

**Environmental Education and Practices in Canada, Turkey & Pakistan at Primary
Level: A Content Analysis**

* Saba Tariq, MPhil Scholar

** Dr. Sohaib Sultan, Assistant Professor

*** Farkhunda Rasheed Choudhary, Assistant Professor

Abstract

The current investigation was directed to analyze environmental education and practices in curriculum adopted in Pakistan, Turkey, and Canada at the primary level. For this purpose, General Science textbooks of the public schools in Ontario (Canada), Istanbul (Turkey), and Rawalpindi (Pakistan) were explored and their practical implementation was studied as primary data for the year 2008-2015. A close content analysis of the inscribed curriculum revealed that over time, Canada has taken significant steps to incorporate the elements of environmental awareness as their curricula and trained the teachers to deal effectively with environmental education, leading to creating awareness in problems and their solution among children regarding concepts of waste management, littering and sustainability. Topics related to awareness about reducing, recycle, reuse, and ecosystems were a vital part of the environmental curriculum and practices in Turkey. Exploring climate change and the environment was found to be part of the Science curriculum in Pakistan. However, the practical activities regarding environmental education were relatively less in Pakistan as the implementation of the curriculum is not in its mature stages. Comparison of the study reveals that incorporating environmental projects benefitting from national and international organizations in Pakistan would help as they have contributed constructively in creating awareness in the education sector in Turkey and Canada.

Keywords: Comparison, Content Analysis, Educational Practices, Environmental Awareness, Environmental Issues, Primary Education.

Introduction

The environment has nurtured life since the beginning of times and is accountable for the essence of life we commence (Zelenika, Moreau, Lane & Zhao, 2018). Advancements in technology have been exceedingly harming the restoration of earth and damaging the environment with every forthcoming day (McMillan, 2003). To promote sustainability, humankind needs to change its behavior and approach towards the environment which needs to be activated by developing a sense of responsibility and awareness in the general public (Barrable, 2019). The best way to approach the uprising problem is to start at the root level by educating the children about it and coming up with meaningful knowledge and solutions to cater to the problem in the long run (Martínez-Borreguero, Maestre-Jiménez, Mateos-Núñez & Naranjo-Correa, 2020). The new generation of any nation is the best source of hope to rectify the wrongs that have been taking place in society. To attain such targets, children need a consistent source of awareness so that they know how, when, and why to work on bringing about the change that's needed in society (Barrable, 2019). Environmental awareness is one such issue that has been the center of attention for many nations around the globe. Realizing the vitality of the concern, nations have developed and implemented their environmental education programs (Van, Garyfallou, Oană, IE. et al., 2019). Many countries have taken major steps to improve and implement their environmental education as per need (Derman & Gurbuz, 2018). The idea to look

* Department of Humanities, Education and Psychology, Faculty of Social Sciences, Air University, Islamabad Email: sabakamran10@yahoo.com

** Department of Humanities, Education and Psychology, Faculty of Social Sciences, Air University, Islamabad Email: sohaib.sultan@ymail.com

*** EPPSL Department, Faculty of Education, Allama Iqbal Open University, Islamabad
Email: Farkhunda.rasheed@aiou.edu.pk

into the practices of Turkey, Pakistan, and Canada is to find how these nations have developed their workable approach over time. Analyzing such practices in the curriculum where a comparison of some countries is made can assist to upgrade the existing course of action for nations as Pakistan where resources are scarce. Many countries like Turkey have upgraded their environmental curriculum by studying and analyzing the approach adopted by the neighboring nations in the EU (Tanriverdi, 2009). A comparative study (Van, Garyfallou, Oană & IE. et al., 2019) assists in providing detailed descriptions and knowledge about important factors that identify similarities and differences between two or more macro level cases. Hence, it turns out to help the analysis of the strength and weaknesses of the existing curriculum of the nation, eventually, leading practical paths ways to improvise on the practical and implementation of the approach and yielding best possible outcomes to achieve the set target (Derman & Gurbuz, 2018).

Statement of the Problem

Environmental education in many countries has gained serious attention and is being implemented on a practical note. Among such countries are the developed nations, like Canada. Turkey, industrialized though not as developed as Canada in comparison but is continuously working to follow the high standards of environmental education and development to bridge the gap. Whereas Pakistan, being a developing country in Asia has been taking measures to incorporate the elements of environmental concerns in the educational curriculum. The current research tends to provide an analysis of the major elements of curriculum and practices of implementation of environmental education in the three countries with different developmental sustainability in the world.

Furthermore, a comparison is healthier to revise the current status of ecological education in a country. There are other elements in addition to textbooks' mode of education that aid the educational system of a country to reach its learning objectives. Unearthing those elements is the sublime purpose of this study and the need for time.

The Study Objectives

- Study the individual curriculum and practices of environmental education in Canada, Turkey, and Pakistan in primary education.
- Compare and contrast the implementation of practices of environmental education in Canada, Turkey, and Pakistan in primary education.
- Give suggestions for better environmental education development in Pakistan that has a more practical and comprehensive approach.

Significance of the Research

The current study was aimed to analyze the room for improvement in Pakistan's practices of environmental education. The findings of the study will provide a guideline to the educators, curriculum developers, teachers, local and international environmental organizations, parents, and school administrations to design, devise, implement, participate, improvise and practice the environmental concepts, activities, issues and their solutions in the current Pakistani educational set up to be as efficient and effective as possible. The elements of findings highlighted, can be incorporated by the education ministry and private/public schools authority of the country to bring a constructive change in the curriculum of the environment in Pakistan.

