy.
5) Murray, S. (2015). How education can moderate population growth. World Economic Forum.https://www.weforum.org/agenda/2015/07/how-education-can-moderate-population-growth/
6) Nanda, S. K. (2005). Population education, Published by Doaba House,

Delhi.

7) Pandey, V. C. (2012). Population education. Isha Books.

8) Pandya, R. & Maniar, A. (2014). Non formal education: An Indian context. Indore: International E-Publication.

9) Slade, S. (2021). What do we mean by quality education? PAL Network. https://palnetwork.org/what-do-we-mean-by-a-quality-education/#:~:text=A%20quality%20education%20is%20one%20that%20focuses%20 on%20the%20whole,life%2C%20not%20just%20for%20testing.

10) UNESCO. Population Education in Non-formal Education and Development Programmes: A Manual for field workers. Bangkok: UNESCO Regional Office

11) UNESCO. (1978). Population Education: A Contemporary Concern.

12) United Nations (2003). Population, Education and Development.

13) United Nations (2015). Population 2030: Demographic Challenges and Opportunities for Sustainable Development Planning.

15.11 ANSWERS TO CHECK YOUR PROGRESS

Ans. to Q. No. 1: The three main factors determining population growth are fertility, mortality and migration.

Ans. to Q. No. 2: Illiteracy keeps people in ignorance and makes it difficult for the people to understand the necessity of birth control or importance of small family norms, thereby resulting in population growth.

Ans. to Q. No. 3: Education empowers women to take decisions in family matters as well as helps in removing superstitious beliefs, customs and social taboos regarding birth control. Thus it helps in control of population growth.

Ans. to Q. No. 4: The adults have already developed their own notions about issues like birth control, family planning, growth of population,

etc., so it is difficult to change their ideas, attitude and values. Therefore, it is important to be sensitive while imparting population education to adult learners.

Ans. to Q. No. 5: The NEP 2020 envisages development of an adult education curriculum framework, suitable infrastructure, training of the instructors/educators, ensuring the participation of community members, improving the availability, affordability and accessibility of books, quality technology-based options for adult learning and Adult Education Centres.

Ans. to Q. No. 6: 1988

Ans. to Q. No. 7: Two Govt. of India initiatives on non-formal education are— Alternative Schooling Programme and National Institute of Open Schooling.



15.12 POSSIBLE QUESTIONS

A. Very Short Questions (Answer each question in about 50 words)

Q 1: Define population growth.

Q 2: What are the factors leading to decline in death rates?

Q 3: Name the population education projects in India funded by UNFPA.

B. Short Questions (Answer each question in about 150 words)

Q 1: Write how migration acts as a factor of population growth.

Q 2: Write note on initiatives of the Govt. of India on vocational education.

Q 3: Write a brief note on the population education initiatives in India.

C. Long Questions (Answer each question in about 300-500 words)

Q 1: Explain in detail the relation between population growth and adult education.

Q 2: Discuss how the recommendations of NEP 2020 on adult education, vocational education and non-formal education would help in control of population growth.



REFERENCES

Units (1 - 9) :

- Aggarwal, J. C. (2005). *Essentials of Educational Technology: Teaching Learning*. New Delhi: Vikas Publishing House.
- Akhtar, P. and others (2008). *Environment and Population Education*. Guwahati: Assam Book Depot.
- Akhtar, P. R. (2014). *Environmental and Population Education*. Guwahati: Assam Book Depot.
- Barua, J. (2009*). Paribesh Aru Janasankhya Siksha*. Guwahati: Chandra Prakash.
- Bhargava, A. (October 18th, 2019). List of Environmental Organisations in India. Retrieved from https://byjusexamprep.com/environmental-organisation-in-india-i
- Bhattacharjee, J. (2013). NGOs and Environment Protection in Assam. IOSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 18, Issue 6 (Nov. - Dec. 2013), PP 68-76 e-ISSN: 2279-0837, p-ISSN: 2279-0845. Retrieved from https://www.iosrjournals.org/iosr-jhss/papers/Vol18-issue6/K01866876.pdf
- Bhattacharya K, Bhattacharya, R & Sharma, S (2012). *Environmental Education*. Guwahati: Assam Book Depot.
- Bhattacharya, S. (2015). Human Being and Environment – Psychological Point of View. Working papers. *Voice of Research.* Retrieved from, *https://ideas.repec.org/p/vor/issues/2015-06-06.html*
- Das, S. (2011). *Environmental Education- Concepts, Issues and Problems.* Guwahati: K.K. Publication.
- Das. P. and Sahidullah. F.T. (2019). *Environmental Education and Population Education*. Guwahati: Shanti Prakashan.
- Gupta, K. R. (2010). *Environmental Education in India*. New Delhi: Atlantic Publishers and Distributors (P) Ltd.

