

Towards an Indigenous Interdisciplinary Model of Social Studies Education: Integrating Indigenous History, Geography, Economics, and Sociology for Twenty-First-Century Citizenship

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ABSTRACT

This study was based on the synthesis of the study concept of Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE) that integrates Indigenous perspectives from History, Geography, Economics and Sociology in order to support the curriculum transformation process and twenty first century citizenship education. The study was based on Indigenous Relationality, Systems Theory, Decolonial Theory, and used a qualitative model-development design in the interpretivist paradigm and selectively incorporated aspects of educational design research and constructivist grounded-theory approaches. A primary sample of 80 participants comprising five traditional language zones and five Colleges of Education in Ghana was obtained through purposive, criterion and maximum variation sampling. Semi-structured interviews were conducted with 50 participants and six focus-group discussions with 10 SS teacher educators and 20 teacher trainees. Literature and curriculum-policy documents were used to gather evidence, as well as reflective field notes, analytical memos and two Delphi rounds with an independent panel of 15 experts. Reflexive thematic analysis, constant comparison, concept mapping, model building and expert validation were used iteratively to analyses the data. The results indicated that Indigenous History has an impact on living memory, identity and civic responsibility; Indigenous Geography has an impact on place, livelihood and environmental stewardship; Indigenous Economics has an impact on reciprocity, ethical choice, and sustainable livelihood; and Indigenous Sociology has an impact on strengthening governance, community responsibility, conflict resolution, and relational citizenship. When used as a unified relational system for problem analysis, they had the greatest educational value, rather being used as content of individual disciplines. In the resulting IIMSSE, Indigenous Relationality is the heart, and the four domains are connected in relational ways, ways that are pedagogy connected, assessment appropriate, ways of ethical partnership, ways of critical reflection, and ways of human rights protections. In Round Two, consensus was reached after revisions for all ten Delphi criteria with adequate ratings going from 79.3% to 94.0% and highly adequate ratings climbing from 0% to 3.0%. The study suggests that IIMSSE provides a theoretically coherent and contextually responsive framework for interdisciplinary Social Studies, which needs to undergo empirical verification, teacher preparation, and assessment reform, institutional support, and classroom testing.

Keywords: Indigenous knowledge; interdisciplinary Social Studies; Indigenous Relationality; curriculum decolonization; citizenship education; Ghana

1.0 Introduction

Citizens are needed for the 21st century who can adopt a systems-thinking approach, think in interdisciplinary terms and solve problems (UNESCO, 2021). The needs of social studies can be met by combining the four subjects of History, Geography, Economics and Sociology and related disciplines and providing an informed and active citizen. Although it is discipline-centred it can restrict the learners' understanding of the interrelated issues of society (Levstik & Tyson, 2008).

Indigenous knowledge provides a holistic, relational and place-based framework that is interlinked with history, geography, economy, governance, culture and the environment. However, it is rarely used as a learning and citizenship education epistemology, but rather as ancillary resources or add-on content to the curriculum (Battiste, 2013; Dei, 2012; Kovach, 2021; Ndlovu-Gatsheni, 2018; Wilson, 2008). The Social Studies curriculum in Ghana encourages students to think critically, become responsible citizens, develop cultural identity, take care of the environment and learn to solve problems (NaCCA, 2019). But how these aspirations and Indigenous knowledge of Interdisciplinarity are put into practice needs empirical study.

This paper therefore puts forth an Indigenous Interdisciplinary Model of Social Studies Education based on Indigenous Relationality, Systems Theory and Decolonial Theory. It links Indigenous History, Geography, Economics and Sociology together to promote citizenship, sustainability, decolonizing the curriculum and teacher education in Ghana and other culturally diverse contexts.

1.1. Background to the Study

The SS discipline was developed as a interdisciplinary subject to equip students to become good citizens in a democratic society by combining all the subjects related to History, Geography, Economics, Sociology and related subjects. It aims to educate informed and responsible citizens who see knowledge through the lens of relationships between people, institutions, cultures, economies and environments, not just through the lens of disciplines (Levstik & Tyson, 2008). This vision corresponds to the current educational priorities associated with inter-disciplinary learning, systems thinking, sustainability and collaborative problem solving to tackle issues of global complexity like digital transformation, inequality, migration and climate change (UNESCO, 2021). However, Social Studies curricula continue to be generally disorganized due to the disciplines that have developed and the test-oriented approach that dominates SS education (Levstik & Tyson, 2008).

Meanwhile, Indigenous knowledge systems are also being acknowledged as practices contributing to sustainability, climate adaptation, conservation of biodiversity, and culturally responsive education (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2022; McKinley & Smith, 2019). They are grounded in relationships, and history, geography, economics, governance, culture and ecology are considered all as interconnected aspects of community life (Kovach, 2021; Wilson, 2008). However, curriculum decolonization has primarily been about the integration of Indigenous examples, instead of acknowledging Indigenous knowledge as a valid framework to build curriculum and citizenship education (Battiste, 2013; Ndlovu-Gatsheni, 2018; Smith, 2021).

The demand for education that fosters critical thinking, sustainability, civic engagement and epistemic inclusion has grown across Africa (UNESCO, 2021). Likewise, the Ghana SS curriculum based on standards focuses on responsible citizenship, cultural identity, protecting the environment and solving problems (NaCCA, 2019). However, the curriculum is not clear about a systematic linking of history, geography, economics and sociology as relational knowledge domains with an Indigenous epistemology.

These restrictions show theory gap to a great extent. Studies have been carried out on Indigenous knowledge and interdisciplinary education, but there are few that describe how Indigenous History, Geography, Economics and Sociology are connected as systems of knowledge. This study aims to fill this gap by proposing an Indigenous Interdisciplinary Model of Social Studies Education, based on Indigenous Relationality that can inform the reform of SS education, teacher training and the development of culturally responsive citizenship education in Ghana and other parts of the world.

1.2. Problem Analysis

The current challenges facing the world today, such as climate change, inequality, loss of biodiversity, migration, democratic decline and public health crises are interrelated and demand interdisciplinary solutions (UNESCO, 2021). The introduction of Social Studies was to bring together the disciplines of History, Geography, Economics, Sociology and others; however, the practice of SS is not yet well integrated and learners' understanding of the relationship among the various processes of history, environment, economics, politics and sociocultural is still limited (Levstik & Tyson, 2008). Indigenous knowledge systems are becoming more and more recognized as instruments that can foster sustainability and community resilience, but they have yet to be regarded as an interdisciplinary epistemological approach in citizenship education (IPBES, 2022; UNESCO, 2021).

This separation in Africa is further exacerbated by the influence of colonial education that favoured Euro-centric disciplinary systems and devaluated Indigenous knowledge systems (Battiste, 2013; Dei, 2012; Ndlovu-Gatsheni, 2018). While the process of decolonization has been taking place, the reforms have mainly included Indigenous examples, but didn't acknowledge Indigenous epistemological systems as frameworks for organizing knowledge (Smith, 2021). However, there is an increasing focus on competency-based and sustainability-related education and this potential for interdisciplinary aspect of Indigenous knowledge is still underdeveloped (UNESCO, 2021).

Critical thinking, democratic participation and sustainability are core components of the reforms that are gaining traction across West Africa (UNESCO, 2021). The extent to which curricula and classroom practices include Indigenous knowledge as a system that is interwoven with histories, places, economies, governance and community life, however, is not sufficiently documented. A limitation that is readily apparent should not be regarded as evidence for uniformity of practice for the region.

While curriculum reforms in Ghana place emphasis on critical thinking, collaboration, environmental responsibility, cultural identity and ethical citizenship (NaCCA, 2019), they do not offer a clear picture of how Indigenous History, Geography, Economics and Sociology are interlinked to enhance citizenship education. Therefore, the present study attempts to explore this conceptual and practical gap and not makes an assumption that the aim of the policy is always put into practice in a uniform manner.

1.3. Problem Statement

Despite its interdisciplinary nature, Social Studies is still taught by separate disciplines (History, Geography, Economics, Sociology, etc.), and learners' understanding of the interconnectedness of the contemporary society's issues is limited, which further limits the SS ability to foster systems thinking and good citizenship education (Levstik & Tyson, 2008; UNESCO, 2021).

While there is growing recognition that Indigenous knowledge systems can be used to promote sustainability and curriculum change, it remains that they are viewed as ancillary cultural knowledge and not as a basis for an epistemological approach. Previous work primarily focuses on Indigenous History, Indigenous Geography, Indigenous Economics, and Indigenous Sociology without considering them as a whole, and very little focus is on the collective contribution of these four disciplines to the interdisciplinary study of Social Studies (Battiste, 2013; Smith, 2021).

In Ghana, the curriculum reforms focus on critical thinking, sustainability, cultural identity, and responsible citizenship (NaCCA, 2019), however, there is no explicit curriculum plan to incorporate the Indigenous knowledge in the constituent disciplines of Social Studies (SS). This study aims to bridge that conceptual gap by creating an Indigenous Interdisciplinary Model of Social Studies Education, which is based on the philosophies and theories of

Indigenous Relationality, Systems Theory and Decolonial Theory; to articulate how the knowledge domains of indigenous peoples can be conceptualized as dynamic systems that can help enhance Social Studies education.

1.4. Aim of the Study

This study aims to construct Indigenous Interdisciplinary Model of Social Studies Education that is a synthesis of the indigenous perspectives in history, geography, economics and sociology so as to enhance curriculum transformation and twenty-first century citizenship education.

1.5. Research Objectives

The study has the following objectives:

1. To explore the unique nature of the disciplines of Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology and their relevance to social studies education.
2. To examine the interconnections between Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology in relation to contemporary societal issues in the context of the Social Studies.
3. To design an Indigenous Interdisciplinary Model of Social Studies Education that can facilitate the transformation of curriculum and twenty first century citizenship education.

1.6. Research Questions

The study aims to answer the following research questions:

1. What are the unique contributions of Indigenous History, Indigenous Geography, Indigenous Economics, and Indigenous Sociology to SS education?
2. How do Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology relate to each other as interconnected fields of knowledge in the resolution of contemporary social problems in terms of Social Studies?
3. What can be created as Indigenous Interdisciplinary Model of Social Studies Education to support the process of curriculum transformation and twenty-first-century citizenship education?

2. Literature Review

This literature review is the theoretical, conceptual, and empirical basis to develop an Indigenous Interdisciplinary Model of Social Studies Education. It does not simply put together the current scholarship, but critically analyzes the evidence necessary to justify the potential integration of Indigenous knowledge to support the interdisciplinary nature of Social Studies and to form the foundation for an evidence-based conceptual model (Booth et al., 2021; Snyder, 2019).