Literature Review

Relationship between Knowledge and Behaviour

It has been demonstrated through research (Alias, 2019; Mohiuddin, Mamun, Fazal, Masud & Su, 2018) that there exists a positive subsist association among knowledge, attitude, and behavior. Studies (Martínez-Borreguero, Maestre-Jiménez, Mateos-Núñez & Naranjo-Correa, 2020; Grodzińska-Jurczak, Stepska, Nieszporek & Bryda, 2006) further designates that once equipped with an eco-friendly frame of mind set and humanity can be undeniably influenced to accomplish the appropriate level of awareness, attitude, and enthusiasm towards the natural environment.

World Wide Environmental Movement

Ecological training has gotten more consideration in Science instruction since it gives answers for some environmental issues using the science instruction division and logical clarifications for solutions for ecological problems (Wing, 2017). Since the 1970s, the investigation of the indigenous locality has gotten increasingly occupied with the idea of natural instruction (Gough, 2002). At a comparable time, teachers (mainly Science) have presumed liability for giving ecological training

intending to and estimating ordinary occasions and fundamental issues through specialized and organic strategies (Zelenika, Moreau, Lane & Zhao, 2018).

Importance of Environmental Education (EE) and Instructors

The expression “ecological instruction/environment” (EE) was characterized by Stapp for the first time in 1969, a professor at the University of Michigan. According to Stapp, “the reason for natural instruction is to instruct residents about the biophysical condition and its associated issues, how to help tackle these issues, and to operate effectively to interpret them”. Therefore (Tarman, 2018; McMillan, 2003), it is imperative to do ecological instruction to accomplish social transformation, which is the inadequacy of time.

Upgrading Environmental Education in Schools on National Level

Every nation needs an educational plan that harangues the issues of society. In request to meet these obligations, frequently prevailing courses ought to be actualized (Derman & Gurbuz, 2018; Delibaş & Babadoğan, 2009). In expansion, an evaluation is expected to decide if the educational plan is beneficial to guarantee the maintainability and advancement of the current curriculum (Tarman, 2018). Evaluation assists with distinguishing the qualities and shortcomings of the educational plan in practice. In doing these appraisals, notwithstanding educational programs, courses in nations are viewed as productive in instruction at the global level (Tarman, 2018; Kaya, Gul & Gul, 2012; Göktas, Hasaңcebi, Varisoglu, Akçay, Bayrak, Baran & Sözbilir, 2012). Many nations profit by watching and analyzing the educational program of various nations in the improvement of their educational plans (Derman & Gurbuz, 2018; Demirel, 2010).

Presenting Environmental Education to Learners

David Sobel (1995) believed that the natural environment is a learning process that is considered to be a vital component in understanding environmental issues and solutions (Martínez-Borreguero, Maestre-Jiménez, Mateos-Núñez & Naranjo-Correa, 2020). Research (Barrable, 2019) claims that at a young age, the exploration of the natural environment begins and grows into middle age while continuing into adolescence as “a source of strength for social action”. The curriculum should not be eco-phobia, whereby students experience an environmentally correct curriculum, because these teachings end up distancing the students from connecting to the natural world (Sobel, 1995). Furthermore, environmental education should not be presented to learners in a way that is loaded with a sense of doom, disappointment, or disaster; otherwise, children may feel that the natural world is a universe of never-ending problems and are likely to become disengaged from it (Alam, 2017; Sobel, 1995). The effective strategy is to connect children to nature by employing experiential strategies, such as going outdoors, immerses them in the natural world (Derman & Gurbuz, 2018; Pedretti, Nazir, Tan, Bellomo & Ayyavoo, 2012).

Role of Eco-schools

Eco-schools are the world’s most prominent school program with numerous noteworthy accomplishments that can be said to have delivered ages of economic reasoning, naturally cognizant people (Andreou, 2020; Boeve-de & Van, 2013). Eco-schools challenge understudies school to be associated with tackling ecological issues at a level where they can see unmistakable outcomes and rouse them to understand that they can truly make a difference (Mohiuddin, Mamun, Fazal, Masud & Su, 2018; Boeve-de & Van, 2013; Cincera & Krajhanzl, 2013).

Need for Current Comparison of Environmental Education and Practices

Prior studies (Barrable, 2019; Aktep & Girgin, 2009) have correlated the objectives for mainly one country or several countries in the curricula; the curricula of one subject have been confined, or the curricula of various environmental education countries have been compared. The intent of this inquiry is, therefore, to evaluate the environmental goals and activities of Turkish, Pakistani, and Canadian curricula. The subsequent concerns have been addressed in this study as; to compare and contrast the primary education of the countries as mentioned above concerning; Environmental Issues (EI) and Environmental Activities (EA).

Delimitations

The content analysis was based on the findings of previous studies and the national framework of policies regarding environmental education. Most of the data for analysis was obtained from the official websites of Canada, Turkey, and Pakistan. It was limited to the provinces which had the official environmental education policies and curriculum available online via websites. Direct

interviews and observations were not part of the study. The study took into consideration the time frame of curricula and practices adopted during the year 2008-2015.

Methodology

Research Design

The current investigation is a qualitative analysis that was based on a comparative education approach. Multiple-country (≤ 20) approach was adopted in the current study. For a meaningful detailed study, a group of fewer countries is recommended for comparisons (Van, Garyfallou, Oană & IE. et al., 2019).

