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Todd Wallenius

Barbara Grossman-Thompson

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## Challenging Hegemonic Gender Norms through STEM Education in Nepal

Todd Wallenius<sup>1</sup> and Barbara Grossman-Thompson<sup>2</sup>

### ABSTRACT

*Aid and development have long targeted schooling as a primary site of intervention in Nepal. However, scant research has explored perceptions of development among educators themselves. This study considers how Nepali educators understand themselves as beneficiaries and agents of development within the context of a U.S. Department of State funded education program. Further, the paper considers how educators understand hegemonic gender norms, and how their participation in this program may challenge them. The study suggests that the program – as part of larger development initiatives – is a location and context through which girls’ and educators’ identities are negotiated in Nepal.*

Keywords: STEM education, gender, development, Nepal

### I. INTRODUCTION

Through the Four Point program funded by the United States in 1951, Nepal received its first direct foreign aid payment of US \$2000 (Whelpton, 2005). Since then, foreign aid and development efforts in Nepal have been inseparable, operating as twin, synergistic processes (Panday, 2011). Though Nepal has a long history of home-grown education initiatives (Sharma, 1990), foreign aid has targeted schooling as a primary site of intervention. While foreign aid for educational programs flows into Nepal under a ‘politically neutral’ guise (Panday, 2011), these programs, and the development discourse that frames them, have ideological consequences. In particular, education programs that target girl children confront hegemonic constructions of Nepali womanhood, which have historically disapproved of girls’ education. The encounter between competing ideologies has led to a process of identity negotiation for educators, students and parents alike.

This study explores how Nepali educators understand themselves as beneficiaries and agents of development within the context of a U.S. Department of State funded education program. Further, it considers how educators understand

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<sup>1</sup> Corresponding author, and teacher in the International Baccalaureate Diploma Programme, Ullens School, Kathmandu, Nepal. Email: wallenius.todd@gmail.com.

<sup>2</sup> Assistant Professor in International Studies at California State University Long Beach, Long Beach, California, USA. Email: barbara.grossman-thompson@csulb.edu.

hegemonic gender norms, and how their participation in this program may challenge these norms. We examine educators' perceptions through the concept of *bikas*—the Nepali word for development. In popular consciousness, *bikas* describes anything new or foreign (Pigg, 1996). As a concept, however, it is frequently juxtaposed with the traditional and historic culture of Nepal, which is understood as rural, pastoral and bound by hegemonic Hindu norms. Thus, being *bikasit*, or 'developed,' has a practical, cultural, and economic value that enables one to operate in the wider, modern world of development. Although it is widely acknowledged that schools are a primary site of development (Shrestha, 1993), according to our knowledge, scant attention has been given to Nepali educators themselves—a gap this research addresses.

## II. GIRLS GET STEM SKILLS

Funded by the U.S. Department of State, the Girls Get STEM Skills (GGSS) program provided 254 girls in grades 6, 7, and 8 with foundational science, technology, engineering, and mathematics (STEM) skills during an eight-month period spanning 2015-16. GGSS took place at three government schools that were identified as having a large population of traditionally under-served students in Pokhara, Nepal's second largest urban centre. Empowering Women of Nepal (EWN), a NGO founded and run by Nepali women, served as the implementing organization and helped teachers conduct and coordinate STEM classes throughout the duration of the program.

The GGSS program was designed to bridge the gender achievement gap in Nepal by providing girls with training in core STEM skills. GGSS used targeted instruction of pre-STEM skills, such as computer literacy and problem solving, to address women's low representation in Nepal's skilled work force. While many empowerment-based programs focus on providing skill training to women already on the job market, GGSS addressed the problem at the secondary education level. By intervening at the secondary school level, before girls are tracked away from vocations in STEM, GGSS aimed to attract girls to high skill careers and avert inter-generational deficits in education.

The GGSS program also sought to affect the attitudes of parents, classroom teachers, and school administrators about the capacity of girls to excel in STEM subjects. Long-term goals included creating lasting shifts in schools' approach to teaching girls in pre-STEM skills. In this way, the GGSS program did have overt ideological intentions that explicitly labelled girls' absence in STEM fields as both a material and cultural problem. To prepare schools to implement the GGSS curriculum a leader of the GGSS grant team trained participating teachers, administrators, and EWN staff over a two-day orientation program in Pokhara.