The review is structured on the three goals of the study. Firstly, it explores how Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology uniquely contribute to education and to the learning of Social Studies. Second, it delves into the interconnections and cross fertilization of these domains of Indigenous knowledge, and the ways in which they can collectively underpin the holistic learning, citizenship education and sustainable development. Thirdly, it draws together theory and empirical research to create the conceptual framework for an Indigenous Interdisciplinary Model of Social Studies Education based on Indigenous Relationality, Systems Theory, and Decolonial Theory (Charmaz, 2014; Smith, 2021).

The review also highlights the existing concepts, theoretical relationships and gaps in the literature in a coherent manner to inform the development of models. It does so by incorporating current research, Indigenous scholarship, literature on African centered education and relevant policy documents, ensuring theory is well-developed, epistemic plurality is encouraged and the model is culturally relevant (McKenney & Reeves, 2019; Smith, 2021).

2.1. Theoretical viewpoints of the study.

To create an Indigenous Interdisciplinary Model of Social Studies Education, a theoretical framework is required to make sense of the relationship of Indigenous knowledge systems and its implication for curriculum transformation. The foundational theories that are used to support the study are Indigenous Relationality, Systems Theory and Decolonial Theory, as Indigenous Relationality is the theory that is based on a context of knowledge, identity, land, community, history, economy and governance, which are interwoven (Wilson, 2008; Kovach, 2021).

Indigenous epistemologies are holistic, experiential, and centred; history, place, identity, geography and economy are interconnected, interdependent, and in reciprocal relation with one another; it is connected to the environment; and it serves to sustain cultural continuity (Battiste, 2013; McKinley & Smith, 2019). This worldview is based on an interdisciplinary philosophy of Social Studies, but takes it to the next level and sees relationships as the organizing principle of knowledge, instead of disciplines. Thus, it gives philosophical underpinning to the teaching of Indigenous History, Geography, Economics and Sociology in Social Studies and makes citizenship a relational process based on the concepts of reciprocity, collective responsibility and community well-being. An Indigenous Interdisciplinary Model of Social Studies Education is then developed in the light of Indigenous Relationality. Indigenous Relationality, in turn, is the organizing concept for the proposed Indigenous Interdisciplinary Model of Social Studies Education.

The significance of Systems Theory in the Social Studies (SS) is that the social, economic, environmental, historical, political and cultural systems are interrelated and the outcomes of the society are the result of the interrelationships (Meadows, 2008; Capra & Luisi, 2014; UNESCO, 2021). It shows that these complex issues, such as climate change, poverty, food insecurity, migration and conflict aren't the result of one cause, but many. Applied Systems Theory combined with Indigenous knowledge illuminates the interconnections between Indigenous History, Geography, Economics and Sociology, and how each of these relates to and is influenced by the others. It also helps support the curriculum integration by promoting a holistic approach to inquiry, systems thinking and inter-disciplinary problem-solving, and clarifying the ability of the domains of Indigenous knowledge to address complex issues in society.

According to Decolonial Theory, one way to understand this is through the colonial education systems' impact on the fragmentation of indigenous ways of knowing, and the imposition of Eurocentric epistemologies that helped reinforce a longstanding knowledge hierarchy, which continues to shape educational systems (Dei, 2012; Ndlovu-Gatsheni, 2018). These hierarchies are reflected in Curriculum materials in SS which focus on western worldviews and do not value indigenous knowledge as an alternative, but not real, way of knowing society. The idea of epistemic plurality was introduced by decolonial scholars like Marie Battise (2013) and Linda Tuhiwai Smith (2021) who recognize the legitimacy of both indigenous and western knowledge systems as equally contributing to education. The Decolonial Theory is used here to centre Indigenous knowledge as the focus for Social Studies, and in conjunction with Indigenous Relationality and Systems Theory to develop an Indigenous Interdisciplinary Model for thinking about how to decolonize curriculum and how to engage in Interdisciplinary Learning.

2.1.1. The Three incorporated Theories

The proposed Indigenous Interdisciplinary Model of SS Education is based on the theories of Indigenous Relationality, Systems Theory and Decolonial Theory. Indigenous Relationality sees knowledge as interconnections

and relations between each other, Systems Theory sees the dynamic interplay between historical, geographical, economic and sociocultural processes and Decolonial Theory is a process of validating Indigenous epistemologies as a foundation for curriculum change. The totality of these theories makes it clearer that SS should go beyond disciplinary content integration to knowledge integration, based on Indigenous principles of relationship. Therefore, Indigenous History, Geography, Economics and Sociology are viewed as related strands of knowledge that all serve to foster critical citizenship, sustainability, and community resilience, social justice, and democratic participation, and cultural identity. The theoretical basis of the Indigenous Interdisciplinary Model outlined in the following section is this holistic approach.

2.2. Interdisciplinary Social Studies

The SS was a subject launched to produce social citizens and informed problem-solvers who could become democratic citizens of the world by learning about the knowledge areas of History, Geography, Economics, Sociology, Political Science and Anthropology (Levstik & Tyson, 2008). It not only transmits knowledge but also produces reflective, active citizens who are able to act in complex social issues. In response to challenges of climate change, inequality, migration and democratic decline, UNESCO (2021) proposes an interdisciplinary approach to learning, systems thinking, and global citizenship. Social Studies programs, however, often fall short on creating a sense of relationships among social, economic, political, cultural and environmental issues (Levstik & Tyson, 2008).

The incorporation of SS into indigenous knowledge systems is enhanced by the use of holistic and place-based knowledge with long-term interweaving between communities and their environments. They cover governance, ecology, livelihoods, conflict resolution, spirituality and communal values, and are growing in prominence in the areas of sustainability, climate adaptation, biodiversity conservation and culturally responsive education (Kovach, 2021; IPBES, 2022). However, they are frequently used as cultural products instead of an epistemological approach to the incorporation of knowledge.

Social Studies has four complementary domains of indigenous knowledge. The different courses from the Indigenous Academy would help keep history and culture alive (Indigenous History), teach people how to look at the land and the environment (Indigenous Geography), the concepts of reciprocity, sustainable livelihoods, and economic citizenship (Indigenous Economics), and the principles of kinship, leadership, conflict resolution, and collective responsibility (Indigenous Sociology) (Battiste, 2013; Kovach, 2021; Ndlovu-Gatsheni, 2018; Wilson, 2008). These are intrinsically linked and allow students to explore topics like climate change, food insecurity, migration, inequality and democratic participation from a variety of viewpoints.

Last but not least, the emphasis on Indigenous knowledge offers a more holistic approach to 21st-century citizenship education, which brings sustainability, culture, ethics, environment and community health and wellbeing (UNESCO, 2021). In Ghanaian SS this means a unified indigenous interdisciplinary framework of curriculum design, teacher training and teaching.

2.3. Decolonization of Curriculum and Indigenous Curriculum Models

Reflects the decolonization of a curriculum: What is the knowledge that is valued, taught, privileged and shapes learning in that curriculum? It does not deny the validity of western understandings, but rather seeks to find a balance of understanding, seeing Indigenous knowledge as valid and intellectually valuable (Battiste, 2013; Smith, 2021). For decolonizing in Social Studies, one must go beyond the inclusion of Indigenous examples in a tokenistic way. An interdisciplinary approach towards inquiry should be organised around indigenous knowledge. For instance, land should not just be taught as geographical but also as history, a means of living, identity, governance, spirituality and relation with the environment. The reimagined, decolonized SS should be place-based, culturally responsive,

question-based, and community engaged, leveraging elders, oral history, local institutions, community stories, natural systems, and Indigenous decision-making structures.

2.4. Empirical Review

Research on integrated education around the world reveals that the learning process of integration helps students connect different learning areas and transfer learning to the real world (Levstik & Tyson, 2008). Also, systems thinking, local knowledge and community sustainability education learning are emphasized in the research on sustainability education for addressing environmental and social problems (UNESCO, 2021).

Research in Indigenous education demonstrates the importance of culturally responsive pedagogical practices that are associated with the development of identity, belonging, participation and engagement of learners (Kovach, 2021; McKinley and Smith, 2019). In Africa study on Indigenous knowledge has focused on the management, governance, agriculture, conflict resolution, moral education and community development (Dei, 2012). Much of this literature, however, is about the Indigenous knowledge and not about the creation of interdisciplinary curriculum models.

Citizenship education, cultural identity, environmental responsibility, democratic participation, critical thinking, and collaboration are emphasized in the curriculum in Ghana (NaCCA, 2019). However, NaCCA (2019) does not provide empirical evidence of classroom practices but is a policy document. What is demonstrated by the document is that there is no explicit framework or design that links Indigenous History, Geography, Economics and Sociology. Thus, the impact of this omission in the classroom will need to be studied empirically.

2.5. Gaps in the Literature

There are four gaps identified in the review. First, SS is described as interdisciplinary but there is an interdisciplinary failed practice. Second, Indigenous knowledge is not just acknowledged in education, but is also generally treated as ancillary material, as a tool for educational resource enhancement but not as an epistemological framework. Third, in most cases, Indigenous History, Geography, Economics and Sociology are studied in isolation, and have only limited focus on the relationship between them. Fourth, the current scholarship on SS in Ghana has no single paradigm that integrates and provides guidance for curriculum reform, teacher education and the development of citizenship. These gaps warrant the current study, which builds on the concept of an Indigenous Interdisciplinary Model of Social Studies Education, in order to highlight the interconnections and relationship between the Indigenous knowledge domains that support Social Studies education.

2.6 Indigenous Interdisciplinary Model of Social Studies Education

Proposed Indigenous Knowledge System is a conceptualism of Indigenous History, Geography, Economics and Sociology as interconnected knowledge systems. History gives them memory, identity, continuity and moral lessons; Geography gives them place-based understanding and environmental responsibility; Economics gives them knowledge about how people earn a living, how resources are shared, how people are interdependent, and how to deal with conflict. Stories of morality, reciprocity and sharing resources; of governance, understanding conflict and communal responsibility; come from Sociology. Indigenous Relationality links the four domains to each other, and Systems Theory helps to understand how they relate to one another, while Decolonial Theory disrupts the fragmentation of knowledge in a colonial context. The model views Social Studies as a whole curriculum space that helps to support inquiry-based learning, community and place-based learning, oral history, environmental stewardship, local economic analysis, culturally responsive citizenship and teacher preparation.

2.6.1. Philosophical Underpinning of the Model

The IIMSSE is based on three intertwined theoretical approaches. Indigenous Relationality is the philosophical underpinning at the heart of the concept, which views knowledge as relational between people, communities, ancestors, future generations, land, spirituality, institutions and the natural environment (Kovach, 2021; Smith, 2021; Wilson, 2008). Knowledge is, therefore, not in the form of separate disciplines.

