

A Critical Analysis of the D.El.Ed Curriculum of Assam with Special Reference to Integration of ESD and GCED Themes

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ABSTRACT

The National Education Policy (NEP) 2020 highlighted the importance of developing knowledge, skills, values and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being in its vision statement and has underlined the role of teachers in realising this vision. Driven by this context, this study examines the degree to which ESD and GCED themes are incorporated into Assam's Elementary Teacher Education Curriculum, employing the adapted Curriculum Analysis Coding Tool from the International Bureau of Education (IBE) and the Global Education Monitoring Report (GEMR). The analysis covers four areas, viz., the inclusion of cognitive content, learning domains, suggested pedagogical approaches and suggested assessment practices related to ESD and GCED. The findings reveal that in most of the courses in the analysed curriculum, the themes related to ESD and GCED are under-represented. Only very few themes found a place in the curriculum, and those were also not comprehensively covered. The study highlights the importance of a holistic curriculum for the initial teacher education programme, along with orientation and support for teacher educator implementation.

Keywords: *D.El.Ed Curriculum, Education for Sustainable Development, Global Citizenship Education, Curriculum Integration, GCED Pedagogy*

Introduction

Education and development are mutually interdependent. Education contributes to development and development not only supports education but also needs more education for the sustenance of development. The idea of sustainable development

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has its origins in the 1972 United Nations Conference on the human environment held in Stockholm, Sweden. Since then, continuous efforts have been made, which include the Global Action Programme (GAP) 2015–19 and the new global framework on Education for Sustainable Development (ESD for 2030) for implementation between 2020 and 2030. Education Agenda 2030 highlighted the importance of providing equal opportunity for the best type of education to every individual so that they become a capable and beneficial member of society. Goal 4 of Agenda 2030 aims at the attainment of inclusive and equitable quality education for all and continuing education throughout life. The goal is to provide every individual with an equal opportunity for quality education to become a capable and beneficial member of society who can develop a tolerance for promoting peace and contribute to the prosperity of society.

Sustainable Development Goal 4 (SDG 4) comprises seven broad targets. Out of these targets 4.7 highlights, 'By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and culture's contribution to sustainable Development' (United Nations, 2015). Similarly, UNESCO has initiated the vision of Global Citizenship Education (GCED) to prepare the future generation to face and amicably solve global challenges and eventually become an active member of society to contribute to ensuring a just, peaceful, tolerant, inclusive, secure and sustainable world (UNESCO, 2014).

Linkage between ESD and GCED

Education for Sustainable Development (ESD) can be considered the core element of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) (United Nations, 2015). It is mentioned in Target 4.7 of Sustainable Development Goal (SDG) 4, which aims to ensure that all learners acquire the knowledge and skills to promote sustainable development. Global Citizenship Education (GCED) is an approach to education that helps individuals develop the skills, knowledge and values they need to become active, responsible and responsive citizens who contribute to building more peaceful, just and sustainable societies thereby supporting the achievement of the United Nations'

Sustainable Development Goals (SDGs) (UNESCO, 2015). ESD and GCED are two interconnected and complementary educational approaches that focus on developing holistic, informed and active citizens who can address local and global challenges.

ESD and GCED in Teacher Education

Any changes in the area of school education have to originate from teacher preparation programmes. UNESCO (2018a) has rightly perceived this and has been involved in numerous programmes and activities to raise the standard of both pre-service and in-service teacher education programmes. It is an agreeable fact that teacher education has an important place and role to play in ensuring the goals of ESD and GCED within the education system. Many kinds of research are being conducted by UNESCO as well as researchers in the area of teacher education, with a special focus on the integration of ESD and GCED themes in the curriculum as well as practice. (Adawiah, J. and Norizan, E., 2012, Cordina, M. and Mifsud, M. C., 2016, Durrani, R. Malik, S. and Jumani, N.B., 2019, Kalsoom, Q et al, 2019, UNESCO, 2018a).

A study by Andersson (2017) highlights that a few universities from some countries, such as Australia, Germany, Spain and Sweden, have made successful attempts to integrate ESD and GCED themes, such as human rights, peace and intercultural understanding, into their teacher education curricula. This has been done in two ways in those universities, viz., as a part of a course or as a separate course for the initial teacher education programme. A few universities from a few countries, such as Australia, Germany, Spain and Sweden, have followed this approach (Andersson, 2017).