## III. METHODS

We chose a thematic analysis design for this study. Our research questions included, 1) what perceptions do GGSS educators have of the gender imbalance in STEM fields of study? and 2) how do GGSS educators view themselves in the context of Nepal as a 'developing'<sup>3</sup> nation? Participants were recruited and selected from

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<sup>3</sup> The term "developing" is used in quotation marks to acknowledge its contested and

teachers and administrators who taught or implemented the GGSS program at three Pokhara area Secondary Schools in 2015-16. EWN provided an existing list of GGSS educators and facilitated introductions between researchers and participants. All three GGSS participating schools and the EWN main office in Pokhara, Nepal were visited.

A total of 18 Nepali educators were interviewed. This included 10 individual interviews and two focus groups consisting of six and two educators respectively. The interview protocol, based on the research questions, was semi-structured and open ended. During interviews, participants chose a pseudonym and completed a demographic questionnaire. Each interview lasted approximately 30 minutes. At the end of the interview, participants were given the opportunity to change their responses or express anything not covered in the interview. Focus Groups were arranged for participants who preferred group discussion to individual interviews. Two classroom observations were also conducted at the invitation of teachers.

All recorded data was transcribed along with field notes. Thematic analysis was preferred to the grounded theory approach to understand the social phenomena of the GGSS program itself rather than produce an overarching theory. Through an iterative process, 43 initial codes were synthesized into major themes. The findings are presented below in their thematic sections.

## **IV. FINDINGS**

### **4.1 Social and Cultural Restrictions**

Gender imbalance in STEM was widely acknowledged as a ‘problem’ among GGSS educators, who cited a variety of cultural and social reasons for the educational gap (Ijon<sup>4</sup>). Many pointed to family pressure to get married as a factor that restricted girls’ access to education. Deepak, a science teacher, explained, ‘most of the parents have the concept that girls have to get a nice family environment and a nice caring husband.’ He continued, ‘[Parents] say, “hey, you have to handle your home, you have to go into the home of your husband,” like that.’ Deepak’s reference to ‘the home of your husband’ refers to the traditional marriage practice in which women leave their natal home to live with her husband’s family. His comments demonstrate recognition that traditional Nepali marriage practices disincentivize families from investing in their daughters’ schooling. Girls’ education is not seen as a worthwhile investment because they ‘go to someone else,’ meaning their earnings will not stay within their natal family (Chandrakanta).

Educators also pointed to ‘male dominated’ Nepali society as restricting girls’ education (Sagar Rana). Chandrakanta explained, ‘the thinking we have in Nepal is poor towards the girls. In our society, girls have to suffer the family.’ Educators’ comments disclosed their understanding of women’s historical confinement to the private realm. Ijon divulged, ‘parents do not allow girls to go outside from the home.’ As a result, ‘girls face many difficulties to study technical subjects because they have to go to outdoors and parents do not allow them to go’ (Ijon). Ijon’s reference of ‘outside’

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problematic nature (Sachs, 2010).

<sup>4</sup> All names are self-selected pseudonyms.

and ‘outdoors’ is an acknowledgement of parental preferences for girls and women’s domestic seclusion. For the parents of young girls, ‘outdoors’ refers to participation in the public spheres of education and wage labor, arenas which have not been historically welcoming of women.

### **Need for Development**

14 out of 18 educators mentioned Nepal’s lack of material resources as a major social and educational challenge. Referring to physical conditions, Deepak stated, ‘most of the Nepali people are living in scarcity.’ He continued, ‘we don’t have much, we don’t have many available resources.’ Similarly, Ijon lamented, ‘important materials are not at our school,’ and continued ‘we have no projector and no teacher’s laptop.’ A dearth of materials meant Nepali schools were unable to teach students effectively or efficiently. Educators viewed the absence of material resources and education as a reflection of Nepal’s lack of *bikas* or development. Devid, a computer teacher, explained, ‘Nepal is [an] underdeveloped country, you know very well. In Nepal, many students are ignorant of education, skills, and training programs.’ Devid’s expression ‘you know very well’ reveals a universal view of Nepal’s underdevelopment in comparison to the West. Devid’s emphasis on ‘you’ pointed to his acknowledgement of the researcher’s position as a white male westerner from a *bikasit*, or developed, country who would clearly recognize the comparative lack of resources in his classroom.

