ICRW
INTERNATIONAL CENTER
FOR RESEARCH ON WOMEN

GEMS

Towards gender transformative education

Evidence from GEMS in Jharkhand

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The International Center for Research on Women (ICRW) decentralized global network comprises three autonomous regional entities—ICRW Africa, ICRW Americas, and ICRW Asia. For nearly 50 years, ICRW has set the global agenda for gender equity, inclusion, and shared prosperity with action-oriented research and solutions. Our global experts generate groundbreaking insights and develop gender transformative strategies on topics like economic opportunity and security, health and reproductive rights, gender norms, and climate action. Our vision is to create an equitable, sustainable, and prosperous world where women, girls, and structurally excluded populations lead and thrive.

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Contents

List of Abbreviations

GEMS	Gender Equity Movement in Schools
ICRW	International Center for Research on Women
NFHS	National Family and Health Survey
RTE	Right to Education
NEP	National Education Policy
GoJ	Government of Jharkhand
HM	Headmasters/mistresses
BRP	Block Resource Person
CRP	Cluster Resource Person
GEA	Group Educational Activities
ASHA	Accredited Social Health Activist
CAPI	Computer-Assisted Personal Interviewing
GSE	General Self-Efficacy Scale
FAWE	Forum for African Women Educationalists
SMC	School Management Committee
PTM	Parent Teacher Meeting

Introduction

Gender norms assign specific roles and expectations to individuals based on their gender, shaping and sustaining inequalities by influencing access to power, resources, and opportunities for men, women, and gender-diverse individuals (Heymann et al., 2019; Heise et al. 2019). These norms begin to take root early in life - gender awareness can emerge as young as age two - and continue to evolve through adolescence (Bian et al., 2017; Tran & Olshan, 2022). Adolescence is a particularly critical stage for shaping gender attitudes. Puberty is often seen as a turning point, fundamentally influencing how males and females perceive themselves, while also requiring them to navigate the social expectations imposed by others (Gluckman and Hanson, 2006; Sullivan et al., 2018; Basu et al., 2017; Igras et al., 2014; Lundgren et al., 2013; Chong et al., 2006). During this period, gender roles and responsibilities tend to get more entrenched. For instance, time use data from the Young Lives study in Ethiopia indicate that from around the age of 12, girls tend to take on more unpaid domestic responsibilities, while boys increasingly engage in productive work that offers career opportunities (Boyden et al. 2016). Similarly, evidence also suggests that in low-income communities, the social spaces available to girls tend to shrink after puberty, while for boys, it expands, as observed in the CRISP Trust study on social mapping of pre-and post-pubescent boys and girls (Hallerman et al. 2015).

This gendered divergence is also visible in educational access. Globally, nearly 40% of adolescent girls and young women do not finish upper secondary education, with completion rates even lower for those in rural, low-income or marginalized communities (UNICEF 2025). In South Asia, girls aged 15-19 years are three times more likely than boys to be out of school, be unemployed or not engaged in any form of training (UNICEF 2025). Within resource constrained households, boys' education is often prioritized, while girls are held back by the burden of domestic work, restrictions on mobility, and concerns about safety in schools (UNICEF 2021; Psaki et al., 2022; White et al. 2015). Early marriage further compounds these barriers in India, where millions of girls under 18 are married each year, undermining their rights, education, and health, while reinforcing cycles of inequality (UNICEF 2023). At the same time, boys are also limited by gender norms, particularly those tied to harmful ideals of masculinity. From early adolescence, many internalize pressures to become breadwinners, adopt behaviours that disengage them from school or perpetuate violence against girls (UNESCO 2018). Unequal gender norms therefore affect both boys and girls in distinct but interconnected ways. For girls, factors such as unsafe sanitation facilities, teachers' biases, and limited leadership opportunities discourage school participation, while boys may face expectations that divert them from education (Mairead 2007).