Content analysis was practiced to examine the primary data. Initially, the data was defined as descriptive analysis systematically. Later results were derived using the descriptions and investigation of the cause-effect relationship. Evaluation of concepts along with their relationships was the primary purpose of the description in the content analysis. The number of times the revision of an environmental concept took place over the years was taken into consideration in the study.

Content analysis was practiced to examine the primary data. Initially, the data was defined as descriptive analysis systematically. Later results were derived using the descriptions and investigation of the cause-effect relationship. Evaluation of concepts along with their relationships was the primary purpose of the description in the content analysis. The number of times the revision of an environmental concept took place over the years was taken into consideration in the study.

The Statistical Population

The research's statistical population includes curriculum and practices of general science in primary school along with the external involvement of the agencies and organizations that aid the environmental projects and plans. Curriculum related to environmental education taught in public schools in Ontario (Canada), Istanbul (Turkey), Rawalpindi (Pakistan) were analyzed. The age group of children in the primary school 6-11 year-olds represented grade1-5.

Content Analysis and Measurement Instruments

To analyze the curriculum and practices, content from the public schools in Ontario (Canada), Istanbul (Turkey), Rawalpindi (Pakistan) and their practical implementation in a classroom environment was studied as primary data. The information was gathered by;

1. Determining which reports consolidating ;
 - a. Access to these archives,
 - b. Interpretation of documents (decipher courses and select objectives for the earth),
 - c. Organization information is dependent on research addresses.
2. Analysis of Secondary information from the official sites of the previously mentioned nations.

Analysis of the individual Environmental Education model in Canada, Turkey, and Pakistan

Initially, the analysis of the classical pathway of policies and curriculum was carried out for education related to the environment in primary education curricula on a country basis.

Environmental Educational in Turkey

Primary education is considered obligatory for all Turkish citizens and is a continuous process that caters to the education of the children for 8 years, starting at the age of 6 till 14.

General Aims of Education and Environmental Education

There is no appropriate acknowledgment of nature or environmental issues when the general aims of education as per the Ministry of Education are reflected upon. However, statements such as *respecting human rights, being responsible for society, having national moral and cultural values* have environmental awareness embedded as a concept. The Turkish constitution, Article 56 states, "Everyone has the freedom to live in a healthy, harmonious environment. The republic and residents have to enhance the tangible atmosphere and to prevent environmental pollution" (TBMM, 2005). A good citizen, thus according to the constitution, is the one who needs to be responsible for society which means being protective towards the environment.

Implementation Project for School (ÇEP) and Environmental Education

One of Istanbul's venture was entitled "Natural Education and Implementation Project for Schools" (EP). This was a five-year natural assurance program, in quintessential and elective schools, concentrating on raising the natural attention to youngsters, particularly (Yıldız, 2006). Governorship of Istanbul coordinated ÇEP, a project aimed to enhance environmental awareness among students by arranging activities in and out of school. Almost all other environmental projects were carried out in Istanbul voluntarily, while in all primary and secondary schools ÇEP was made obligatory.

Eco-School Membership

Eco-Schools Program has always provided an approach to schools based on the environmental management system where students take up the principal role (Andreou, 2020). It is regulated by the Foundation for Environmental Education (FEE) worldwide. Analyzing Eco-Schools provided a source to compare with projects led by ÇEP. Schools in Istanbul and many other cities are to date members of eco-schools.

Environmental Issues and Curriculum

EE at school has been specifically important for Turkey, as per the Ministry of Environment of Forestry (MoEF, 2004). Due to no awareness in parents, lack of participation of media, the school has been the only source for some children, to study about the environment (MoEF, 2008). In Turkey, the Ministry of National Education defines and regulates the curriculum followed by the methods of teaching, and the prescribed books (Tarman, 2018). In 2002, the EU and Turkey signed a new agreement about developing a new educational program involving the NGOs and universities, modifying the curriculum contents changing approaches to education (Tanriverdi, 2009). Hence a new curriculum was implemented in 9 cities, 120 schools in the initial pilot phase that met the set targets successfully. This program was then in 2005-2006, implemented in grades 1 to 5 all over Turkey.

The new curriculum demanded the students to play a more vibrant role in the education process providing opportunities via several activities, and the teacher's presence marks a facilitator only (Mahmutoğlu, 2010; Tanriverdi, 2009). According to Tanriverdi, (2009) the old educational system was criticized for handling the environment through separate chapters in various subjects. although study (Mahmutoğlu, 2010) suggested that the practical approach to EE has enhanced the capacity of students to understand nature and its events, to develop awareness and knowledge on the protection of the environment, sensible use of natural resources, and recycling, etc. The objective was that students comprehend the need to protect the environment, instead of memorizing useless information as in the previous system. This was in contrast to the previous system that promoted the element of the environment in Science and Geography courses only (Tanriverdi, 2009).

Current implementation of EE in Eco-schools of Istanbul

In the past, the curriculum had elements of EE embedded in specific subjects. Whereas the revised Turkish education system today follows both; EE incorporated in certain subjects across the curriculum, and the issues addressed through themes and concepts in an interdisciplinary manner.

Role or organizations in Turkey- GLOBE and SEMEP

South-Eastern Mediterranean Environmental Project (SEMEP) is a regional UNESCO project, intending to holistically “foster knowledge, awareness, understanding of the common heritage – historical, social, cultural, ecological, etc. of the South-Eastern Mediterranean region and thereby to promote a culture of peace and tolerance between countries” under interdisciplinary approach. Including Turkey, Primary and secondary schools from 14 countries, joined the international project (UNESCO, 2004). A national coordinator in each country, province, and school was responsible for establishing communication and carrying out activities related to EE practices throughout the year.