The report of the Global Action Programme on ESD (UNESCO, 2018b) has mentioned that the capacity building of teachers and teacher educators has to be considered a priority area and those countries should consider it an important component of teacher education programmes to ensure the Sustainable Development Goals. Similarly, the Global Education First Initiative (UN, 2012) has identified the lack of teacher capacity as one of the barriers to GCED. In this context, the findings of the Global Education Monitoring Report are very crucial and eye-opening. The report highlights that ten countries in Asia and the Pacific face a shortage of information about how teachers are trained in themes related to GCED (UNESCO, 2016).

The report further mentioned that topics, such as human rights, equality of gender, peace and tolerance, health education, education for sustainable development, and education for global citizenship need to be included in the teacher education programme (UNESCO, 2016). Teachers, being the change agents and responsible stakeholders, are required to expand their knowledge base and pedagogical skills as per the demands of society and changing curriculum.

An analysis of the curriculum of the Bachelor of Education (B.Ed) programme of the Regional Institute of Education (RIE), Bhubaneswar, reveals that the themes connected to ESD and GCED are under-represented in the different curricular courses. It further shows that only a few concepts were included in the curriculum and they were not all completely covered (Panda. B.N, and Krishnan Dhanya, 2022). A similar study was conducted on the analysis of the curriculum of B.Ed. Elementary education in Pakistan reveals that the environmental, economic, social and cultural components, which are the core of ESD themes, were not aligned in the curriculum (Durrani, Malik and Jumani, 2019). Another study on the B.Ed. The curriculum of Pakistan found that there was no single specific course in the B.Ed. Curriculum, which focuses on themes related to education for sustainable development. The study also found that only in the social studies and Pakistan studies themes related to human rights, cultural diversity, peace and responsible production, environment, and its effects on the economy have been included (Kalsoom, Qureshi and Khanam, 2019).

A few studies have observed that in-service teachers have knowledge, awareness and relevance about the three components of ESD but they fail to have a holistic understanding of their interconnectedness (Adawiah and Norizan, 2012; Borg et al., 2014; Summers and Childs, 2007). Some of the studies further pinpointed that the major reason for the lack of holistic understanding of the various concepts of ESD is the faulty method of training given to those teachers during their pre-service and in-service activities (Cordina and Mifsud, 2016; Symons, 2008). This means that knowledge and awareness about sustainability concepts and concerns alone do not help in the process of realising the SDGs. It also requires more practical-oriented actions, where the teachers and teacher educators have to get hands-on experience in using the different pedagogical skills and competencies required for that. This has been

supported by the studies done by Symons (2008) and Summers, Corney and Childs (2003). The pedagogical approaches that help in developing the right kinds of behaviours, socio-emotional skills, values and ways of thinking have to be practiced by the teachers. UNESCO, as well as the scholars in this area, has suggested child-centred approaches, such as fieldwork, discussions, role-plays, debates, reflective practices, case studies, participatory learning, inquiry-based learning, experiential learning, etc., as some of the suitable pedagogies to be implemented (UNESCO 2012; Cotton and Winter, 2010; Garrard, 2010).

Need and Significance

The Government of India has been instrumental in adapting UNESCO's Sustainable Development Goals and GCED. The National Education Policy (NEP) released by the Indian Government in 2020, 'envision[s] an education system rooted in Indian ethos that contributes directly to transforming India, that is, Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower' (NEP 2020, GOI, p.6). The vision of the policy is 'to instil among the learners a deep-rooted pride in being Indian, not only in thought but also in spirit, intellect, and deeds as well as to develop knowledge, skills, values and dispositions that support responsible commitment to human rights, sustainable development and living and global well-being, thereby reflecting a truly global citizen' (NEP 2020, GOI, p.6). To translate this vision into reality, the Ministry of Education (MoE) of the Government of India has initiated various action plans in the areas of school education, teacher education and higher education. Teacher education is a crucial link in the process of education for the future generation. The curriculum and its implementation, both in pre-service and in-service, have to be infused with the themes and sub-themes of ESD and GCED.