Systems Theory is a theory that describes how historical, geographical, economic, sociocultural, political and environmental systems interact to produce complex outcomes of society (Meadows, 2008). Today's issues, including climate change, migration, poverty, biodiversity loss and the decline of democracy, are therefore seen as systemic rather than stand-alone problems.

The epistemological basis for decolonizing Indigenous knowledge to be used as a curriculum organizing framework instead of as a cultural add-on is found in Decolonial Theory. It counteracts and defies the colonial knowledge hierarchy and promotes epistemic plurality in SS education as introduced by Battiste (2013); Ndlovu-Gatsheni (2018); and Smith (2021). These theories can both be used to help understand why the shifting focus of Social Studies from traditional disciplinary structures, to Indigenous relational structures, is necessary.

2.7. Conceptual Framework: An Indigenous Interdisciplinary Model of Social Studies Education

2.7.1. Introduction

The principal contribution of this study is the Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE), which repositions Indigenous knowledge as the organizing epistemology for integrating Social Studies rather than merely adding Indigenous content. Unlike Western interdisciplinary models that connect disciplines through themes or problems (Levstik & Tyson, 2008), the IIMSSE, grounded in Indigenous Relationality, Systems Theory, and Decolonial Theory, conceptualizes Indigenous History, Geography, Economics, and Sociology as interconnected knowledge domains. The framework comprises four levels: (1) Indigenous Knowledge Domains, (2) Indigenous Interdisciplinary Integration, (3) Social Studies Outcomes, and (4) Long-Term Societal Impact.

Level One: Indigenous Knowledge Domains: The model is founded on four complementary knowledge domains. Indigenous History develops historical consciousness, cultural identity, governance, and intergenerational learning through living traditions. Indigenous Geography emphasizes relationships among people, land, and the environment to promote stewardship and sustainability. Indigenous Economics highlights reciprocity, collective welfare, ethical resource use, and sustainable livelihoods. Indigenous Sociology explains kinship, leadership, communal responsibility, conflict resolution, and shared decision-making. Together, these domains function as interconnected rather than separate fields of knowledge.

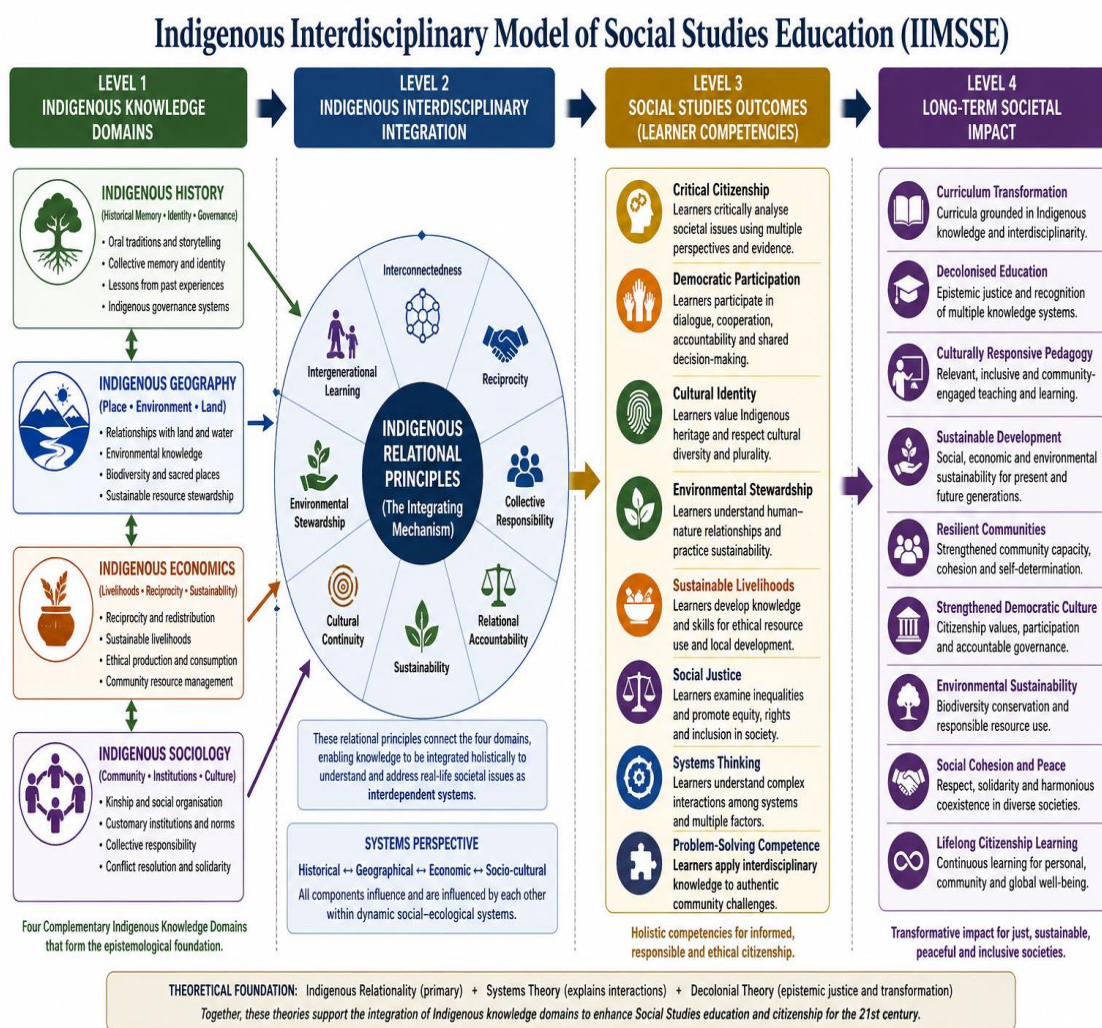
Level Two: Indigenous Interdisciplinary Integration: The model's central innovation is integrating knowledge through Indigenous relational principles rather than curriculum topics alone. Principles such as interconnectedness, reciprocity, relational accountability, collective responsibility, environmental stewardship, cultural continuity, place-based learning, sustainability, and intergenerational responsibility connect the four domains, enabling learners to understand societal issues as dynamic systems in which history, environment, livelihoods, and community institutions continually influence one another.

Level Three: Social Studies Outcomes: Integrating the four domains is expected to support competencies beyond disciplinary knowledge, including critical citizenship, democratic participation, cultural identity, environmental stewardship, sustainable livelihoods, social justice, systems thinking, and problem-solving. These proposed outcomes require empirical testing rather than being treated as automatic consequences of curriculum integration.

Level Four: Long-Term Societal Impact: The model is intended to contribute to curriculum transformation, culturally responsive education, sustainable development, community resilience, democratic culture, environmental sustainability, inclusive governance, and lifelong citizenship learning, consistent with international aspirations for quality education and sustainability (United Nations, 2015; UNESCO, 2021). These are proposed long-term pathways, not effects already demonstrated by the present study.

2.7.2. Dynamic Relationships Within the Model

Unlike linear curriculum models, the IIMSSE is dynamic and recursive. Knowledge flows continuously among Indigenous History, Geography, Economics, and Sociology, with historical experiences shaping community values, environmental management influencing livelihoods, and social institutions preserving historical memory. Learning is therefore relational, cyclical, and adaptive rather than sequential.



2.8. Contribution of the Model

It is crucial that the Indigenous Interdisciplinary Model of Social Studies Education contributes in four ways. First, it reframes the concept of Social Studies, and constructs curriculum around the concept of Indigenous Relationality and not disciplinary integration alone. Secondly, it offers an original theoretical account on how Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology are knowledge areas that are mutually reinforcing and this is an area in the Social Studies and Indigenous education literature that is not adequately

explained. Third, it offers a curriculum framework which incorporates systems thinking, decolonial thinking and culturally responsive teaching to enhance twenty first century citizenship education. Lastly, the model provides a framework for future research in curriculum development, practice, teacher education, and comparative research in a variety of educational settings.

3. Methodology

3.1. Research Design

The study used a qualitative model-development design that was grounded in selected principles of educational design research and constructivist grounded theory, and that was embedded in the interpretivist paradigm. It did not state that it used either method in its entirety. The interpretivist orientation was suitable as the study aimed to understand how Indigenous knowledge holders, SS educators, curriculum experts, and community stakeholders build and interpret connections between Indigenous History, Indigenous Geography, Indigenous Economics, and Indigenous Sociology. This study was not intended to test hypotheses, but was meant to yield a conceptual model that is grounded in the participants experiences, documentary evidence, relevant scholarship, and expert review (Creswell & Poth, 2018).

The model was designed and iteratively developed and validated through educational design research and constructivist grounded-theory analysis of qualitative data (constant comparison, memo writing, and theoretically responsive sampling) (Charmaz, 2014; McKenney & Reeves, 2019). The study involved four stages: (1) a structured literature review, which led to an initial conceptual framework; (2) an empirical exploration with key stakeholders; (3) a synthesis of the available documentary, theoretical and empirical evidence, which resulted in an initial draft model; and (4) an expert validation and iterative refinement process. The initial description of the four proposed knowledge domains as provisional was significant as it sensitized the inquiry while being open to change based on empirical evidence.

3.2. Research Paradigm

This study was conducted within the Interpretivist paradigm, which assumes that reality is socially and culturally constructed through human interaction and that it is the meanings that humans give to their experiences that need to be understood (Creswell & Poth, 2018). The paradigm was suitable because it allowed for the study to examine the conceptualization of the relationship between Indigenous History, Indigenous Geography, Indigenous Economics, and Indigenous Sociology when considering the development of an Indigenous Interdisciplinary Model of Social Studies Education by Indigenous Knowledge holders, Social Studies educators, curriculum specialists and community members. It also gave participants their voice and Indigenous ways of knowing, as it was a conceptual model that was developed through iterative interpretation and researcher participant engagement.

The interpretivist paradigm is aligned with Indigenous Research Methodologies, Decolonial Research, Constructivism, and Indigenous Relationality, and together, these informed the study philosophical foundation. These lenses focus on relational, culturally relevant and co-constructed knowledge, and on the legitimacy of Indigenous knowledge systems as valid inputs for curriculum development and theory (Kovach, 2021; Smith, 2021). They both together offered a sound foundation for building a model grounded in an Indigenous perspective, culturally responsive, and theoretically sound.

3.3. Data Collection Instruments

Validity and validity of qualitative model-development research are dependent upon the employment of suitable ways of collecting the data that can yield conceptually rich and contextually meaningful evidence. The study was

not designed for testing pre-formulated hypotheses, but to build an Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE) thus the study used multiple complementary tools in order to acquire theoretical, empirical, documentary, and validation evidence. These instruments helped to achieve methodological triangulation, methodological depth, and the credibility of the developed model (Creswell & Poth, 2018; Flick, 2023). The main data collection tools used in the study were: (1) Literature Review, (2) Document Analysis, (3) Semi-Structured Interviews, (4) Delphi Technique, (5) Focus Group Discussions. Each instrument had a unique and complementary role in the systematical process of model development through the generation, refining and validation of the model proposed, which was an iterative process.

