



PROMOTING INTERDISCIPLINARY LEARNING IN GEOGRAPHY EDUCATION

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Abstract : This paper explores strategies for integrating interdisciplinary learning within geography education, emphasizing the importance of a holistic approach to understanding complex spatial phenomena. By incorporating insights from fields such as history, sociology, environmental science, and economics, geography educators can foster a more comprehensive and contextualized learning experience. The study highlights successful case studies, pedagogical frameworks, and collaborative projects that enhance critical thinking and problem-solving skills among students. Key findings suggest that interdisciplinary methods not only enrich geographic literacy but also prepare learners for addressing real-world challenges.

IndexTerms - interdisciplinary learning, geography education, holistic approach, critical thinking, pedagogical frameworks, spatial phenomena, real-world challenges.

INTRODUCTION

The main objective of all education is to develop an autonomous learner who can effectively engage with the community. Interdisciplinary education aims to impart knowledge about various disciplines. It encourages students to blend knowledge, methodologies, and ideas from different fields of study. It motivates them to engage in a professional manner. It allows students to combine skills, facilitating their understanding by connecting concepts across disciplines, and using this knowledge to solve complex problems. This approach leads to a comprehensive understanding of how to apply a wide range of knowledge in a particular field and promotes innovative thinking. Assessment is the final step in this process, and it plays a crucial role in evaluating students' comprehension of geography topics and their critical thinking abilities. Field et al (2004) argue that assessment can be enhanced by involving students actively in evaluating and directly testing the key assumptions and implications of their work. This aligns with NEP's statement on the importance of being globally-oriented and producing students who possess definitive proficiency. This approach will provide better employment opportunities and enable individuals to achieve their career goals with self-determined professional motives.

Overview of NEP 2020

National Education Policy 2020 is the third education policy in the history of India after independence. The government of India believes that the education sector is the key for the change and development in the country. So, from time to time it has changed its education policy in the interest of the nation. The changes in policy of education also aim in changing the system and structure of education in the country. For example, opening of Navodaya Vidyalayas, Kendriya Vidyalayas, independent schools, special schools for the disabled etc. NEP 2020 is a comprehensive framework for primary education to higher education as well as vocational training in the country. It also includes madrasas, and training given in madrasas. The policy of the education starts with a small village and goes up to international level. The main focus of the government is to bring the entire spectrum of education under one umbrella. Any change in the education system, its steps, methods are designed in such a way to reach the entire spectrum of the education in the country. Like first step, the government has conducted the national level quiz on the NEP to address and make aware every citizen of the country about the NEP. An entire dedicated website for NEP is made and videos are made in multiple languages to explain each and every concept of the NEP.

Importance of interdisciplinary learning in Geography Education

Education or learning at any level should always be thought of in terms of interdisciplinary programs and related courses. Starting from early education, the policy proposes to integrate different streams of learning such as basic sciences, social sciences, art, sports, and vocational skills in the school curriculum. Integration of geography with natural and social sciences will be a powerful means for developing interdisciplinary understanding. This is necessary as geographers are in fact synthesis's; often geographical inquiry sets out to view and explain how things are integrated and interlinked. In the context of NEP 2020, this integration of subjects becomes significant as the policy aims at moving away from the present fragmented knowledge delivery and towards an integrated multidisciplinary education. The idea of moving away from textbooks to a more well-rounded education is also proposed. Textbooks often exemplify traditional discipline-based boundaries that the policy is trying to blur.

The introduction of NEP 2020 marked a considerable shift in the paradigm of education in India at all levels. It is perceived as a game changer. The policy is based on the foundations of inclusiveness, development, expansion, and integrity and aims at turning

India into a world superpower of knowledge. The policy consolidates the two Ministries to form a single Ministry of Education. A distinct feature of the policy is the emphasis on science learning, universalization of education from preschool to secondary level, and multilingualism in both instruction and examination. It has also proposed setting up of a new regulatory body, the Rashtriya Shiksha Aayog, which will prepare a holistic education plan for the country, the idea of which seems to be derived from Indian philosophy.

