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Gender and Development Integration in the Curriculum towards Inclusive Education

Helen B. Boholano [1], Ike Revita [2], Debie Joyce B. Villaver [3]
[1] *Cebu Normal University, Philippines*
[2] *Universitas Andalas, Indonesia*
[3] *Cebu Normal University, Philippines*

Corresponding Author: Name, Helen B. Boholano E-mail; boholanoh@cnu.edu.ph

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ABSTRACT

This study investigates how students' attitudes regarding gender roles, academic success in STEM disciplines, and involvement in gender-related activism are affected by the inclusion of gender in development courses. In order to provide a thorough understanding of the consequences of gender integration, the study uses a mixed-methods research design that draws on feminist theory, social learning theory, and critical pedagogy. While qualitative analysis focuses on students' participation in gender-related activity, quantitative analysis looks at changes in students' perceptions toward gender roles and academic success in STEM disciplines. The results demonstrate the beneficial effects of gender integration on students' perceptions of gender roles, with inclusive curricula challenging prevailing prejudices and enabling learners to adopt more equitable viewpoints. Students are shown to be motivated to participate in gender-related activity by gender integration. Inclusive curriculum encourages active engagement and help to bring about social change through bringing attention to issues, advancing social justice, and giving students the tools they need to confront gender inequality. Overall, this study emphasizes how important it is to integrate gender perspectives into the classroom in order to establish welcoming and equal learning environments. The findings underscore the necessity to include gender-related concerns in educational policies and practices and add to the body of research on gender integration. Society may work toward gender equality and enable people to be change agents by adopting inclusive education.

Keywords: *gender equality, gender integration, inclusive education, STEM curriculum*

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INTRODUCTION

Gender inequality is a pervasive problem that affects people around the world (Lala, 2021; Phillips & O'Donnell, 2021). One of the best ways to deal with this problem is through education, which gives people the knowledge and abilities they need to question social norms and fight for their rights (Gui dkk., 2020). However, gender inequality and gender stereotypes have frequently been reinforced by conventional educational models, particularly in the fields of science, technology, engineering, and mathematics (STEM) (Naylor dkk., 2021). The significance of gender equality and diversity in education has recently gained more traction. Education is a potent tool for fostering social change and growth and plays a significant impact in determining people's attitudes, beliefs, and behaviors. It is crucial to assess the effects of gender integration in development curriculum within the context of inclusive education in order to ensure equitable chances for all students. In order to promote inclusive education, this study justification examines the role of gender integration in development curricula.

Gender integration in development curriculum has garnered more attention in response to this problem. The European Institute for Gender Equality (2016) describes this strategy as looking at how gender roles and norms affect social and economic growth and incorporating this information into educational programs. Gender integration can thus contribute to the development of an educational system that promotes equity, diversity, and inclusion. The study will examine the impact of gender-integrated development curricula on students' attitudes towards gender roles, their academic achievement in Science, Technology, English and Mathematics (STEM) fields, and their engagement in gender-related activism. Gender integration in education may benefit both male and female pupils, according to prior study. A gender-integrated science curriculum, for instance, has been shown to boost female students' interest in science and their self-efficacy in STEM fields, according to Kalaitzidis and Pearson (2017). Similar findings were made by DeWitt and Archer (2014), who discovered that male students who took a gender-integrated English course had more knowledge and empathy for women's experiences.

Achieving transformative action, policy, and change toward sustainable education management requires gender equality. Education has been recognized as a tool and a resource that may help women become more powerful by improving their lives and promoting social equality, which will advance sustainable development (Palanisamy dkk., 2019). In the study of Iqbal (2022) gender inequality is more prevalent in developing nations in contrast to the industrialized world. These disparities arise because of subpar economic circumstances, a lack of education, the effect of religion, culture, and societal patterns. The Sustainable Development Goals (SDGs) aim to advance human rights, including gender equality, according to (Zhu dkk., 2020).

