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Article

From Transnational Policy to National Curricula: Tracing the Diffusion and Integration of Sustainability in School Curricula in England, India, Norway, and Pakistan

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Abstract

This paper examines how transnational policies on sustainability, particularly the UN's Sustainable Development Goals (SDGs), diffuse to and reflect in national curriculum frameworks in England, India, Norway, and Pakistan. Using a qualitative exploratory design, the study analyses policy documents from transnational organisations and national curriculum frameworks from the four countries. The research focuses on how these countries conceptualize and integrate sustainability within their education systems, exploring the dominant educational ideologies underpinning these approaches. The findings reveal a clear pattern of diffusion of the three-dimensional model of sustainability (environmental, social, and economic) from transnational policies to national contexts. However, the study also highlights significant variations in

how each country integrates this model, reflecting different national contexts, cultural values, and policy decisions. The study concludes that despite a global push for sustainability education, its integration remains largely contingent on national priorities and contextual factors. Further research is needed to understand how these different approaches translate into classroom practice and impact pupil learning. In particular, the study highlights in comparative terms the interplay of the national and the global in shaping curricular conceptualizations of sustainability and education for sustainable development

Keywords: sustainability in education, sustainable development goals, curriculum policy, subject curricula, formal education

Introduction

Sustainability of natural habitats and resources, and of cultural, artistic, and civilizational heritage has emerged as a pressing concern for humanity. Governments have increasingly responded to this concern through a range of efforts. Education, and in particular, curricular reforms have accelerated in the past two to three decades in response to the global education policy goals on sustainability (e.g., Fredriksson et al., 2020; Weldemariam et al., 2017). In this backdrop, the study's aims are twofold. First, it examines the conceptions of sustainability at transnational level where sustainability is promoted as a global education policy goal. And second, it compares the curricular reforms involving sustainability as a key theme of action in four countries - England, India, Norway, and Pakistan - where sustainability is integrated as a *national curriculum goal*. Correspondingly, the study asks two main research questions (RQs): 1) What conceptions of sustainability as global policy goals are promoted by transnational organisations? and 2) How is sustainability conceptualized and integrated into curriculum policy in select national contexts? The national contexts of England, India, Norway, and Pakistan are therefore analysed as case illustrations of the diffusion and integration of the transnational conceptions identified in RQ1. In particular, with regard to the national contexts, the study examines how curricular reforms in England, India, Norway, and Pakistan have responded to the global push for education for *sustainability*. This study is distinctive as it examines how countries with differing geographic, socio-cultural, economic, political, and educational contexts adapt their curricula to emphasize sustainability against the backdrop of a global movement towards sustainable development endorsed by transnational organisations.

We first present a brief review on curriculum research on sustainability in education, followed by our theoretical framing and methodological considerations. We then investigate the idea of education for sustainability as espoused by international organisations such as the United Nations (UN), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Organisation for Economic Cooperation and Development (OECD), and the European Union (EU)/the European Commission (EC). Borrowing from several theoretical perspectives, we also explore sustainability as a key pursuit in curriculum frameworks and documents as a point of action for sustainability from within the recent

education reforms in England, India, Norway, and Pakistan. We close the article with discussion and main conclusions to highlight the conceptions of sustainability promoted by international organisations, as well as those incorporated in national curriculum contexts.

Curriculum research: sustainable development and/or education for sustainable development

Many countries have started to develop policies and guidelines to promote sustainability education and/or education for sustainable development, with a growing interest in incorporating sustainability into the curriculum (e.g., Bagoly-Simó, 2014; Maude, 2014). Comparative analyses across multiple national contexts demonstrate both the breadth of adoption and variation in how ESD is framed and implemented in formal curricula (Fredriksson et al., 2020; Molina et al., 2021; Suárez-López & Eugenio-Gozalbo, 2022; Weldemariam et al., 2017). At the transnational level, the UN's SDGs have catalysed national reforms, with OECD and EU frameworks further consolidating ESD as a policy priority (Bianchi et al., 2022; OECD, 2018; OJEU, 2018; UN, 2015). However, the extent to which sustainability is integrated into the curriculum varies significantly. This variability is well documented in cross-national curricular analyses that report differences in emphasis (environmental vs. social/economic pillars), stage-specific integration, and pedagogical orientation (Holst et al., 2020; Li et al., 2019; Maude, 2012; Suárez-López & Eugenio-Gozalbo, 2022).

Reviewing several national curricula, Maude (2012) found that most curriculum documents do not distinguish between sustainable development and sustainability, as they also do not explain what is to be sustained. This conceptual ambiguity is echoed in broader theoretical debates, where 'sustainable development' is contested for privileging certain worldviews or policy priorities (Bonnett, 2003; Maude, 2014). We review recent curriculum research on sustainable development (SD) and education for sustainable development (ESD) within educational frameworks, using scholarly sources to highlight key themes and debates.

A significant strand of research highlights the limitations of current ESD curricula/ frameworks (Sengupta et al., 2020; Tomren, 2022), with calls for a paradigm shift towards transformative, participative, and interdisciplinary pedagogies gaining momentum (Sengupta et al., 2020). This work argues for an action-oriented, transformative ESD that advances interdisciplinary competence, critical reflection, and civic agency among pupils (Ohlsson et al., 2022; Sengupta et al., 2020; Tomren, 2022). This shift aims to empower pupils to become active agents of change, fostering critical thinking and problem-solving skills necessary to address complex sustainability challenges. However, studies show that curricula often lack a holistic approach and a strong focus on environmental issues compared to social and economic pillars of sustainability (Filho, 2018; Holst et al., 2020; Li et al., 2019). Furthermore, the need for innovative

methodologies and frameworks to facilitate deeper understanding and engagement with sustainability concepts is emphasized (Sengupta et al., 2022).

The very concept of SD itself is contested. It may reflect varying worldviews and priorities (regarding environmental protection, social equity, and economic development) (Bonnett, 2003; Maude, 2014). National curricula embody these diverse perspectives, with some emphasizing general principles that guide educational approaches (Sweden) while others focusing on subject-specific integration of SD concepts (Japan) (Fredriksson et al., 2020). A study covering Bavaria, Romania, and Mexico (Bagoly-Simó, 2014) reveals that each country's curriculum conceptualizes and implements SD and ESD differently, reflecting their unique historical, cultural, and educational contexts. Taiwan and Colombia (Molina et al., 2021) integrate SD into their national curricula systems, emphasizing, citizenship, social inclusion, democracy, human rights, and the environment. Analysing SD as curriculum content across countries (Sweden, Norway, Australia, England, and the USA) Weldemariam et al. (2017) find that the curricula depict a one-way relationship where pupils learn about and care for the environment. Curricula in Spain and Portugal showed a limited presence of SD in both countries (Suárez-López & Eugenio-Gozalbo, 2022).