The influence of unequal gender norms is also evident in education systems, which often mirror and reinforce broader social inequalities through curricula, textbooks, and teaching practices (UNICEF 2021). School are not only sites of learning but also key spaces of socialization, where peers and teachers play a significant role in shaping adolescents' values and attitudes. Too often, these interactions reinforce restrictive norms with long-term consequences for both boys and girls (Achyut et al., 2016; Manchana & Gannavarapu, 2024; McCoy et al., 2022; Nugroho et al., 2022; Meland & Kalvedt, 2017). Yet this same influence means that schools also hold immense potential to disrupt entrenched inequalities. As familiar and trusted spaces outside the home, schools provide children with opportunities to explore new ideas and engage with supportive adults. They

are uniquely positioned to shape gender attitudes, encourage equitable behaviours, and equip adolescents to question harmful expectations. Evidence also shows that programs engaging adolescents through both schools and community settings have greater impact in shifting norms and promoting equity (Barker et al., 2007). Thus, schools provide a compelling setting in which to engage children in discussions about gender, and this work needs to begin as early as childhood, when notions and beliefs around gender identity and expression first take shape.

Gender Equity Movement in Schools (GEMS)

Recognizing the potential and significance of education systems in promoting gender equity, the Gender Equity Movement in Schools (GEMS) program has been implemented by the International Center for Research on Women (ICRW) across different parts of India (Achyut et al., 2016; Achyut et al., 2017). The program aims to build schools as gender transformative spaces wherein norms and beliefs around unequal gender norms and practices can be challenged and transformed. Since its inception in 2008 in Mumbai, the program has been adapted, implemented, and evaluated in several geographies within and outside India, reaching over 2,500,000 students and teachers across 25000 schools.

GEMS is an evidence-informed gender-transformative school-based program that aims to foster gender equality, redefine norms around masculinity, and negate all forms of violence to create safer and more gender-equitable schools; enhance educational aspirations of and for girls; and increase school retention of girls. Situated within the public school system, GEMS program draws its approach and strategies from four conceptual pillars – **starting at a young age, engaging both girls and boys** in the gender discourse, and **using gender transformative approaches in institutional settings** for normative change. It uses a combination of the **cognitive-affective approach and life skills,** undertaken in the school setting, to bring transformative and sustained changes toward gender equality and violence prevention.

GEMS in Jharkhand

The play of unequal gender norms is quite significant in Jharkhand. According to the National Family Health Survey (NFHS) - 5 (2019-21), the overall female literacy rate in the state is 62%, while the rate among women with over ten years of schooling is only 33%. Jharkhand also faces a challenge with the practice of child marriage, with 32% of women in the age group of 20-24 years married before the age of 18, much higher than the national average of 23% (NFHS-5, 2019-21). Additionally, evidence suggests that adolescent girls and young women experience significant exclusion, due to increased restrictions on mobility of older girls and the pressure of marriage, leading to many of them not being able to access education or employment (Morton et al., 2018).

To address some of these concerns and uphold its commitment towards creating gender equitable and inclusive schools, as enshrined in the Right to Education Act (RTE) and National Education Policy (NEP), the Government of Jharkhand (GoJ) has been working towards mainstreaming gender within the school system. Towards this end, ICRW has been supporting the state's efforts, including the implementation of the GEMS program. Building on the experiences from the first phase of the program in Ranchi and Khunti districts from 2014-2016, ICRW launched the second phase with implementation in 200 schools in three blocks of Godda and Jamtara districts, in collaboration with the Badlao Foundation and funding support from Echidna Giving. The program was further expanded to 70 more schools in 2023 in these districts.

Evaluation

To understand the overall effects of the program and generate evidence on how well the program has met its intended outcomes, an evaluation study was conducted in 2024, with a focus on 200 schools included under the program in 2021, among which 164 are up to grade VIII, 26 up to X, and ten up to XII. By systematically examining key performance indicators, this evaluation report aims to present key achievements and limitations of the program and provide actionable recommendations for future strategies.

The evaluation report has been divided into four sections: the first section provides an overview of the GEMS program, its different components and implementation strategies. The second section details the evaluation design and methods used. The third section discusses the findings from the evaluation, while the fourth section presents learnings and recommendations from the program.

Core program components

Drawing from the understanding that attitudes have three components (cognition, affective, and behavioural), the different program components (gender curriculum, classroom sessions, GEMS diary, campaign guide, comic book, and videos) are designed to provide the necessary knowledge (cognition) and establish an affective connection to create an understanding of how gender issues impact daily lives and future courses for girls and boys, thereby motivating them to change behaviours.