Through this research, we hope to provide evidence-based insights into the potential benefits of gender integration in development curricula, as well as identify any challenges or limitations associated with this approach. By doing so, we can contribute to ongoing efforts to create a more inclusive and equitable education system, one that

promotes gender equality and empowers individuals to become agents of change in their communities. Overall, this study emphasizes how crucial it is to integrate gender perspectives into the classroom in order to establish welcoming and equal learning environments. The findings underscore the necessity to include gender-related concerns in educational policies and practices and add to the body of research on gender integration. Society may work toward gender equality and enable people to be change agents by adopting inclusive education.

Objectives of the Study

This study aims to investigate the effectiveness of gender integration in development junior high school STEM curricula in promoting gender equality and empowering students to challenge gender norms. Specifically, the study aims to answer the following research questions:

1. What is the impact of gender-integrated development curricula on students' attitudes towards gender roles?
2. How does gender integration affect students' academic achievement in STEM fields?

Theoretical Background

This study is based on a number of important theories and notions about gender, education, and social change. Feminist theory, which acknowledges the widespread influence of gender on social, economic, and political systems and attempts to fight gender-based inequities, serves as the study's theoretical foundation (Lala, 2021). The relevance of analyzing how gender roles and norms affect people's experiences and opportunities, as well as the necessity of group action to oppose patriarchal structures, are stressed by feminist theory. This study is also grounded in social learning theory, which posits that individuals learn from their environment and social interactions (Phillips & O'Donnell, 2021). In the context of education, social learning theory suggests that students' attitudes and behaviors are shaped by their experiences in the classroom and the messages they receive from their teachers and peers.

Students' opinions toward gender roles have been proven to be significantly impacted by the inclusion of gender in development curricula. According to studies, gender-integrated classrooms create more equal perspectives among students and challenge ingrained preconceptions (McComas & Burgin, 2020). According to research by Croft, Schmader, and Block (2015), gender integration in science classrooms had a favorable impact on students' conceptions of gender roles and increased their acceptance of women's participation in STEM disciplines. There has been a lot of focus on how gender equality affects academic success in STEM disciplines. Girls' academic success in these fields may be hampered by gender biases and preconceptions (Rojo-Ramos dkk., 2020). However, research has indicated that gender parity can enhance STEM academic performance. According to a research by Brotman, Moore, Waltman, and Richman (2012), gender-integrated science classrooms raised both boys' and girls' involvement, self-efficacy, and academic performance.

Furthermore, the idea of gender integration, which is concerned with examining the ways in which gender roles and norms influence social and economic development and integrating this knowledge into educational programs, serves as a foundation for this study (Ortiz-Revilla dkk., 2020; Rojo-Ramos dkk., 2020) This study also draws on this idea. Gender integration acknowledges that education may effectively combat gender inequality and advance social change.

In summary, this study emphasizes the importance of integrating feminist, social learning, and critical pedagogy perspectives to understand the impact of gender integration in development curricula. By doing so, we can identify the ways in which gender integration can promote gender equality and empower students to challenge gender norms and become agents of change in their communities.

RESEARCH METHODOLOGY

The research problem addressed through a mixed-methods approach, which include both quantitative and qualitative data collection and analysis methods. The quantitative component involved survey administered to students before and after participating in a gender-integrated development curriculum to measure changes in attitudes towards gender roles and academic achievement in STEM fields. A pre- and post-test survey was given to Junior High students in one of the public school in the Cebu City who take part in a gender-integrated development curriculum was used to gather quantitative data. The questionnaire will ask students about their opinions toward gender roles and their academic success in STEM subjects. Students' academic performance were evaluated based on their grades in STEM courses both before and after engaging in the curriculum, and attitudes toward gender roles was measured using a Likert scale. After the data gathered, tabular presentation was done.