Studies advocate for a shift towards action-oriented learning that equips pupils with the necessary skills and knowledge to address real-world sustainability challenges (Ohlsson et al., 2022; Tomren, 2022). This includes fostering critical thinking, problem-solving, and decision-making abilities, alongside a sense of global citizenship and intergenerational responsibility (Hadzigeorgiou, 2021). Barthes (2018) highlights the ’hidden curriculum’ in ESD curricula and underscores the existence of implicit values and ideologies.

While prior studies capture the varying ways and perspectives into which national governments are working towards promotion and integration of SD and ESD in their formal curricula, our own work here contributes towards this emerging curriculum research work by looking into another set of countries. Simultaneously, the study examines the conceptions of SD and ESD at different levels, where SD and ESD are promoted as global education goals (transnational level) and curriculum goals (national level). Critical analysis of curriculum content is crucial to ensure a balanced and nuanced understanding of SD and ESD that transcends economic growth and national boundaries. Building on comparative ESD curriculum analyses and transnational policy diffusion, this study uniquely traces how the UN-aligned three-pillar conception travels into four culturally diverse national frameworks (England, India, Norway, Pakistan), and explains cross-national variation by linking Berry and Berry’s diffusion mechanisms with Schiro’s curriculum ideologies (and treating sustainability as Klafki’s epochal key problem).

Conceptual framing: policy and education perspectives

The study borrows from different policy and education perspectives. First, we use Berry and Berry’s (2018)

model to understand the nuances of diffusion, conceptualization, and integration of sustainability in curricular documents and policies at transnational and national levels. We believe this may be one of the first studies that uses this model to understand how sustainability goals diffuse from one to the other jurisdiction, as is the case with integration of policies from transnational to national levels. Berry and Berry (2018) suggest that policy adoption is a function of factors categorized as 'internal determinants' and 'diffusion mechanisms.' Internal determinants are the political, economic, and social and cultural characteristics and tendencies specific to a jurisdiction. Whereas diffusion mechanisms (i.e., learning, imitation, normative pressure, competition, and coercion) are the pathways that governments and jurisdictions follow to conceptualize and integrate policy. This policy perspective enabled us to gain an understanding of which diffusion mechanisms are at play in the national contexts when sustainability is reflected in, conceptualized, and integrated as a curriculum goal. In turn, the analysis uses the four national curriculum policy contexts to trace the effects of learning, normative pressure, and coercion as the global concept (RQ1) translates into national policy (RQ2).

The question of education is always a question of the future of education. And education is also always instrumental in some ways as it pursues different purposes, varying in time and space. Schiro (2013) has conceptualized four curriculum ideologies which shape the main purposes that education aspires towards. The four ideologies include scholar academic, social efficiency, pupil centred, and social reconstruction (Schiro, 2013). To sum up briefly from Schiro (2013), the scholar academic ideology is about academic curriculum and advancement of academic achievement of individuals. The social efficiency ideology emphasises ways in which education can provide most graduates with requisite knowledge and skills to participate in the social/economic order. The pupil centred ideology is about personal development of pupils and using their interests as starting points for the design of education experiences. Lastly, the social reconstruction ideology puts emphasis on society (not the individual) pursuing the vision that education can resolve social issues and transform society for the better. Considering these curriculum ideologies, we discuss the positioning of sustainability concepts in the transnational policies and national curriculum documents to pinpoint the dominant ideologies underpinning the vision of sustainability as a policy and curriculum goal.

Further, in the European context Wolfgang Klafki has been an influential education scholar who emphasised the idea of epochal key problems that education needs to address (Klafki, 1997). An epochal key problem refers to a central, pressing issue or challenge that is characteristic of a particular historical epoch and has a significant impact on society and individuals. Such a problem is seen as an essential topic for educational focus because understanding and addressing it is crucial for personal development, societal participation, and fostering a democratic, humane society. Already in the past century, Klafki's list of epochal challenges to be addressed through education included peace, environment, social inequality, new

technologies, developing versus highly developed countries, employment versus unemployment, social injustice, migration, and mass media (Klafki, 1997). In this regard, sustainability can be discussed as an epochal topic relevant for our times in need of conceptualization and integration in education.

Methodological considerations

This study employs qualitative exploratory design, involving document analysis through reading, analysing, and interpreting documents selected for the purposes of research (Bowen 2009). We focus on the last two to three decades when policy development and action have become much more pronounced due to increased climate and sustainability concerns. In particular, data sources include policy documents and frameworks from the UN (2015), UNESCO (2020; 2021), the OECD (2018), and the EU/EC (Bianchi et al., 2022; OJEU, 2018) where sustainability is promoted as a *global education policy goal* at the transnational level (see Appendix 1). To investigate policy diffusion, conceptualization, and integration to curriculum goals in national contexts, we analysed the latest national curriculum documents/frameworks from England, India, Norway, and Pakistan - all available in the public domain. Within these curriculum documents, we focused on the core academic disciplines such as *Mathematics*, *Science*, *Languages*, and *Civic/Social Studies*, as we see these areas as typically mandated for ESD integration in the environmental, economic, and social dimensions. To extract the relevant text from the included documents from both transnational and national levels, we have used an analytical template consisting of four entries:

- Are concepts *sustainability*, *sustainable,* and *sustainable development* used in the text? If yes, how many times?
- Are definitions of *sustainability* and *sustainable development* provided?
- What are the arguments about *sustainability* and *sustainable development*?
- What is the context in the text in which *sustainability* and *sustainable development* are used?

Our focus on the keywords such as *sustainability*, *sustainable* and *sustainable development* falls under the summative content analysis approach suggested for qualitative content analysis by Hsieh and Shannon (2005). We read the curriculum documents for the number of counts these appeared in each to zoom in on areas and subjects where sustainability has been treated highly to do the latent analysis. Next, the analysis spiral procedure (Creswell, 2013) was applied to analyse, code, and interpret the extracted text from the documents. Table 1 provides a summary of analytical lenses and theoretical perspectives integrated in the study.