It has to start by integrating ESD and GCED-related themes and sub-themes in the pre-service teacher education curriculum and simultaneously needs to be included as a crucial component in various in-service programmes as well. How these themes and sub-themes can be infused, what themes and sub-themes are presently included and what more is required to be integrated into our teacher education curriculum also needs to be studied. The National Council of Teacher Education (NCTE), an autonomous body under the Ministry of Education, Government of India, has the responsibility to frame

the curriculum guidelines and ensure quality teacher education across the country. NCTE came up with a curriculum framework in 2009 (NCFTE, 2009) and norms and standards for different teacher education programmes in 2014 (NCTE Regulations, 2014). NCTE Regulations 2014 have approved 15 different initial teacher education programmes for preparing teachers at various levels, such as pre-primary, elementary, secondary, special subjects and teacher educators. As per the 2014 regulations, the initial teacher education curriculum will have to include three broad curricular areas, viz., Perspectives in Education, Curriculum and Pedagogical Studies and Engagement with the Field. The first two consist of different theory papers with integrated practicum activities, whereas the last one is completely a practical paper. Out of the 15 programmes approved by NCTE, the 2-year Diploma in Elementary Education (D.El.Ed.) programme, which aims to prepare teachers at the elementary level, is one of the most popular among the student community and has the most takers.

In this context, the present study has been conducted to analyse the D.El.Ed. Curriculum for the integration of different themes under ESD and GCED. It is an agreeable fact that the inclusion of these themes in the curriculum and providing theoretical and practical exposure to the student teachers using appropriate pedagogical strategies are the best ways to impart the goals of sustainability and global citizenship to some extent. This integration and practice will help in transferring the same to the school curriculum and teaching-learning process.

Objectives

The objectives of the present study are to:

- Examine the extent to which the different themes under ESD and GCED are being included in the curriculum of the D.El.Ed. programme offered in Assam.
- Suggest the best possible mechanisms to improve the integration of ESD and GCED in the initial teacher education curriculum.

Methodology

This study is intended to analyse the D.El.Ed. Curricula of Assam to see how far the themes of GCED and ESD are incorporated into the syllabus for different courses and papers. Hence, the study has used descriptive research methodology using the methods of

content analysis and document analysis to showcase the inclusion of ESD and GCED themes in the curriculum of D.El.Ed.

Research Tool

The tool used in the study for collecting information pertinent to the objectives mentioned above is an adapted coding scheme for curriculum analysis developed by the International Bureau of Education (IBE) and the Global Education Monitoring Report (GEMR) team (UNESCO, 2016, p. 37–40). The coding scheme was developed by the IBE and GEMR teams through various validation processes, including piloting. For adaptation, the coding scheme developed by IBE has been shared with five subject experts in the area of teacher education for their initial comments and feedback. It was followed by a two-day workshop to modify the coding scheme as per the context of the study as well as the theoretical concepts of ESD and GCED. A few items were included and some items were modified from the IBE tool during expert validation.

The adapted coding scheme has four components, viz., knowledge (cognitive content), learning domains, pedagogy and assessment. The themes and the associated sub-themes under each component have been cross-checked with ESD and GCED documents published by UNESCO, such as the GCED Guide for Teachers, Issues and Trends in Education for Sustainable Development, Integrating Education for Sustainable Development in Teacher Education in South-East Asia, a guide for Teacher Educators, etc. The sub-themes provide more information, such as how the overarching categories are to be understood and which aspects are included in the curriculum and hence, will provide valuable information while analysing the curriculum.

For example, sub-themes under the theme ‘Human Rights’ are given below in Table 1.

Table 1: Sub-themes identified under the theme ‘Human Rights’

Theme	Sub-Themes
Human Rights	Rights and responsibilities (conceptual dimensions of human rights such as universal standards; individual and group rights, children’s rights, cultural rights, indigenous rights, women’s rights, disability rights, rights of gender identities (for example, LGBTQ+))
	Freedom (of expression, of speech, of press, of association or organisation), civil liberties
	Social justice (with respect to class, race, gender, etc.)

	Structural Violence (local, national and global inequalities; its causes role of TNCs and IFIs (IMF; World Bank); sovereignty; landlessness and land reform; urban poor; housing inequalities; child labour; street children— factory labour; migrant workers active engagement of NGOs and CSOs— education for global-local justice or development education)
	Democracy or democratic rule, democratic values or principles

Coding Procedure

The curriculum analysis has been done based on the inclusion or non-inclusion of the sub-themes of GCED and ESD in the syllabi of different courses and papers. The process has been carried out with the help of computerised word searches and manual searches of words and phrases. The number of subthemes ranges from 3 to 10 under each theme. Their inclusion was denoted by 1, and their non-inclusion was denoted by 0. Based on the count under each theme, the percentage of inclusion or non-inclusion was calculated for further analysis. Wherever the sub-themes are included, a sample quote from the syllabus has also been copied for further analysis.