Capacity building of teachers

Building teachers' gender perspectives and skills constitutes a key intervention component and strategy of the GEMS program, with the aim of equipping teachers to challenge stereotypes and nurture equitable learning environments. Each school nominates at least two teachers, preferably a female and a male teacher, who have an interest in different gender related topics for the training. These teachers then take part in the capacity building workshops.

Over the three-year program period, ICRW has conducted five rounds of workshops in Jamtara and Godda, respectively, reaching teachers from 85 and 105 schools. The workshops have usually been organized around the same time in both the districts. Each workshop has spanned 2-3 days and collectively engaged over 500 teachers. These workshops focused on critical themes such as patriarchy, gender discrimination, gender-based violence, sexuality, relationships, privileges and restrictions based on gender, conflict resolution, bystander intervention, aspiration-building, nutrition, and substance abuse – reflecting the key components of the GEMS curriculum.

The workshops have used participatory pedagogies involving role-play, games, group-work, discussions, and simulation sessions to build teachers' confidence and skills while focusing on three key areas. Firstly, the sessions encouraged teachers to connect the issues discussed in the workshops to their own experiences, reflecting on personal instances of discrimination or inequality. Secondly, the sessions reinforced the role of teachers as guides and role models in the lives of children. Thirdly, it encouraged them to identify practices and processes that perpetuate inequity, discrimination, and violence. The training also included self-reflective sessions, prompting teachers to examine their life journeys and experiences of discrimination, thereby emphasizing the importance of challenging and transforming societal norms.

The capacity building workshops yielded numerous moments of introspection and enabled teachers to take on difficult transformative journeys (See box 1). For instance, a male teacher mentioned how he started viewing everyday life events, such as distribution of household work differently after attending the workshops. Another teacher said that during the training, they had a question-answer session with trainers about emotions and why boys and girls express these differently. He said that when boys get hurt, they cannot cry as others ridicule them for behaving like girls. This recognition of the harmful impact of this norm on boys was a moment of deep introspection for him. As teachers embark on this transformative journey, peer support, handholding and periodic nudges have helped them navigate internal and external challenges and dilemmas.

Box 1
Lessons beyond the Textbook: A teacher's journey towards transformation

Urmila Kumari (name changed) has been teaching at an upper middle school in Narayanpur block of Jamtara for the past 10 years. Under the GEMS program, she was selected as a nodal teacher and attended her first training in 2022. Though she participated in the training, she struggled to relate to the themes discussed in the workshop. In fact, some sessions made her deeply uncomfortable. "When I attended the session on bodily changes during adolescence, I felt that this should not be discussed with children, as it would distract them". With this mindset, she had little interest in taking GEMS classes.

A personal incident, however, changed her perspective. Both her son and daughter-in-law work full-time. Yet, after duty, her daughter-in-law shouldered all the household chores, while her son spent his time on the phone or with friends. Frequent quarrels broke out between the couple, until one day the fight escalated and the daughter-in-law, in anger smashed her husband's phone.

At first, Urmila sided with her son and blamed her daughter-in-law. But later, she recalled a discussion from the GEMS training about unequal distribution of household responsibilities. The session had highlighted how women often bear the double burden of paid and unpaid work, while men are rarely expected to contribute at home.

Reflecting on her own family, Urmila realized that her daughter-in-law worked the same number of hours outside as her son yet continued to shoulder all the household chores. This inequity made her uncomfortable. However, when she discussed with her friends, most dismissed it saying, "housework is a woman's responsibility, your daughter-in-law is overreacting". But Urmila's doubts persisted.

A few days later, she sat down with both her son and daughter-in-law. Drawing on her GEMS sessions, she explained to her son that household work is not solely a woman's duty and that he should contribute to household work. Urmila also regretted not having taught him earlier about equality at home.

It took time, but the conversations had an impact. Gradually, Urmila noticed her son helping with chores after work, and tensions between the couple began to ease. This experience deeply affected her. She not only shared this story at her school but also encouraged fellow teachers to initiate conversations on such issues in their homes and communities.