The selection of the four countries to represent national contexts is purposeful and strategic to have a broad representation, although admittedly very limiting as well. Specifically, we follow the GLOBE (Global Leadership and Organizational Behavior Effectiveness) project, which examined how a society's culture affected leadership behaviours of leaders (see Gupta et al., 2002 for details), to select our countries for

regional representation. The four countries in our sample represent three out of the ten cultural clusters that the GLOBE project has identified (Gupta et al., 2002): the Nordic cluster (Norway), the English-speaking cluster (England), and the Southern Asia cluster (India and Pakistan[1]). We argue that to gain a more nuanced understanding it is important to study the integration of sustainability and/or sustainable development in diverse contexts such as these included here. Further, the exploration of these diverse contexts shows in what ways they have responded to the calls for incorporating the concept of sustainability as an educational ideal and goal in curriculum documents.

Table 1. Analytical lenses and theoretical perspectives integrated in the study

Analytical Lens	Theoretical Perspectives	Justification
Policy	Policy Diffusion Mechanisms (Berry & Berry, 2018)	Explains *why* the concept was adopted and integrated by nation-states (e.g., coercion from aid dependencies, normative pressure) and serves as the structural context for the comparison.
Content	Curriculum Ideologies (Schiro, 2013)	Explains *how* sustainability is framed by each nation (e.g., social reconstruction for transformation in Norway/India, social efficiency for practical problem-solving in Pakistan), defining the educational purpose.
Significance	Epochal Key Problem (Klafki, 1997)	Explains the *conceptual weight* of sustainability in each curriculum, assessing whether it is treated as a core, defining challenge of the current era (e.g., Norway comes closest to this framing) or merely a subject-specific topic.

Curricula are conceived of as existing in three forms, i.e., *intended*, *implemented* and *attained*. We follow van den Akker's (2003) strategy in differentiating and analysing the curricula with distinctions in intent, implementation, and attainment at different levels. At the systems level (van den Akker, 2003) curriculum is 'intended' to achieve a certain vision with a rationale specific to sociopolitical context(s) within which it is implemented. However, what is intended at the macro level may not transpire with complete fidelity at the

[1] Pakistan was not included in the earlier waves of the GLOBE project, however here we follow Cherfan and Allen (2022), who placed Pakistan under the Southern Asia cultural cluster.

micro (classroom) and nano (personal) levels. Due to factors such as teacher agency and capacity, enactment will be at variance with the intent of the curricula. Similarly, due to factors such as pupil motivation and preparedness, attainment will be at variance to enactment at the nano level (van den Akker, 2003). Consistent with van den Akker's (2003) distinction among *intended*, *implemented*, and *attained* curricula, our analysis addresses the 'intended' level only. We have developed country profiles based on our findings, which descriptively and analytically show how the concept of sustainability shows up and conceptualized in the four national contexts.

Results

We first present our findings from our reading, analysis and interpretation of transnational policy documents, followed by the four strategically selected country cases.

Conceptions and operationalization of sustainability in transnational and national policy documents

In our reading of the transnational documents, we searched whether concepts such as *sustainability* and *sustainable development* were used, how frequently, and what definitions were provided, if any, as well as the context in which they appeared. We first examined the UN (2015) document *Transforming our world: the 2030 Agenda for Sustainable Development.* The Resolution mentions *sustainability* six times, while *sustainable development* 142 times. It doesn't provide a direct definition to either sustainability or sustainable development, however it elaborates on the 17 sustainable development goals (SDGs) and corresponding 169 targets, which are built on the prior agenda of millennium development goals. The SDGs are presented as "[...] integrated and indivisible and balance the three dimensions of sustainable development: the economic, social and environmental" (UN, 2015, p. 1). However, the UN, with wide country representation, promotes sustainable development globally and coordinates SDG progress tracking. Its conception of sustainability encompasses economic, social, and environmental aspects, creating a consensus for countries to adopt similar sustainability frameworks.

UNESCO has produced several documents and roadmaps to support achievement of SDGs (e.g. UNESCO, 2020). For our study, we selected a recent influential 186-page UNESCO publication that offers a fresh vision for education globally titled *Reimagining our futures together – A new social contract for education* (UNESCO, 2021). In this publication, the term *sustainability* is mentioned 22 times and *sustainable development* eight times without definitions, but aligns with the UN's three-dimensional sustainability concept, focusing on equity, justice, and environmental considerations. The text highlights a paradox where higher education levels correlate with unsustainable practices, indicating the need to rethink education's role in promoting sustainability (UNESCO, 2021, p. 33). This publication emphasizes the need to rethink

education to foster sustainability, suggesting a shift from traditional economic-centric models to a balanced approach considering social well-being and ecological limits. It advocates for schools to become beacons of sustainable living, implying education can correct unsustainable past practices and contribute to a peaceful, equitable existence on Earth: “There are thresholds of economic performance that we need to learn to live within, to achieve the fine balance of social well-being and ecological sustainability” (UNESCO, 2021, p. 67).

The OECD's *The future of education and skills: Education 2030* publication, mentioning 'sustainability' and 'sustainable development' thrice without definitions, acknowledges finite natural resources and the need for pupils to prioritize common prosperity, sustainability, and well-being. It identifies environmental, economic, and social challenges in line with the UN's three-dimensional sustainability framework and aims to contribute to the SDGs by ensuring the sustainability of people, profit, planet, and peace. While recognizing the importance of sustainability in education's future, the OECD maintains an economic perspective by including 'profit' as a sustainability pillar.

Two EU documents on education policy recommendations were examined (Bianchi et al., 2022; OJEU, 2018). The *Council Recommendation on Key Competences for Lifelong Learning* (OJEU, 2018) mentions sustainability twice and emphasizes sustainable development 13 times, referencing UN SDGs and UNESCO's ESD programs. A more recent EC report, *The European Sustainability Competence Framework* (Bianchi et al., 2022), with 440 mentions of *sustainability* and 22 of *sustainable development*, defines *sustainability* as prioritizing all life within planetary boundaries, and *sustainability competence* as enabling pupils to take action for ecosystem’s health and justice, focusing mainly on environmental aspects. The EU's concept of sustainability competence emphasizes environmental aspects over economic and social ones.

Despite varied conceptions, transnational documents share the belief that education can address global challenges. A gap exists between transnational policy recommendations and school curricula, necessitating examination of national contexts for sustainability and SD integration. Transnational policy documents, while not binding, greatly influence national policies by tying development funds and international aid to the achievement of sustainability targets (Pincet et al., 2019). They facilitate learning and exert normative pressure and coercion (Berry & Berry, 2018). Curriculum experts reference these documents to develop SD and ESD goals within national contexts, with countries potentially adopting these ideals influenced by diffusion channels, learning, and coercion from aid dependencies on SDG targets, and normative pressures (Victor, 2018).