Strategies for Promoting Interdisciplinary Learning

Simply encapsulating two different subjects into a learning module is inadequate because it does not provide the depth of knowledge and variety of experiences that are possible when they are studied distinctly and in relation to each other. Major areas of burgeoning activity in geographic education involve the linkage of the subject with others within an integrated curriculum and the promotion of learning that takes place outside the confines of the conventional curriculum. A common approach for integrating geography with other subjects involves assimilating the geography in the 'mother' subject where the teacher or textbook in say, science or mathematics, uses geographical examples to illustrate principles of their own subject. This is generally the easiest way to get teachers and pupils both to see geography's relevance to other subjects and to develop their understanding how what they learn in the geography classroom is applicable to the world at large, but it does little to create a genuinely interdisciplinary learning experience. An alternative is to adapt 'mother' subject content to promote learning of both subjects in a geographic context and vice versa. This method requires a high level of coordination between teachers of different subjects and is best carried out using a team-teaching method. A third approach is to find a common ground between subjects and teach them as a single subject with its own identity and methods but using materials and teaching from both subjects. This method therefore should take equal input from teachers of different subjects and be taught to pupils who may be exclusively of one subject class. Note that neither pupils nor teachers of other subjects can hope to gain much if the learning is simply taking one set of subject content and teaching it using the methods of the other subject. Any of these approaches can be more effective if involve formal assessment of other subjects using geography assessments or vice versa.

Integration of Geography with other subjects

It is generally believed that in the current education climate in many countries, an isolated geography curriculum is not beneficial to the development of the subject and its broader educational goals. This is particularly relevant as geography is losing its place as a core curriculum subject in many countries and schools. An integrated curriculum provides an opportunity for showing the importance of geography to the understanding of broader issues and facilitating learning from other subjects. This can be critical to the preservation of the subject.

The National Council for the Social Studies in the United States takes the view that social studies and, by inclusion, geography are ideal vehicles for the realization of integration because they can be used to pull together knowledge and information from various subjects in order to address complex issues which are not narrowly defined. This is in contrast to the teaching of subjects in isolation, where subject specialists often regard their field of expertise as an end in itself and the mastery and retention of subject-specific content may overshadow the broader skills and understandings which are relevant to the application of the knowledge.

Integration has been defined as the development of the "concept of a structural whole, instead of learning isolated facts and techniques in subject fields" (Young, 1956). The key to interdisciplinary learning is to find a common ground between different subjects which will allow subjects to complement each other and contribute to producing a broader understanding of issues and concepts.

Project-based learning approaches

PBL essentially entails the generation of a project of any duration to synthesize a complex question, problem, or challenge. There are many types and styles of PBL, but most centre around the motivation of students to identify and use problem-solving skills. Projects are likely to cut across traditional subject matter boundaries and lead to the increased application of what has been learned. PBL is student-centered, and it provides the opportunity for the student to take control of their own learning. The teacher in this setting is more of a facilitator, and it is his/her responsibility to guide the student in the right direction. PBL is relevant and integrative and provides an intellectually honest and authentic task. Projects become in-depth studies of a topic, and students can get involved in the design, management, and completion of their project. They can utilize the community, make use of experts or resources, and build an end product preparing them for what the real world has to offer. The quality of the project is very important and should produce a constructive change of understanding and be communicated to those who have a stake in the project.

Collaborative teaching and learning methods

By grouping students in a cooperative learning environment, it has been proven that, for the most part, the student learns and retains information better. A student-centered collaborative learning opens up the field for the educator to guide and direct the learning experience. This can be done by engaging students in structured group work, having peer tutoring, or debates. Think-pair-share is a simple model to pick up and can be implemented on the spot. Students are first asked a question, then given time to think, followed by discussing their answer with a partner, and then sharing it with the entire class. This is a structured way of confronting alternate viewpoints and gauging a student's understanding of a topic.

Collaborative teaching is a refined extension of cooperative learning. Collaborative teaching is where two or more teachers from different subject areas work together, jointly teaching the students, often discussing and problem-solving together. Team teaching has a similar outcome, but is less structured. The intent of both approaches is to mix the strengths of the content area experts and provide the best learning environment for students. Unfortunately, this method is hard to implement in today's schools since it requires a modified class schedule and grouping of teachers and classes.