Today, Urmila conducts GEMS classes with enthusiasm. She speaks more confidently about gender equality, equitable household work distribution and discrimination. She says that change is not limited to her students – she has changed as well. "If we practice at home what we teach in school, conflicts will reduce, and cooperation will grow".

While capacity-building workshops with teachers have been a core component of the program, they have also presented several challenges. Teachers have often expressed their hesitation to participate citing heavy workloads and teaching responsibilities, especially since the workshops are held at regular intervals and span two to three days. However, motivation has tended to improve with continued engagement across multiple rounds. Another persistent challenge has been the frequent transfer of trained teachers to other schools, resulting in their exit from the program and the need to train new teachers from the start.

Strengthening school leadership

To create an enabling environment for teachers and students to take on issues of discrimination and violence in schools as well as facilitate implementation, a key intervention strategy has been conducting orientation workshops with different school level stakeholders, such as Headmasters/mistresses (HMs), Cluster Resource Persons (CRPSs) and Block Resource Persons (BRPs). Across the two districts, four rounds of orientation workshops have been organized in each, reaching teachers from 85 and 104 schools respectively. Similarly, two rounds of training have been organized for BRPs and CRPs as well across these districts. A total of over 300 HMs, CRPs, and BRPs have been engaged through the course of the program. The workshops have included discussions on NEP 2020, themes on gender and power, role of schools in reinforcing and breaking gender discrimination and violence, and specific steps participants can take to address inequity and create an inclusive and responsive learning environment. The orientation of these school-level stakeholders, particularly HMs, has proven to be quite impactful, as many of them have played a key role in facilitating the participation of teachers in the program and supporting them as well as program facilitators, to conduct other program activities in schools. However, some HMs have also cited school-level responsibilities and other engagements to express their difficulties in playing a more active role in the program, leaving it to the nodal teachers to manage activities associated with the program.

In addition to school-level stakeholders, various institutional platforms, such as Guru Goshthi (meeting of HMs/school in-charge), block-level meetings as well as meetings with members of School Management Committees (SMCs) have been leveraged to continue engaging and strengthening school leadership and facilitating active discussion on gender issues for enhanced program ownership.

Group Education Activities (GEAs) in classrooms

The primary intervention component is the implementation of the gender curriculum through GEA sessions in classrooms. The GEMS curriculum comprises 33 sessions to be delivered over three years. The first two years comprise 12 sessions each, followed by nine in the third year. The first year's sessions cover three broad domains – gender, violence, and bodily changes – with a focus on creating understanding of these concepts and their various manifestations. The second year's sessions cover gender, relationships, emotions, communication, and conflict resolution; while the third year emphasizes goal setting, time management and resourcefulness. These sessions use participatory fun activities, including role-play, stories, vignettes, free-listing, game-playing, and debates. The sessions are 45 minutes in duration to align with the school timetable.

During the program period, over 31000 students from grades VI to XI have been engaged with from 200 schools, through GEA sessions, with the majority being from grades VI-VIII. On average, most schools have been able to conduct 10-12 sessions annually. Middle schools have proven easier to work with, largely due to smaller student numbers, allowing for joint sessions that include mixed groups from Grades VI, VII, and VIII. In contrast, high schools have larger student populations, making it difficult to organize such combined sessions. Additionally, there is a stronger emphasis on academic performance in higher grades, which often results in reduced time and priority given to GEA sessions.

These sessions have encouraged students to reflect on how unequal gender norms and beliefs have influenced their experiences at home, in school as within their communities -- and have empowered them to begin challenging these norms in small but meaningful ways (See Box 2).

Box 2
From Silence to Voice: A Story of Quiet Transformation

Twelve-year-old **Shahnaz**, a student at a residential government school in Godda district, lives in a rural household where traditional beliefs and taboos around menstruation continue to shape everyday practices. Like many families in the region, they rely on using cloth during menstruation – washed and dried indoors, away from sight, and more importantly, away from sunlight and hygiene.