Sustainability and/or sustainable development in the four country cases

This section gives country cases on how conceptions of sustainability and sustainable development have been operationalized in the most recent curricular reforms in England, India, Norway, and Pakistan. The

curricular stages that we analysed include the broad curricular frameworks from these countries, as well as specific subject level objectives in Science, Mathematics, language, and social and citizenship studies included in the analysis ranged from primary to higher secondary.

England

Many of the recent reforms in England, especially in the 1980s and 90s, have introduced market-driven approaches including school choice and nationally prescribed standardized curricula. Specifically, between 2013 to 2017, new curricula were introduced by the Department for Education (DfE) (2014), with the locally maintained K-12 schools having the freedom to organize these according to their local conditions. The national framework document delineates statutory national curricula, with the latter being mandatory for state funded schools (DfE, 2014).

The curriculum framework for England does not carry overt references to *sustainability*, *sustainable development goals* or other such overarching declarations and references. However, on closer scrutiny, specific learning goals and objectives in some subjects can be identified and implied as referring to sustainability and associated notions and conceptions. For example, the overarching aims in English and Mathematics are purely technical in how and why these subjects are taught for developing literacy and numeracy skills. However, in science, there are repeated references to sustainability with respect to ecosystems, energy, earth and atmosphere and interdependence in different species and elements.

Science curricula for KS3 and KS4 outline teaching methods and objectives. KS3 aims to develop pupils' scientific outlook, encouraging them to "...develop a sense of excitement and curiosity about natural phenomena…" and use science to "...explain what is occurring, predict how things will behave, and analyse causes" (DfE, 2014, p. 168, para 1). This approach positions science as a rational investigation of natural phenomena, enabling pupils to address global issues like climate change. KS4 curriculum emphasizes science's impact on lives and future prosperity, stressing the importance of scientific methods and achievements. Both curricula highlight social and economic implications, requiring teachers to use diverse instructional approaches "…to maximise their students' engagement with and motivation to study science…" (DfE, 2014, p. 169, para 1). Teachers are encouraged to contextualize content with historically relevant examples reflecting modern scientific developments. The curricula emphasize scientific work for pupils and integrated content delivery by teachers.

KS3 and 4 curricula emphasize 'working scientifically' through developing scientific attitudes, experimental skills, analysis, evaluation, and measurement. They address mitigating negative human impacts on Earth's resources (DfE, 2014). *Biology, Chemistry, Physics*, and *Geography* curricula for KS 3-4 focus on organism-ecosystem interactions, abiotic and biotic factors, and natural resources that sustain life. *Chemistry*

discusses Earth's limited resources, recycling needs, and carbon dioxide's impact on climate (DfE, 2014). *Physics* covers energy efficiency, conservation, and renewable/non-renewable sources (DfE, 2014, 222, para 3). *Geography* examines human-environment interactions (DfE, 2014, p. 240, para 1). The curriculum aims for pupils to understand dynamic processes affecting human and physical landscapes, incorporating sustainability concepts.

The *Citizenship* curriculum at KS4 aims to create active, responsible citizens with "…keen awareness and understanding of democracy, government and how laws are made and upheld" (DfE, 2014, p. 227, para 1). It emphasizes critical thinking about governance and social issues, understanding personal liberties and public institutions' roles, and community engagement (DfE, 2014). Financial management skills are included to promote financial sustainability and productive societal membership. KS4 citizenship education focuses on acting together, understanding governance systems, human rights, international laws, and fostering mutual respect (DfE, 2014). All these can be considered as important elements of sustainability education in *English* curricula.

India

The *National Curriculum Framework* (NCF) issued by the National Steering Committee for National Curriculum Frameworks (NSCNCF) for School Education in India is a comprehensive document serving as a pathway to achieving what the *National Education Policy (NEP) 2020* entails as a philosophy to transform and 'decolonize' education and to align it to the needs of the pupils in the 21st century and beyond. The NCF covers education at all levels from early childhood care and education to school education, higher education, teacher education and vocational education. NCF 2023 carries school subjects with the objective to transform the Indian educational landscape according to the vision envisaged in NEP 2020.

The NEP 2020 and NCF 2023 in India illuminate two primary approaches to incorporating sustainability in education. Firstly, they emphasize grooming Indian pupils as global citizens, conscious of human rights and global well-being, with a focus on Global Citizenship Education (GCED) to engage them with global challenges and promote peaceful, inclusive, and sustainable societies (Ministry of Human Resource Development (MHRD), 2020, p. 37). Secondly, they integrate environmental consciousness and action on issues like pollution, biodiversity conservation, biosphere management, climate change, and waste management. Additionally, the NEP commits to the SDGs by stressing the need for accessible, equitable, quality education at primary and secondary levels (MHRD, 2020, p. 32).

Strategies for sustainability in Indian education, as outlined by NEP 2020, include incorporating technology in agricultural education to support sustainable practices (MHRD, 2020, p. 50) and leveraging disruptive technologies to teach pupils about sustainable living, with a focus on initiatives related to renewable

energy, water conservation, and environmental protection (MHRD, 2020, p. 58). *Organismal Biology* addresses sustainability through food security, highlighting the impact of climate change and biotechnology on food production, while *Chemistry* introduces sustainable energy technologies (NSCNCF, 2023, p. 475, p. 478). *Geography* promotes resources and ecosystem conservation. The NCF 2023 includes *Environmental Education* in grade 10 and introduces an interdisciplinary *Sustainability and Climate Change* curriculum for grades 11 and 12, covering biodiversity conservation and sustainable resource exploitation.

The NCF 2023 specifies that the curriculum for *Sustainability and Climate Change* and *Environmental Science* is guided by a social-environmental systems framework that render the environmental concerns systemic, "...and complex, non-linear in cause and impact, subject to shocks and with tipping points" (NSCNCF, 2023, p. 491). It enables pupils to understand how the use of technology alone, via new approaches to waste management or energy production, cannot completely address sustainability objectives, which require working adaptively with people, culture, markets and policies. Therefore, *Environmental Education* fosters in pupils a well-developed set of environmental values as well as the capacity to participate and initiate actions to remediate or prevent further environmental issues and sustainability (NSCNCF, 2023, p. 359). Local case studies are encouraged on sustainable homes with sustainable practices that evolved historically on drainage, cooling, water systems and cultural traditions related to agriculture, forests, flora, and fauna (NSCNCF, 2023, p. 410).

