ISSN: 2705-4853 | e-ISSN: 2705-4861

Social Inquiry: Journal of Social Science Research

2020, Vol. 2, No. 2, pp. 38–63

https://doi.org/10.3126/sijssr.v2i2.33044

Open Access

Article History: **Received**: 18 March 2020 | **Revised**: 26 August | **Accepted**: 5 September 2020

Original Article

Gender Assessment of Teacher Education Curricula: A Case Study of Kathmandu University, School of Education

Lina Gurung[a] Roshani Rajbanshi[b]

School of Education, Kathmandu University, Lalitpur, Nepal

[a] Email: lina@kusoed.edu.np [b] Email: roshani@kusoed.edu.np

https://orcid.org/0000-0003-4268-2575 https://orcid.org/0000-0002-2839-2347

Abstract

Gender issues are prevalent in every field, and its intersection in the teacher education programme is equally important. To explore gender inclusion in teacher education, this paper analyses the curriculum and teaching/learning materials of two master's courses, namely Sustainable Development and Mathematics Education, taught at Kathmandu University, School of Education, Nepal. The course syllabus and lecture presentations were analysed using Barbara Hey's (2010) framework to explore the status of gender inclusion. Tutors' interviews are also added to cross-check the content analysis of the courses. The study found out that the gender mainstreaming in the curriculum design and implementing them in the classroom from the gender-balanced teachers remained a major drawback. The university has provided training to the teachers and revised its programmes timely, but the sampled courses had less gender integration. So, realizing the teacher may treat the subject from his/her gendered position, the delivery of the content is also equally important. There are no sexist languages and images used. However, some illustrations indicated towards reinforcing gender bias. The gender assessment has been taken from a holistic perspective, so the content delivery is equally emphasised. A gender-sensitive teacher is the utmost necessary to be responsible for avoiding sexist languages, valuing the students of all gender, and bringing gender discourses wherever is relevant and possible in the subject even if it is not in the course units exclusively. Trainings are instrumental in changing teachers' gender-biased mindset, and gender-friendly provisions can be crucial to achieving gender-related outcomes through gender-inclusive educational programmes.

Keywords: *Gender Sensitivity; Curriculum Design; Gender Assessment; Curriculum Analysis; Gender Inclusion*

Introduction

Gender is a cross-cutting issue. It persists not only in higher education but throughout the world (Khan, 2015). Higher education is pertinent in building the learners' experience and shaping their perspectives towards men and women. So integrating gender in the curriculum of higher education is very important. The curriculum is also gendered as its contents are associated with gender aspects in one or the other way. It is handled by male and female teachers differently from their students of a different gender. Gender perspectives in the curriculum should be embedded as it leverages gender equality and builds social justice. Blumberg (2015) highlights that promoting gender equity in textbooks and classrooms will promote gender equality in the country. Gender integration seeks to bring gender to the center of the curriculum by examining how gender influences knowledge development and ways of knowing (Figueira-McDonough et al., 2001). It is sensitive to the changing gender relations brought about by modernization and globalization. Therefore, it is critical to assess whether the courses reflect male and female students' needs and life experiences, encourage equal participation, and promote gender equity through activities countering negative stereotypes.

In Nepal, the recent data published in a national daily newspaper showed that there are 53.68% of girls studying in undergraduate, 47% in graduate, 17.25% in MPhil, and 20.33% in PhD programmes (Tamang et al., 2020). Though there is an increasing number of women pursuing higher education in Nepal, the number is about only one fifth in postgraduate programmes. The number has decreased from half the percentage to only one fifth. However, the exclusion of gender aspects in the curriculum is no more acceptable if higher education strives to make their curriculum responsive to social change. Since the male and female populations constitute the population together, there is a need to provide gender-inclusive education and cater to individual learners' needs on a larger scale (IBE-UNESCO, 2017, p. 74). Khan (2015) argues that women's access to higher education should not be limited only to the number count. Still, the process of educating them should be able to unlock the latches of internalised oppression, mould self-perception, and add to their

self-esteem. To challenge existing gender structures, there should be gender concerns in the teaching content and academic materials.

Marshall and Arnot (2008) emphasised that there should be a global discussion of every national curriculum concerning gender, education, and development. It explores the global significance of recent intervention on gender, particularly to girls' and women's education. Suppose gender issues are excluded in the curricula. In that case, it will reproduce gender inequalities in the public and private sphere and sustain hegemonic male regimes (Arnot, 2002, as cited in Marshal & Arnot, 2008, p. 165). So when we discuss the overall quality of education, it should incorporate gender perspectives to broadly contribute to gender equality broadly in society (Dhakal, 2019). A study carried out in Pakistan also found that the policy implementers believe that a curriculum is an essential tool for promoting gender equality. Unfortunately, gender stereotypes were portrayed through images, characters in textbooks, and female authors absent (Mirza, 2004). Needless to say that both men and women must be represented in the groups for developing or revising curricula. Analyzing the curriculum from a gender perspective focuses not only on the topics related to gender concern but also on the issues that could be related to different dimensions of everyday life of men and women in the teaching and learning process. So it is about connectedness, relativeness, and responsiveness to all the proximate aspects in content, definitions, reading materials, planning, organizational arrangement, pedagogy, and holistic environment. A gender-sensitive curriculum requires considering the effects that ideas and assumptions about gender have on students' learning experiences (IBE-UNESCO, 2017, p. 68).