- Kaushik, A. and Kaushik, C.P. (2004). *Perspectives in Environmental Studies*. New Delhi: New Age International (P) Limited, Publishers.
- Krishnamacharyulu, V. (2004). *Environmental Education*. Hyderabad: Neelkamal Publications Pvt. Ltd.
- Kumar, M. & Kumar, P. (2008). Valuation of the ecosystem services: a psycho-cultural perspective. *Ecological Economics.* 64, 808–819 DOI:10.1016/j.ecolecon.2007.05.008
- Lotus, A. (Feb, 15, 2021). Environmental Education in India – UPSC. Retrieved from https://lotusarise.com/environmental-education-in-india-upsc/#:~:text=Environmental%20education% 20at% 20the% 20doctoral, or %20 engineering% 20 is% 20 available%20in
- Mittal, S. & Agrawal, M (2010). *Environment & Environment Education in 21st century*. Meerut: R Lall Publications.
- Mohapatra, D. (nd). *Environmental Education*. New Delhi: Kalyani Publishers.
- Mohapatra, P. & Raval, M. (2018). Environmental Education: The Indian Context. (Conference Paper). Retrieved from - https://www.researchgate.net/publication/324748328_Environmental_Education_The_Indian_Context.
- Pandey, V. C. (2005). *Environmental Education*. New Delhi: Isha Book Publishers.
- Reddy, K.P. & Reddy D.N. (2003). *Environmental Education*. Hyderabad: Neelkamal Publication Pvt. Ltd. Hyderabad.
- Sampath, K et al. (1987). *Introduction to Educational Technology*. New Delhi: Sterling Publishers.
- Samuel, R. & Thanikachalam, V. (2003). “Non-Governmental Organisation (NGOs) Spearheading Public Participation in Environmental Issues” in Martin J. Bunch, V. Madha Suresh and T. Vasantha Kumaran, eds., Proceedings of the Third International Conference on Environment and Health, Chennai, India, 15-17 December, 2003. Chennai: Department of Geography, University of Madras and Faculty of Environmental Studies, York University. Pages

427 – 440. Retrieved from http://www.yorku.ca/bunchmj/ICEH/proceedings/Samuel_R_ICEH_papers_427to440.pdf

- Sarma, R.C. (1997). *Environmental Education*. Meerut: Surya Publication.
- Saruna, A. B. (1986). *Environmental Education*. Agra: National Psychological Corporation.
- Sharma P.D. (1990). *Ecology and Environment*. Meerut: Rastogi Publishers
- Sharma R. A. (2010). *Environmental Education*. Meerut: R. Lall Book Depot
- Sharma, R. A. (2005). *Environmental Education*. Meerut: Surya Publication.
- Sharma, R.A. (2006). *Environmental Education: Ecological Challenges and Educational Programmes.* Meerut: R. Lall Book Depot.
- Sharma, R.A. (2010). *Environmental Education*. Meerut: R.Lall Book Depot.
- Sharma, R.A. (2012). *Environmental Education*. New Delhi: Metro Politary Book Co. Pvt. Ltd.
- Shrivastava, K. K. (2004). *Environmental Education: Principles Concepts and Management.* New Delhi: Kanishka Publishing and Distributors.
- Shukla, B.C. (2016). Formal Environmental Education. Retrieved from http://www.pioneershiksha.com/news/3199-formal-environmental-education.html
- Sing, S. & Dubey, A. (1989). *Environmental Management*. Allahabad: Allahabad University.
- Tidball, Keith G. and Krasny, Marianne E. (2011). Urban Environmental Education from a Social-Ecological Perspective: Conceptual Framework for Civic Ecology Education. *Cities and the Environment (CATE)*: 3(1). Retrieved from, https://digitalcommons.lmu.edu/ cate/ vol3/iss1/11
- Vijayan. S. (2008). *Principles of Environmental Education*. New Delhi:Sarup & Sons.