The D.EL.Ed. Curriculum of Assam was developed in a semester-wise pattern. Some of the courses and papers are repeated in more than one semester; hence, while analysing the curriculum, those courses and papers have been counted only once. The syllabi for a few papers and courses are in regional languages and were omitted while analysing. All the remaining papers and courses are classified under three major categories, viz., Perspectives in Education, Curriculum and Pedagogy, and Practicum and School Internship. There were 9 courses under Perspectives in Education, 6 courses under Curriculum and Pedagogy, and 7 under Practicum and School Internship.

Analysis and Findings

The data obtained through the coding of courses and papers in the D.El.Ed. Curriculum for the inclusion of ESD and GCED themes has been done component-wise. It is followed by findings and interpretation.

Inclusion of knowledge (cognitive content) related to ESD and GCED themes

The details of the content knowledge under 7 major themes related to ESD and GCED incorporated in different courses and papers of D.El.Ed have been analysed using the coding scheme and are given in Table 2.

Table 2: Course-wise inclusion of cognitive content related with different themes (in percentages)

Courses	Themes					Interconnected- ness and Global Citizenship
	Human Rights	Intercultural Understanding and Respect	Gender Equality	Peace, Non- violence and Human Security	Health and Well Being	Sustainable Development
Perspectives in Education						
Education in Contemporary Indian Society with Special Reference to Assam	40	66	50	25	0	0
Cognition, Learning and Socio-cultural Context	0	0	0	0	0	0
ICT Integrated Pedagogy	0	0	0	0	0	0
School Culture, Leadership and Teacher Development	0	0	0	0	0	0
Diversity, Gender and Inclusive Education	80	33.3	50	25	0	0

Childhood, Child Protection and the Development of Children	40	0	0	25	0	0	0	0
Early Childhood Care and Education	0	0	0	0	12.5	0	0	0
Understanding Language and Early Language Development	0	0	0	0	0	0	0	0
Understanding Society, Education and Curriculum	60	0	25	0	0	0	0	10
Curriculum and Pedagogy								
Pedagogy of Mathematics	0	0	0	0	0	0	0	0
Pedagogy of Modern Indian Language	0	0	0	0	0	0	0	0
Pedagogy of English	20	16.6	0	25	0	0	22.2	20
Pedagogy of Science	0	33.3	75	0	50	33.3	0	0

Pedagogy of Social Science	0	33.3	0	0	0	0	0	10
Pedagogy of Environmental Studies	0	0	0	0	0	0	22.2	0
Practicum and School Internship								
Art and Creative Education	0	0	0	0	0	37.5	11.1	0
Children's Physical and Emotional Health Education	0	0	0	0	0	75	22.2	0
Towards Self-understanding	0	0	0	0	0	0	11.1	0
Proficiency in English	0	0	0	0	0	0	0	0
Yoga Education	0	0	0	0	0	37.5	0	0
Work and Education	0	0	25	25	25	12.5	11.1	0
School Internship	0	0	0	50	37.5	11.1	0	0

Out of nine courses under perspectives in education analysed, five courses included at least one theme related to ESD and GCED. Human rights-related sub-themes have been included in four courses, specifically in two courses titled 'Diversity, Gender, and Inclusive Education' and 'Understanding Society, Education, and Curriculum'. More than 50 per cent of sub-themes under human rights were included.

While analysing the curriculum, a few exemplary quotes from the syllabi were also identified. A few such quotes that reflect the inclusion of some of the sub-themes in the syllabus are—

Policies, legislation, provisions, and services for children with special educational needs: RTE Act, 2009, Acts related to gender violence (Theme: Human Rights, Sub-theme: Rights and responsibilities, State: Assam, Course: Diversity, Gender and Inclusive Education)

While analysing the theme-based inclusion in courses under perspectives in education, it can be seen that the theme of human rights has been incorporated in more courses, whereas the theme of sustainable development has not been incorporated in any courses.