Many teachers are not aware that the language they use in the classroom reinforces negative gender attitudes (Dhakal, 2017; Mlama et al., 2005). Sometimes, they may use terms and expression that girls are not good at, especially in technical or mathematical subjects. Fahim (2010) stated that most developing countries' curriculum failed to address gender concerns and mitigate gender bias in education. Therefore, it is crucial to sensitise future teachers to become agents of change in which they exercise their teaching profession in schools. Teachers need to understand how gender perspective and social

diversity can enrich the curriculum and contribute to quality education. Therefore, a gender-sensitive curriculum encourages both teachers and students to be aware of people's perceptions of gender and how it shapes their attitudes and behaviours. This kind of awareness helps the students better impact their learning outcomes and improve the teacher's pedagogy as per their own expectations led by their consciousness (IBE-UNESCO, 2017 p. 68).

Kathmandu University, School of Education (KUSOED) has been implementing NORHED QUANTICT project funded by NORAD since 2014 and it aimed at developing teachers' capacity through integration of ICT (Information, Communication and Technology), gender and indigenous knowledge while delivering the master degree teacher education programme through online distance learning (ODL) mode. The teacher education programme's curriculum analysis is important as it produces teachers whose attitudes and values are shaped by this curriculum, which will later inspire or influence the students or future teachers. The teachers were oriented before the beginning of the semester to include the gender aspects in their curriculum. Thus the purpose of this paper is to analyse the curriculum and course details of two selected programmes from the gender perspectives to identify gender stereotypes in teaching-learning contents, materials, methods, and institutional structure or efforts to make the courses gender-sensitive.

The course content, syllabus, classroom reading materials, and teachers' perspectives were analysed from the gender's perspective. There are various frameworks for curricula assessment that includes different aspects from the document analysis to the curriculum design process and delivery in the classroom. This paper focuses its assessment study based on Barbara Hey's (2010)'s guideline that includes the holistic approach from defining the needs to the gender-friendly pedagogy. The curriculum needs to be assessed and revised time and again to improve the quality of teacher education. Our study is limited to the document analysis and tutor's interview only. However, with the belief that curriculum is not only a product but its whole process of designing and delivering is equally important, based on the holistic approach of Hey, the curriculum of two courses of KUSOED was reviewed to highlight change not

only in the design of the courses but also in the delivery of the content with incorporation of gender-perspective.

Methodology

This study was conducted at Kathmandu University, School of Education (KUSOED), Nepal. There are more than 20 courses taught in different subjects of the master's degree programme. But this study focuses only on two master's degree programmes, which are Masters in Sustainable Development (MSD) and Mathematics Education (ME).

For curriculum and course analysis, Barbara Hey's (2010) framework was applied, which provided a holistic view of the programme from the perspective of institutional arrangement and content integration, stakeholder's participation, materials used, and the teaching methods used. The detailed analysis of the selected courses from a gender perspective was executed in the second stage. And the chosen courses included (i) Fundamentals of Sustainable Development (FSD) and (ii) Sociology of Sustainable Development (SSD) from MSD and (i) Teaching and Learning in Mathematics (TLM) and ICT in Mathematics Education (ICTME) from ME.

These courses were selected as they had complete course information, including course plan, reading materials, and assignments uploaded on the Moodle platform, an online learning management system used at KUSOED. The courses developed in 2016 were considered for the analysis as there were no major changes until 2019. The reading materials uploaded in Moodle were analysed. The content analysis of brochures, course syllabus, assignments, PowerPoint presentations, and reading materials were done. The texts and illustrations of the textbooks/lecture notes/ presentation were also analysed from a gender perspective. Based on the needs to revise the curriculum, the teachers were oriented towards gender-inclusive curriculum before the course. The courses' pedagogical section has been delimited only to whatever has been mentioned in the course plan and from the tutor's interview. The tutors of the four selected courses were approached for the interview. Only three of them agreed, and interviews were conducted to get their gender perspective on their courses. Mr Ghimire and Mr. Pandit were the Assistant Professors while Mr. Dhakal

was a lecturer who had recently joined the job. The interviews were audio-recorded, and critical excerpts were transcribed and used for analysis. For ethical consideration, consent was taken with the participants, and pseudonyms were used to protect the participants' privacy.

Findings

Hey (2010) has developed a guideline or analytical framework to develop a gender fair curriculum. Hey's guideline has intended to identify the parts of curricula and improve the competitiveness of higher education degrees through inclusion and innovation of relevant knowledge and foster both male and female students' creativity. No one should be excluded, segregated, or discriminated just on the grounds of a person's gender. However, such inequalities exist in teaching and learning, which are not considered important and relevant. Consequently, it will reinforce gender stereotypes in society. In this paper, the assessment of the curriculum is based on the Hey's framework. Barbara Hey (2010) has identified six components for programme evaluation of higher education and achieving gender fairness. The components are (i) Target group definition, access (2) Definition of learning needs, teaching objectives, learning outcomes (3) Definition and compilation of teaching contents (4) Compiling teaching materials (5) Teaching methods, and (6) Forms of organisation.

Target Group Definition and Access

Giving access to the programme to disadvantaged groups, including women, by encouraging marginalised groups, providing equal opportunity, and better recognizing disadvantaged groups (Hey, 2010) is the first step of gender fairness. Besides that, there should be a balance between the male and female students or teachers, different learning types, gender-balanced group of participants, and stereotypical roles for students' recruitment.