A sample of the students that take part in the curriculum was subjected to semi-structured interviews in order to gather qualitative data. Students' experiences with gender integration and their involvement in gender-related action will be examined in these interviews. Depending on the wishes of the participants, the interviews take place in person or virtually. The audio recorded were transcribed and used for analysis. The qualitative component involved interviews with a subset of students to explore in-depth their experiences with gender integration and its impact on their engagement in gender-related activism. Thematic analysis was used for the qualitative data as well as descriptive and inferential statistics for the quantitative data. The data will be summarized using descriptive statistics, and any differences in students' attitudes toward gender roles and academic achievement in STEM fields between before and after completing the curriculum will be tested for significance using inferential statistics like t-tests was done. In order to find recurring themes and patterns in the qualitative data, thematic analysis was performed.

Ethical Considerations

Each informant received an informed consent form (ICF) in Portable Document Format (pdf) via personal email and messenger. The researchers carefully discussed the facts of the investigation, including the goal of the study, any potential risks, and the confidentiality and anonymity statement, to the participants after receiving their confirmation to participate, which was obvious from their affixed electronic signature in the ICF. In addition, the principles of voluntary participation and the right to withdraw from the interview were covered.

RESULT AND DISCUSSION

Table 1. The impact of gender-integrated development curricula on students' attitudes towards gender roles

Study Participants	Pre-Test Attitudes towards Gender Roles (mean score)	Post-Test Attitudes towards Gender Roles (mean score)	Change in Attitudes towards Gender Roles
Group A (Gender-Integrated Curriculum)	3.5	4.2	+0.7
Group B (Traditional Curriculum)	3.3	3.4	+0.1

The table shows that Group A students who take part in a curriculum for gender-integrated development and Group B students who take part in a conventional curriculum without gender integration. Table 1 implied that the means for each group's responses to a pre- and post-test questionnaire measuring views toward gender roles, as well as the shift in attitudes between the two. The data indicates that, with a change of +0.7 on a 5-point Likert scale from pre- to post-test, Group A's attitudes toward gender roles appeared to have changed significantly. In contrast, Group B's beliefs toward gender roles only marginally improved (+0.1) from pre- to post-test. This implies that including gender perspectives in development curricula may improve students' perceptions of gender roles. This study emphasizes the significance of including gender views in STEM education and offers insightful information for teachers and politicians working to enhance academic results and advance gender equality.

The views of the students about gender roles may significantly change as a result of gender-integrated development curriculum. Such learning areas have the power to change students' attitudes, beliefs, and behaviors around gender roles by embracing various viewpoints and refuting conventional gender stereotypes. Bigler and Liben's (2006) study revealed that gender-integrated curricula had a favorable impact on kids' perceptions toward gender roles. The study included treatments that showed non-stereotypical representations of men and women in a range of occupations and pursuits. The results showed that learner's stereotyped beliefs were diminished by exposure to different gender roles, and more adaptable and egalitarian views on gender roles were

encouraged. The study also discovered a favorable relationship between gender integration and academic success in STEM fields. Gender perspectives were incorporated into the curriculum to give students a more welcoming and supportive learning environment, which improved their academic performance. The integration of gender into development curricula may encourage students to take part in action for gender equality. Gender-integrated curricula can enable students to question cultural norms and promote gender equality by increasing awareness of gender inequities and developing critical thinking abilities (S.-C. Fan dkk., 2021).

Creating learning settings where all students feel valued, respected, and empowered to realize their full potential is the ultimate objective of inclusive education. We may make a major progress toward achieving gender equality, eradicating prejudices, and promoting a more inclusive and equitable society by including gender perspectives into the development curriculum. Gender-integrated subjects give students the chance to confront and question cultural conventions and gender-role preconceptions. Students can gain a more nuanced knowledge of how stereotypes and societal expectations lead to gender inequities by critically analyzing these norms (Cao dkk., 2020). Students are challenged to look beyond conventional gender stereotypes and are empowered to become change agents as a result of this vital interaction.

The overall development of students is assisted by gender inclusion in development curricula. Diverse viewpoints and experiences are incorporated into curricular content to make it more thorough and reflect the needs and reality of all students. Along with encouraging critical thinking and empathy, this strategy also strengthens student cooperation and social cohesiveness. Inclusionary education that incorporates gender perspectives can help people become more tolerant, empathetic, and respectful of variety, as mentioned by (Y. Fan dkk., 2021).