The analysis of courses under Curriculum and Pedagogy shows that only the course content of Pedagogy of Science has incorporated more than 5 per cent of subthemes under the themes 'Gender Equality and Health and Well-Being'. Further, the data reflects that only in the course contents of two courses, Social Science Pedagogy and Science Pedagogy, themes such as 'Gender Equality', 'Health and Well-Being' and 'Human Rights' were incorporated, while in the course content of Environmental Studies, the theme Sustainable Development was incorporated with less than 50 per cent of the subthemes. In the rest of the courses under Curriculum and Pedagogy, the inclusion of the themes was very minimal and negligible.

A few exemplary quotes from the syllabus are—

Environmental issues: biodiversity, ecosystems, conservation of the environment, pollution and treatment, global warming, loss of habitat, and endangered species with special reference to North-East India. (Theme: Sustainable Development, Sub-theme: Sustainable, Sustainability, Sustainable Development, State: Assam, Course: Pedagogy of Science)

Under the third category of courses, practicum and school internship, it can be seen that the course content related to

children's physical and emotional health education incorporates more than 50 per cent of the subthemes under 'Health and Well-being'. Apart from this, only the course content of the school internship programme incorporates 50 per cent of the subthemes under 'Peace, Non-violence, and Human Security'. Hence, it is obvious from the fact that only four themes have been incorporated under practicum and school internship activities, which have scope for the integration of more themes.

Inclusion of Learning Domains in the Curriculum

Global citizenship education covers three learning domains, which are cognitive, socio-emotional and behavioural (action). Apart from the cognitive content analysed in the earlier section, it is essential to see to what extent these domains of learning are reflected either in the objectives or learning outcomes of the different courses or in the rationale for including different contents and activities in the curriculum. The details of the analysis are given in Table 3.

Table 3: Course-wise inclusion of learning domains (in percentages)

Courses	LEARNING DOMAIN		
	Cognitive	Socio-Emotional	Behavioural (Action)
Perspectives in Education			
Education in Contemporary Indian Society with Special Reference to Assam	25	0	0
Cognition, Learning and Socio-cultural Context	0	0	0
ICT Integrated Pedagogy	0	11.1	0
School Culture, Leadership and Teacher Development	0	0	0
Diversity, Gender and Inclusive Education	25	44.4	0
Childhood, Child Protection and the Development of Children	0	0	0
Early Childhood Care and Education	0	0	0
Understanding Language and Early Language Development	0	0	0

Understanding Society, Education and Curriculum	25	22.2	50
Curriculum and Pedagogy			
Pedagogy of Mathematics	40	11.1	0
Pedagogy of Modern Indian Language	25	0	0
Pedagogy of English	25	11.1	0
Pedagogy of Science	25	44.4	50
Pedagogy of Social Science	50	22.2	0
Pedagogy of Environmental Studies	0	0	0
Practicum and School Internship			
Art and Creative Education	25	11.1	0
Children's Physical and Emotional Health Education	0	33.3	0
Towards Self-understanding	0	11.1	50
Proficiency in English	0	0	0
Yoga Education	0	33.3	50
Work and Education	25	0	0
School Internship	0	0	50

From Table 3, it can be seen that the syllabus of five out of nine courses and papers under perspectives in education miss all three categories of learning domains. Only in one course, Understanding Society, Education and Curriculum, all three learning domains found a place, and that was also negligible inclusion with 25 per cent, 22.2 per cent and 50 per cent. In all other courses, the inclusion of learning domains in the course structure is minimal, with a maximum of 44.4 per cent for the socio-emotional domain in the course Diversity, Gender and Inclusive Education.

In the case of courses under Curriculum and Pedagogy, in all courses and papers except in Pedagogy of Environmental Studies, the different learning domains have been included. The maximum inclusion is in the course of pedagogy in science. But it can also be seen that none of these domains have been reflected in more than 50 per cent of any of the courses.

Practicum and School Internship courses, which are expected to be more practical-oriented as well, could not provide the expected inclusion of various learning domains but only three courses, viz., Towards Self-understanding, Yoga Education and School Internship, have a reflection of exactly the 50 per cent components of the behavioural domain. In all other cases, the percentages of inclusion of different domains are less than 50 per cent or, in some cases, nil.