### **Beneficiaries of development**

As a result of Nepal’s perceived underdevelopment and material lack, educators viewed themselves as beneficiaries of ‘resources from donors.’ School principal Abhishek was ‘proud to get this project here,’ as the GGSS program had energized the school community. Educators saw the program as ‘a great chance,’ for students and themselves. Deepak Paudel explained, ‘we taught them and we learned at the same time.’ As a result, teachers described becoming ‘updated in language and learning.’ ‘Updated’ in this context reveals the modernity’s influence in Nepal, where knowledge of science and the English language can greatly increase one’s social and economic standing. Seeing themselves as beneficiaries of GGSS, educators offered ‘thanks to those like you who provide us this chance.’ The phrase ‘those like you’ again reflects *bikas*’ colloquial association with foreign aid and foreigners, particularly white Westerners. Shyam described himself as ‘waiting’ for ‘another program to be provided to us,’ revealing the manner in which one-off programs like GGSS can lead to failed initiatives by preventing locals from integrating projects with existing processes or tasking locals with the upkeep of expensive programs.

### **Agents of Development**

Educators’ perceptions showed that they understood and embraced the GGSS program’s mission to challenge hegemonic gender norms. Kancho, a science teacher, reflected, ‘for this problem to be addressed, we have to erase the misbeliefs or myths of our society.’ Accordingly, educators saw themselves as preparing girls for a ‘career in the computer line or as a computer engineer,’ directly challenging the Nepal’s dominant gender roles (Deepak Paudel). Kancho explained his success in this endeavor, ‘Before the program we asked the girls, “What do you want to be in future?”’ He continued, ‘The girls’ aim changed after the duration of the program. Some told us, “we want to be

a lecturer like you,” and some told us, “we want to be like software engineer, computer engineer.”” Accordingly, educators advocated for the expanded implementation of the STEM program. Babu Paudel recommended, ‘take this program to the remote site of the Karnali River,’ an isolated region viewed as deficient in development. Devid suggested, ‘continue this program whenever, in any corner of world, in Nepal, or anywhere,’ pointing to the need to bring *bikas* to any and all remote regions. By embracing GGSS aims and advocating for the expanded implementation of *bikas*, educators’ revealed their perception of their position as agents of development.

## V. DISCUSSION

This study points to an ongoing tension in Nepal between hegemonic gender norms and development ideals. Through the GGSS program, girls were taught to participate actively in their education and pursue high skill and high value STEM careers. At the same time, however, women are met with persistent hegemonic gender norms that counter these exhortations. Hegemonic norms that disapprove of women’s nobility and visibility in public space continue to have tremendous power in Nepal. Thus, as Grossman-Thompson (2017), in her work on contemporary gender norms in urban Nepal explains,

while the ubiquitous development discourse urges women to “modernize” through higher education, political participation, and capitalist productivity, hegemonic norms promoting women’s domestic role inhibit women’s ability to participate equally in the promises of modernity (p. 489).

These competing visions of modern Nepali womanhood present a challenging mix of directives for girl students navigating their path to adulthood.

A principal impact of the STEM program for girls may be an exacerbation of the ideological tensions between hegemonic gender norms and *bikas*. For young Nepali women increasingly negotiating between development discourse and high-caste Hindu gender ideology, programs such as GGSS are the locations and context in which modern girls’ identities are mediated. While GGSS supports the ‘empowerment’ message of development discourse, its conflict with dominant gender norms leads to a slippery social landscape for girls to traverse. How, then should GGSS participants ‘make sense of these competing visions of modern Nepali womanhood?’ (Grossman-Thompson, p. 502)

In addition to providing a space in which girl students shape their identity as modern young women, the GGSS program is also an arena where educators come to understand their role in Nepal’s development agenda. Educators’ dual understanding of themselves as beneficiaries and agents of development demonstrates how development discourse is accepted and then perpetuated by educators in Nepal. Education, as a critical aspect of a *bikasit* (developed) identity, has been a historical point of intervention for development programs. Thus, it is not surprising that educators understand themselves as part of a *bikas* vanguard. The GGSS program not only functioned as a vector of STEM skills transference from trainers to teachers to students, but also served as a medium for the transfer and circulation of ideas about the politics of gender, development and Nepali cultural norms more broadly.

By examining the perceptions of GGSS educators on their role in challenging hegemonic gender roles through participation in development programs, we emphasize the importance of viewing development interventions from the middle, where ideology and implementation converge (Hindman, 2002). Educators are in a unique position to act as conduits for the dissemination of development discourse from both foreign and local development institutions. Educators' understanding of their role as mediators between development programs like GGSS and the 'targets' of development efforts is a particularly rich source of data on the convergence of the discourse of *bikas*, gender norms, educational systems and cultural change. This research suggests that in the case of Nepal, educational institutions are both a locus of skill and knowledge transmission as well as a locus of ideological shifts, which have equally important implications for development writ large.

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