Sustainability is integrated into *Social Sciences* and *Arts* in the NCF 2023, with a focus on conserving natural resources and understanding human environmental impact (NSCNCF, 2023). The NCF, drawing from NEP 2020's vision, aims to instil pride in Indian heritage while fostering knowledge and values for sustainable living and global wellbeing, shaping pupils into global citizens (NSCNCF, 2023, p. 26). The curricula also engage with complex sustainability issues such as the potential conflict between biodiversity conservation and green energy, seeking solutions to these challenges. Elective courses like *Environmental Philosophy* for grades 11 and 12 encourage pupils to contemplate non-human rights, ecosystem status, environmental sustainability, and responsibilities in combating climate change.

Thus, through interdisciplinarity and critical awareness of and grounded responses to the issues of environmental and societal sustainability Indian curricula conceive of sustainable development as the actions that impact the environment and elements of biosphere and ecosystems and life on Earth. The pursuit for sustainability, therefore, be approached in a systemic manner with a deep reference to Indian history and culture.

Norway

Norway has a centralized curriculum system where the government develops curriculum frameworks and

guidelines for the entire education system. The *Core curriculum – values and principles for primary and secondary education* (Utdanningsdirektoratet, 2017) is the latest curriculum framework for the most recent reform usually abbreviated *LK20*, to note the year 2020 when the curriculum came into effect. The latest *Core Curriculum* framework (Utdanningsdirektoratet, 2017) makes a direct specific reference to sustainability in the second part, where *Sustainable development* is listed as the third interdisciplinary topic, required to be integrated across the entire curriculum and subjects in primary and secondary education. In addition, in the first section, *respect for nature and environmental awareness* is listed as one of the six main values for education and training in Norway, which also highlights sustainability aspects.

The curriculum underscores that schools should instil a respect for nature and an appreciation of the environment, enhancing climate and environmental awareness as part of pupils' development (Utdanningsdirektoratet, 2017, pp. 9-10). It emphasizes individual responsibility and collective action to address pressing environmental threats such as climate change, pollution, and biodiversity loss. The Norwegian curriculum includes sustainable development, health and life skills, and democracy and citizenship as interdisciplinary topics requiring local, national, and global engagement (Utdanningsdirektoratet, 2017, p. 15). These themes are woven into the curriculum, with specific learning goals outlined in relevant subjects. The framework defines sustainable development as the preservation of life on Earth and meeting current needs without compromising future generations, acknowledging that social, economic, and environmental factors are intertwined and affected by our lifestyles (Utdanningsdirektoratet, 2017, p. 16).

The conceptualization of sustainability in the Norwegian curriculum aligns with transnational policies that consider social, economic, and environmental dimensions, emphasizing future generations' needs and global impacts of individual behaviour. Sustainable development is framed as world-centred, connecting personal actions to wider effects across local, regional, and global levels.

The Norwegian curriculum framework outlines key values and directives for primary and secondary education and guides the creation of subject-specific curricula, such as the *Curriculum for Mathematics* year 1-10 (Utdanningsdirektoratet, 2019a). Upon review, it appears the mathematics curriculum for grades 1-10 incorporates interdisciplinary topics like health and life skills, and democracy and citizenship, yet omits sustainable development. This exclusion is also noted in the mathematics curriculum for upper secondary education. In the *Curriculum for Norwegian*, on the other hand, all three interdisciplinary topics are integrated and elaborated on. Regarding sustainable development, the curriculum states that, “In the Norwegian subject the interdisciplinary topic of sustainability shall develop the students’ knowledge of how texts present nature, the environment and living conditions, both locally and globally” (Utdanningsdirektoratet, 2019b, para 3).

The curriculum guideline points to the importance for pupils to improve language skills to navigate dilemmas and challenges as society progresses towards sustainability. It aims to equip them to contribute to the national sustainability goals. Despite sustainable development being mentioned as an interdisciplinary topic in the Norwegian curriculum's general provisions, a detailed examination of the competence aims reveals no direct inclusion of sustainable development aspects.

The *Social Studies Curriculum* for grades 1-10 emphasizes all dimensions of sustainable development—social, economic, and environmental—showcasing its key role in sustainability education within Norway's system (Utdanningsdirektoratet, 2019c). It connects the general sustainable development framework to classroom by stressing the need for both individual and collective solutions to sustainability challenges. For example, Grade 10 pupils must discuss sustainability's multiple aspects and suggest actions towards more sustainable societies (Utdanningsdirektoratet, 2019c), ensuring that Norwegian pupils receive a thorough curriculum on the subject's issues and resolutions.

Sustainable development is extensively incorporated into the Norwegian curriculum, especially in *Natural Sciences*, *Geography*, *History*, *Physical Education*, *Arts and Crafts*, and *Food and Health* subjects as a core goal and competence aim. However, it is notably absent in *English* and *Mathematics*, with only a cursory mention in *Norwegian*. The *Social Studies* and *Natural Science* subjects most thoroughly and explicitly address sustainable development, providing pupils with ample opportunities to explore its dilemmas, challenges, and complexities, and to develop ethical perspectives on sustainability for their current and future lives.

Pakistan

In Pakistan, provinces can frame their own curricula. However, in the most recent round of developments between 2020 to 2023, the new curricula developed by the National Curriculum Council (NCC) have been welcomed by most provinces. Even when provinces make their own curricula, they generally follow guidelines from the national curriculum. Therefore, this country-case is based on the curricula issued by the Ministry of Federal Education and Professional Training (MFEPT) through the NCC. These curricula entail various dimensions of sustainability, i.e., environmental, economic, and social.