In a few cases, the sub-themes under learning domains are included in the practicum and school internships are given under Mapping and utilisation of community resources (theme: behavioural domain, sub-theme: participation or skills to participate at local, national and global levels, state: Assam, course: school internship).

Pedagogical Approaches

This section of the analysis focuses on the specific pedagogical strategies, if any, suggested in the curriculum while teaching the themes related to GCED and ESD. The preliminary analysis of the curriculum shows that no specific strategies have been suggested theme-wise or topic-wise. Instead, suggestive pedagogical strategies have been given either in the preliminary part of the syllabus or at the end in general. The percentages of courses and papers that suggest a particular pedagogy have been calculated and given in Figure 1.

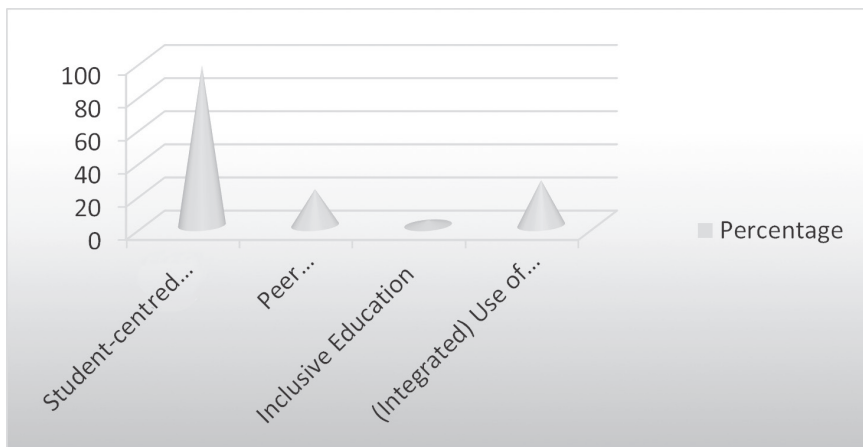


Figure 1: Pedagogical Approaches

It is visible from the figure that the most frequently suggested pedagogy is student-centred approach. As per the details in the curriculum, around 80 per cent of the courses suggest this pedagogy. The least suggested pedagogy is inclusive pedagogical strategies.

Assessment Practices in the Curriculum

Along with the pedagogical strategies, the assessment strategies and processes suggested in the curriculum have been analysed based on the statements given in the courses, either in the introductory part, in the objectives or the topics. It is also relevant to mention that this analysis has also been done based on the whole syllabus and not on any specific assessment strategies used for the ESD/GCED theme. This is because the syllabus does not provide any themes or topic-based assessment strategies. The data collected using the coding scheme has been presented in the form of graphs given in Figure 2.

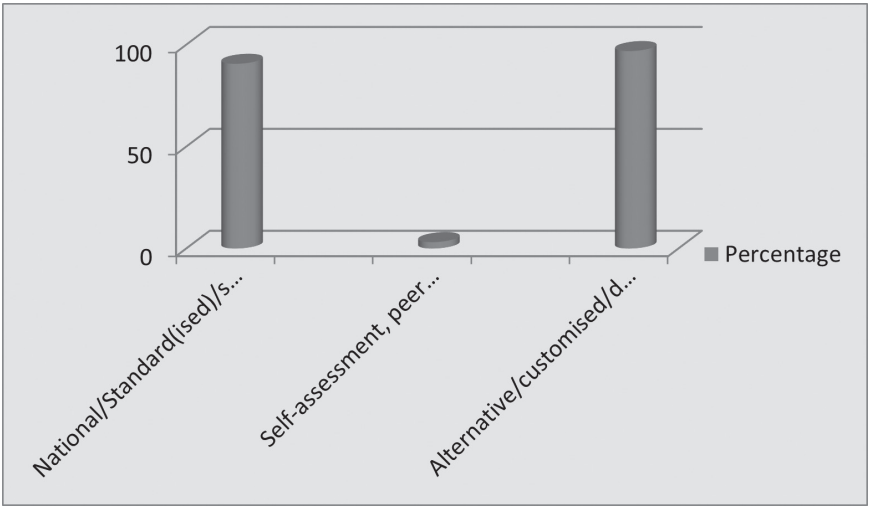


Figure 2: Assessment Strategies

The analysis shows that alternative, customised, differentiated, creative or authentic assessment, performance-based assessment, outcomes or competency-based assessment and portfolio assessment strategies have been suggested in most of the courses. Peer- and self-assessment strategies have been suggested in very few courses.