The family's menstrual practices, handed down over generations, were largely shaped and upheld by Shahnaz's grandmother, the head of the household. Sun-drying menstrual clothes was forbidden, and sanitary napkins were seen as unnecessary, unaffordable luxuries. Having grown up with these norms, Shahnaz never questioned them. For her, using cloth felt entirely normal.

That changed when Shahnaz began attending GEMS classroom sessions on menstrual health management. These sessions offered not just accurate information, but also a safe space for students to ask questions, share experiences, and challenge the stigma and silence surrounding menstruation.

During a school break, Shahnaz returned home. One day, she noticed her sister washing and preparing to dry used menstrual cloths indoors – just as they always had. But this time, something stirred in Shahnaz. She intervened gently: "Don't dry them inside. They should be kept in the sun – it kills germs". Her grandmother overheard this conversation and immediately objected. "What nonsense are you teaching her? You want people to see these dirty clothes hanging outside? That's shameful". But Shahnaz persisted: "Dadi, it is not shameful. If the cloth does not dry in sunlight, bacteria will grow. This can cause infections".

Encouraged by Shahnaz, her sister spoke up as well and requested their grandmother to let them either dry the used clothes in the sun or use sanitary napkins. "Sanitary napkins? Those are for city people. Do you even know how much they cost?" Shahnaz understood that it would be challenging to convince her grandmother like this, so she decided to reach out to the village ASHA, who belonged to their own community and was well known to them. "Chachi, Shahnaz is right. Doctors also say cloth must be sun-dried, or better yet, use sanitary napkins. The government provides them at a low cost". She handed the family a packet.

That evening, Shahnaz and her sister used sanitary napkins for the first time at home. While affordability still limits regular use, the sisters make more of an effort now – asking the ASHA for support or occasionally buying a pack themselves. More importantly, Shahnaz's quiet determination has led to another significant shift: her grandmother now allows menstrual clothes to be dried at the back of the house, where there is some sunlight. It is a small, almost invisible change. But it marks a powerful transformation in mindset.

Shahnaz's story is a testament to how gender transformative school programs such as GEMS can equip girls with essential knowledge – and the confidence to question, advocate, and lead change. In doing so, they not only safeguard their own health and dignity but begin to reshape deeply rooted social norms within their families and communities.

School-wide Campaigns

To build awareness and understanding around gender issues and the need for equity among students, school campaigns have been organized as another key intervention strategy. School campaigns are usually a week-long process in which students, with support from teachers and program facilitators, organize various activities, such as role-play, poster-making, slogan and essay-writing, games like snake and ladder[1] as well as races, plays, debates, and pledges. The campaigns have focused on varied themes, including prevention of child marriage, school enrolment and retention, violence prevention, aspirations, road safety, and drug abuse. These campaigns engage not only students participating in the GEMS program, but also other students, teachers, non-teaching staff, and parents. SMC members and parents are also invited to attend the campaigns, which have provided space for students to share personal experiences of transformation.

Over the program period, one round of school campaigns has been organized across all schools in each district per year. To organize the campaigns, the focus has been on a process of collaboration and co-creation with teachers and other school-specific stakeholders. Before organizing the campaigns, discussions have been held with teachers, HMs, and program facilitators to deliberate on the campaign theme and range of activities to be conducted. While teacher involvement has been present in terms of theme selection and participation in campaign activities, teachers have shown less interest in leading the campaigns or organizing them independently, with them still expecting facilitators to lead the campaign. To foster greater ownership of the program, selected schools have attempted to motivate teachers to lead in planning and organizing campaign activities with students, with facilitators providing hand-holding support. This has involved teachers directing the students in role play activities or supporting them in poster-making.

GEMS diary – connect with family and friends

GEMS diary is an innovative activity-based workbook that has been developed to facilitate engagement of students with siblings, parents and friends on issues of gender and violence outside schools.

Parent and community outreach

The GEMS program uses contextually available institutional platforms, such as students' groups, parent-teacher meetings, and SMC meetings to engage students, teachers and parents in discussions and reflections, aimed at challenging and changing inequitable gender norms.