An international US-based project, called the Global Learning and Observations to Benefit the Environment (GLOBE), was executed in 109 countries. Students from primary and secondary schools carried out practical measurements in the fields of atmosphere, hydrology, soil, land cover in their surroundings; reporting the data on the internet. The project was supported by the National Science Foundation (NSF) and the National Aeronautics Space Administration (NASA). Schools published their research projects and created interactive websites to create public awareness based on the GLOBE data. About 75 schools currently have executed the project in Turkey.

Evaluation of EE practices in Turkey

Concerning the practices mentioned earlier, via changes in the curriculum and extra-curricular projects, there has been a movement towards reviewing environmental education in schools across the country. SEMEP and GLOBE proved valuable projects where the GLOBE demonstrated the use of Science for the betterment of the environment to students. Hence from a regional perspective, SEMEP enhanced the understanding of environmental and planning issues in students. The environmental issue was dealt with from a broader perspective, via executing ÇEP and Eco-Schools programs.

Environmental Education EE in Canada

The Ministry of Education in Canada has the following aims and objectives of their environmental education policy (Ontario Ministry of Education, 2008). It is aimed to: “Embed environmental

education expectations and opportunities in all grades and all subjects of the Ontario curriculum, as appropriate”;

- “Ensure that the standards outlined in Standards for Environmental Education in the curriculum are applied to curricula in all subjects and disciplines during the revision and development process”.
- “Foster linkages between the environmental education policy framework and other ministry policies, frameworks, and initiatives, such as the character development initiative and the Ontario First Nation, Métis, and Inuit education policy framework, to accommodate learners to enhance care and be accountable members of the community”.

Integrated Environmental Education across Canada

The vision signified by the Canadian government states that Canadians should work towards the opportunity to participate in spontaneous learning, both inside and outside the study hall, where essential issues can be investigated and established and significantly dialogued. The archive urged teachers to propose ecological and maintainability ideas that empowered students to reach their determinations on significant ecological and social issues (Environment Canada, 2002). As an outcome, training services across Canada have impersonated ecological instruction ventures in school settings.

Environmental Studies Programs (ESP) in Ontario

Ontario’s training framework built up the erudition, techniques, opinions, practices expected to turn out to be earth heedful citizens. One of the activities that proved fruitful were the Ontario Environmental Education Initiative and the Integrated Environmental Research Initiative (ESP), approaches to regulate fundamental concepts into a refined set of interdisciplinary educational program model at the optional level (Sharp & Breunig, 2009). The Environmental Research Program (ESP) was a “complete educational program” that meant to gain from a “genuine world” rendezvous, interface the subjects (Ontario Ministry of Education, 2002; 2007, 2009). This program was specifically designed for the and incorporated games, topography, interdisciplinary examinations and English credits (Breunig, Murtell & Russell, 2015)

Resources and organizations working for EE in Ontario, Canada

- **Learning for Sustainable Future (LSF)**
www.lsf-lst.ca
The LSF concentrated initially on operating with educators, students, governments, communities, company’s crosswise Canada to desegregate sustainable development notions and principles into policies for education, school curricula, teacher education, and lifelong learning.
- **Council of Outdoor Educators of Ontario**
www.coeo.org
The COEO worked to advance the public in a competent and high-quality open-air education experience and acted as a professional educator facility in Ontario.
- **Environmental Education Ontario (EEON)**
www.eeon.org
In 2003, KETONE developed for 17 various kinds of audiences a strategy plan to promote environmental education. KETONE, an organization of environmental and eco-label instructors, parents, other concerned citizens, including non-governmental organizations and government agency spokespeople.
- **Ontario Society for Environmental Education**
www.osee.org
OSEE was an organization that aided in the promotion and improvement of environmental education by facilitating the dedicated elements of society like students, environmental educationalists, and parents.

Environmental Education in Pakistan

Below is the National Environmental Policy of 2005:

1. A national strategy for public education and environmental education will be developed at the state, city, and provincial levels for distinguished target groups. The policy will be implemented and developed.

2. Environmental skills should be incorporated into primary and university curricula.
3. It would promote the setting-up of environmental education and training institutions.
4. Environmental education will foster the creation of environmental clubs throughout the country.

Clause, c, and d’ directly referring to the environmental education implementation in Pakistan, whereas clause ‘a’ is the indirect reference, to the educational policy of environmental awareness at different levels in the country.

National Education Policy 2009 exhibits serious concerns over worsening environmental issues by issuing a policy action that delivers a serious message, “Environmental Education shall be made an integral part of early education” (National Education Policy, 2009). “Introduction of environmental education materials in schools” as a part of the critical constituent of (NEAP-SP) the National Environmental Action Plan Support Program had been a major step towards integrating environmental education by the Ministry of Environment. United Nations Development Program (UNDP) and donor agencies supported implementing this program, with assistance to the recognition of the Government of Pakistan’s National Environmental Action Plan (Ministry of Environment, 2001).

A content analysis (Yousuf & Bhutta, 2012) of the elementary curriculum concerning environmental education in Pakistan concluded that overall the country lacked a well-established environmental education with concepts integrated with the Science curriculum. Issues like inadequate measures of waste management and continuous deforestation in Pakistan needs to be top listed in the awareness program at every level (Sultan, Ahmed, & Imran, 2020).