Discussion

Inclusion of Cognitive Content in the Curriculum

From the findings mentioned above, it can be seen that the cognitive content is related to the theme 'Human Rights' only in two courses in the curriculum of Assam. This has been included in the courses 'Diversity, Gender, and Inclusion', and Understanding Society and Curriculum in Assam. This finding reveals the necessity of including various sub-themes under human rights in the curriculum by infusing the concepts in different courses. The sub-themes under intercultural understanding and respect have been part of one course from Assam; it requires a systematic effort to infuse them as a part of more courses, including the practicum activities.

The cognitive content related to the sub-themes of 'Gender Equality' has been included in at least one course. This has been a part of the course Diversity, Gender and Inclusive Education in these states. Apart from that course, two more courses from Assam have given importance to concepts related to gender equality. It is essential to integrate the fundamental concepts of gender equality in different courses, apart from those related to gender or inclusive education.

Various subthemes under 'Peace, Non-violence and Human Security' have been integrated with at least one course of the curriculum. In Assam, it was integrated as a part of a school internship. The findings also reveal that this particular theme has been neglected in many courses, in which the integration could be done effectively if planned effectively.

The only theme that has been part of the curriculum is health and well-being. This has been a part of the course related to children's physical and emotional health. The finding shows that the subthemes related to sustainable development are completely missing from the curriculum. It happened even after the National Council for Teacher Education (NCTE) made mandatory that environmental education be a part of the curriculum of all teacher education courses, where the theme of sustainable development is part of environmental education. The finding also reveals that the last two themes, viz., sustainable development and global citizenship, which are two crucial components of ESD and GCED, were almost completely missed in the D.El.Ed. Curriculum. These findings also support the findings by Durrani, Malik, and Jumani (2019) and

Kalsoom, Qureshi and Khanam (2019) about the B.Ed. Elementary curriculum and B.Ed. Honours curriculum of Pakistan, where many of the crucial themes, such as environmental, economic, social and cultural components are missing in the curriculum.

The findings of this study partially support the findings of the study by Andersson, who highlights that a few universities from a few countries, such as Australia, Germany, Spain and Sweden, have made successful attempts to integrate the ESD and GCED themes in their teacher education curriculum. But concerning the mode of integration, the present study only supports one of the two ways, viz., included as a part of a course or as a separate course found by Anderson. None of the curriculums has a separate course on ESD or GCED. There may be some possibility of inclusion during their curriculum transaction time as well.

Inclusion of Learning Domain

The crux of the integration of GCED lies in the successful infusion of three interrelated domains of learning— visual, cognitive, socio-emotional and behavioural components in the curriculum. The findings related to the inclusion of these domains in different courses under the D.El.Ed. Curriculum shows that these components were minimally infused in a few papers. Cognitive learning domains were included in the course Pedagogy of Social Science. This only reflects the inclusion of knowledge and thinking skills necessary for the students and teachers to understand global issues and their complexities. It is equally important to include the socio-emotional learning domain, which will eventually help to develop values, attitudes and social interaction abilities to cope with and cooperate with others in the curriculum. The extent to which the curriculum provides an opportunity for the learner to practice knowledge, skills and even the value system in their daily lives has also been given importance in GCED by incorporating the third domain, namely behavioural. The findings based on the analysis show that five courses were given scope to include behavioural components. Hence, it can be said that the curriculums require urgent modification to include these crucial aspects of GCED. This is required for materialising the concept of transformative education, where the learners will be able to use their knowledge and skills effectively to solve complex real-life problems, including environmental issues and work to ensure peace, prosperity and progress in society.

Pedagogical Practices

The analysis of the curriculum reveals that the most suggestive pedagogy mentioned under the different courses is based on student-centred approaches. However, those pedagogies were suggested for all the topics under the particular courses, not specifically for ESD or GCED themes. UNESCO also recommends that the appropriate pedagogy used for transacting the curriculum be student-centred. This supports the findings and views of Rieckmann (2017), UNESCO (2012), Cotton and Winter (2010), Garrard (2010), and Jucker (2002), who found that the vision of ESD could be materialised through the constant use of child-centred pedagogies, such as project work, discussions, group work, cooperative learning activities, etc. The findings of the present study also highlight that pedagogical approaches, such as peer learning strategies, inclusive pedagogy and ICT integration were suggested in very few courses. This is an area to be taken care of while revising the curriculum.

