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Assessing the Continuity and Sequence of Geography Curriculum: A Case of Physical Geography at Bachelor`s and Master's Degree at Tribhuvan University, Nepal

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Abstract

This study examines the continuity and sequence in the geography curriculum at bachelor's and master's levels in Tribhuvan University. The learners are facing various learning difficulties in the classroom but insufficient attention has been paid to the curriculum. Why learners feel problems understanding any part of the courses is still an unexplored issue in this context, this study highlighted the importance of continuity and sequence in the curriculum. It is based on secondary information collected from various journals, books and the present curriculum of geography at both levels from the Dean`s office of the faculties of Humanities and Social Science, TU. The study reveals that there is a commendable degree of continuity and progression across the bachelor's and master's levels, ensuring students build on foundational concepts while exploring advanced applications. However, there is a lack of a specification table and an absence of teaching methods in the curriculum. Moreover, a lack of standard criteria for internal evaluation causes inconsistent marking. This study will be useful and serve as a roadmap for curriculum designers in the future at the university level since it reveals the gaps in continuity and sequence in the curriculum of these specific courses.

Keywords: Continuity, Curriculum, Content, Learning difficulties, Objective.

1. Introduction

The curriculum is an integral part of instructional activities that reflects the strengths and weaknesses of the institutions that offer specific degrees. Curriculum and delivery status establish a university department's global reputation and validity. Curriculum at TU is comparable to universities

in other countries. In addition, the curriculum at any level plays a vital role in achieving the objectives of a specific level. What kind of nation we want to see is primarily determined by its curriculum, so an effective and innovative curriculum not only provides a guideline to the teacher and student but also provides a way for the nation to drive in the appropriate path. Therefore, assessing the major components of the curriculum in any subject, some issues may be identified which may be fruitful in devising a relevant curriculum.

The curriculum is defined differently by different scholars based on their experiences and studies. For instance, Luitel & Luitel (2020) describe the curriculum as the content to be covered in a given timeframe and argue that it guides teaching methods. In addition, Whitson (2005) considered the curriculum as a roadmap for any subject. The curriculum can be introduced from two basic perspectives: narrow and wide. In a narrow sense, the curriculum refers to subjects taught in school or the course of study. Similarly, in the wider sense, curriculum refers to those planned learning activities or experiences provided by educational programs to the learners

Regarding the various views, Ornstein and Hunkins (2018) explained the curriculum from different perspectives. First, they introduced a curriculum as a plan for accomplishing objectives and this perspective was made popular by Tyler and Taba and is a prime example of a linear curriculum. The plan consisted of a series of actions. Nowadays, this perspective is accepted by most behavioral, management and systems experts.

Second, a curriculum can be broadly described as addressing the learners' experiences. According to this concept, the curriculum includes most of the activities that are planned inside or outside of the school is part of the curriculum. Dewey's concept of experience serves as the foundation of this definition.

Next, the curriculum can be described as a field of study with its fundamentals, such as research, theory, principles, specialists, and knowledge domains. People who use this concept typically talk about curriculum in terms of theory rather than practice. They are interested in broad historical, philosophical, or social concerns.

Lastly, the curriculum might be described in terms of content (the way we organize and adapt knowledge) or subject matter (math, science, English, history, and so on). We can also talk about content or subject matter in terms of class. Those who have adopted this notion emphasize the facts and ideas of specific topic areas.

Geography is a branch of science concerned with the study of the land surface, its inhabitants and other phenomena of the Earth. According to Subedi (2014), geography is regarded as a bridge between

natural and social sciences and it is taught as part of natural science in many universities throughout the world.

Geography education was started at Durbar High School in 1901 at the school level in Nepal. However, it was started in 1947 at Tri-Chandra College in Higher Education (Subedi, 2014; Linkha, 2021). Moreover, a bachelor`s degree in geography was started in 1949 from the same college. Raja Jaya Prithivi Bahadur Singh at the school level and Jagat Bahadur Burathoki at the college level were the leading founders of geography development in Nepal (Linkha, 2013).