Analyzing MSD programme based on group definition and access, it was found that the programme aimed to produce educators, researchers, policy analysts, planners, and trainers. It accepts graduates from any discipline and prepares them to serve different professions and positions, and it is open to all groups irrespective of gender. The

criteria for ME is neither rigid nor as flexible. Students from math, computer science, physical science, electronic engineering can apply in ME, but it does not accept students from other disciplines besides these streams. The programme objectives have clearly mentioned that it intends to make a better image of mathematics to fulfil low mathematical attainment of female students.

All four courses and two programmes had targeted participants from all groups. Mr. Ghimire, the tutor of SSD said that the female students in MSD was increasing and now since 3-4 years there are an equal number of male and female students. The case was different in ME. On average, there was about only 10 percent of female students in ME from 2017-2019. There was no female students in 2016. There were scholarships for female students in both programmes. Even then, there were less female participation in ME, the tutor of 'ICTME', Mr. Dhakal said,

> *I accept that this subject is a male dominated subject, so we have very less number of female students. Currently, in my class, there are only two female students which does not make even 5 percent. So, the university needs to apply the strategy to bring more female students in ME.*

The tuition fees in KUSOED is comparatively higher than other universities of Nepal running similar programmes which was one of the barriers for easy access (Gurung, 2018). So the scholarship provision is instrumental in bringing financially disadvantaged female students in ME, though small in number.

The dissemination of the courses was done through the university's official website, admission announcement in national daily newspaper, social media, and various out-house training and workshops organised by the university. The classes in KUSOED were conducted in the evening time. Mr. Dhakal informed that since the target students of the teacher education programme in KUSOED were mostly day time job holders either in schools, colleges or development organizations, the class hours was kept according to their need since its initiation period. The transportation facility provided by KUSOED was limited as it covered only one way up to 8 km after the evening classes ended. However, this adds to providing access to the students

as the students can have difficulty getting home at night.

The programme brochure's information allows the students to apply either in the face-to-face mode or online mode. This provision allows the students to access the university programme even if they cannot attend the classes in person. Mr Ghimire reported that students in KUSOED could get access to their course plan, reference reading materials, lecture videos and topic-related links from the Moodle platform. He said that this online technology and the options of the online mode in their programme had provided easy access for students regardless of their gender and region.

Defining Learning Needs, Teaching Objectives, and Learning Outcomes

Learning needs, teaching objectives and learning outcomes are stated in each course objectives. In this second component of the framework, Hey (2010) emphasises the group's representation that defines the teaching needs like the involvement of gender experts and defining the learning needs by considering groups with different preconditions, experiences, and understanding of the subject-relevant gender aspects. A gender-sensitive attitude and learning outcomes are necessary to promote "non-stereotyped images of women and men" (UNESCO, 2009, p. 13), and its absence leads to an unfair learning environment. According to both MSD and ME syllabus, following learning needs, teaching objectives, and learning outcomes were observed.

MSD aims to allow and make students capable of defining the needs of subjects in different issues and situations. The programme objective mentions that it focuses on fostering employability and prepare students for entrepreneurship. The courses' critical discourses are assumed to contribute to producing visionary leaders and practitioners well equipped with theoretical knowledge and skills. In MSD, the members of the faculty board are the stakeholders who are consulted to design the curriculum and review the programme. Mr, Ghimire said, "we have faculty board which provides inputs for curriculum design and updates, but unfortunately we don't have any female members on the board." This depicts that women's perspective was not included. Further, in the process outside the faculty board, the curriculum was not reviewed or

consulted from the expert who could include gender perspective to the curriculum. Barbary Hey (2010) explains the need for gender experts who have the understanding of subject-relevant gender aspects and/or the capability to analyse gender-relevant inequalities related to the subjects of the course to be included while defining the learning outcomes. Thus gender experts were consulted at the time of designing the curriculum in MSD and ME. The brochure of ME states that formal and informal interactions were made while designing the course. It also mentions that there is always a focus on revisiting curriculum as a need to produce quality teacher educators or for their quality teacher development programme.

The objectives of Teaching and Learning in Mathematics (TLM) course include the importance of change, increasing interest and motivation of students towards the subject, enhancing creative pedagogies, focused on developing skills and practices, well planned, responsive to the emerging needs, emphasizing on constructive knowledge building attempts are made in making the course more effective in learning and teaching through learner-centered approach using pedagogies such as problem-solving, cognitive-learning and culturally-relevant pedagogy (TLM). ICT in Mathematics Education (ICTME) course focuses on individual differences in learning, such as those pertaining to motivation, reinforcement, intelligence, learning styles and the assessment of learning are also covered. ICTME emphasises long-term learning activities in daily life.

Fundamentals of Sustainable Development (FSD) course aimed at developing critical understanding of development discourse among students. The course objective mentions that it will help students realise the wider meanings, significance, indicators, and challenges of sustainable development to critically assess the role of development actors in bringing change in development perceptions and practices. Sociology of Sustainable Development (SSD) course examines the relationship between various social, economic and environmental issues with the theories and philosophies that may shape our world view on development and society.

Definition and Compilation of Teaching Contents

While designing the course, the relevant contents must be included, so integrating gender at this early phase is highly pertinent. According to Hey (2010), there should be the incorporation of gender-related teaching contents, avoidance of gender blindness and sexist examples, presentation of gender-segregated data, and topics that take into account all genders' interests. Any concrete considerations for the incorporation of gender-related teaching contents, avoiding gender blindness and sexist examples, presentation of gender-segregated data, topics that take into account the interests of women and men are evaluated in this section.