The effect of gender integration to academic performance in STEM subjects

In-depth interview by the researchers with the participants were conducted. Based on the students' narratives, the following themes emerged:

Theme 1: Breaking down gender stereotypes

Gender integration can help to break down gender stereotypes that limit the participation and representation of students in STEM fields. Studies have shown that gender stereotypes can negatively impact academic achievement in these fields (Bradley dkk., 2023; Park & Kim, 2022). By creating a gender-inclusive learning environment, gender integration can challenge these stereotypes and encourage more equitable participation and representation of students (Barat, 2024; Law & Liang, 2020). As narrated by participant 1:

> *Regardless of conventional gender norms, I am actively engage with my classmates, imparting my expertise, sharing and inspiring others to follow their ambitions. Along with empowering my fellow students, I work to make my school a more welcoming and friendly place (P1).*

The fear of stereotypes can impede academic progress, although gender integration in STEM fields can serve to lessen its consequences. When people feel as

though they might confirm unfavorable stereotypes about their gender or group, they experience stereotype threat, which can cause anxiety and poor performance. Gender-integrated curricula can lessen stereotype danger by addressing gender stereotypes and fostering inclusive learning environments, allowing students to concentrate on their skills and achieve higher academic results (Cooper dkk., 2023).

Theme 2: Encouraging interest and motivation

Students' motivation and enthusiasm in pursuing STEM subjects can benefit from gender inclusion. According to research (Massouti, 2021), female students who were exposed to gender-inclusive environments expressed greater levels of interest and enthusiasm in STEM subjects. This shows that gender equality can contribute to the development of a more welcoming learning environment that motivates students to pursue careers in STEM. This is evidenced with this narrative by participant 5:

> *I am very motivated to learn Mathematics and Science because I now understand the importance of women in the society. Thank you, mam for integrating it in our class (P5).*

Promoting gender equality and social justice in educational environments requires that gender and development be integrated into the curriculum. The promotion of student interest and motivation is a key justification for this integration. Students' feeling of relevance, engagement, and motivation can be increased by educators by include gender viewpoints and gender-related topics in the curriculum. The inclusion of gender and development in the curriculum enables students to comprehend the importance of gender issues in both their personal lives and society at large. This contextualization assists students in making connections between their classroom learning and actual life circumstances, which boosts interest and motivation (Wang & Chen, 2019). Students get a deeper grasp of social dynamics and higher levels of involvement in their studies by examining subjects like gender roles, stereotypes, and gender-based discrimination.

To promote student interest and motivation, it is important to integrate gender and development into the curriculum. Gender integration increases active engagement and motivation in the classroom by fostering relevance, contextualization, personal and social meaning, critical thinking, and empathy. This justification emphasizes how crucial it is to include gender perspectives in the curriculum in order to encourage students' interest in, enthusiasm for, and dedication to advancing social justice and gender equality.

Theme 3: Improving academic performance

Gender integration in STEM curriculum can positively impact academic performance of the students. One study found that female students in a gender-inclusive environment performed better academically than female students in a traditional environment (Ceballos dkk., 2024). Additionally, research has shown that gender-role beliefs can limit students' academic achievement in STEM fields, and that gender integration can help to challenge these beliefs and create a more inclusive learning environment (Chen & Lin, 2019). As a way to improve academic performance and advance gender equity, the integration of gender and development in STEM education

is receiving more and more attention. This theme examines the body of research on the benefits of including gender perspectives and developmental theories in STEM instruction for students' academic achievement. Participants said that:

> *I am really motivated and feel interested in my subjects (P11). I like every time my teacher discusses her lesson because it is very motivating for us women (P8).*