The curriculum documents in Pakistan, accessible at the National Curriculum Council (NCC) website, include progression grids, standards, and Specific Learning Objectives (SLOs) for each subject and grade, featuring sections on cross-cutting themes. The *National Curriculum* (NC) aims to nurture values such as honesty, tolerance, environmental awareness, democracy, and sustainable development in pupils, promoting analytical and critical thinking through a pupil-centred, activity-based instructional approach (NCC, 2023a). Guidelines are also provided for teachers to shape instruction and assessments aligned with these

standards and SLOs. The concept of sustainability shows up in *Science*, *English*, and *Geography* only. For example, guidelines for social and ethical development in English identify the need for pupils,

> ...to be acquainted with the importance of making sustainable lifestyle choices, acquiring greater environmental awareness, and being aware of safety and security measures…Students need to appreciate and feel a sense of interconnectedness with their community and the world at large and develop attributes such as tolerance, respect, equality and gender equity in them which is the basic essence of Islam and other religions. Students need to be fostered with a sense of peace and social cohesion. (NCC, 2023a, p. 106)

There are various instances of the word 'sustainable' referring to the multiple dimensions of sustainable development practices. Environmental sustainability dominates *Science* and *Geography* in Grades 7-8, defined as practices conserving the natural environment, including curbing deforestation (SDG 15) and using renewable energy (SDG 7). Science curriculum aims to develop understanding of data, science's environmental and societal impacts, and connect with industrial and agricultural domains for a sustainable environment (NCC, 2023b, p. 2). It addresses threats to carbon-oxygen balance contributing to global warming and climate change and predicting ecosystem changes affecting resources and population balance (NCC, 2023b, pp. 24-25). Human actions in reforestation, conservation, addressing endangered species and pollution are emphasized. Sustainability is contextualized in Pakistani settings, discussing biotechnology applications for environmental challenges (NCC, 2023b., p. 28). Learning objectives convey environmental and climatic issues. The *Geography* curriculum focuses on resource utilization and conservation, human impact on landforms, and improving the global environment. It addresses managing resources, curbing overuse, ecosystem-human interdependence, and cross-regional effects of human activity (NCC, 2023c). Pupils are expected to demonstrate understanding through posters and awareness creation about sustainable environments.

The *Pakistan Studies* curriculum has six domains specifying SLOs with a mix of history, geography, economy, and its cultural and social elements of being a Pakistani citizen. The fourth domain is specific to the cultural diversity of Pakistan that aims to instil a sense of national cohesion in pupils who are also multiculturally literate. For example, it specifies that pupils develop intercultural understanding, open-mindedness and the attitudes necessary to respect and evaluate a range of viewpoints by becoming knowledgeable, inquiring, caring and compassionate learners (NCC, 2023d). Similarly, the curriculum for *Social Studies* for grades 4 and 5 is also organized into six domains including citizenship and culture and diversity. Aiming to develop an appreciation and understanding of the diversity manifested in culture, gender, religious, ethnic, and disability, the social studies aim to nurture a pupil who can coexist in harmony with others as a citizen of the country and of the world (NCC, 2023e).

Thus, the curricula in Pakistan carry overt and covert references to sustainability and education for sustainable development. The need for these reforms has been spurred by an internal debate on reforming

the curricula but also pushed down by global aid agencies such as the UN and others who often attach strings, some of which also happen to be around sustainability.

Table 2 serves as a summary of conceptions of *sustainability*, *sustainable development*, and *education for sustainable development* as these appear in the four country cases. These conceptions emerge along the three dimensions of social, environmental, and economic. While these conceptions are universally present in all four cases, there is variance in the occurrence, emphasis, and curricular mapping. On the social dimension, England emphasizes understanding governance systems, rights, and mutual respect, with Norway, India, and Pakistan carrying the same undertones, but also emphasizing global citizenship, diversity, and inclusion. On the environmental front, the features cut across all four cases with references to ecosystems, energy conservation, life, and resource preservation, and inter-dependence of species and factors on Earth. Economic references are also embedded in reference to sustainability and sustainable development, ranging from the need for skills for financial sustainability in England, to responsible use of Earth's resources, and sustainable agricultural, practices with the use of biotechnology in India, Pakistan, and Norway.

Table 2. Social, environmental, and economic dimensions in curricula across the four countries

Countries	Social	Environmental	Economic
England	Emphasizes the need for understanding governance systems, human rights, laws, and mutual respect.	Incorporates sustainability concerning ecosystems, Earth, energy, and inter-dependence of elements and species within.	Refers to the need for financial management skills for financial sustainability.
India	Emphasizes global citizenship, human rights, well-being for inclusive, peaceful, sustainable societies which are tied to the deep Indian history and culture.	A social-environmental systems framework with environmental challenge as systemic, nonlinear phenomenon, with the need for renewable energy, conservation, and protection.	Focuses heavily on the integration of technology for sustainable agricultural practices.
Norway	Emphasizes global citizenship with understanding that personal actions have wider effects beyond the local and regional to the global.	It has the most overt of all four countries references to protecting ecosystems, preservation of life on Earth.	Economic references are woven in a discourse of sustainable use of Earth's resources without compromising the needs of the future generations.

Pakistan	Specifies intercultural understanding, diversity, equity, and pluralism for compassionate, peaceful, tolerant, inquiring, and inquisitive learners for social cohesion locally and globally.	Emphasizes interdependence of humans on the environment, cross-regional environmental effects, and the need for reforestation and conservation.	Emphasizes sustainable use of resources through lifestyle changes, population balance, and biotech in agricultural practices.

The Dance of the Global and The National: Emergent Themes

Though all commit to sustainability, curricula from the four countries reveal varying themes and integration levels. Unique local values, challenges, and priorities shape each country's educational strategy towards sustainability, highlighting the diversity in their responses to the global push to sustainability in and through education.

Sustainability from Transnational to National: Convergence and Divergence in Conceptions, Conceptualizations, and Policy Goals

Our research focused on sustainability conceptions promoted by the transnational organisations (RQ 1), and how those conceptions are conceptualized and integrated in the curriculum policy contexts in the four countries (RQ 2). In this section, we will first show how a clear pattern of diffusion with coercion, normative pressure, and learning in different national contexts, where the three-dimensional model of sustainability, encompassing environmental, social, and economic aspects, originating from the UN's Sustainable Development Goals (SDGs), is mirrored in all national curriculum frameworks. We will also show how, despite the varied contexts, the countries have integrated this three-dimensional model into their curricula, indicating a shared conceptualization of sustainability as a global educational objective.

The diffusion pattern suggests that international standards like the SDGs significantly influence national education strategies as many of the curricular documents repeatedly refer to these while making a case for sustainability. This top-down diffusion of ideas, mediated by normative pressure and learning, mirrors mechanisms in policy diffusion theory (Berry & Berry, 2018), with coercive elements more salient in aid-dependent contexts (Pincet et al., 2019; Victor, 2018). Our findings that the UN's three-dimensional sustainability conception diffuses across national frameworks through normative pressures and learning aligns with diffusion mechanisms theorized by Berry and Berry (2018). In aid-dependent contexts, elements of coercion are also plausible (Berry & Berry, 2018; Pincet et al., 2019; Victor, 2018). Berry and Berry (2018)

explain this as normative pressure, where governments adopt policies because of the sense that these policies are widely accepted by other nations.