Findings of the Comparative Analysis

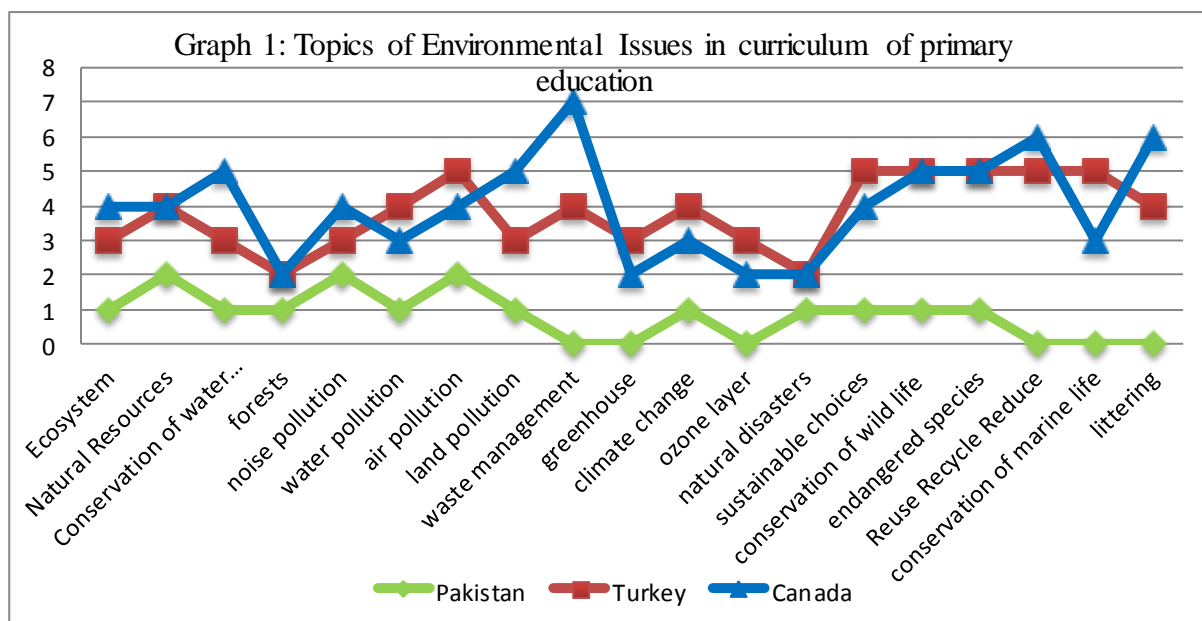
Following are the findings of environmental education curriculum and practice related in the subjects of General Science at the primary level in Pakistan, Turkey, and Canada:

Table 1

Category in the curricula of environmental education taught at the primary level in the three countries

Primary curriculum	Category	Sub-category
General Science	Environmental Issues	20 concepts
	Environmental activities	4 concepts

Close analysis of the curriculum taught in Ontario, Canada; Istanbul, Turkey, and Rawalpindi, Pakistan revealed that 20 important topics were part of the environmental analysis. Not all these were taught at the same level or subject. However, they were included in the primary curriculum.



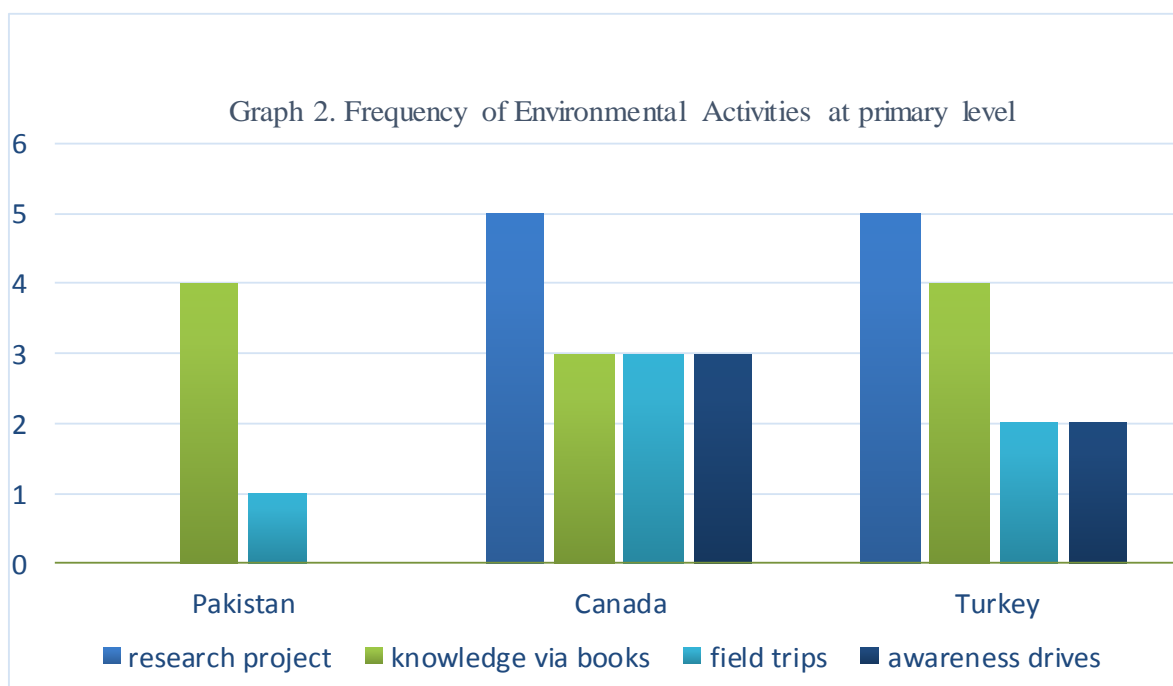
An analysis of graph 1 shows the comparison of the frequently practiced topics taught at various levels in Canada, Pakistan, and Turkey. Among these, waste management was most seriously practiced by Canada. This implies that Canada gave more weightage to waste management than any other country in comparison. However, concepts like forests, greenhouse, ozone layer, natural disasters still had room to be taught in-depth with a more practical approach in Canada at the primary level. Turkey also followed an impressive spread of most concepts that needed public awareness and practical measures to be dealt with. Concepts like endangered species, conservation of wildlife, air pollution, reuse, recycle, and reduction was given much importance at different levels of primary education in the curriculum of Turkey. This shows that Turkey had a quite proactive approach in creating awareness about a variety of concepts taught in the environmental curriculum. However, in Turkey, the lowest practices were recorded in case of topics as the greenhouse, forests, ozone layer, and natural disasters. Among all the environmental concerns examined in Pakistan’s curriculum at the primary level, the frequency of the concepts taught was alarmingly low. Many environmental issues were found in the secondary curriculum in Pakistan but were not present in the primary curriculum like waste management, greenhouse, the ozone layer, littering, and conservation of marine life, reduce, reuse and recycle.