MSD programme has many topics that are of equal interest to men and women but while screening the content of FSD, it did not have any explicit topics regarding gender. FSD curriculum mentioned its objective to provide a critical understanding of sustainable development theories and practices; critically examine the economic, environmental and social sustainability in local, national and international contexts; recognizing their roles to understand practice and critically analyse comparative international perspectives and policy practices in Sustainable development. The course SSD aimed to cultivate a 'higher-order thinking' of understanding nature, society, people, and well-being within the notion of sustainability. It stated its concern for developing students' critical thinking process to observe and analyse human interaction. So both the courses seem to be very promising with providing relevant and contextual learnings to the students. However, with a quick glance at the course syllabus's available documents, the contents on gender are missing. The teacher rather claimed to have included the gender discourses by including writings of feminist scholars and avoiding the stereotypes in the assignments. Mr. Ghimire, the tutor of SSD said,

> *I agree that gender is a cross-cutting issue. I bring the discourse brought by feminist scholars such as Simone and Butler. Even when assessing the assignment, I take concern of sexist words and stereotyping imaging of women and ask the students to avoid them.*

In the ME case, the inclusion of the gender topics seems to be even far-

reaching goals. However, while discussing the different topics within Mathematics, the courses have given the importance of bringing a non-western worldview. Though it may not always be relevant to include the gender topic in various technical subjects within ME, there is still ample space for gender aspects to be brought in the classroom discussion. So to state, there is no dedicated consideration for gender-related teaching content suggested by Hay (2005). The course tutor of TLME, Mr. Pandit claimed that the course contents were revised, keeping the notion of gender balanced at the center and bringing the issues as far as possible. However, while scanning the topics, both ME courses has no explicit gender topics included. The positive aspects are that two courses lacked sexist examples and biased language. In some of the courses, based on the topic and the course objective, gender perspective can be introduced; however, it seems that there is lack of awareness in bringing gender perspective in the course, which could be brought by workshop engaging the tutor in thinking and incorporating gender perspective in the course. Furthermore, Holman et al. (2018) also suggested having an intervention to make progress in gender-biased disciplines and Mathematics is one of them.

Compiling Teaching Materials

In this fourth component, Hey (2010) focuses on the teaching materials that present and promote both genders equally, bringing flexible materials to enable individual access and contribute to break through the existing traditional divisions of labour and provide guidelines to address different stakeholders' interest and learning types within the target groups.

In FSD course, regarding learning materials, the tutors have used gender-neutral words. The articles discussed in the course are mostly by male authors and male philosophers. This will probably give a misconception that there are no female authors concerned about sustainable development. More importantly, it will make students think that the development agenda is mainly for and by men. However, there is enough flexibility for the tutors to discuss gender issues in cross-cutting themes such as economy, climate change, resource management, sustainable development, and so on. For instance, in the Post agenda 2015,

important concerns have been raised on gender issues in the reading materials. It talks about promoting income security through equal wages for men and women, empowering women, equal participation of women, traditional knowledge among women, emphasis to be focused on leadership roles that women play, etc. Likewise, there was a case for discussion that gave good examples of women's contribution to climate change. The title of the case was 'Local Efforts to combat desertification in Pakistan'.

There were other reading materials in this course, such as 'The New Agenda of Sustainable Development Goal'. This document mentioned gender equality and women empowerment as the 20th agenda of sustainable development goal. Mr. Ghimire said, '*Since the goal 5 of SDG talks about gender equality, it is highly relevant in SSD and always tries to bring gender perspective in the classroom*'. But while reading the tutor's presentation slides, it didn't discuss SDG 5 much as the slides were focused more on the other SDGs.

In SSD, the key reading material, 'The Basics of Sociology,' contained the data portraying the percentage of sociology degrees awarded at each degree by gender of three decades. Such data gave a comparative picture to the students about the status of sociology graduates by gender. However, the same book contained the biography of ten sociologists, and out of 10, there were two female sociologists. The other SSD reading was about 'Sociological Theory' and it had a chapter 'Contemporary Feminist Theory'. The chapter included the basic concepts of feminism, such as Historical Framing, Feminism sociology and gender varieties of contemporary, Feminist Theory, Gender Differences, Gender inequality, gender oppression, structural oppression, Feminism and postmodern Feminists and sociological theories of feminism.

In the SSD course, the tutor tried to balance gender issues by taking one male author and one female author for key reading materials in the first unit of the course. Likewise, the concept of gender term is portrayed in the outcomes of the second module, and the key reading is balanced with one female author and one male author. Similarly, in the third module, there is the term of exclusion, inclusion and gender. In module 4, there are readings with three male authors and two female authors. In the last module's reading materials,

there are five male authors and five female authors, which shows a balance in gender. Thus, it can be said that there has been some attempt by the tutor to be gender-balanced while selecting the book or journal authors.

The learning objectives of ME mentions that ME is focused on the proper understanding of the subject rather than learning abstract theorems but connecting the learner with the local context. The teaching materials in ICTME imparts practical digital skills such as using geogebra for teaching learning strategies. There has been use of gender neutral words such as students, teachers, children, people, researchers, carpenter, lawyer, student A, student B (no pseudo names in examples), preacher, author, creator, infant, etc. The teacher has used gender-neutral language very carefully, tactfully, and consistently in the illustrations and assignments. The PowerPoint slides had gender-balanced images while discussing the 'cognitive development theory'. Likewise, the reading text provided on constructivism in the course tried to highlight the stereotype constructs and help in changing the perspective.