The 19th-century works of Kant, Humboldt, Ritter, Peschel and Ratzel marked the beginning of the global scientific study of geography (Martin, 2005; Poudel, 2021). To advance geography as a scientific discipline, they established the scope and content of the subject (Martin, 2005). The curriculum is crucial and a prerequisite for teaching geography in schools and at higher levels. Geography Curricula vary among countries, emphasizing different sorts of geographical knowledge and abilities. Geography curriculum reflects the evolving requirements of individuals and society. Curriculum development explains a systematic process that includes educational objectives, contents, methodology and evaluation scientifically and wisely. Curriculum development is a difficult process in geography because it does not provide a precise concept at the heart of the discipline. However, the concept of geography, its major themes and traditions such as space, place, time, scale, disaster, risk and landscape are important sources of the curriculum in geography education at various levels (Poudel, 2021). In addition, Poudel (2021) claimed that the school-level curriculum in Nepal started early in the 20th century and Jaya Prithivi Bahadur Singh was the main contributor to preparing a curriculum at the school level.

Curriculum design encompasses several dimensions and examines the relationships between curriculum elements. Curriculum designers need to pay serious attention to the various dimensions of curriculum design for the perfect curriculum for certain target groups, although there are no common views on these dimensions of curriculum designs. Ornstein and Hunkins (2018) describe continuity, sequence, integration, scope, articulation and balance as dimensions of the curriculum designs. However, Taba (1962) explained four dimensions that should be considered while developing a curriculum, such as continuity, sequence, integration and scope. Among these various dimensions, only sequence and continuity are discussed.

The main objective of this study is to thoroughly assess the continuity and sequence of the present geography curriculum of Tribhuvan University at the bachelor`s and master levels. Education and the curriculum are mirrors of society and everyday life. Currently, educational issues are changing rapidly owing to the advancement of technology and information. Moreover, extremely diversified social,

cultural, political and economic factors directly influence education so, addressing the dynamics of society is necessary to assess how the curriculum is integrated with any courses is the fundamental task today. This study will be useful and serve as a roadmap for curriculum designers in the future at the university level as it reveals the gaps in continuity and sequence in the curriculum of these specific courses. Due to gaps in the curriculum, students experience a variety of learning difficulties; however, policymakers and educators are not paying sufficient attention to these factors and instead focus solely on the outcomes. Therefore, this study provides new insights into why students struggle in the classroom and why the outcomes do not meet expectations.

This study is confined to the bachelor`s and master`s degree curricula of the geography discipline of the Faculties of Humanities and Social Science. There are various courses in geography at both levels as presented in Tables 1 and 2. However, this study only assessed the continuity and sequence of Physical Geography which are denoted by Geog. 421 at the bachelor's level (Physical Geography) and Geog. 553 (Geomorphology-I) and 554 (Geomorphology-II) at the master`s level. Under the Faculties of Humanities and Social Sciences (FoHSS), there are no any study have been conducted that assessed the continuity and sequence of the geography curriculum hence, this study may helpful to the curriculum designers in future although, Subedi (2014) discussed about the overall curriculum of geography and published from Martin Chautari, Kathmandu.

2. Methodology

This study is descriptive and based on secondary data. The required information is collected from various journals, books and curricula. To analyze the curriculum of bachelor`s and master`s degrees, the required curricula were have acquired digitally from the Dean's Office of Humanities and Social Science, TU. After acquiring the required curricula, each curriculum was assessed from the perspective of continuity and sequence. Initially, the contents, objectives, pedagogies, evaluation and references are listed at the bachelor`s level and then thoroughly assessed for continuity to the master`s degree curriculum. However, the researcher felt some difficulties due to the absence of a specification table (clearly mentioned objectives in each lesson) in the curriculum. In addition, there is a lack of clear descriptions of teaching methods (pedagogy) in this curriculum. To address these limitations, this study attempts to assess both curricula in terms of their continuity and sequence.

3. Results and Discussion

It provides a brief background of geography education in Nepal. Moreover, it also highlights the brief history of the curriculum change of the geography discipline over time in Nepal. In addition, it analyzes the continuity and sequence of bachelor`s and master`s level curricula and is presented here.

3.1 The curriculum of bachelor's and master`s levels in Geography

In every discipline, classroom instruction is highly influenced by the designed curriculum and the geography curriculum has also adopted curriculum revisions to accommodate current trends and development. As mentioned, above bachelor`s levels teaching was started in 1949 by Tri-Chandra College in Nepal, at that time, this college was affiliated with Patna University, India. Thus, the curriculum for the intermediate and bachelor's level was Indian-based, and these two-level exams and degrees were granted by Patna University (Subedi, 2014). Only after the establishment of Tribhuvan University in 1960 did a self-determining curriculum begin to be developed to fit the Nepali case; nonetheless, the legacy persisted. Like other disciplines, the geography curriculum has also changed over time to meet the nation's demands. The switch from a second-year B.A. program to a third-year BA program also led to changes in the geography curriculum. Adhikari (2010) claims that the focus of geography has shifted to include human geography. Gradually, the Bachelor degree course, particularly in the Faculties of Humanities and Social Science (FOHSS) upgraded from 3 years to 4 years since the academic year 2076/77 B.S. which resulted in the revision of the curriculum. Therefore, this study evaluates the current four-year bachelor's degree program in geography. The current course of Bachelor's program in Geography at Tribhuvan University are as follows:

Table 1

Courses offered in geography for a 4-year BA program TU, 2019

Year	Course Title	Nature	Marks
First	1. Physical Geography (Geog 421)	Theory	100
	2. Regional Geography of Nepal (Geog 422)	Theory	100
Second	1. Human Geography (Geog 423)	Theory	100
	2. Geography Practical (Geog 424)	Practical	100
Third	1. Geographic Information System (GIS) and Remote Sensing (RS) (Geog 425)	Theory + Practical	100
Fourth	1. Geographic Thought and Natural Resource Management (Geog 426)	Theory	100
	2. Research Methodology and Quantitative Techniques (Geog 427)	Theory	100
Total	**7 subjects**		**700**

Source: Dean`s Office, 2024.

Table 1 shows the courses offered in geography over a four years' period in B.A. Program. The table indicates that out of the total courses, two courses comprise practical's. The courses comprised physical geography, regional geography, human geography, Geographical Information Systems (GIS), Remote Sensing (RS), geographical thought and natural resource management, research methodology and quantitative techniques. According to the present curriculum for a bachelor`s degree in the humanities and social sciences, students must select two majors and other compulsory courses.

One of the few humanities and social science subjects to begin a master's level program in the early years of TU was geography, which began teaching at the University Campus, T.U., Kirtipur, Nepal, in 1961 (Adhikari, 2010; Subedi, 2014). A similar program began at Prithivi Narayan Campus, Pokhara, in 1978 (Linkha, 2021; Subedi, 2014). Today, these two institutions offer only a master`s degree program in geography.

During the 1960s, the master`s-level curriculum mainly focused on physical aspects, such as physical geography, regional geography and practical geography were dominant subjects. There was a lack of human geography aspects in the master`s degree curriculum in the beginning; however, in 1966, human geography entered the geography curriculum at its master`s level (Subedi and Joshi, 1997; Subedi, 2014). With these changes, geography has shifted its emphasis from physical to social science (Adhikari, 2010). Moreover, in 1971, when the Nepal Education System Plan (NESP) was started and the annual system was revised to adopt a semester system, all subjects' course structures were revised, including geography. Subsequently, when the yearly system was reestablished in the 1980s, the course was revised again. Similarly, there was a revision of the Master`s degree course in geography during the 1990s and 1999. During the 1990s a seminar course was introduced, which was a fruitful course in this discipline for practical knowledge related to research and its presentation. After the 1990s, it was in 1999 that the geography curriculum was revised thoroughly because during this time, there was a switch from a 2-year bachelor`s program to a 3-year hence, it was necessary to adopt a new curriculum (Subedi, 2014). A minor revision was made in 2010 to adapt the latest scenario in the country. The Geographic Information System (GIS) and Remote Sensing (RS) were divided into two full papers, and every subject scored 100 marks in this revision.

In 2013, the TU decided to implement a semester system for master's degrees in each discipline. As a result, the geography master's curriculum was updated in 2014 in accordance with the semester system. Except for thesis writing, students pursuing a master's degree in geography needed to complete 60 credit hours in total, comprising 19 subjects of three credits each. For the first, second, third, and

fourth semesters, the allocations of credit hours were 15, 18, 18 and 9 respectively. At present master's degree courses in Geography at Tribhuvan University are as follows:

Table 2

Courses offered in geography at the MA program in TU, 2014

Semester	S. N.	Course Title	Credit Hr.	Nature
First	1	Geographical Thought -I (Geog 551)	3	Theory
	2	Geomorphology-I (Geog 553)	3	Theory
	3	Human Geography-I (Geog 555)	3	Theory
	4	Geographical Information System (GIS)-I (Geog 563)	3	Theory + Practical
	5	Remote Sensing (RS)-I (Geog 565	3	Theory + Practical
Second	1	Geographical Thought -II (Geog 552)	3	Theory
	2	Geomorphology-II (Geog 554)	3	Theory
	3	Human Geography-II (Geog 556)	3	Theory
	4	Research Methods in Geography-I (Geog 561)	3	Theory
	5	Geographical Information System-II (GIS) (Geog 564)	3	Theory+ Practical
	6	Remote Sensing (RS)-II (Geog 566	3	Theory+ Practical
Third	1	Region, Regionalization and Regional Analysis (Geog 557)	3	Theory
	2	Climate, Hydrology and Bio-Geography (558)	3	Theory
	3	Research Methods in Geography-II (562)	3	Theory
	4	Optional I	3	

	5	Optional II	3
	6	Optional III	3
Fourth	1	Geographical Problems of Nepal (Geog 559)	3
	2	Thesis (Geog 560)	6
Total	**19**		**60**

Source: Dean`s Office, 2024.