Graph 2 indicates the mode of teaching approach used to inculcate the environmental issues at the primary level in the above-stated countries. Both Canada and Turkey being members of the eco-school foundation has laid an essential emphasis on the research projects and awareness drives. However, in comparison to Canada; Pakistan and Turkey gave more weightage to teaching students using books. Canada practiced educating students via practical exposure and adopted field trips as the mode of practice.

Discussion

In comparison to the implementation of environmental education curriculum and practice, Canada is found to have the most goal-oriented practices to create public awareness at a young age, with Turkey matching its practices and implications to quite an extent. Concepts of environmental awareness in (Istanbul) Turkey are uniformly spread over the first 5 years of primary education. Following the guidelines practiced by the European Union has aided the achievement of a high-end goal for creating awareness. Eco-schools (in Turkey and Canada) exhibit a more serious and committed approach to implementing environmental education in its system.

Studies (Junot, Paquet & Martin-Krumm, 2017; Wilson & Monroe, 2005) regarding biodiversity proved that a curriculum with learning material and activities in connection with the world around have a deeper substantial influence on developing required responsible skills of the learners in addition to the attitudes. Canada and Turkey have ensured the practical implication of environmental education by involving their schools with voluntary organizations that work in



cooperation with the education sector. This encourages activities as research and projects, adopting awareness drives like plantation drive, etc. Hence, improving the efficiency of the environmental education system, schools attain their long term and short term objectives. It is of vital importance to realize that in Canada and Turkey, Environmental Education is not just taught as sub-topics in Science subjects but as separate projects too.

Multiple studies over time (Junot, Paquet & Martin-Krumm, 2017; Mirrahimi, Tawil, Abdullah, Surat & Usman, 2011; McMillan, 2003) reveal that a qualified level of environmental education needs to be approached in a multidisciplinary manner instead of an approach that is one dimensional to enforce a sustainable life with strong values. In addition to the findings mentioned above, Canada was found to have a set of trained, expert instructors that carried out environmental projects and practices. Turkey (Istanbul) to some extent missed out on this resource.

Turkey and Canada avail external assistance from environmental organizations to arrange field trips, awareness campaigns, research projects, plantation drives, and so on to accommodate the financial burden on the educational institutions and departments in the country. Backed by some studies (Harris, 2018; Edmund & Brent, 2011; Martin, 2003) financial constraints as the cost of transportation faced for field trips, are marked among the elements that bound the teaching methodology to read material and prescribed textbooks only.

Conclusion

Comparison concluded that the traditional schools in Pakistan were lacking practical programs because of the Environmental Education (EE) still being in its initial stages. Pakistan is new to the idea of implementing environmental awareness, it needs time and an upgraded plan to implement long term objective-oriented curriculum. Due to inconsistency of goals and principles in preparing education programs, non-availability and scarcity of resources and lack of trained staff in the field of environmental education are a significant drawback in the efficient implementation of EE in Pakistan. Financial constraints, transportations, and lack of involvement of external environmental organizations are some significant reasons why environmental education has limitations to the execution of practical projects in Pakistan.

Involving students in practical field trips for plantation drives, educational visits, and other awareness campaigns are to date not affordable by the education sector of Pakistan. Research (Harris, 2018; Putz, Treiblmaier & Pfoser, 2018; Adu & Olatundun, 2013) further implies that the curriculum needs to inculcate field trips, projects, research, and other practices at an adequate level to arm students with skills and understanding that in future would add to the environmental awareness and provide sustainable solutions too. This is where the education ministry in Pakistan needs to involve external environmental organizations in cooperation with the UN to make the exposure of students more meaningful as Canada and Turkey are practicing.

As per the conclusions derived from this research, Pakistan is practicing the traditional system of imparting environmental awareness to students by adding certain topics in the science or social studies curriculum only. Learning through research projects, field trips, and awareness drives are at an alarmingly low level in the country. Concepts of global concerns regarding the environment are taught but they are not homogenously spread over the five years of primary education. None of the three stated countries had adopted similar activities and practices to attain the learning objective of environmental awareness.

Suggestions

In Pakistan, the textbooks need to have detailed guidelines/planners for instructors to generate awareness with practical implications and responsible attitude among learners; to enlighten them with tactics to solve environmental issues and preserve the Earth's natural resources, creating productive citizens. Following the guidelines set by the curriculum at the primary level in Canada and Turkey, Pakistan can also develop better environmental education and practices. The contribution of voluntary organizations is crucial. Both international and national organizations can play their part in collaborating with the education sector for the improvement in creating awareness via curricula in primary schools. This will also help students' diversified practical learning through research, projects, campaigns, and drives.