> *Children tend to develop exciting and unique concepts about physical phenomena such as the one explained above and even about the social world. Children have seen only men in short hair and trousers, which is often the case in rural Indian societies. On seeing women in the same attire, children refer to them as 'uncle.' They have constructed a concept of an uncle (men) on the basis of certain characteristics. Even though they may be told that she is not uncle but aunty, and even if they seemingly accept what they are told, they may not necessarily believe in it. They may use the word auntie but continue to hold on to their earlier constructs. Our daily life experiences are replete with such instances. How about exploring such interesting ideas among children around you?*

In spite of the attempt to be gender-sensitive with language and images, some illustrations have reinforced gender stereotypes. For example, while explaining the concept of a triangle through a story, only the male characters were presented. An excerpt:

> *The flat-long-moustache-faced person with an unironed suit and typical faded Nepali cap had just entered our fourth-grade classroom. I could not make eye contact with Mr. Giant, who was our opponent-and-umpire for the whole year's game. What a pity! We were a group of helpless opponents! He went directly to the small boy who was not able to complete 'math homework'. The boy's face was already full of fear. He was silently saying that he could not understand the problem. However, Mr. Giant was too big to listen to the small boy's plea. A few days ago, the same boy was on Mr. Giant's blacklist and was threatened several times. Mr. Giant had told the boy, "If you follow me, you will pass the test and become a good person; otherwise, you will remain a cowboy.*

The conversation presents an excerpt from a reading material, which is about the math class, where there are a male math teacher and a boy. This reproduces the stigma of mathematics subjects as math is only for males. In such teaching, women and girls are less frequently mentioned, and even if they are mentioned, they are not given an active role, which aligns with the example provided above (UNESCO, 2009). Besides that, the course had only male theorists and scholars used despite adequate famous and intellectual female mathematicians contributing the same issue and theories. Female mathematicians are not given any space throughout the course.

Teaching Methods

Every tutor is different; their teaching method along with the "interpretation of curriculum, interaction with learners, and ways they assign duties and homework" (UNESCO, 2009, p. 14) is different which affects the learner's outcome. According to Hey (2010), teachers' behaviours should be suitable to address gender fairness issues and increase awareness for equal opportunities to disadvantaged groups, identify stereotypes and correct them. It should also equally address and deal with gender-related topics, involve both genders during classes and, while assessing, it should be free of gender stereotypes. Many conventional teaching methods do not give girls and boys equal opportunities to participate (Mlama et al., 2005, p. 7). It creates gender inequality in society. Even though girls and boys are given equal

opportunities, males usually dominate and lead the situation (Healy, 2009). Therefore there should be gender-responsive pedagogy, which refers to teaching and learning processes that pay attention to the specific learning needs of all genders in the classroom (Mlama, et al., 2005, p. 7). There should be the use of diverse teaching and assessment styles in order to address the different learning needs of all students (IBE-UNESCO, 2017, p. 70).

The pedagogy of the FSD and SSD in the MSD course is mostly presentation, writing reflection, group discussion, paper writing, and case analysis. Mr Ghimire said, 'The assignment in my course begins from the self-reflection where students reflect about their position in the society'.

ME is focused on pedagogical content knowledge. It emphasises Applied Mathematics courses, collaborative projects, instructor-learner conferences, specific facilitation techniques, group learning, problem-solving methods, practical-based, and skill-oriented teaching. The course has also emphasised the evidence-based approach to bring pedagogical changes. This kind of conducive learning environment familiarises students with real-world classroom problems to enhance the teaching and learning method. Even though gender issues are prevalent, interviews with two instructors of ME showed that they are aware of gender issues and they have tried to avoid gender biasness in their teaching method. During the interview, the course tutor of TLM, Mr. Pandit, "during the course delivery in the courses of ME, we have become aware with the gender issues and tried our best to address this by bringing local issues of gender, by providing cases that have gender-sensitive issues, by encouraging students to conduct research on gender issues in mathematics teaching and learning." Similarly, Mr.Dhakal said,

> *I have tried to integrate gender in the classroom while doing activities such as while using the excel sheet or creating a database, I use the equal number of girl's and boy's names. As a teacher, I will try to be less gender-biased and do not make the female students uncomfortable in any sense in learning activities. The notice of the difference between the male and female students is hardly seen in the classroom except the number representation. There is equal participation of male and female students in my class. The*

> *female students complete their task timely and I appreciate and encourage them for their work.*

The course ICTME had videos, a quiz at the end of every module, links to online sites, discussion forum, auto tutorial of software used in mathematics and different related documents uploaded for reading. The instructions to the students were given in detail to the course student-friendly to both genders. The zero module of the course begins with exploring student's information and their interest in ICT and mathematics. This pedagogy helps in connecting the students with the subject and tutors. However, no other gender topics were discussed throughout the course.