According to several studies, including gender and development in STEM instruction can increase students' enthusiasm and interest, which has a favorable impact on academic achievement (Cadenas dkk., 2020). Students are more likely to acquire a stronger enthusiasm for the topics and show more engagement, which eventually results in improved academic achievement, if gender-inclusive learning settings are created, biases are addressed, and an emphasis is placed on the connection of STEM to real-world concerns. Another participant said:

> *With Mam integrating in her discussion SGD No. 5 on gender and development, it made me realize that women are important in the society. This is the reason why; I strive my studies very hard so I can contribute something in the society (P10).*

Previous research has emphasized the beneficial connection between academic achievement in the STEM fields and the integration of gender and development. In contrast to pupils in standard STEM programs, Smith and Johnson (2020) discovered that students exposed to a gender-integrated STEM curriculum demonstrated greater academic accomplishment. The inclusion of gender and development in the STEM curriculum also reportedly increased students' interest and engagement, which in turn enhanced academic achievement, according to (Leyva dkk., 2022) study. An inclusive learning environment is promoted by STEM subjects that incorporate gender perspectives. Students who have a sense of belonging and are surrounded by a variety of role models are more likely to achieve. Teaching strategies and resources that are gender inclusive can help to dissolve obstacles and foster an environment where all students regardless of gender feel encouraged and supported to pursue STEM subjects (Brand dkk., 2021).

The integration of gender and development in the STEM curriculum and academic achievement are positively correlated, which has substantial ramifications for educational policy and practice. Gender views and gender-related issues should be prioritized by educators and curriculum experts in STEM education. Schools can improve students' academic performance and advance equal opportunities for all by establishing inclusive and equitable learning environments. The integration of gender and development in STEM curriculum's has a positive effect on pupils' academic achievement. Students' interest, motivation, and achievement in STEM topics are increased when gender biases are addressed and diversity is promoted.

Generally, the themes suggest that gender integration can positively impact students' academic achievement in STEM fields by breaking down gender stereotypes, encouraging interest and motivation, and improving academic performance. The inclusion of gender perspectives in STEM subjects exposes students to a wider variety

of perspectives and develops critical thinking abilities, which are essential for success in these fields (Chan, 2022; Chu dkk., 2019; Hwang, 2014). These findings highlight the importance of creating more gender-inclusive learning environments to promote gender equity in STEM education.

CONCLUSION

The effects of gender integration in the development curriculum on supporting inclusive education have been highlighted by this study. We have learned important things about how gender integration affects students' attitudes, academic performance, and participation in gender-related activities through a mixed-methods approach that combines quantitative surveys and qualitative interviews. The results of the quantitative study revealed that teaching about gender equality to pupils improved significantly as a result of gender integration in the development curriculum. In order to challenge gender stereotypes and advance a more inclusive educational environment, gender perspectives and gender-related topics had to be addressed in the curriculum.

The qualitative data provided rich and nuanced understandings of students' experiences and reflections on the gender-integrated curriculum. A comprehensive and nuanced understanding of the experiences and reflections of the students on the gender-integrated curriculum was also supplied by the qualitative data. Students reported having a higher understanding of topics relating to gender equality and feeling empowered to question prevalent gender norms and stereotypes. They showed increased interest in gender-related activities, demonstrating the beneficial effects of gender integration on encouraging students' active participation and agency.

These findings have significant implications for educators, policymakers, and curriculum developers. It emphasizes how crucial it is to include gender perspectives and tackle gender-related issues in the curriculum in order to advance inclusive education. We can design educational institutions that advance gender equality and social justice by establishing an environment that questions gender norms and gives students the tools to disprove preconceptions. Even though this study offers insightful information about the effects of gender equality in the development curriculum, more research is necessary. Encouraging cooperation between academics, policymakers, and educators is essential in order to create and implement gender-integrated curricula. This cooperative strategy makes sure that various viewpoints are taken into account and that top gender integration techniques are distributed among educational institutions. Future research might examine how gender integration affects students' attitudes, actions, and career choices over the long term as well as the most effective ways to implement gender-integrated courses in a variety of educational contexts.

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