Private schools in the country can take lead in registering with Eco-schools and have a pilot program to check the effect of EE education along with its affordability as many countries have benefitted from this program. This will create awareness and open doors of opportunity for other

schools to follow. The government on a national level can also approach eco-school organizations for a devised plan for the existing public schools in the country.

The revision of the primary curriculum in terms of practical approach is needed through which the Ministry of Education at large or the public/private school organizations, even schools individually can devise a layout concerning environmental awareness program. Pakistan, as suggested by previous studies (Sultan, Ahmed & Imran, 2020; Yousuf & Bhutta, 2012) also needs serious teacher training programs to equip them for the above stated.

References

- Adu, E. O., & Olatundun, S. A. (2013). The use and management of ICT in schools: Strategies for school leaders. *European Journal of Computer Science and Information Technology*, 1(2), 10-13.
- Aktep, S., & Girgin, S. (2009). Comparison of eco-schools and other primary schools in terms of environmental education. *Elementary Education Online*, 8(2), 401- 414.
- Alam, S. (2017). Environmental education: Role of the physical environment in students' learning in Gilgit-Baltistan, Pakistan. *Journal of Education and Vocational Research*, 8(2), 22-33.
- Alias, N. (2019). Correlation between knowledge, attitude, and behavior towards river pollution. *International Journal of Modern Trends in Social Sciences*. 2, 31-38.
- Andreou, N. (2020). *Towards a Generation of Sustainability Leaders: Eco-Schools as a Global Green Schools Movement for Transformative Education*. In: Gough A., Lee J.C.K. Tsang E.P.K. (Eds) *Green Schools Globally. International Explorations in Outdoor and Environmental Education*. Springer, Cham.
- Barrable, A. (2019). Refocusing environmental education in the early years: A brief introduction to pedagogy for connection. *Education Sciences*. 9, 61.
- Boeve-de, J., & Van, P. (2013). The effect of eco-schools on children's environmental values and behavior. *Journal of Biological Education*. 47, 96-103.
- Breunig, M., Murtell, J., & Russell, C. (2015) Students' experiences with/in integrated environmental studies programs in Ontario. *Journal of Adventure Education and Outdoor Learning*, 15(4), 267-283.
- Cincera, J., & Krajhanzl, J. (2013). Eco-Schools: what factors influence pupils' action competence for pro-environmental Behavior? *Journal of Cleaner Production*, 61(25), 117-121.
- Delibaş, H., & Babadoğan, C. (2009). A comparison of biology teacher education programs in Germany, England, and Turkey. *Elementary Education Online*, 8(2), 556-566.
- Demirel, B. (2010). The effect of using waste marble dust as fine sand on the mechanical properties of the concrete. *International Journal of Physical Sciences*, 5(9), 1372-1380.
- Derman, M., & Gurbuz, H. (2018). Environmental education in the science curriculum in Different countries: Turkey, Australia, Singapore, Ireland, and Canada. *Journal of Education in Science, Environment, and Health*. 4(2), 129-141.
- Edmund, G., & Brent, R. (2011). Using the theory of planned behavior to understand student attitudes and constraints toward attending field trips. *Journal of Teaching in Travel & Tourism*. 11, 179-194.
- Göktas, Y., Hasançebi, F., Varisoglu, B., Akçay, A., Bayrak, N., Baran, M., & Sözbilir, M. (2012). Trends in educational research in Turkey: A content analysis. *Kuram ve Uygulamada Eğitim Bilimleri*, 12(1), 455-459.
- Gough, N. (2002). Ignorance in environmental education research. *Australian Journal of Environmental Education*, 18(4), 19-26.
- Grodzińska-Jurczak, M., Stepska, A., Nieszporek, K., & Bryda, G. (2006). Perception of environmental problems among pre-school children in Poland. *International Research in Geographical & Environmental Education*, 15(1), 62-76.
- Harris, F. (2018). Outdoor learning spaces: The case of forest school. *Area*. 50, 222–231.
- Junot, A., Paquet, Y., & Martin-Krumm, C. (2017). Passion for outdoor activities and environmental behaviors: A look at emotions related to passionate activities. *Journal of Environmental Psychology*. 53, 177-184.
- Kaya, H., Gul, H., & Gul, S. (2012). Impact of environmental education on elementary school students in Turkey. *International Journal of Multidisciplinary Thought*. 2(3), 423–431.