Websites:

- http://edugreen.teri.res.in/explore/ngos.htm
- http://www.kazirangawildlifesociety.in/
- https://aaranyak.org/donation.asp
- https://assamsciencesociety.in/
- https://en.wikipedia.org/wiki/Nature%27s_Beckon
- https://moef.gov.in/en/
- https://www.worldwildlife.org/

Units (10-15) :

- Aggarwal, J. C. (2009). *Population Education*. New Delhi: Shipra Publications.
- Aggarwal, J. C. (2009). *Essentials of Educational Technology*. New Delhi: Vikas Publishing House.
- Aggarwal, J.C. (2010). *Theory and Principles of Education.* New Delhi: Vikas Publishing House.
- Aggarwal, J. C. (2013). *Population Education.* New Delhi: Shipra Publications.
- Akhtar, Parveen R. (2014). *Environmental and Population Education.* Guwahati: Assam Book Depot.
- Chandel & Nand (2011). *Population Education.* Agra: Shri Vinod Pustak Mandir.
- Dash, B.N. (1996): *"Principles of Education and Education in the Emerging Indian Society"*, New Delhi.
- Gupta, P. K. (2005). *Population Education.* Meerut: R. Lall Book Depot.
- Gupta, P.K. (2012). *Population Education*. Meerut: R.Lall Book Depot.
- Goswami, Meena Kumari (2013). *Environmental Education and Population Education.* New Delhi: Asian Books Private Limited.
- Kapoor & Kapoor (2013). Population Education. Guwahati: EBH Publishers.Nanda, S. K. (2002). *Population Education-An Informative Update.* Delhi: Doaba House.
- Macbeth, Helen, Collinson, Paul, and Collinson Paul (2002): *"Human Population Dynamics: Cross- Disciplinary Perspectives"*, Cambridge University Press.
- Murray, S. (2015). How education can moderate population growth. World Economic Forum.https://www.weforum.org/agenda/2015/07/how-education-can-moderate-population-growth/
- Ministry of Human Resource Development, GoI (2020). National Education Policy 2020.

- Mangal, S. K. (2001). *Foundation of Educational Technology*. Ludhiana: Tandon Publications.
- Nanda, S.K. (2008). *Population Education.* Delhi: Doaba House.
- Pandey, V. C. (2012). *Population Education*. Isha Books.
- Pandya, R. & Maniar, A. (2014). *Non formal education: An Indian context*. Indore: International E-Publication.
- Rao, V. K. (2001). *Population Education.* Delhi: A. P. H. Publishing Corporation.
- Sharma, R. C. 1991. "An Overview of Population Education". In Seshadri, C. and Pandey, J. L. (eds). *Population Education: A National Source Book,* Vol- I. New Delhi: NCERT.
- Slade, S.(2021). What do we mean by quality education? PAL Network. https://palnetwork.org/what-do-we-mean-by-a-quality-education/#:~:text=A%20quality%20education%20is%20one%20that%20focuses%20 on%20the%20whole,life%2C%20not%20just%20for%20testing.
- UNESCO. Population Education in Non-formal Education and Development Programmes: A Manual for field workers. Bangkok: UNESCO Regional Office
- UNESCO. (1978). Population Education: A Contemporary Concern.
- United Nations (2003). Population, Education and Development.
- United Nations (2015). Population 2030: Demographic Challenges and Opportunities for Sustainable Development Planning http://egyankosh.ac.in/bitstream/123456789/43753/1/Unit-1.pdf