3.3.1 Literature Review

An original conceptual model was built on the basis of the literature review, which served as the data collection instrument for the study to ensure that it was based on the available scholarship and was open to further empirical refinement. Literature serves as conceptual evidence in qualitative model-development research to identify theoretical constructs, the relationships among them, gaps in the literature, and educational debates (Booth et al., 2021; Snyder, 2019). Indigenous Relationality, Systems Theory, Decolonization Theory, Indigenous and Social Studies education, Interdisciplinary Curriculum, Citizenship, Sustainability, Indigenous pedagogies and culturally responsive teaching were among the areas of the review. The relationships between Indigenous History, Geography, Economics and Sociology were given special attention.

The review has set the theoretical underpinnings, delineated the constructs and gaps in the literature, informed the data collection instruments and offered a frame of reference for interpretation of data. It also contributed to theoretical triangulation, as it helped to combine and synthesize different knowledge. To mitigate against potential publication bias and Western-centricism, Indigenous and African-centred scholarship, policy documents and current international research were included. Therefore, the literature review was kept as an analytical tool in the model development process.

3.3.2. Semi-Structured Interviews

The key primary data collection technique used was semi-structured interviews, which were primarily used to gain rich and contextually based understandings of the contributions and interrelationships between Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology, as they are conceptualized in the context of SS education by key stakeholders. Like the interpretivist paradigm, the interviews were flexible enough to explore participants' experiences, beliefs, and culturally based perceptions of their world and to allow for issues that arose to be explored (Creswell & Poth, 2018; Kovach, 2021). The participants were teacher educators, curriculum specialists, Indigenous knowledge holders, traditional leaders, and experienced teachers and education policy experts. The questions focused on Indigenous knowledge, and the unique contributions and interrelationships of the four domains of Indigenous knowledge, and the implications that this has for curriculum, citizenship education and twenty first century competencies. Interviews took a considerable amount of time but the credit, reliability and confirmability of the model was enhanced through probing, clarifying, checking, reflexive field notes and through triangulation.

3.3.3. Document Analysis

The other source of evidence was document analysis, which entailed a systematic review of curriculum documents, educational policies, teacher education guidelines and Indigenous education documents for an understanding of the concepts of Indigenous knowledge, how it is represented, how it is incorporated, or how it is neglected in SS (Merriam & Tisdell, 2016). Documents such as the NaCCA Social Studies curriculum, Ghana Education Service

(GES) curriculum documents, curriculum frameworks of Colleges of Education, and curriculum frameworks of UNESCO, African Union Agenda 2063 and Indigenous education policy documents were used to analyse the curriculum objectives, curriculum content, pedagogy, assessment and citizenship education. Findings reinforced the findings from the interview and focus group information, and supported methodological triangulation in identifying gaps in policy practice in relation to Indigenous History, Geography, Economics and Sociology. Although official documents do not necessarily accurately portray the reality of the classroom, findings were triangulated with interviews, focus group discussions, and expert validation, thus enhancing the credibility, trustworthiness and analytical depth of the findings.

3.3.4. Focus Group Discussions

The interviews were supported by Focus Group Discussions (FGD) that were used for gathering collective opinions and ideas on the relationship among Indigenous people in the field of interdisciplinary work. The focus groups comprised teacher educators, practicing teachers, pre-service teachers and community elders who considered together the relationships between Indigenous History, Indigenous Geography, Indigenous Economics, and Indigenous Sociology, and their interconnectedness, and their relationships with SS learning (Krueger & Casey, 2015; Kovach, 2021). Topics covered in the discussions were Indigenous knowledge systems, designing curriculum, culturally responsive pedagogy, citizenship education, and competencies required to address modern challenges of society. Shared meanings and socially negotiated understandings were built up in interaction between the participants, which supported conceptual development and conceptual elaboration (Morgan, 2019). The group dynamics were managed with skill, group composition, and structured discussion protocols and triangulated with the interview and documentary evidence to minimize possible constraints of group dynamics.

3.3.5. Delphi Technique

The Delphi Technique was used to validate and refine the preliminary Indigenous Interdisciplinary Model of Social Studies Education as the last step in the process. The model has been anonymously reviewed by a number of experts in the following fields: SS education, curriculum studies, Indigenous knowledge systems, teacher education, educational policy, and Indigenous community leadership (Keeney et al., 2011; McKenney & Reeves, 2019). Feedback was provided in subsequent rounds to work towards consensus in an iterative process. Some limitations of the technique were addressed: the technique is time consuming, requires expertise in its use and requires a limited number of iterations (Hsu & Sandford, 2007) but these were minimized by purposive selection of experts, use of instrumented evaluation methods, limited number of rounds and triangulation with other results obtained from literature review, document analysis, interviews and focus group discussions. As a result, the content validity, theoretical validity, methodological validity, and applicability of the final Indigenous Interdisciplinary Model of Social Studies Education has been enhanced using the Delphi process.

3.3.6. The Analytical Stages have been integrated

The five analytical stages were presented sequentially but not necessarily in a linear fashion. The initial concepts came from Reflexive Thematic Analysis, the conceptual relationships evolved through Constant Comparative Analysis, Concept Mapping helped to help visualize the conceptual relationships, Model Construction helped to integrate the concepts into an overall model, and Delphi Validation helped to refine the model by asking experts to evaluate it. Each stage was linked to the next and emerging perspectives were further tested in literature and in documentary evidence, as well as by participants and, in feedback with experts, in a way that exemplifies the iterative aspect of qualitative model-development research.

3.3.7. Explanation of the Analytical Framework

The systematic approach of converting the qualitative evidence to the empirically supported conceptual model was provided through the use of Reflexive Thematic Analysis, Constant comparative Analysis, Concept Mapping, Model Construction and Delphi Validation. All the stages contributed to the process of meaning generation, theories abstraction, relational analysis, model development and expert validation. Overall, these procedures resulted in the development of the Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE) in a transparent, rigorous, iterative and evidence-informed process following the principles of qualitative educational research and conceptual model building.

3.3.8 Data sources Triangulation

Complementary evidence sources were intentionally included in the study. The literature review set a solid foundation for the theory, document analysis gave insight into policy and institutional approaches, interviews gave insight into professional and Indigenous perspectives, and focus groups ensured a common understanding of the emerging model, and the Delphi Technique was used to validate and refine the emerging model. This synergy allowed for continuous comparison between theory and policy, educational practice and Indigenous knowledge, and between Indigenous knowledge and expert judgement. With the convergence, conceptual consistency was reinforced; with the divergence, further analysis and refinement was initiated. The use of triangulation thus strengthened the credibility of the findings, their dependability, their confirmability, and minimized reliance on a single source.

3.3.9 Reasons for Multiple Data Source

Because the ability to fully understand indigenous interdisciplinary relationships relied on several data sources, interviews, documents, and literature were needed. The integration of primary, secondary and validation evidence resulted in a holistic understanding of the links between the Indigenous History, Geography, Economics, and Sociology. This method is based on the qualitative model-development research process in which conceptual models are developed by synthesizing theoretical, empirical, documentary and expert evidence (Charmaz, 2014; McKenney & Reeves, 2019). Thus, the strategy was instrumental in creating an Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE) that is based on empirical studies, theory, culture, and validation by professionals.

3.4. Sampling and Sample Procedure

3.4.1. Sampling Strategy

This study used purposive sampling technique and complementing with criterion sampling and maximum variation sampling for participant selection based on the information rich who have expertise in developing the Indigenous Interdisciplinary Model of Social Studies Education. As in qualitative model-development research, participants were purposefully chosen to know and have knowledge about Indigenous knowledge systems, Social Studies, the curriculum development, and the citizenship education, not for statistical representativeness (Creswell & Poth, 2018; Charmaz, 2014). The sample consisted of curriculum experts, teacher educators in Social Studies, Indigenous knowledge holders, traditional leaders, experienced teachers, educational policy experts and pre-service teacher educators.

Participants were sampled using criterion-based sampling, which ensured that they all possessed the required inclusion criteria, and maximum variation sampling, which aimed to ensure a representation of a range of educational, cultural, institutional, geographical and Indigenous perspectives, and identify common conceptual patterns across a variety of contexts (Patton, 2015). Although these non-probability sampling methods do not allow

for statistical generalizations and may be subject to researcher judgment, this was overcome by using explicit inclusion criteria, a diverse group of participants, and explicit documentation of sampling decisions (Creswell & Poth, 2018).

3.4.2. Sample Adequacy

The principles of information power and theoretical saturation guided the sample size for this model-development research in a qualitative approach, which is more relevant than statistical sample size determination in qualitative work (Malterud et al., 2016; Charmaz, 2014). The information power principle implies that the smaller the sample the more focused the research goals, richer the dialogue and more theoretically sound the analysis if participants have highly relevant expertise (Malterud et al., 2016). The study employed focused research goals, experts, multiple data sources and a combination of reflexive thematic analysis, constant comparative analysis, concept mapping, model construction and Delphi validation techniques to attain high information power. The sampling of participants continued until theoretical saturation, when there were no new concepts or theoretical relationships that emerged from new data in relation to the model development, but rather the concepts began to replicate (Charmaz, 2014). Therefore, the number of participants was not strictly controlled; it was used more as a guideline and recruitment proceeded as needed for further conceptual clarity.

3.4.3. Sampling Procedure

Sampling was done sequentially and iteratively based on the qualitative model-development and constructivist grounded theory method. Participants were initially recruited via purposive sampling, with pre-determined inclusion criteria, from educational institutions, professional associations, traditional authorities and other organizations. Before data collection, all participants got information regarding the study, voluntary participation, confidentiality and informed consent (Kovach, 2021).

The data collection and analyses were conducted concurrently, and as data from the interviews, focus group, document analysis and literature review were analyzed, so were the decisions made for the next steps of recruitment (Charmaz, 2014). The recruitment process was only halted when further evidence has supported and not extended the growing conceptualization of Indigenous History, Geography, Economics and Sociology in relation to Indigenous Relationality. Interpretive judgement was used in interpreting data and determining the level of saturation; continuous comparison of emerging concepts, iterative recruitment and continuous reflection on interpretation of data, to enhance the rigour, transparency and credibility of the study (Braun & Clarke, 2021; Charmaz, 2014).