Table 2 delineates the courses available in the Master of Arts (MA) program in Geography at Tribhuvan University (TU), which commenced in 2014 and is organized over four semesters. The table specifies the course titles, credit hours, and the nature of the courses (theoretical, practical, or a combination thereof). According to the current curriculum, the first semester comprises five courses, each valued at three credit hours. Similarly, the second semester mirrors this structure, offering six courses, each also carrying three credit hours. The third semester includes six courses, consisting of three mandatory and three elective courses, each worth three credit hours. The final semester focuses on specialized and research-oriented courses, including Geographical Problems of Nepal (Geog 559) (3 credit hours) and a thesis (Geog 560) with a weight of six credit hours, underscoring its significance within the curriculum.

3.2 Continuity of the geography curriculum at the bachelor`s and master`s level

Continuity refers Continuity refers to a vertical reiteration of curriculum elements/components (Ornstein & Hunkins, 2018). Henson (2015) describes continuity as the smoothness or lack of interruptions in the curriculum across time. Throughout the curriculum, topics and skills that teachers feel students should acquire gradually reappear. Students will continue to review important ideas and abilities because of this continuity. For example, it takes a lot of exposure to different kinds of reading materials over time to become a proficient reader. Moreover, Sand (1951) defined continuity as it is the main curricular components such as understandings, skills, attitudes, ways of thinking and interests, that can be vertically repeated to connect the learning experiences from the first to the last year. For example, if developing critical thinking is important in a curriculum, then this concept will appear throughout the curriculum at a gradually higher and higher level of complexity. This ensures that the students develop mastery of the important concept or idea. One simple way to look at continuity is the idea of repeating and expanding. A teacher shares an idea one way. In the future, they return to the idea

and add another layer of complexity to it. This process is repeated over and over again until the entire concept is explained to the students. Continuity helps students to motivate towards lessons, give priority to important knowledge and skills, and make new content easy and comprehensive. But there is no hard and fast rule for the continuation but a certain level of continuity is required. Tyler (1964) highlighted its importance as it is vital to observe that there is a consistent and ongoing opportunity for the development and practice of these abilities. This implies that the same kinds of skills are going to be put into ongoing operations. Continuity of the bachelor`s and master`s degree curriculum in geography is as follows:

A. Content Continuity

- At both levels, the fundamental idea of the geomorphology content is repetition. Since this is the introduction material and each student needs to understand this basic idea to move forward with the course successfully, this is a positive aspect of the curriculum.
- Subsequently, the crustal movement is also included in both bachelor's and master's level curricula; however, at the master's level, the name is changed to tectonics.
- Following that, weathering and mass movement—two topics that are very relevant to this subject are given continuity in both curricula.
- Then, although applied geomorphology is covered in both curricula, the master's level unit is called something different, like practical geomorphology. Nonetheless, an effort was made to concentrate on its implementation.
- Lastly, the geography curriculum's final theme is the introduction of climate and weather themes, which are also covered in both curricula.

B. Objective Continuity

Although there is a lack of information regarding the precise objectives and unit-by-unit objectives at both curriculum levels, the primary goal of these two courses is to improve students' understanding of geomorphology and climatology, geomorphic processes, and landforms.

C. Methods Continuity

Both curricula do not specify specific teaching methods, but they are designed to employ conventional teaching techniques, including lectures, questions and answers, and discussions. Although each subject may require different teaching methods to enhance learning, both curricula lack these methods.

D. Evaluation Continuity

Both courses incorporate the procedures of internal and external evaluation systems. However, there aren't any consistent standards to evaluate students' performance for the internal assessment, which is mostly at the bachelor's level. Due to TU's lack of standardized guidelines, the internal evaluation systems on various campuses differed.

E. Reference Continuity

At the bachelor's level, 15 books and reports are included under the reference sections. Among these, only 1 book is getting an opportunity to be included as the reference in a master level course.