Several transnational organisations, including the UN, UNESCO, OECD, and EU/EC, position and conceptualize sustainability as a key education policy goal, advocating for its integration into national curricula. The emphasis is on equipping pupils to become agents of change for a more sustainable future. While on a conceptual level definitions aren't always explicitly provided, a common thread emerges such that sustainability encompasses environmental, social, and economic dimensions. These organisations believe education can address global challenges and that the current educational practices, often focused on economic growth, have contributed to unsustainable living. Sustainability is adapted to national educational priorities, leading to diverse emphasis and integration methods internationally.

The English curriculum conceptualizes and integrates sustainability into science and citizenship studies, targeting responsible citizenship, ecological awareness, particularly climate change, and merging environmental responsibility with economic growth. In contrast, Norway's curriculum adopts an interdisciplinary stance, infusing sustainability into various subjects and underscoring a holistic view encompassing social, economic, and environmental aspects with a strong sense of collective duty. *Sustainable development* is a core interdisciplinary theme across subjects, especially in Social Studies and Natural Sciences, showing a balanced sustainability understanding. India emphasizes environmental conscientiousness and global citizenship, focusing on environmental education to spur pupils towards addressing local environmental challenges and systemic change with social sustainability evident in human rights and global well-being components, and economic factors implied in sustainable development. Pakistan's curriculum centralizes sustainability, particularly in science and geography, with an emphasis on practical solutions like renewable energy. It uniquely combines environmental sustainability with peace, tolerance, and cohesion reflecting national circumstances in response to terrorism's impacts.

The analysis suggests that one may speak - on a global scale - of explicit and implicit conception and integration of sustainability as curriculum topic/content/goal. In Norway and India, sustainability is explicitly framed as a core principle or dedicated curriculum area compared to England and Pakistan where sustainability is woven into various subjects more implicitly. Further, one can see that the countries vary in their focus on specific dimensions of sustainability (environmental, social, and economic). England and Pakistan seem to focus more heavily on the environmental aspects, while Norway emphasizes the interconnectedness of all three. England's curriculum concentrates on environmental sustainability in science education, aiming to develop scientific literacy about ecological issues, like climate change, and stressing future economic prosperity. However, social elements are less explicitly integrated, only broadly covered in citizenship education aims.

The country-specific emphases reflect Schiro's (2013) curriculum ideologies: England's science-centred literacy and numeracy register primarily as Scholar Academic, Pakistan's pragmatic, solution-oriented stance aligns with Social Efficiency, while Norway and India's societal transformation framing reflect Social Reconstruction. These ideological anchors clarify how similar transnational goals are curated through differing educational purposes (Schiro, 2013).

Sustainability as an Epochal Key Problem

In our research, we explored how four different countries - England, India, Norway, and Pakistan - have integrated the concept of sustainability into their educational curricula. The analysis focuses on the extent to which sustainability is framed as an "epochal key problem," as defined by the German pedagogue Wolfgang Klafki.

Curricular approaches to sustainability reflect differing educational ideologies i.e., the scholarly focus on knowledge, the economic leanings of social efficiency, and the adaptability of pupil-centred models (Schiro, 2013). In England, a scholarly academic ideology emphasizes scientific knowledge about environmental issues, promoting informed decision-making regarding sustainability. Additionally, the social efficiency ideology in England's curriculum includes financial literacy to foster economically responsible citizens who also consider environmental and community impacts. Norway's curriculum embodies the social reconstruction ideology, teaching sustainability as a perspective on global issues and aiming to build a sustainably advanced society. Dominantly, social reconstruction ideology pervades, prioritizing pupil preparation for social change as key to sustainability education. Similarly, India follows this ideology, integrating sustainable development and global citizenship topics to equip pupils to tackle environmental challenges. Pakistan's curriculum, under the social efficiency ideology, focuses on practical solutions to environmental problems like renewable energy and deforestation, linking these with broader social objectives like peace and cohesion. The pupil-centred ideology is subtly present in England and Norway, emphasizing educational content that aligns with pupil interests and their connection to nature. This ideology supports the notion that a personal environmental connection enhances sustainability learning.

Norway appears to come the closest to framing sustainability as an epochal key problem. The country's curriculum framework explicitly defines and discusses sustainability in relation to the interconnectedness of social, economic, and environmental conditions, underscoring its importance for current and future generations. The emphasis on individual responsibility for local and global impacts further reinforces the notion of sustainability as a central concern. India demonstrates a strong focus on environmental awareness and sustainability, promoting pupils as global citizens. The curriculum includes dedicated courses on 'Environmental Education' and 'Sustainability and Climate Change,' indicating a clear

commitment to addressing these issues. The integration of sustainability concepts across various subjects, including social sciences and arts, further highlights its significance.

England addresses sustainability-related concepts, but does so more implicitly, lacking the direct pronouncements seen in Norway or India. The focus appears to be more on understanding natural phenomena and applying scientific knowledge to address challenges like climate change, rather than on sustainability as a central, defining problem. Like England, Pakistan incorporates sustainability across various subjects, but without the same explicit focus on "Sustainable development" as a defining issue seen in Norway. The emphasis is on environmental awareness, conservation, peace, tolerance, and inclusivity, which aligns with sustainability goals, but the overall framing remains less explicit than in Norway.

Positioning sustainability as an ‘epochal key problem’ (Klafki, 1997), Norway’s core curriculum explicitly foregrounds sustainable development as an interdisciplinary imperative connected to the present-future nexus, while India’s dedicated courses signal a strong, though domain-specific, epochal stance. England and Pakistan’s implicit integrations suggest sustainability functions as important content but not yet as the defining, epochal organizing principle (Klafki, 1997).

Transnational policies influence national school curricula: underlying ideologies

Transnational policies shape the integration of sustainability within national curricula. Countries adapt these global frameworks to their unique contexts, which is reflected in the varied emphasis and underlying educational ideologies that emerge from these adaptations.

England adopts an approach that can be characterized by a scholarly academic ideology. The English curriculum prioritizes imparting scientific knowledge to pupils, with a strong focus on the economic aspects of sustainability. This approach prepares pupils to understand sustainability through a scientific lens, considering economic efficiency as a key factor in sustainable practices.