3.4.4. Justification of the Sampling Approach

A solid framework for the selection of participants was provided through the use of purposive, criterion, and maximum variation sampling methods, as well as information power and theoretical saturation. To ensure that relevant expertise, conceptual breadth, and sample adequacy and completeness, the sampling method was purposive, criterion, maximum variation, and information power (and/or theoretical saturation). These strategies enhanced the credibility, dependability, confirmability and transferability of the study and added depth and breadth of evidence leading to the development of the Indigenous Interdisciplinary Model of Social Studies Education, not by numbers. The sampling framework, therefore, was sympathetically designed with regard to the interpretivist paradigm, indigenous research practices and the desire to get a theoretically coherent and valid model of SS curriculum transformation.

3.4.5 The Study Sites and Sample Size

The study was conducted in the five purposively selected traditional language zones namely Akan, Ewe, Mole-Dagbani, Ga-Adangbe and Guan and the five Colleges of Education namely Evangelical Presbyterian College of Education, Bimbilla; Tumu; Offinso; Jasikan and Komenda. These were the geographical, cultural and institutional diversity needed to explore the implications of the relevance of Indigenous knowledge systems to SS and citizenship education.

The sample size was based on information power and theoretical saturation, as with the qualitative model-development research. Participants were recruited to ensure that they had the appropriate expertise and the process went on until no further concepts or relationships emerged from the additional data (Malterud et al., 2016; Charmaz, 2014).

The anticipated participants were 80 which included 15 Indigenous knowledge holders, 15 traditional leaders (3 from each language zone), 10 experienced Social Studies teachers, 10 teacher educators, 20 teacher trainees, six curriculum experts, and four educational policy experts. Were conducted the teacher educators' and trainees' focus group discussions. These were subject estimates which might be increased to develop ideas and extend the theoretical content of the model further if desired.

3.5. Data Analysis

The process of data analysis was conducted in multi-stage, iterative, and inductive way, which involved Thematic Analysis, Constant Comparative Analysis, Concept Mapping, Model Construction and Expert Validation to develop the Indigenous Interdisciplinary Model of Social Studies Education. This approach enabled moving from qualitative evidence to the integration of theory and the development of a model, and yet still kept the focus on the participants' experiences and the interpretivist paradigm (Charmaz, 2014; McKenney & Reeves, 2019). Data collection and analysis was an iterative process, whereby ideas arose as the process continued, to guide future sampling, coding and interpretation. To enhance the trustworthiness and credibility of the findings, the triangulation of interviews, focus groups, literature search and review of curriculum documents and experts was used (Nowell et al., 2017).

The analytical process was divided into the following five stages, each one of which was related to the others in a step-wise fashion. The first phase involved using the reflexive approach as outlined by Braun and Clarke (2021) to identify themes and patterns associated with Indigenous History, Geography, Economics, Sociology, citizenship and curriculum integration, as well as the relationship that exists between the disciplines. To strengthen the credibility of this research, a reflexive memo writing and an audit trail which documented the researcher's interpretative decisions were employed, and to increase credibility, peer debriefing and feedback from the participants were used, although subjectivity was not viewed as an issue that could be negated (Braun & Clarke, 2021; Nowell et al., 2017).

In Stage Two, the author utilized Constant Comparative Analysis to compare the ideas within the literature, across the interviews, focus groups and curriculum documents, and to make iterative comparisons; analytical memoing (Charmaz, 2014) was used to elaborate categories and deepen theory into the concepts.

The third stage of the process was the implementation of the Concept Mapping application, which visualized relationships between themes and constructs and was useful for synthesizing the Indigenous disciplinary knowledge in higher order and for identifying key constructs and pathways of relationship (Novak & Cañas, 2008). The concept map was created in an iterative process in order to keep it aligned with the evidence.

In Stage Four: Model Construction, the themes and conceptual relationships that were validated led to the development of the Indigenous Interdisciplinary Model. Constructs, dimensions, and relationship pathways were

developed from the empirical results as well as literature and supported by evidence, which was made clear and theoretically coherent (McKenney & Reeves, 2019).

Valuation by the Delphi Technique was performed at the fifth stage of development (Expert Validation). The model was evaluated for clarity, coherence, context and applicability by experts in SS, indigenous knowledge, curriculum studies, teacher education and teacher leadership and educational policy. To ensure content validity and scholarly credibility within the model, feedback was provided multiple times to build and refine constructs and conceptual pathways (Keeney et al., 2011; McKenney & Reeves, 2019). The final model was theory-driven and professionally tested by a multi-disciplinary expert panel, and triangulated with empirical results.

Ensuring Trustworthiness

Qualitative rigor is achieved by using reliability measures such as Cronbach's alpha:

- **Credibility:** triangulation of literature, documents, interview, focus group, expert review, member checking.
- **Transferability:** Thorough participant and setting descriptions.
- **Dependability:** A history of coding, model revisions and method decisions.
- **Confirmability:** done to reduce researcher bias, reflexive journaling and peer debriefing:

Methodological Framework Summary

Component	Recommendation
paradigm	Interpretivist, Indigenous and Decolonial approach.
Design	Qualitative Model Development Research Design (based on Design Based Research and Grounded Theory)
Purpose	Higher Education Institutions' curriculum development and refinement of an Indigenous Interdisciplinary Model of Social Studies Education
Data Collection techniques	Literature review and document analysis, semi-structured interviews, focus groups, expert Delphi validation
Instruments	Participants include data collection personnel, focus group facilitators, Delphi group facilitators, residents, focus group and Delphi groups.
Data Analysis	Thematic analysis, Constant comparison, Concept mapping, Iterative Model construction
Validation	Expert review (Delphi), triangulation, member checking, and peer de-briefing.

Findings and Discussion

4.0 Introduction

The results of this presentation and discussion are merged. The evidence presented in each of the thematic sections is based on interviews, focus group discussions with teacher educators and teacher trainees, analysis of documents, coding, expert validation, and theoretical interpretation and implications for curriculum and teacher education. The six themes of the study that addressed the three research questions are interrelated. The first four will be discussed based on the unique contributions of Indigenous History, Indigenous Geography, Indigenous Economics and

Indigenous Sociology, while the last will be discussed regarding the construction, validation and refinement of the Indigenous Interdisciplinary Model of Social Studies Education (IIMSSE).

The need for a place based, culturally responsive, relational and community connected approach to Social Studies was agreed. However, among participants there were some conflicts as to the extent to which Indigenous institutions and practices would be integrated into the formal curriculum. There was endorsement of increased community ownership from indigenous knowledge holders and traditional leaders, endorsement of national standards from curriculum and policy experts and endorsement of constitutional and human-rights principles, assessment requirements, and teacher capacity. The differences were deemed as worthwhile negative cases.

4.1 Empirical and Analytical Profiles

The main evidence was from 80 participants in five traditional language areas and five Colleges of Education. Fifty participated in individual interviews: 15 Indigenous knowledge holders, 15 traditional leaders, 10 experienced Social Studies teachers, six curriculum experts, and four educational policy experts. The remaining 30 comprised 10 SS teacher educators and 20 teacher trainees who joined in six focus groups. The teacher educators were selected purposively two for every College, which was divided into two sets of teacher educators with five each and the trainees into four sets of five.

The teacher-educator conversations focused on Indigenous disciplinary knowledge, the organization of the curriculum into interdisciplinary units, pedagogy, assessment, teacher preparation and community partnerships. Teacher-trainee dialogues were centered on their experience of learning, attitudes towards the Indigenous knowledge, willingness to apply pedagogies that are linked to the community.

Six categories of curriculum and policy documents, field notes, analytical memos, and two rounds of the Delphi process with a separate panel of 15 experts were additional evidence. The model was confirmed by the Delphi panel and did not count towards the number of participants. The average interview lasted 40-65 minutes and the focus groups lasted 70-90 minutes.

186 initial codes were obtained, followed by the development of 42 focus codes and 14 subthemes and six super themes through constant comparison. The integrating construct that rose to the fore was Indigenous Relationality. The cross-analysis of interviews, focus group and documents supported interpretations and negative case analysis raised concerns of feasibility, inclusion, human rights, representation and romanticizing of customary institutions. Unless verified, by the teacher-educators, the focus-group results are presented as SSTE-FGD1, SSTE-FGD2 and reported as thematic syntheses.

4.2 RQ1: The unique contributions of the four domains of Indigenous Knowledge

4.2.1 Indigenous history: Living memory, critical identity and civic responsibility

Participants recognized Indigenous History as an oral, living history, and through family stories, celebrations, music, symbols, sayings and customs of migration and settlement; leadership; conflict and reconciliation. This was in contrast to what history was supposed to be – a list of facts, dates and key players. The other person in the indigenous knowledge group said:

“The stories are not just in a book, they are in the names of places, the stories of families, the festivals and the responsibilities passed on from the elders to the young”. (IKH04, 2025)

Other traditional leaders also emphasized that traditional stories give a history of the ownership of the land, the power system, inter-community relations and communal responsibilities. Community history is no longer a history of what occurred, but is a means of understanding what has occurred in the past and what is occurring in the present:

“By showing youth the rationale for the community's settlement here, and how the prior generations solved their conflicts, they will become aware that citizenship means protecting what has been handed down to them”. (IKH09, 2025).

Teachers and trainees recognized the value of using oral-history interviews, community biographies, festival analysis and analysis of local timelines, and researching the migration and settlement experiences of students as suitable means of linking national issues with local experiences. The teacher-educators in both teacher-educator focus groups had a high level of agreement that they should engage local histories to discuss national identity, citizenship, conflict, migration, leadership and social change. They did discuss, however, that teacher trainees would need to be able to cross-check the oral accounts, be familiar with the alternative community accounts, and be able to connect the local evidence with the documentary and scholarly evidence (SSTE-FGD1; SSTE-FGD2). Analysis of documents also confirmed cultural identity and national belonging but local history knowledge was not unified and did not form a coherent basis for interdisciplinary enquiry.

The outcomes demonstrate the ways in which Indigenous History helps to develop historical awareness, identity and belonging, moral and civic development, and intergenerational sense of continuity and critical awareness of colonial and local History. They are grounded in a drive to restore to memory and voice the margins, so as to achieve culturally based citizenship (Battiste, 2013; Smith, 2021). It is not acceptable to take everything on faith when it comes to recovery, however! It's possible to have several interpretations and outlier interpretations, as well as interests in oral accounts. For this reason, learners need to focus on oral, material, materiality and documentary evidence, as well as on the scholarly evidence, which involves decolonial recovery and a disciplined historical investigation.

4.2.2 Indigenous Geography: Place, Belonging and environmental stewardship

Indigenous Geography is a connection with the land, water, climate, vegetation, settlement, spirit and livelihood. They refused to have the land localized, monetized and were a memory, identity, rights, living and promises to future generations. In this relationality this one knowledge holder was captured as follows:

“The river is geography, but also history, and livelihood; it has pointed out where people have lived, it has provided water for agriculture and cultivation; it has set out guidelines for its protection”. (IKH11, 2025).