Forms of Organization

Change and reform are objectives of higher education to meet the needs of the new era (Bamber, 2009). The role of organizations is very crucial in implementing the changes and being responsive to the diverse needs of the learners or the society. An organization "reflects and replicates the values of who sets it" (Association for the development of Education in Africa [ADEA], 2006, p. 9). There are many structural obligations that hinders bringing amendment or revise the curriculum timely and responsively. Hey (2010) stated that there should be financial resources available for the needy students so that students of both genders can participate in the evaluation and further development of the curriculum. In this regard, scholarships are provided by KUSOED. This study found that all four courses by facilitated by male tutors. MSD programme facilitates students for more participation as the courses are offered even on Saturdays for makeup classes. The programme allows for credit transfer for those who have done Post Graduate Diploma Programme (PGDE) from KUSOED. This will loosen the students' load of compulsion to take all subjects. There is flexibility and support for students to complete within a specified time with a choice of taking either dissertation or two research projects. And most importantly, it allows the student to enrol either in online mode or face to face mode. It applies equally in ME. So in the forms of organization, there is no differentiation in school's different courses as the programmes run under the same structure.

Summary

The teacher education programme tried to access more women and disadvantaged groups through scholarships but since there are only male tutors, there is a gender imbalance in the teaching profession. There is less participation of female students in ME while it is equal representation in MSD. Pandelejmoni (2011) has suggested a broadened gender-balanced access to higher education in terms of subject profiles and including specialists by enabling them to critically assess gender mainstreaming programmes.

While defining the curriculum's learning needs and objectives, there is no representation of the students and gender experts, so there are possibilities of missing the rich and vital experiences of all the groups and incorporating the relevant gender aspects in courses. The inclusion of gender experts in curriculum design is essential as the curriculum is influenced by its developer's philosophical, psychological, and social viewpoints about society's functioning and the need of the individual learner (IBE-UNESCO, 2017, p. 74).

The sexist languages and images have been mostly excluded except a few illustrations that depict gender stereotypes. The reference of female mathematicians are rarely visible in mathematics discourses. Such visualization may lead girls or women to believe that ME is not for them, mapping them out of academic excellence (Aikman & Rao, 2012) in ME and further reinforces the gender stereotypes. The courses of MSD had enough space to include gender-related topics but bring those topics to the classroom is contingent on how gender-sensitive the tutor is. However, the teachers enjoyed autonomy in selecting the teaching contents and materials in KUSOED. The UNESCO EFA Global Monitoring Reports concerns the need to consider 'curriculum as a democratic tool' where teachers can deconstruct curricular materials, rethink teaching styles, redesign curricular offerings concerning appropriate and relevant curriculum aims, content, educational policy and demand of the time (Marshall & Arnot, 2008, p. 173). There are efforts to include the women writers in MSD but it lacks in ME. The successful integration of gender in the classroom is contingent on the institutional arrangement and autonomy of the teachers. Kathmandu University

has time appropriateness for class hours according to the need of the students. However, there were fewer female students in ME. The reasons for underrepresentation and the strategies for inclusion could be an issue for another study. By such excluding or marginalising knowledge about gender inequality, education may limit female students' potential to foster voice and aspiration to increase their agency (Marshall & Arnot, 2008, p. 177).

Discussion

The educational policy initiatives in Nepal for enhancing equitable access to quality education and life-long learning are aligned with International campaigns like Education For All (EFA), Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), Convention on Elimination of Discrimination Against Women (CEDAW), Beijing Platform for Action (BPfA) and so on but they do not specify about the gender mainstreaming in the curriculum of higher education as an outcome and in process. There are lots of efforts to reach the target groups of both genders. There is massification in higher education to provide unprecedented access to people in higher education, even through online and distance education but M.Ed. programme in mathematics still depicts the conventional picture where there are fewer female students. The gender-sensitive curriculum has not yet become a serious concern that can help mitigate such pathetic gender representation. Only bringing the gender-neutral images and non-sexist language is not enough. The graduate programmes are more about socializing, educating, and critiquing the gender-biased content and sexist languages. The more attention being placed in improving gender parity of access has been critiqued for its failure to take into account the diversity of contexts in which the schools and universities function and boys and girls live (Aikman & Rao, 2012). Just improving access is not enough to challenge social, economic inequalities, and power structures (Aikman & Rao, 2012).

A study carried out in universities of Pakistan in five faculties - natural sciences, applied sciences, social sciences, management sciences and Art and linguistics, concluded that graduate and postgraduate programmes were not conceived and designed to empower women in regard to the programme's structure, pedagogy, and philosophy

behind such biases for women (Khan, 2015). This will eventually deteriorate the value of education from the female learner's experience. The curriculum, therefore, has power in reality than rhetoric as it is a selection from the knowledge and it the selection it makes it represents powerful choices about what and whom society values (Unterhalter, 1999). These power inequalities in such programmes are influenced by social and cultural contexts. The delivery of contents by a teacher in the classroom is highly responsible for countering or reproducing the gender power relations because they are the people to tackle this cross-cutting issue and promote students to understand the gender perspectives in every arena of society. Teachers' role is very important in bringing gender discourses in the classroom by identifying stereotypes, allowing students' to express their critical perspectives and involving both genders equally in the classroom and assessing their performance free of gender stereotypes. Both men and women have to be equally represented in the curriculum through contents, pedagogical approach, and while planning/designing. Gender integrated curriculum helps in preventing gender discrimination in society through education. According to Aikman and Rao (2012), investigating the gendered nature of curriculum helps in comprehending the ways in which academic knowledge, teaching and learning processes and power relationships can reinforce, retain and reproduce gender inequalities, which signify approaches to transforming practices of curriculum and pedagogy.