- Mahmutoğlu, A. (2010). Civil administration supervisor of environmental ethics in the field of rural Turkey opinions. *Turkish Administrative Journal*, 468, 103-130.
- Martin, S, C. (2003). The influence of outdoor schoolyard experiences on students' environmental knowledge, attitudes, behaviors, and comfort levels. *Journal of Elementary Science Education*, 15(2), 51-63.
- Martínez-Borreguero, G., Maestre-Jiménez, J., Mateos-Núñez, M., & Naranjo-Correa, F. (2020). Analysis of environmental awareness, emotions, and level of self-efficacy of teachers in training within the framework of waste for the achievement of sustainable development. *Sustainability*, 12(6), 2563.
- McMillan, E. (2003). A method for evaluating the impact of an introductory environmental studies class on the values of students. *Applied Environmental Education and Communication: An International Journal*, 2(2), 91-98.
- Mirrahimi, S, Z., Tawil, N, M., Abdullah, S, M., & Usman, I, M, S. (2011). Developing conducive sustainable outdoor learning: The impact of the natural environment on learning, social, and emotional intelligence. *Procedia Engineering*. 20, 389-396.
- Mohiuddin, M., Mamun, A., Fazal, S, Masud, M & Su, Z. (2018). Environmental knowledge, awareness, and business school students' intentions to purchase green vehicles in emerging countries. *Sustainability*. 10, 1-18.
- Pedretti, E., Nazir, J., Tan, M., Bellomo, K., & Ayyavoo, G. (2012). A baseline study of Ontario teachers' views of environmental and outdoor education. *Pathways: The Ontario Journal of Outdoor Education*, 24(2), 4-12.
- Put, L, -M., Treiblmaier, H., & Pfoser, S. (2018). Field trips for sustainable transport education: Impact on knowledge, attitude, and behavioral intention. *The International Journal of Logistics Management*. 29(4), 1424-1450.
- Sharp, E., & Breunig, M. (2009). Sustaining environmental pedagogy in times of educational conservatism: A case study of integrated curriculum programs. *Environmental Education Research*, 15(3), 299-313.
- Sobel, D. (1995). Beyond ecophobia: Reclaiming the heart in nature education. *Clearing*, 91, 16-20.
- Stapp, W. (1969). The concept of environmental education. *Environmental Education*, 1(1), 30-31.
- Sultan, S., Ahmed, S., & Imran, M. (2020). Awareness regarding environmental education: A qualitative study suggesting practical steps in education leading towards green Pakistan. *Global Social Sciences Review*, 5(1), 510-518.
- Tanriverdi, B. (2009). Analyzing primary school curriculum in terms of sustainable environmental education. *Egitim ve Bilim - Education and Science*, 34(151), 89– 103.
- Tarman, B. (2018). The awareness of social studies teacher candidates' regarding special area competencies and the overlap level of these competencies with social studies degree. *Journal of Ethnic and Cultural Studies*, 5(2), 16-28.
- Van, J., Garyfallou, A., Oană, E., IE. Et al. (2019). a methodology for cross-national comparative focus group research: Illustrations from discussions about political protest. *Qual Quant*, 53, 2719–2739.
- Wilson, J. R., & Monroe, M. C. (2005). Biodiversity curriculum that supports education reform. *Applied Environmental Education and Communication*, 4(2), 125-138.
- Wing, M. (2017). *An Analysis of Science Instruction and Environmental Education in Virginia and Oklahoma*. Paper for Environmental Studies Senior Seminar, University of Richmond, USA
- Yıldız, N. (2006). *Environmental Education in Schools in Turkey*. Thesis Project. M.Sc in the environmental management department of development and planning. Aalborg University, Denmark.
- Yousuf, A., & Bhutta, S. (2012). Secondary school students' attitude towards environmental issues in Karachi, Pakistan. *Journal of Educational and Social Research*, 2(10), 154.
- Zelenika, I., Moreau, T., Lane, O., & Zhao, J. (2018). Sustainability education in a botanical garden promotes environmental knowledge, attitudes, and willingness to act. *Environmental Education Research*, 24(11), 1581-1596.

Websites

- Ministry of Environment (2001); Program Document, National Environmental Action <http://www.environment.gov.pk/images/rules/envsamprules.pdf>

- MoEF. (2004). Türkiye Çevre Atlası [Environmental Atlas of Turkey] <http://www.cedgm.gov.tr/cevreatlasi.htm>
- MoEf. (2008). https://www.un.org/esa/dsd/dsd_aofw_ni/ni_pdfs/NationalReports/turkey/Full_text.pdf
- National Education Policy of Pakistan. (2009). http://itacec.org/document/2015/7/National_Education_Policy_2009.pdf
- National Environmental Policy of Pakistan. (2005). <https://mowr.gov.pk/wp-content/uploads/2018/05/National-Environmental-Policy-2005.pdf>
- Ontario Ministry of Education (2010). Green clean program resource guide – http://www.edu.gov.on.ca/eng/policyfunding/GreenClean_Guide.pdf
- Ontario Ministry of Education. (2002). Retrieved from <http://www.edu.gov.on.ca/eng/curriculum/secondary/interdisciplinary.html>
- Ontario Ministry of Education. (2007). Retrieved from <http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18currb.pdf>
- Ontario Ministry of Education. (2008). *Reach Every Student: Energizing Ontario Education*. <https://michaelfullan.ca/wp-content/uploads/2016/06/13396078200.pdf>
- Ontario Ministry of Education. (2009). Acting today, shaping tomorrow: A policy framework for environmental education in Ontario schools Toronto, Retrieved from http://www.edu.gov.on.ca/curriculum_council/ShapeTomorrow
- Ontario Ministry of Education. (2009). Retrieved from http://www.edu.gov.on.ca/curriculum_council/ShapeTomorrow.pdf
- Ontario schools, kindergarten to grade 12- policy and program requirements. (2016). http://www.edu.gov.on.ca/eng/document/policy/os/onschools_2016e.pdf
- Standards for environmental education in the curriculum- reach every student. (2008). Ministry Of Education, Ontario, Canada http://www.edu.gov.on.ca/eng/teachers/enviroed/Env_Ed_Standards.pdf
- Türkiye Büyük Millet Meclisi, TBMM. (2005). the Constitution of the Republic of Turkey. <http://www.tbmm.gov.tr/english/constitution.htm>
- UNESCO. (2004). SEMEP: South Eastern Mediterranean Environmental Project <http://portal.unesco.org/education/en/ev.php->