The participants expressed their knowledge about the climatic changes, soil characteristics, rains, sacred trees, watering points, local plants, and farmer's calendars and indicators in the community. This knowledge was believed to have potential applications in the context of climate variability, land degradation, deforestation, food security and resource management. A teacher observed:

“Learners will be able to understand how responsible one needs to be towards the environment, as they will explore their own stream, farm or degraded environment rather than just learning what it means.” (SST06, 2025).

The purpose of Social Studies as a problem solving and practice was reported by teacher trainees to be continuous, meaning there was no gap between the two.

Many lessons are not taught outside to learn about the social problems that exist in the community, we are told that Social Studies is solving social problems. (TT07-FGD2, 2025).

This theory–practice gap was confirmed by the teacher-educators focus groups. The pedagogic significance of community mapping and observing areas of degradation was identified, as was the cost of transporting staff students, the number of students in the field, the limited time available for teaching, safety concerns and fixed schedules as challenges to engaging in regular field-based learning. They suggested that low cost, sites were close to them, and community assignments were more realistic options were provided (SSTE-FGD1; SSTE-FGD2). The formal focus was the words associated with the environmental responsibility and sustainable development, while the latter was quite represented in the documents, environment and topics associated with local history were not well integrated with custom governance and cultural responsibility. Indigenous Geography therefore introduces a body of knowledge on place knowledge, spatial relationships, awareness of the environment, land identity, knowledge of climate and livelihood, stewardship, inter-generational responsibility and more.

Taking an ecological, historical, economic and ethical perspective of land strengthens environmental citizenship. It resonates with the scholarship on the importance of Indigenous knowledge in the biodiversity conservation, sustainability and climate adaptation (IPBES, 2022), and UNESCO's (2021) emphasis on systems thinking. This means that illegal mining, deforestation, flooding, land degradation and water pollution in Ghanaian Social Studies should, therefore, be studied as a multi-facet problem, rather than an environmental topic only.

4.2.3 Indigenous Economics: Ethical Choice and Reciprocity Sustainable Livelihood

According to the participants, Indigenous Economics system consists of a system of social relations, production, distribution, exchange and consumption, which are all interwoven. Various aspects of communal labour, apprenticeship, family support, sharing of resources, rotation of support, farming, craft production and local trading were mentioned repeatedly. Several traditional leaders gave the reason that:

“Income is not only the amount of what people save, it is the wealth or amount that they have to share with others, and with other people within their Indigenous economy who work for them.” (TL03, 2025).

Not all things Indigenous economies are straightforward and fair. Instead, they found some principles which they believed could help the existing economic education, which were reciprocity, ethics in utilizing resources and collective welfare and security of livelihoods. “So, one of the experts at the curriculum said:

“Socialization of economic education through the learner's thought process is achieved when the learner thinks not only about the profit of the economy, but also the livelihood, justice, the cost and the responsibilities of the environment to the community”. (CE02, 2025).

Teacher trainees proposed that local markets, farming, apprenticeship and small-scale production and community resources sharing, should be places of inquiry and that these are not typically considered as legitimate economic knowledge. Teacher educators further supported this claim and said that they could be related to health and welfare in the family, costs to the economy, gendered work, entrepreneurship and community duties. There was hesitancy in both educator group meetings/consultations to consider Indigenous economy as a single sustainable and equitable (SSTE) way (SSTE-FGD1; SSTE-FGD2). So, Indigenous Economics brings reciprocity in exchange, collective production and effort, ethics of resource management, sustainable livelihoods, collective welfare and socially responsible entrepreneurship in.

This finding is a challenge to these perspectives that see persons as free and independent agents in the market place. The processes of decision making that take place in the economy are decided in the context of family responsibilities, community survival, the environment and the moral responsibility. It is not about the sustainability and equality of the Indigenous economy, it is about the Indigenous relationality to change the mind of the learner to critically view

poverty, unemployment, inequality, food insecurity and irresponsible extraction. Therefore, Indigenous Economics fosters ethical economic citizenship which poses the question about what economic decision-making mean for other people, communities, ecosystems and future generations?

4.2.4 Indigenous Sociology encompasses Governance, Community and Relational Citizenship

Kinship, family, leadership, socialization, customary authority, age groups, communal decision making, conflict resolution, sanctions, ceremonies and shared obligations were all included in Indigenous Sociology. Participants have reported that learning identity and responsibility is a learning process that is created by human and institutions:

We are responsible through a relationship and the family, elders and community teach us that we are responsible for our actions for others and ourselves. (IKH02, 2025).

The need for dialogue, mediation, restitution, apology and reconciliation in traditional leadership to deal with conflicts was highlighted. Teachers felt that these were values that can be useful to build peace, good governance, leadership and civic responsibility. One teacher broadened the concept of citizenship to something outside of formal politics:

“Election participation is just one of the ways of being a good citizen, others are communities service, peaceful conflict resolution, caring for the weak and the vulnerable among others.” (SST03, 2025).

The teacher-educator focus groups were connected to the creation of concrete suggestions on how to teach the concepts of leadership, peacebuilding, responsibility, participation and social cohesion, and Indigenous Sociology. They had particular interest in community case studies, and conflict-resolution simulations, noting the importance of understanding customary authority and social practice in a democratic governance framework of accountability, gender equality, and inclusion and human rights (SSTE-FDG1; SSTE-FDG2). The evidence is then connected to Indigenous Sociology themes of identity and belonging, leadership and governance, conflict resolution, communal participation and collective responsibility and relational citizenship. This is a decolonized understanding which aligns with Indigenous Relationality: personhood and responsibility in relation to one another (Wilson, 2008; Kovach, 2021).

A good negative case qualified this conclusion, however. Casualties must be considered and addressed in relation to gender equality and children's rights, inclusive disability, and democratic accountability and human dignity, according to experts in curriculum.

“Decolonization is not romanticization Indigenous institutions have good principles and learners need to know about the principles of power, exclusion and need for reform” (PE03, 2025).

Thus, cultural responsiveness cannot be an excuse to discriminate, exclude generations, have too much power or be gender biased. Indigenous governance principles, human rights, inclusion, social justice and critical reflection are integrated into the IIMSSE. This helps to prevent Indigenous institutions being prescribed on to the curriculum without being respectfully and critically examined.

4.3 RQ2: Interdisciplinary Relationships between the Indigenous Domains

4.3.1 Indigenous Knowledge as a Relational System

It was found that History, Geography, Economics and Sociology were always missing in the life of the community. The boundaries have been described as "useful" for academic analysis and to allow for access to curriculum but not "faithful" to Indigenous experience:

“The division of History, Geography, Economics and Sociology helps the academic analysis but the knowledge of the community does not lie in those compartments” (CE05, 2025).

“In discussing land, we also discuss relationships with the ancestors, farming, inheritance, leadership and peace” (TL14, 2025).

There were four recurring pathways which explained this interdependence. History and Geography were connected in a variety of ways, including migration and settlement, boundaries, sacred places, land ownership, place names and community identity. Geography and Economics were connected through agricultural/food production (farming/fishing), climate, soils, vegetation, trade, craft production, and livestock. Kinship and trust, customary rules, status, family roles, communal obligations, inequality and welfare were linked in the context of Economics and Sociology. Sociology and History converged in the areas of customary authority, leadership, identity, social norms, conflict resolution and selection and transmission of collective memory. The teacher educators also reinforced this by arguing that a problem-centred unit of work (rather than four separate units on four different disciplinary subjects) would give the trainees a lesson plan to build around issues of land conflict, migration, food insecurity, climate change or local governance, and they would then be able to draw evidence from all four domains (SSTE-FGD1; SSTE-FGD2).

The result is an interdisciplinary SS which is supportive and more radical than conventional SS. It echoes the interdisciplinary mission stated by Levstik and Tyson (2008) but instead, it focuses on the relationships (as opposed to academic disciplines) as the organizing principle. It is consistent with Wilson (2008) and Kovach (2021) conceptions of Indigenous knowledge that are relational, experiential, ethical and community based. The four-domain classification is thus analytically and pedagogically useful, but ontologically incomplete, and the model is kept for the purposes of curriculum accessibility, while at the same time reconnecting the domains via Indigenous Relationality.

4.3.2 Systems Analysis of problems in contemporary society

Participants demonstrated how causal processes and consequences are transdisciplinary, by addressing current issues. The important relationships found in the data are outlined in table 4.1.

4.1: Systems Analysis of Contemporary Problems

Societal problem	Historical dimension	Geographical dimension	Economic dimension	Sociological dimension
Climate change	Changes in land-use practices	Rainfall, vegetation, and water systems	Farming and livelihood insecurity	Community rules and collective adaptation
Food insecurity	Historical farming knowledge	Soil, climate, and land availability	Production, exchange, and household income	Labour-sharing and family support
Migration	Historical mobility patterns	Regional and rural-urban differences	Employment and livelihood opportunities	Family networks, identity, and adaptation
Land conflict	Settlement history and ancestral claims	Boundaries and resource location	Land value and livelihood interests	Customary authority and conflict resolution

Environmental degradation	Changes in community practices	in Ecosystem and landscape deterioration	Resource extraction and income	Regulation, responsibility, and sanctions
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The patterns are based on the Systems Theory that postulates that there are many inter-dependent factors which cause climate change, migration, food insecurity, inequality and conflict; they feed into each other and one factor does not cause another alone; and that they are not independent of each other, but instead interdependent (Meadows 2008). With the IIMSSE, the concept of systems thinking is translated into action by having learners look at how previous experience, environment, livelihood options, governance mechanisms, and culture affect each other. In response to the call of the UNESCO (2021) to make responsible citizens, sustainable development, collaboration and problem-solving in the Education.

4.4 Curriculum Conditions (aspirations, epistemic gaps and implementation constraints)

4.4.1 Unless epistemological integration no policy aspirations

The curriculum and policy documents were examined for the following topical areas of citizenship, cultural identity, environmental stewardship, critical thinking, working cooperatively, sustainability and problem solving. The indigenous knowledge, however, was found to be in the form of culture, traditional practices, national values and content of the local areas respectively. Three gaps were identified, indigenous knowledge was conceptually fragmented, interdisciplinary aspirations were missing and there was a lack of integrative pathways and guidance for assessment that was less focus on community based and relational learning.