1. The **Snake and Ladder** game is one of the participatory techniques that is used in the program for students and teachers, to foster their understanding of gender equity. It is inspired by the popular children's board game in which players take turns in rolling a die to either move up the ladder or fall by landing on the snake's mouth. In this version of the game, a snake and ladder banner is used and cards with positive messages on gender equity are placed at the mouth of the ladder whereas those with negative messages are placed at the mouth of the snake on the banner of the game. Through the game, students and teachers are made aware of behaviours and actions that promote gender equity (when they land on the ladder), as well as those that inhibit it (when they land on the snake). For instance, if a student reads out a message found on the ladder box, it is likely to be one that reinforces a gender equitable behaviour, such as, equitable division of household work between boys and girls. Similarly, if a student reads out a message on the snake box, it will be one that reinforces a gender inequitable behaviour, for instance, prohibiting girls from studying in schools.

   https://www.icrw.org/promoting-gender-equity-through-participatory-techniques-the-snake-and-ladder-game-under-gems/

Evaluation method and design

This section presents an overview of the evaluation methodology, including the key objectives guiding the study, the design framework within which the evaluation was conducted, and the analytical strategies utilized to examine program outcomes.

Objectives

The GEMS program was evaluated to assess the effect of the program on the attitudes and behaviour of students, and their school experiences. In particular, the study focused on the following outcomes:

- Patterns of school retention
- Students' attitudes and beliefs with respect to educational and economic aspirations, gender roles, and marriage
- Self-esteem and self-efficacy of adolescents
- School environment and overall school experience

Evaluation Design

A quasi-experimental evaluation design was used with intervention and control arms and cross-sectional data collection at two time points - baseline and endline.

As ICRW was implementing the comprehensive adolescent empowerment program UMANG[2] in four blocks (Godda, Mahagama, Nala and Jamtara) of Godda and Jamara districts with two blocks (Barhait and Barh) of Sahibgunj serving as the control, the GEMS program was positioned as the third arm. GEMS was implemented in three separate blocks (Poriyahat, Pathargama, and Narayanpur) within Godda and Jamtara districts, following the same evaluation design and using Sahibgunj as the control arm for both GEMS and UMANG.

However, due to the COVID-19 pandemic, there was a time lag of 18-20 months in data collection between GEMS and control arms (Table 1). Therefore, this brief presents findings based on the analysis of only the GEMS baseline and endline data. Further, since the surveys were conducted in the community and not all schools were included for the GEMS intervention, it allowed for comparative analysis of students with and without program exposure.

2. **UMANG** is a comprehensive, multi-layered girls' empowerment program that aimed to increase their school retention and reduce child marriage in Godda and Jamtara districts of Jharkhand, India. Using a socio-ecological framework and gender transformative approaches, the program aimed at creating multi-layered interventions at individual (adolescent girls), family (parents, siblings), community (men and boys, women, and other community members), and system (schools, local governance structures, child protection mechanisms, etc.).

   ICRW implemented the UMANG program from 2018-2024. https://www.icrw.org/projects/umang-2/

Table 1: Data Collection Timeline of GEMS Jharkhand Evaluation Study

	GEMS (Godda and Jamtara) Porayahat, Pathargama, Narayanpur	**Control arm (Sahibganj)** Barhait, Barhawa
Baseline	February – March 2021	July – September 2019
Endline	June – August 2024	December 2022 – March 2023

Sample Size

The eligible respondents for the survey were girls aged 10-14 years and 15-18 years, and boys aged 10-18 years. Separate samples were drawn for girls aged 10-14 years and 15-18 years due to the distinct needs and barriers of young and older adolescent girls, for instance, the possibility of early marriage and school drop-out is much higher for girls aged 15-18 years than those aged 10-14 years. The achieved sample size at baseline and endline for different age groups of girls and boys are presented in Table 2. Face-to-face interviews were carried out with eligible respondents who consented to participate in the survey using a structured survey questionnaire and Computer-Assisted Personal Interviewing technique (CAPI).