Learners are exposed to ideas about gender through the curriculum, so mainstreaming gender issues in curricula will raise awareness of gender inequalities and start a culture of human interaction irrespective of gender (UNESCO, 2015), so it goes beyond textbooks. When female students don't see women in the pictures and discussion, they exclude themselves (Goldstein, 2007). Kathmandu University, School of Education, is autonomous, self-directed in terms of curriculum designing and implementation, so it has a lot of opportunities for modifying and creating a gender-responsive and sensitive curriculum. Acar-Erdol and Gözütok (2018) prepared a 'Gender Equality Curriculum Draft' which focused on students being able to express their ideas freely, identify the gender stereotypes or discrepancies and

its causes and impacts, know how gender roles are learned and scrutinize the problems, question the gender biased participation, develop solutions against the gender stereotypes and support the ideas to make gender balanced participation in decision-making mechanisms.

The learning experiences of the curriculum should activate critical thinking, collaborative work, creative thinking and problem-solving skills and happen in a democratic school environment. The aim of much critical pedagogy is to make clear to students that the curriculum is a site of meaning-making and the social construction of knowledge opens up possibilities of including their knowledge (Marshall & Arnot, 2008, p. 167). There is a need to use examples that students can relate to, especially when introducing gender as a concept and analytical tool (UNESCO, 2015). It should be applied while designing curriculum, executing in classroom management, teaching process and performance evaluation (Mlama et al., 2005). Learner-centered pedagogy shares most of its activities with gender-responsive pedagogy such as group work, self-reflection, valuing diversity and promoting creative and critical thinking. (IBE-UNESCO, 2017, p. 70). As suggested by Cummings et al. (2008), teachers engage students in higher education through curriculum embedded performance assessment to tie the students learning with the overall programme goals and objectives and for enhancing student-faculty involvement and modify the programme under meaningful ongoing process.

Conclusions

In conclusion, the curriculum of Mathematics Education and its courses' description support gender-friendly pedagogy. However, the teaching and learning materials from the gender perspective are not adequate as it does not bring the female authors' writings and female mathematician's contribution to the academic discourses of ME. Furthermore, some illustrations still reinforce gender stereotypes even after a clear gender orientation is provided to them. Though the MSD programme has a separate course on gender, the sampled courses for the study tried to include gender discourses to some aspects in its teaching. Still, the teaching method is very generic, which may not address the diverse needs of learners from the gender perspective. There has been an institutional arrangement to address the students'

practical needs with time appropriateness and scholarships. However, the gender mainstreaming in the curriculum design and implementing them in the classroom from the gender-balanced teachers remained a major drawback. The university has provided training to the teachers and revised its programmes timely, but the sampled courses had less gender integration. So, realizing the teacher may treat the subject from his/her gendered position, the delivery of the content is also equally important. The gender assessment is about the contents in the syllabus and who puts the topics and how it is being presented. A gender-sensitive teacher is necessary to be responsible in avoiding sexist languages, valuing the opinion of the students of all gender and bring gbringing discourses wherever is relevant and possible in the subject even if it is not in the course units exclusively. Trainings can help to change the gender-biased mindset to a more open, receptive and gender-sensitive teacher (World Health Organization, 2007). Blumberg (2015) suggests that training should apply the gender-balanced representation, less gender-stereotyped portrayals of the attributes, activities, and bring explicit and positive gender content. According to ADEA (2006), the first step of the curriculum's transformation is the sensitisation of tutors for gender sensitivity; therefore, this study also recommends providing training to tutors for gender sensitivity. Such training helps them be aware of the multiple contexts and include women's experiences in constructing knowledge. Velasco (2004) reports that in many countries, neither the curriculum developers nor teachers have given the necessary training for building their capacity to incorporate gender analysis in their subjects and teaching styles according to the diverse learning needs of boys and girls (as cited in Aikman & Rao, 2012). The agency and gendered identities should not be neglected both as individuals and professionals are crucial in actualizing quality education (Aikman & Rao, 2012).

In future studies, in-depth interviews with the teachers will help to explore how they deliver the contents, either reinforcing or challenging the gender stereotypes through their teaching and assessment. Teachers are the agent of change in society by addressing society's social problems by educating their students. The pedagogy should promote critical reflexivity, creativity, problem-solving, and collaborative

classroom activities to foster their ways of knowing from their gendered positioning in the society in specific to female students. So the gender-sensitive curriculum is not only about content integration; it is more about enactment, contextualization, and responsiveness to the changing paradigm of the society. According to Marshall and Arnot (2008, p. 167), the curriculum represents a core development capability if made gender-sensitive, offering girls' agency and autonomy, aspiration, and voice.

This kind of curriculum assessment has been carried out only from the individual and institutional level only. Since the carefully designed gender-responsive and sensitive curriculum has a broader long term effect, its assessment has to be carried out from the government level or produce a detailed guideline on developing a gender-sensitive curriculum with embedded gender pedagogy. Nepal government's evaluation studies are not enough in the higher education in different streams identify gender disparities in curricula, understand the experiences of learners and teachers in their gendered lives, learn the impact of gender entrenched curriculum and interrelating to seek multi-faceted strategies to address gender inequalities through the curriculum in higher education.

Acknowledgement

We would like to thank the NORHED QUANTICT project funded by NORAD and its implementing partner Kathmandu University School of Education, for providing us with the opportunity to make this study happen.

Disclosure Statement

The authors declare that no potential conflict of interest exists.