It is this difference that is the essence of decolonization. Enhancing visibility with Festival(s), proverbs, traditional leaders and local examples – but not necessarily impacting on disciplinary fragmentation or colonial hierarchies of knowledge. The IIMSSE propose that the organization of inquiry, pedagogy and assessment be reorganized for IIMSSE to be more in line with Indigenous principles and values of relationships. The topic of decolonization in this work resonates with the work of Battiste (2013), Ndlovu-Gatsheni (2018) and Smith (2021) where decolonization was highlighted at the level of 'production and validation of knowledge' and at the level of 'whose knowledge is valued and what is knowledge'. The model is not an attempt to throw away science and/or western disciplinary knowledge but an attempt to generate epistemic pluralism through dialogue, comparison and critical evaluation of the various knowledge traditions.

4.4.2 Examination Process Oriented and Classroom Bound Pedagogy

The time constraint, examination requirement, large classes, transportation and resource constraint, curriculum coverage and familiar teachers, teacher educators and teacher trainees pointed out the classroom bound teaching. From the findings of both teacher-educator focus groups, it is agreed that teacher trainee need to be made aware of Indigenous pedagogies and inter-disciplinary approaches during the coursework but then in practical supervision, the coverage of the curriculum and examination were focused on remembering information. They requested the following to be brought into harmony: college coursework and supervision of practicum, curriculum requirements and assessment (SSTE-FGD1; SSTE-FGD2). These also had an influence on community enquiry, field observation, involvement of the elders and problem-based learning. As one teacher commented that teachers rely on their notes and definitions when testing for facts:

“Local knowledge is important for the teachers but if they are testing for facts they come back to their notes and definitions.” (SST08, 2025).

It shows that if the ideals expressed in the curriculum are to be realized then there is a need to reinforce it in other ways. An assessment task should not only assess recall but include the learner's ability to recognize relationships, to use a range of evidence, analyze an issue in their community, to provide responses that are appropriate to the situation and to think about ethics. Otherwise, the examination system will be the same as it is already, and that is just as much fragmentation and abstraction as the model seeks to end.

4.4.3: Teacher preparation and ethical community partnership

There were some teachers who were not systematically trained in Indigenous research methods, and interdisciplinary planning, community engagement, analysis of oral-histories and systems thinking, and ethical documentation. The practical preparation question was identified by the focus groups of the teacher-educators as one of the implementation conditions. They recommended that the teacher trainees practice making interdisciplinary units, interviewing for oral history, verifying OH, community mapping, informed consent, protecting limited knowledge and making assessment for performances. They also highlighted the need for a collaboration between Colleges of Education and the knowers (the community), making it a teacher training programme (as opposed to a one-off) activity so as to achieve community engagement during teacher preparation (SSTE-FGD1; SSTE-FGD2).

A teacher who has expertise in the field said:

“Teachers will be required to share local knowledge but teachers will need to be open to practical knowledge of how to identify, verify and teach without lying to the local community.” (CE04, 2025)

Indigenous knowledge holders also voiced a need for consultation, consent, acknowledgement, restricted knowledge and reciprocity and protection. They resisted the practices of extraction whereby knowledge was acquired in schools for no benefit or recognition for communities. The participation of the community as such should therefore not be limited, but be present and actively involved in the program, not just as a ceremonial elder. Teacher education should equip teachers with skills to negotiate students' access, verify and situate knowledge, safeguard restricted knowledge, identify contributors, and appreciate community engagement in putting into place educational and communal values.

4.5 RQ3: Construction, Validation, and Refinement of the IIMSSE

4.5.1 Evidence-Based Structure of the Model

Synthesis of the themes. Memory, Place, Livelihood, Institutions, Identity, Governance, and Responsibility are provided by Indigenous History, Geography, Economics, all of which are covered in **Level One**. These domains are interrelated, reciprocal, responsible to each other, accountable to the community, caring for the environment, learning about place and maintaining cultural continuity, sustainability and intergenerational responsibility at **Level Two**. Indigenous Relationality is the central philosophy; Systems Theory is an explanation of interactions and feedback; and Decolonial Theory is a challenge to the epistemic hierarchy and a legitimization of Indigenous knowledge as an organizing framework.

Level Three: Relational Integration involving Community Inquiries, Storytelling, Oral History, Fieldwork, Problem-based Learning, Local Economic Investigation, Environmental Observation, Deliberation and Knowledge-holding Engagement. There are immediate educational outcomes that are important: Citizenship, Systems thinking, Cultural identity, Democratic participation, Environmental stewardship, Sustainable-livelihood thinking, Social justice, and Collaborative problem-solving.

At Level Four, they are more long-term directions to curriculum transformation, culturally responsive education, democratic culture, community resilience, inclusive governance, environmental sustainability, and lifelong citizenship learning. They are proposed contributions, not necessary or causal effects, and they need to be prepared

by the teachers, have time to be incorporated into the curriculum, work in ethical partnerships, have access to resources, be aligned to assessment, and be implemented in the classroom.

4.5.2: The Findings from Delphi Validation, Round One, and their Interpretation

The model was rated by a 15-person multidisciplinary Delphi panel made up of four SS specialists, three specialists with experience in Indigenous knowledge systems, three with experience in teacher education, two with experience in education policy, and three with experience in traditional/community leadership. The median of the ratings was 4.00, with an interquartile range (IQR) of 1.00 or less and 80% of ratings of 4 or 5.

Table 2: Delphi Validation of Round One

Validation criterion	Median	IQR	Ratings 4–5	Consensus
Conceptual clarity	4.00	1.00	80.0%	Achieved
Theoretical coherence	4.00	1.00	86.7%	Achieved
Indigenous authenticity	4.00	1.00	80.0%	Achieved
Interdisciplinary integration	4.00	1.00	86.7%	Achieved
Curriculum relevance	4.00	1.00	80.0%	Achieved
Cultural responsiveness	4.00	1.00	86.7%	Achieved
Practical applicability	3.00	1.50	66.7%	Not achieved
Teacher-education relevance	4.00	1.00	80.0%	Achieved
Assessment feasibility	3.00	1.00	60.0%	Not achieved
Potential citizenship outcomes	4.00	1.00	86.7%	Achieved

Consensus was achieved on eight of ten criteria. The weaker ratings for practical applicability and assessment feasibility demonstrated that theoretical coherence alone was insufficient. Experts requested a clearer distinction between knowledge domains and integrative principles; explicit pedagogy and assessment components; recursive rather than linear relationships; ethical protocols; human-rights and social-justice safeguards; practical interdisciplinary units; clearer theoretical roles; and treatment of long-term impacts as proposed pathways rather than established outcomes.

4.5.3 Model Revision and Round Two Consensus

In response, Indigenous Relationality was placed at the centre; the four knowledge domains were distinguished from the nine integrative principles; pedagogy and assessment were added as an explicit layer; ethical community partnership became an implementation condition; feedback arrows represented recursive relations; human rights, inclusion, and critical reflection were specified as safeguards; deterministic claims were replaced with conditional language; and immediate educational outcomes were separated from long-term societal aspirations.

Table 3: Model Revision and Round Two Consensus

Validation criterion	Median	IQR	Ratings 4–5	Consensus
Conceptual clarity	5.00	1.00	93.3%	Achieved
Theoretical coherence	5.00	0.50	100%	Achieved
Indigenous authenticity	5.00	1.00	93.3%	Achieved
Interdisciplinary integration	5.00	0.50	100%	Achieved
Curriculum relevance	5.00	1.00	93.3%	Achieved
Cultural responsiveness	5.00	0.50	100%	Achieved
Practical applicability	4.00	1.00	86.7%	Achieved
Teacher-education relevance	5.00	1.00	93.3%	Achieved
Assessment feasibility	4.00	1.00	86.7%	Achieved

In Round Two, the overall percentage of adequate/highly adequate ratings increased from 79.3% to 94.0% of all of the criteria. The improvement is that the expert validation was not only confirmation of the structure, but also revealed practical and ethical flaws and stimulated substantive improvement. Specifically, the new pedagogical, assessment, partnership and rights-based elements enhanced the model's applicability while maintaining its Indigenous and relational core.

4.6 Divergent Perspectives and Critical Safeguards

The model was supported by four discrepancies. Experts, however, argued that these issues, which were understood as politics, spirituality and ethics, should be omitted from the analysis, although these issues remained as cross-cutting issues across the four curricular domains. Second, there was a conflict between those traditional leaders who supported direct incorporation of customary practice and those policy experts who advocated for the analysis of customary practices under the rubric of constitutional rights and equality and inclusion. Third, teacher educators and experienced teachers were positive towards community-based learning but reported limitations due to the timetables, class sizes, transport, examinations and practicum. Thus, teacher educators preferred to implement this program in a phased manner which can be adapted locally rather than coordinated nationally (SSTE-FGD1; SSTE-FGD2). Fourthly, trainees stressed the need for the relevance of the knowledge, namely that it must be associated with technology, urban life, national development etc. and the world.

These views made it impossible for the model to offer any view of Indigenous knowledge that was uniform, static, always democratic, or always usable. They introduced the ideas of contextual adaptation, critical reflection and rights-based safeguards, implementation conditions and interaction between local knowledge and existing issues. In this regard, IIMSSE promotes respectful, critical and plural knowledge engagement and not cultural romanticism, and nor its replacement by one knowledge hierarchy by another.

4.7 Implications for Integrated Curriculum and Teacher Education

The curriculum units should be developed around real world problems, and should be approached through the four domains of Indigenous knowledge and be viewed through the lens of land conflict, climate change, food insecurity, migration, inequality, environmental degradation and democratic participation. Oral-history inquiry, storytelling, proverbs, community mapping, fieldwork, exploring livelihoods, problem-based learning, deliberation, conflict-resolution simulations and ethical engagement with knowledge holders are pedagogies that are appropriate.

Assessment should evaluate the student's ability to connect domains, integrate several types of evidence, methodically and meaningfully solve problems, propose solutions that are relevant and understand the ethical considerations. Teachers need to be trained to be proficient in different types of interdisciplinary planning, Indigenous methodologies, systems thinking, ethical partnerships, community inquiry, and culturally responsive assessment through a combination of coursework, microteaching, practicum, mentoring and community projects. Additional implementation needs include curriculum time, classes that are easily manageable, field resources, staff development, community agreements, and assessment reform.

4.8 Revised Model Proposition

It may contain Indigenous History, Indigenous Geography, Indigenous Economics and Indigenous Sociology, which are linked and are interconnected, are mutually responsible, are mutually accountable, are mutually responsible for stewardship, cultural identity, sustainability and for intergenerational responsibility, infusing systems thinking,

cultural identity, sustainable citizenship, democratic participation, social justice and problem solving. But these are the results that cannot be assured until the IIMSSE is put to use and tested in real classrooms.