Use of technology in interdisciplinary learning

While multimedia resources can be effective tools for teaching students about various dimensions of global issues, they are also isolatable in the classroom and often best suited for a single discipline.

Multimedia encyclopaedias and atlases, along with educational software and the internet, provide a wealth of information for students to learn varied dimensions of the geography discipline. In an interdisciplinary sense, teachers can use these resources to help students see connections between geography and other disciplines. For example, a teacher might use a historical atlas to show students that the boundaries of present-day countries are a result of historical events and often the subject of ongoing political tension.

As many of these dimensions reach beyond the scope of the traditional paper and pencil classroom, web-based tools offer a means of efficiently and effectively executing interdisciplinary strategies. Technology serves as a link between various disciplines for which the term geography is the common factor. But while technology can support interdisciplinary learning, it can also support learning that is shallow and discipline-based.

Teachers have been using technology to support the learning process since the advent of tools like the radio and the electric typewriter. With the development of the computer and the internet, teachers have discovered new and innovative ways to use technology to support learning, and technology has become an integral part of the learning process of today's students. There is a growing movement among educators to use the potential of digital, web-based tools to bring the dimensions of their discipline into the learning process.

Implementation of Interdisciplinary Learning in Geography Education

To implement interdisciplinary learning into geography, the curriculum, upon which all educational practices are based, must change. To meet the needs of the 21st century, a revised geography curriculum would engage pupils in learning about the world as it is and how it got to be like this, focusing on the present. It would be inquiry-based, developing understanding using key questions. It would be problem-solving based, helping young people face the future with a greater degree of confidence. Modern geography in this case would act as a mentor to young people as they face the uncertainty of rapid change and complexity and it would have at its heart an education for sustainable development. Hence, it needs to be current, reflecting the nature of the discipline rather than the world around us, which is dynamic and constantly in flux. The curriculum would thus be skills-focused, promoting the use of the four capacities found within A Curriculum for Excellence. In this way, geography can help young people to be successful learners, confident individuals, effective contributors, and responsible citizens. Using these capacities should foster an environment where pupils feel that they can positively contribute to and improve the world they live in. This proactive outlook on the future is key to educating global citizens. The curriculum will be a platform for work which transcends subject divisions and should allow for the natural occurrence of interdisciplinary learning. With the traditional "subject" being central to the National Qualifications curriculum, this work will occur mostly at the level of outcomes and experiences. If teachers can identify areas where traditional subject boundaries are broken down, they may decide to deliver this work through a defined "added value" element to a given course. This could be in the form of an assignment, a unit of work, or a field study and lend itself well to education for sustainable development and global citizenship.

Curriculum design and development

Geography educators are inclined to think of curriculum as courses of study, and here is where the most prevalent type of interdisciplinary work is found. When departments or schools undertake initiatives to 'infuse' geography into the social studies, or studies of other subjects across the school curriculum, they are dealing with varying degrees of interdisciplinarity. The smallest departure from traditional geography will find educators employing common strategies to develop new foci for such courses. Often, however, new interdisciplinary courses have been developed to address issues of compelling social or environmental concern. Simulation games, problem solving, and decision-making approaches are often thought to be synonymous with interdisciplinarity, and this type of course may be fast moving toward an ideal mode. It should be noted that the outcomes of interdisciplinarity in curriculum design may take the form of student activity as well as specific changes in student knowledge.

Interdisciplinary learning creates a demand for a curriculum that can meet its goals. With the dual focus on synthesis and construction of knowledge, all subject areas and modes of inquiry present in the curriculum are seen as potential contributors to the students' understanding of the world. Effective interdisciplinary curriculum design accommodates this vision in thoughtfully conceived plans and materials. When the various subject matter and strategies are seen as resources to be used in understanding complex ideas or solving problems, the potential for meaningful student attainment is heightened.