In contrast, Norway's sustainability approach is infused with a social reconstruction ideology. Here, the curriculum is designed to not only inform pupils about sustainability but to shape them into advocates for social change. The Norwegian approach, therefore, sees sustainability education as a catalyst for societal transformation, encouraging a generation of pupils to actively participate in the rethinking and reshaping of their society towards more sustainable lines.

India's sustainability approach also resonates with the social reconstruction ideology, albeit with a slightly different emphasis. The Indian curriculum focuses on fostering global citizenship and promoting environmental action among pupils. With this emphasis, Indian education seeks to empower pupils to see themselves as part of a global community, responsible for taking action to address environmental

challenges, both locally and globally.

Pakistan, however, presents a different paradigm, primarily aligning with a social efficiency ideology. This educational strategy emphasizes equipping pupils with practical skills and knowledge to solve environmental issues. The Pakistani curricular focus is pragmatically oriented towards producing efficient solutions to sustainability challenges, potentially preparing pupils for immediate implementation of these solutions in their local contexts.

The predominance of environmental content in England and Pakistan—relative to social and economic pillars—echoes earlier observations of pillar imbalances in ESD integration (Holst et al., 2020; Li et al., 2019; Suárez-López & Eugenio-Gozalbo, 2022; Weldemariam et al., 2017;). Norway's more holistic linkage across all three pillars is closer to the comprehensive model advocated in transnational frameworks (Bianchi et al., 2022; OJEU, 2018; UN, 2015). The varied emphasis across environmental, social, and economic dimensions aligns with prior research documenting uneven pillar integration in ESD (Holst et al., 2020; Li et al., 2019; Suárez-López & Eugenio-Gozalbo, 2022; Weldemariam et al., 2017).

Conclusion

As all four countries incorporate sustainability into their curricula, their approaches differ in terms of the level of integration, emphasis, and the extent to which sustainability is framed as an "epochal key problem." Norway stands out in its explicit framing of "Sustainable development" as an interdisciplinary principle, while India demonstrates a strong thematic focus on environmental awareness and sustainability. England and Pakistan, on the other hand, address sustainability-related issues more implicitly. These differences highlight the challenges of establishing any single concept as universally "epochal" in educational curricula. Educational priorities are shaped by national contexts, cultural values, and policy decisions, leading to varied approaches to the inclusion of globally pressing issues. The focus solely on the macro-level 'intended' curricula (per van den Akker's model) and smaller sample of countries present as a limitation of the study. Further research may uncover deeper currents in the diffusion, conceptualization, and integration mechanisms. Studies using even history analyses may trace the effects of the dance of the global and the national policy contexts by identifying pathways and factors that are significant in ensuring fidelity to the policy goals, conceptions, and action at the most grass roots in classrooms, i.e., individual pupil levels. Future research should particularly trace enactment and attainment dynamics, including teacher agency and pupil outcomes, to capture fidelity and transformation across levels.

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Appendix 1. Transnational and national documents, curricula and frameworks analysed

Transnational/ National	Title	Source
European Union (EU)	GreenComp – The European sustainability competence framework (2022)	European Union, https://publications.jrc.ec.europa.eu/repository/handle/JRC128040
	Council Recommendation on key competences for lifelong learning (2018)	European Union, https://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:32018H0604(01)&rid=7
Organisation for Economic Co-operation and Development (OECD)	The future of education and skills: Education 2030 (2018)	OECD, https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf
	Linking Aid to the Sustainable Development Goals – a machine learning approach (2019)	OECD, https://doi.org/10.1787/4bdaeb8c-en

UN [United Nations]	Transforming our world: the 2030 Agenda for Sustainable Development (2015)	UN, https://sustainabledevelopment.un.org/post2015/transformingourworld/publication
United Nations Educational, Scientific, and Cultural Organization (UNESCO)	Education for sustainable development: A roadmap (2020)	UNESCO, https://unesdoc.unesco.org/ark:/48223/pf0000374802
	Reimagining our futures together: A new social contract for education (2021)	UNESCO, https://unesdoc.unesco.org/ark:/48223/pf0000379707.locale=en
England	Statutory guidance, National curriculum in England: Framework for key stages 1 to 4 (2014)	Department for Education (DfE), https://www.gov.uk/government/publications/national-curriculum-in-england-framework-for-key-stages-1-to-4
India	National Education Policy 2020 (2020)	Ministry of Human Resource Development (MHRD), https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
	National Curriculum Framework for School Education 2023 (2023)	National Steering Committee for National Curriculum Frameworks (NSCNCF), https://www.education.gov.in/sites/upload_files/mhrd/files/NCF-School-Education-Pre-Draft.pdf
Norway	Core curriculum – values and principles for primary and secondary education (2017)	Utdanningsdirektoratet, https://www.regjeringen.no/contentassets/53d21ea2bc3a4202b86b83cfe82da93e/core-curriculum.pdf

	Curriculum for Mathematics year 1–10 (2019a)	Utdanningsdirektoratet, https://www.udir.no/lk20/mat01-05?lang=eng
	Curriculum for Norwegian (2019b)	Utdanningsdirektoratet, https://www.udir.no/lk20/nor01-06?lang=eng
	Curriculum for Social Studies (2019c)	Utdanningsdirektoratet, https://www.udir.no/lk20/saf01-04?lang=eng
	Year 2 Social Studies Competence Aims and Assessment. (2019d)	Utdanningsdirektoratet, https://www.udir.no/lk20/saf01-04/kompetansemaal-og-vurdering/kv148?lang=eng
	Year 10 Social Studies Competence Aims and Assessment (2019e)	Utdanningsdirektoratet, https://www.udir.no/lk20/saf01-04/kompetansemaal-og-vurdering/kv147?lang=eng
Pakistan	National Curriculum of Pakistan 2022-2023: English grades 1-12 (n.d.-a)	National Curriculum Council (NCC), www.ncc.gov.pk
	National Curriculum of Pakistan 2022-2023: General Science, grades 4-8 (n.d.-b)	NCC, www.ncc.gov.pk
	National Curriculum of Pakistan 2022-2023: Geography, grades 6-8 (n.d.-c)	NCC, www.ncc.gov.pk
	National Curriculum of Pakistan 2022-2023: Pakistan Studies, grades 9-	NCC, www.ncc.gov.pk

12 (n.d.-d)

National Curriculum of Pakistan 2022-2023: Social Studies, grades 4-5 (n.d.-e)	NCC, www.ncc.gov.pk