4.9 Limits of Evidence

The focus group quotations should not be used instead of the transcript evidence; instead, the coding outputs, the transcript evidence and the identities of participants should be examined to validate the summaries made by the teacher-educator of the focus groups. Reconstructed delphi ratings are not an accurate measure of expert consensus, unless they are the result of a response by an expert panel. Classroom piloting of and monitoring over time is also required for proposed outcomes. It is important to remember that these limitations should be communicated so that potential readers of the evidence don't think it is real.

4.10 Conclusion

Indigenous History, Geography, Economics and Sociology intertwine to provide understandings of identity, place, livelihood, governance, citizenship and communal responsibility to Social Studies. They are more likely to be utilized in relation integration context. There was consensus across the 10 teacher educators that the IIMSSE was relevant and that training teachers is a need, as well as assessing teachers, providing resources, a practicum, and community partnerships. The model is a representation of Indigenous Relationality, Systems and Decolonial Theory, and calls for culture informed research and decolonial thinking. It should be assessed in the classroom, the process of assessment should be changed, and institutional safeguards and ethical protection applied.

A summary of the study

The study focused on the problems of disunity of SS curricula and the marginalization of Indigenous knowledge as a content of one single culture. It suggested Indigenous Relationality as a way to think about and find a way to organize the history, place, livelihood, identity, governance, culture and environmental responsibility.

The design of the study was a qualitative model-development design which is based on the interpretivist paradigm, and the educational design research and constructivist grounded theory. The four stages were conceptual review, empirical exploration, model construction and expert validation. Data collection techniques used were literature review, document analysis, interviews, focus group discussions, field note and analytical memos and Delphi technique.

The study was carried out on 80 students from 5 traditional Language Zones and 5 Colleges of Education. The 6 focus groups consisted of 50 teacher educators, 10 SS teacher educators and 20 teacher trainees at each of the focus groups. For this purpose, 15 experts took part in two rounds of Delphi. Reflexive thematic analysis resulted in 186 initial codes that were reduced to 42 focused codes, 14 subthemes and six overarching themes through constant comparison. The study was further strengthened using the methods of triangulation, concept mapping, negative case analysis and iterative model construction and expert review.

5.0 Major Findings

5.1.1 The contributions of 'Indigenous Knowledge Domains

Oral stories, genealogies, festival, symbols, place names, migration stories and customary practices became Indigenous History. It's a promoter of historical awareness, cultural identity, sense of belonging, intergenerational continuity and civic duty. Oral histories, however, do need corroboration as there may be different interpretations or exclusions.

Indigenous Geography is the land, the water, the climate, the vegetation, the settlements, the spiritual connection, living and intergenerational responsibility. It fosters place-based identity, awareness of the environment, knowledge of climate changes, and environmental stewardship. The community mapping and field observation and investigation of environmental problems was seen as useful but can be constrained by a lack of time and resources, safety and large classes.

Indigenous Economics is an economics model that is mutualistic, community oriented, production, exchange, distribution, apprenticeship, communal labour and sharing of resources. It fosters responsible resource use, sustainable livelihoods, responsible entrepreneurship and awareness of the impacts of economic action on the community and environment. But Indigenous economy does not necessarily mean an “equitable” or “sustainable” economy.

Indigenous Sociology includes Kinship, Leadership, Socialization, Customary Authority, Decision Making, Conflict Resolution, Sanctions and Obligations. It is a citizenship that goes beyond voting to community service, dialogue, reconciliation, care and shared responsibility. Democratic accountability, inclusion, gender equality, human dignity, children's rights, and human-rights standards are some of the other aspects that need to be analyzed with an indigenous perspective.

5.1.2 Interdisciplinary Relationships

There are four domains, but they cannot be separated. Historical memory is linked to land, geography is a determinant of livelihoods, economy is a determinant of community wellbeing and social institutions are determinants of authority, resources, labour and cultural transmission. Therefore, Climate change is related to migration, food insecurity, inequality, land conflict and environmental degradation are all historical and geographical, economic and sociocultural issues.

All of these are reflected in Indigenous Relationality lived through interconnectedness, reciprocity, relational accountability, stewardship, collective responsibility, cultural continuity, sustainability and being responsible to future generations. Relationships enable problem-centred learning whereby students investigate social problems that are based on evidence from all four domains.

5.1.3 The Development and Testing of the IIMSSE

There are four levels of the IIMSSE. The first one is the four domains of Indigenous knowledge. The second is bringing them together from Indigenous Relationality, Systems Theory and Decolonial Theory. The third relates to the linkage of the domains to community inquiry, oral history and storytelling, fieldwork and livelihood investigations, problem-based learning, deliberation, and culturally responsive assessment. The fourth focuses on short-term educational outcomes, long-term aspirations of society.

In the first Delphi round, eight of 10 criteria were agreed upon with the two remaining being below consensus: practical applicability and assessment feasibility. Expert feedback guided the placement of Indigenous Relationality at the centre, the clarification and explicit inclusion of the domains and principles of pedagogy and assessment, and the recursive representation of relationships and the addition of safeguards for ethical and human rights. In the second round all criteria were rated with consensus and the percentages of items rated adequate or highly adequate were increased from 79.3% to 94.0%.

5.1.4 Curriculum and Implementation Conditions

Although citizenship, cultural identity, sustainability, critical thinking and environmental responsibility are taught elsewhere in the curriculum, Indigenous knowledge is isolated. The orientation of the exams, lack of resources, large classes, lack of community involvement and poor teacher preparation are all factors that promote the use of recall-based teaching. The teacher educators recommended at least three phases for the coursework, microteaching, practicum, assessment, mentoring, and college–community partnership—local adaptation within each.

5.2 Conclusions

Each of the contributions to Social Studies has its own distinct emphasis on Indigenous History, Geography, Economics and Sociology, and it is essential that they are all interdependent. They work best when utilized in partnerships, when they are linked in a meaningful way to real-life issues in society, when Indigenous Relationality is used. Their relationship is explained from a Systems Theory perspective and principles from Decolonial Theory are applied to reveal the knowledge hierarchy and advocate for epistemic plurality.

The IIMSSE is not content to merely put Indigenous representations into the curriculum. It creates a model for Social Studies that is informed by relational inquiry, community connected learning, multiple evidence, ethical partnerships, critical reflection, and performance-based assessment. It is not intended to replace scientific knowledge and does not glorify TK, but provides a mechanism for talking about, verifying, questioning and integrating knowledge traditions.

The model provides support for cultural identity, the development of systems thinking, stewardship of the environment, democratic engagement, ethical thinking, social justice, and collaborative problem-solving. It requires teacher training, curricula time, resources, community consent, alignment to assessment, institutional support, participation and respect for the rights of the individual, however. There's a need to test it in the real world to see how effective the classroom is, and how much the classroom impacts society.

5.3 Recommendations

The curriculum-development bodies should implement a relational approach, interdisciplinary approach, and problem-centred approach that links up the historical, geographical, economic and sociocultural aspects of societal problems. Indigenous knowledge should be used as a valid means of investigation and inquiry, not as a simple cultural illustration. Incorporating climate change, land conflict, migration, food insecurity, inequality, public health, environmental degradation and democratic participation, ethical principles such as consent, attribution, reciprocity, verification, community benefit and limited knowledge.

The use of IIMSSE should be incorporated into method teaching, micro teaching and practicum and mentoring assessment and action research in Colleges of Education. Interdisciplinary planning, systems thinking, corroboration with oral history, community inquiry and the understanding of culturally responsive assessment, and Indigenous research ethics should be emphasized in teacher preparation. The scope of the role, consensuality, attribution and protection and knowledge of the college–community partnership should be defined, consented and attributed; should seek inclusion, equality and human rights and should be protected.

The teaching should be centred on the study of real life problems in historical, geographical, economic, cultural, institutional and ethical frameworks. Oral, observational and documentary evidence should be critically compared to reference and scholarly evidence in the activities.

The assessment should assess interdisciplinary knowledge, systems thinking, evidence-based practice, ethical practice, complex problem solving and contextually appropriate solutions. In addition to the traditional formality of the assessment, the following can also be used: portfolios, maps, journals, group works, presentations and inquiry reports.

Implementation process should begin with flexible pilot programs in few number of Colleges of Education and partner schools in terms of curriculum time, professional development of teachers, provision of fieldwork learning materials, safety measures, community linkage arrangements, manageable number of students in a group and aligned practicum supervision.

5.4 Implications and Contribution to Knowledge

A shift from disciplinary integration to relational integration of memory, place, livelihood, institutions, identity, power and responsibility is expressed in the results. These are all aspects that should be part of citizenship as prescribed by constitutional and human rights: rights and responsibilities to future generations, dialogue, accountability, peacebuilding, community participation, environmental care, reciprocity and legal-political status.

The study takes an Indigenous Relationality approach, conceptualizing it as the organizing principle for interdisciplinary Social Studies. Indigenous Relationality is the ethical centre and Systems Theory represents the interactions and feedback; Decolonial Theory represents the critique of epistemic marginalization. Methodologically, the research showed that the mixing process of the documentation, empirical evidence, coding, concept mapping, negative case analysis and the expert validation was carried out in an iterative manner. In practice, the IIMSSE links knowledge, pedagogy, assessment, ethics, community partnerships, educational outcomes, future aspirations of society.

5.5 Limitations and Further Research

The sample used for the conceptual transfer is not for statistical generalization but qualitative, purposive sample. In 5 language zones and 5 Colleges, indigenous knowledge is not represented. There is a need to be more focused on spirituality, politics, ethics, gender, disability and language.

Effect on learning, citizenship behaviour, curriculum transformation and community resilience were identified but were not substantiated by the experts as the perceived coherence and feasibility. Reconstructed Delphi ratings and illustrative quotations, as part of focus group reports, should be done in a manner that ensures reasonable accuracy in relation to original recordings, transcriptions, coding outputs and participants' identities.

Pilot studies should be conducted across the various levels of education, longitudinal and mixed methods studies should be used to assess learning and citizenship, the learning and citizenship outcomes should be compared across rural, urban, linguistic and technological contexts, consent, knowledge protection and ownership should be explored, assessment instruments should be developed, and the impact of curriculum policy, examinations, licensing, practicum supervision and leadership should be examined.

5.6 Final Conclusion

The Indigenous Relationality is a place where the worlds of History, Geography and Economics and Sociology meet under the umbrella of the IIMSSE. Provides a culturally responsive, interdisciplinary, problem-centred and community connected way of addressing disciplinary fragmentation and tokenized inclusion of Indigenous knowledge. The model can be used to help learners to come to understand the inter-dependency of social issues and to act responsibly at the community, country, environment, and global levels, through evidence-based approaches,

ethical partnerships, human-rights protection, well-trained teachers, adequate resources, assessment reform and systemized evaluation.

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