Teacher training and professional development

The primary aim in implementing the interdisciplinary learning model is to change the way students learn, so that it corresponds to the way knowledge is actually constructed. An important part of this process involves preparing teachers to understand the principles of interdisciplinary education and to learn how to apply them in the classroom. It also involves helping them to become more familiar with the structure of the knowledge domain which they are attempting to teach. Research has suggested that when teachers simply have knowledge of the areas which other disciplines cover, they are more likely to engage in attempts to integrate that knowledge. Therefore, teacher training should be a collaborative effort involving geography educators and educators from other disciplines, with the aim of working towards a common understanding of the knowledge which is to be imparted (Lacourse, Reid and Comber, 2003). This aligns with the constructive alignment model of curriculum design (Biggs, 1999), whereby effective teaching depends to a large extent on the knowledge, conceptions and intentions of the teacher matching the conceptions which it is desired that students learn. To put it simply, active and intentional learning on the part of students demands the same from teachers and a set of common understandings regarding knowledge and effective teaching strategies are crucial. In this instance, exploration of the knowledge domain could be achieved through mapping activities and resource development similar to that which students would engage with.

Resources and materials for interdisciplinary learning

The fourth strategy in moving toward integrated study involves the process of finding, developing, and using resources and materials to support interdisciplinary teaching and learning. A variety of resources exist that can support interdisciplinary work and the focus may vary from social issues to information on specific global systems. Although the ultimate goal is to reach seamless integration of the subjects, it is important and realistic to begin by using resources that provide a bridge to the other subject. This can be done through using resource materials common to the traditional study of a single subject, but which provide many opportunities for interdisciplinary questioning. An example might be using a map to prompt questioning in science, mathematics, language arts, and social studies. Another bridge strategy is the exchange of teachers or team teaching in the shared planning and teaching of a unit. This provides more interaction than resource sharing and it allows the observation of colleagues which is an effective staff development activity. Step by step, these strategies lead the teacher to increase their understanding and ability to implement truly integrated study. An approach for the development of interdisciplinary materials is to create partnerships with university programs

or other experienced educators in order to share the time and resources needed for quality material construction. This collaboration can be quite beneficial. Although it is a demanding task, the use of inquiry to guide students beyond the simple search for isolated facts can greatly increase a student's depth of understanding in a topic. An effective inquiry activity is to simulate the process of a professional in a field related to the topic of study. This can be done through a research essay, but more interesting and interactive methods are possible such as interviews, apprenticeships, or creation of a product. Finally, in consideration of the many barriers to implementation of integrated study, there are specific teaching strategies aimed at classroom management and the facilitation of learning that can ease the process for the teacher while still providing great benefits to the student.

Challenges and potential solutions

The challenges in implementing interdisciplinary teaching have been broadly identified (Ashton et al. 1983, Szostak 1991). The most common obstacle in making connections between subjects was the planning and timetabling of joint work (Hall 1992, Little 1993). Teachers were concerned about the difficulty of finding time for extensive planning involving colleagues from different disciplines and the logistical problems of actually getting students together in one place at one time. This difficulty was highlighted in the Nuffield 14-19 Review (Anning 1997) with a case study from a school in South London. Despite very positive perceptions of interdisciplinary working by both students and the staff involved, timetable constraints made it impossible to schedule the required time. Another logistical difficulty is the recruitment of other colleagues to become involved in a particular project or topic. A teacher may have an idea about how work in their subject could be enriched by input from elsewhere, but the target colleague is often overburdened with their own work and reluctant to take on something extra. If this difficulty can be overcome, future sustainability of work between just a few individuals can also be problematic. The completion of an Action Research Project concerning a simplified model of interdisciplinary education was evaluated by teachers from the Geography and Science departments involved. They perceived that their work had been successful and beneficial for students, but they found it hard to motivate the rest of their departments to adopt these methods because they did not have a clear steer from Senior Management.

Conclusion

Promoting interdisciplinary learning in geography education achieves more than encouraging students to find out about other subject areas. It becomes a transformational paradigm that provides multimedia-enriched learning experiences for students. An important piece in the professional development of geography educators, interdisciplinary learning requires a foundation in good geography and educational theory and scholarship. This essay has tried to address that need by first framing the difficulties for geographic education in the 21st century and justifying why students need an interdisciplinary education. It then recognizes the principal characteristics of the geographic point of view and the potential contributions geography education can make to interdisciplinary learning. Examples were utilized throughout the essay to show how other educators can relate geography to their own subject areas. The essay finishes with a discussion of how geography educators could assist pupils in synthesizing what they have learned by giving them the tools to develop a meta-disciplinary understanding of complex social and environmental issues.

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