Assessment Strategies

The analysis of the curriculum shows that alternative modes of assessment strategies were generally suggested in the courses of the state curriculum. This includes strategies, such as performance assessments, outcomes, competency-based assessments and portfolio assessments. The most significant finding is related to the minimal use of peer and/or self-assessment strategies in different courses. The result throws light on the sorry state of affairs in the area of assessment strategies used in the TEIs. This has to be taken seriously and teacher educators need to be provided support and orientation in the use of different innovative and creative assessment strategies.

Recommendations

The following are the recommendations based on the findings of the present study:

Development of a Holistic Framework

From the data, it can be concluded that the present integration of ESD-GCED in the teacher education curriculum lacks a holistic conceptual framework. Only a few sub-themes from various themes were present in the curriculum. But that also lacks comprehensiveness and implementation modalities. The materials as well as the courses

and presentations of UNESCO and APCEIU have to be studied and their possible adaptation in the teacher education curriculum should be given priority for building a more peaceful, just, inclusive and sustainable society, which is the vision of NEP 2020.

Need for Curriculum Revision and Adaptation

To materialise the vision of NEP 2020, more practical and action-oriented approaches need to be taken by NCTE and other concerned institutions, such as SCERT, DIETs, universities, etc. The pre-service teacher education curriculum has to be revised by including all the themes and sub-themes related to ESD and GCED.

The curriculum of pre-service teacher education could include some practicum activities, such as field visits to different places of cultural importance, student-teacher exchange programmes, international academic collaboration with similar types of institutions through online mode, community living camps, interaction with experts in different areas, etc. The curriculum has to provide clear direction in terms of suggestive pedagogies for transacting different themes, the suggestive mode of assessments, exemplary practicum activities, suggestive additional reading materials, etc. It is also better to have a comprehensive review of the curriculum at least every five years and an update of the curriculum every year, if required, as per the need.

Adaptation and Development of Teaching and Learning Materials

There are study materials available from different international organisations, including UNESCO, APCEIU, etc., related to themes under ESD and GCED. NCTE, NCERT, SCERT, DIETs, and central and state universities need to take proactive roles in adapting these materials to national as well as local contexts. Accordingly, the contextualised materials could be included in the curriculum of pre-service as well as in-service teacher preparation programmes.

Appropriate Pedagogy for Transformative Education

The appropriate pedagogy for integrated ESD-GCED has to be utilised by teacher educators as well as teachers. There may be many reasons for not adopting appropriate pedagogies in the classroom, like lack of exposure to such pedagogies, lack of support materials, infrastructure, class size, lack of awareness,

curriculum not in tune with those pedagogies, etc. If we cannot make changes in the teacher education curriculum and the teacher educators fail to use participatory approaches and activities for developing twenty first century skills among the student-teachers, how can we expect the same from prospective teachers as well as teachers? Hence, the holistic framework needs to cover the importance of the pedagogies required in transformative education to infuse ESD-GCED themes and exposure has to be provided to the teacher educators to enhance their skills.

Conclusion

From the study, it can be concluded that in most of the courses in the D.El.Ed. Curriculum, the themes related to ESD and GCED are missing completely. Only very few themes found a place in the curriculum and that was also not comprehensively included. Some of the courses, such as Gender and Inclusion, Children's Physical and Emotional Health, Pedagogy of Social Science, Pedagogy of Science, Pedagogy of Environmental Education, etc., could have a greater chance of infusing many of these themes. Unfortunately, those were not reflected in the existing curriculum. Hence, a systematic and comprehensive effort is required from different stakeholders to integrate these themes adequately in the pre-service teacher education curriculum in the future. The effort should not be limited to integrating ESD and GCED in the above-mentioned courses; it should go beyond that and integrate into other courses as well. The provision of an opportunity for the teacher educators and teachers to participate in different professional development activities, including in-service programmes and on-site support, will also help in moving confidently toward the vision of materialising SDG 4.7 as well as the vision of National Education Policy (NEP) 2020. The idea of transformative pedagogy needs to be initiated from teacher education programmes so that prospective teachers will get knowledge, skills, attitudes, values and practices of ESD and GCED themes for using the same for transforming the learners.

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