References

Acar-Erdol, T., & Gözütok, F. D. (2018). Development of gender equality curriculum and its reflective assessment. *Turkish Journal of Education*, *7*(3), 117-135.

Aikman, S., & Rao, N. (2012). Gender equality and girls' education: Investigating frameworks, disjunctures and meanings of quality education. *Theory and Research in Education. 10*(3), 211-228. https://doi.org/10.1177/1477878512459391

Association for the Development of Education in Africa. (2006). *A toolkit for mainstreaming gender in higher education in Africa*. Association of African Universities.

Bamber, V. (2009). *Enhancing learning, teaching, assessment and curriculum in higher education*. McGraw-Hill Education.

Blumberg, R. L. (2015). *Eliminating gender bias in textbooks: Pushing for policy reforms that promote gender equity in education* (Background paper). University of Virginia.

Cummings, R., Maddux, C. D., & Richmond, A. (2008). Curriculum-embedded performance assessment in higher education: Maximum efficiency and minimum disruption. *Assessment & Evaluation in Higher Education, 33(*6), 599-605.

Dhakal, R. K. (2017). Going beyond fair treatment: Promoting gender responsive education in Nepal. *Laingik Samabikas Shiksha* [Gender Equality Development Education], *18*, 139-145.

Dhakal, R. K. (2019). Promoting gender inclusive governance to deliver better education in Nepal. *International Journal of Social Sciences & Educational Studies, 6*(1), 83-95. https://doi.org/10.23918/ijsses.v6i1p83

Goldstein, J. (2007). Gender in the IR textbook and beyond. *International Studies Perspectives*, *8*(3), 320-322.

Gurung, L. (2018). Administrative improvement in bringing more students in ODL teacher education program: A case of Kathmandu University, School of Education. *NSOU Open Journal. 1*(1), 1-6.

Healy, D. (2009). The representation of women and men in a modern EFL textbook: Are popular textbooks gender biased? *Memoirs of the Osaka Institute of Technology, Series B, 54*(2), 91-100.

Hey, B. (2010). *Guidelines on gender fair curriculum development.* WUS Austria.

IBE-UNESCO. (2017). *A resource pack for gender-responsive STEM education.*

Holman, L., Stuart-Fox, D., & Hauser, C. E. (2018). The gender gap in science: How long until women are equally represented? *PLoS Biology*, *16*(4).

Figueira-McDonough, J., Netting, F.E & Nicholas-Casebolt, A. (2001). Subjugated knowledge in gender-integrated social work education: Call for a dialogue. *Affilia-Journal*

of Women and Social Work, 16(4), 411-431.

Khan, S. Z. (2015). *Higher education for women: A self-empowerment and gender perspective.* Pakistan Institute of Development Economics.

Marshall, H., & Arnot, M. (2008). Globalising the school curriculum: Gender, EFA and global citizenship education. In S. Fennell & M. Arnot (Eds.), *Gender, education and equality in a global context* (pp. 165-180). Routledge.

Mirza, M. (2004). Gender analysis of school curriculum and textbooks. UNESCO, Islamabad.

Mlama, P., Dioum, M., Makoye, H., Murage, C., Wagah, M., & Washika, R. (2005). *Gender responsive pedagogy: A teacher's handbook.* Forum for African Women Educationists.

Pandelejmoni, E. (2011). Gender mainstreaming curricula in higher education at the University of Tirana. In L. Grünberg (Ed.). *From gender studies to gender in studies: Case studies on gender-inclusive curriculum in higher education.* UNESCO-CEPES.

Tamang, S., Kunwar, M., Karna, S., & Taylor, M (2020, March 8). Shabda ma samanta: Baywahar ma bibhed (Equality in words: Discrimination in practice). *Naya Patrika Daily*, p. 1. *https://www.nayapatrikadaily.com/epaper/08-03-2020*

Unterhalter, E. (1999). Globalization, gender and curriculum 2005. *Agenda: Empowering Women for Gender Equality*, *41*, 26-31.

UNESCO. (2009). *Promoting gender equality in education.*

UNESCO. (2015). *A guide for gender equality in teacher education policy and practices.*

World Health Organization. (2007). *Integrating gender into the curricula for health professionals.*

Author Biosketch

Lina Gurung works as a Gender Coordinator under NORHED QUANTICT project at Kathmandu University, School of Education. She is a visiting faculty as well as a Norhed PhD Scholar at Kathmandu University, School of Education. She has more than two decades of teaching experience in schools, colleges and university in different levels. Her interest of research area are ICT use in higher education, Online and Distance Education, Gender and Development, Gender and Technology, Digital Divide, Feminist pedagogy, Gender responsive curriculum and Women and media.

Roshani Rajbanshi, PhD is a post-doctoral fellow candidate under NORHED fellowship at School of Education, Kathmandu University, Lalitpur, Nepal. She earned her PhD in Curriculum and Instruction from New Mexico State University with major in Educational Learning Technology and minor in Biology. She wrote many STEM related curriculum guides for summer institute and afterschool programs. She is interested in doing research STEAM education, Professional development for teachers, Gender responsive curriculum, Technology use in classroom and science education.

To cite this article: Gurung, L., & Rajbanshi, R. (2020). Gender assessment of teacher education curricula: A case study of Kathmandu University, School of Education. *Social Inquiry: Journal of Social Science Research, 2*(2), 38-63. https://doi.org/10.3126/sijssr.v2i2.33044