3.3 The sequence of the geography curriculum in bachelor`s and master`s level

The sequencing of topics throughout time is called sequence (Henson, 2015). The sequence exceeds continuity but is connected to it. Major curricular elements may reoccur repeatedly, but only at the same level, preventing any progressive development of knowledge, skills, attitudes or other elements. The significance of each subsequent experience building on the one before it while delving deeper and more widely into the issues at hand is emphasized by the criterion of sequence (Tyler, 1964). The order in which learners are given knowledge, abilities, and educational opportunities is referred to as a sequence. This sequence is intended to improve memory and comprehension by promoting progressive understanding, which involves going from easier to more difficult concepts. A carefully thought-out sequence enables teachers to develop a logical flow of education, ensuring that every lesson builds upon the knowledge that has already been acquired. In addition, the sequence is the order in which the information is presented to the student. It is also linked to sequence however it goes more than this because it demands not only duplication but requires progress from the simple to complex order. How many sequences are sufficient in any particular curriculum depends on the development of the student`s cognitive skills. There are four common sequencing approaches in curriculum design; simple-to-complex, prerequisite learning, whole-to-part learning, and chronological learning (Taba, 1962). The bachelor`s and master`s level curricula of geography have the following sequences identified;

A. Content sequence

- Hillslope process and forms
- Drainage basin and morphometry.
- Fluvial process and landforms

- Glacial processes and landforms
- Periglacial process
- Karst process
- Hazard and risk

B) Objectives Sequence

Additional objectives at the master's level are to provide students with the changing paradigms of geology and geomorphological knowledge and skills. Additionally, the function of landforms and geomorphic processes in periglacial, aeolian, and karst environments is taught in this course. Furthermore, it is meant to address the connection between landforms and climate.

C. Methods sequence

New goals for master level courses include lab methods and field visits for geomorphic investigation. Additionally, another new method implemented at the master level is a review of scientific papers and innovative papers connected to geomorphology. Another effective teaching strategy that will be used at the master's level is the provision of guest lectures by qualified professionals.

D. Evaluation sequence

At the bachelor`s level, 30% mark is allocated for internal evaluation, whereas 40% is allocated at the master`s level.

E. Reference sequence

The master's degree course consists of five references and eight Key readings. Five master level references and seven books (Key readings) are included in this list. Furthermore, some recently added master level references are journals that are suggested for study at the master's level.

4. Conclusion

The curriculum for geography exhibits a commendable degree of continuity and sequence progression across bachelor's and master's levels, ensuring students build on foundational concepts while exploring advanced applications. The content continuity emphasizes the importance of repetition for core topics such as crustal movement, weathering and mass movement, which are introduced at the bachelor's level and expanded upon at the master's level with a focus on practical implementation. Similarly, the objectives evolve to incorporate more advanced topics, such as the relationship between landforms and climate and the study of specialized environments like periglacial and karst systems.

However, gaps remain in the curriculum, particularly concerning teaching methods, the absence of a specification table, given less attention of regular review and stakeholders' involvement and a lack of a uniform evaluation system. While both levels rely on conventional techniques like lectures and discussions although, the master's level curriculum introduces innovative approaches such as field visits, lab methods and guest lectures, highlighting the need for these techniques to be consistently applied across both levels. Evaluation processes also vary, with a higher emphasis on internal assessments at the master's level, but a lack of standardized guidelines creates inconsistencies. The reference materials further reflect the sequence in curriculum with the master's degree curriculum where introducing recent journals and key readings made advanced studies, although there is limited overlap between bachelor's and master's references. Overall, the curriculum demonstrates a clear sequence in content, objectives, methods, and evaluation systems, ensuring students acquire a deeper understanding of geomorphology as they advance through their academic journey.

To address the identified gaps, some practical recommendation should be train faculty members through regular pedagogical workshop on active and experiential learning strategies such as inquiry based learning, problem-solving experiences and simulation activities. Moreover, the faculty also need to apply digital tools such as Mentimeter, Padlet, Quizzes in the classroom and adopting digital pedagogy. respecting the 21st century skills. Furthermore, develop standardized specification table for all geography courses to align objectives, contents, teaching methods and assessment techniques and make the use of specification table mandatory during syllabus design, review and course audit. To overcome the inconsistence evaluation system, needs to establish a centralized evaluation guideline across program, detailing types of assessment and use of rubrics for transparent and fair grading. Similarly, should implement a formal feedback system (students, alumni, employer, faculty) to add new contents in the curriculum, teaching methods and evaluation standards.

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