Table 2: Achieved Sample Size for GEMS Jharkhand Evaluation Study

Sample by Age Group	**Sample Size Attained**	
	Baseline	**Endline**
10–14-year-old girls	800	808
15–18-year-old girls	1208	1206
10–18-year-old boys	802	807
Total	**2810**	**2821**

Key Indicators used in the Analysis

The key indictors used in the study are discussed below:

- **Perception on school and studies:** The scale from the Pankh study[3] conducted by ICRW in the state of Rajasthan adapted to assess student perception on school and studies comprised nine statements such as "you enjoy school/college", "you are motivated to work hard in school", and "what you learn in school/college will be useful in the future". Study participants responded to each on a four-point scale - Strongly Agree, Agree, Disagree, or Strongly Disagree. Each response was then scored between one (indicative of negative perception) to four (indicative of highly positive perception) after reversing negative statements. Subsequently, the summative score was calculated, which ranged between **9 and 36**. A mean score was used for bivariate and multivariate analysis.

- **Educational Aspirations:** The indicator measured the aspiration among adolescents to pursue/ continue higher education, specifically graduation and above.

- **Gender Attitudes:** The Gender-Equitable Men Scale, first created in 2008 to measure attitudes towards gender norms among young men in Brazil (Pulerwitz & Barker, 2008) and subsequently implemented in several contexts including Jharkhand was adapted to assess student perceptions on gendered roles and responsibilities, traits, masculinities and Gender-based Violence (GBV). The scale comprised 23 statements such as "a woman's most important role is to take care of her home and cook for her family", "women/girls should work only if there are monetary needs in their family", and "a woman should tolerate violence to keep her family together". Study participants responded to each on a four-point scale - Strongly Agree, Agree, Disagree or Strongly Disagree. Each response was then scored between one (indicative of inequitable gender attitude) and four (equitable gender attitude) after reversing negative statements. Subsequently, the summative score was calculated, which ranged between **23 and 92**. A mean score was used for bivariate and multivariate analysis.

- **Attitudes towards child marriage:** A scale adapted from the National Survey of Drivers and Consequences of Child Marriage in Tanzania, 2017 and tested in the Jharkhand context was used to assess students' attitudes towards child marriage. The scale comprised 15 statements such as "marrying girls young can help protect family honour/reputation" and "marrying girls young can help resolve financial problems in the family". Study participants responded to each on a four-point scale - Strongly Agree, Agree, Disagree or Strongly Disagree. Each response was then scored between one (indicative of attitudes in favour of child/early marriage) and four (indicative of attitudes unfavourable towards child marriage) after reversing negative statements. Subsequently, the summative score was calculated, which ranged between **15 and 60**. A mean score was used for bivariate and multivariate analysis.

- **Self-esteem levels:** The Rosenberg Self-Esteem Scale[4] was adapted to assess self-esteem of adolescents participating in the survey. The scale comprised ten statements such as "on the whole I am satisfied with myself", "I feel that I have a number of good qualities", and "I feel I do not have much

3. **PANKH** is an integrated safe space model program that aims to engage with unmarried and married adolescent girls, parents, in-laws, community, schools, local health systems and other key stakeholders to improve safe spaces and overall sexual and reproductive health of adolescent girls, specifically with a focus on the right to comprehensive maternal health care.
4. The Rosenberg Self-Esteem Scale aims to measure self-esteem. Originally, the measure was designed to measure the self-esteem of high school students. However, since its development, the scale has been used with a variety of groups including adults, with norms available for many of those groups.

to be proud of, I certainly feel useless at times". The study participants responded to each statement on a four-point scale. Each response was then scored on a scale from zero (indicative of low self-esteem) to three (indicative of high self-esteem), after reversing some of the negative statements. Subsequently, the summative score was calculated, which ranged between 0 and 30. A mean score was used for bivariate and multivariate analysis.

- **Self-efficacy levels:** The General Self-Efficacy Scale (GSE)[5] was adapted to assess self-efficacy of adolescents participating in the survey. The scale comprised ten statements such as "I can always manage to solve difficult problems if I try hard enough"; "if someone opposes me, I can find the means and ways to get what I want", and "it is easy me to stick to my aims and accomplish my goals". The study participants responded to each statement on a four-point scale: Not at all true, hardly true, moderately true, exactly true. Each response was scored between one (indicative of low self-efficacy) and four (indicative of high self-efficacy). A summative score was calculated by finding the sum of all the items.

Analytical Approach

Pre-post analysis was conducted for key indicators to determine the effectiveness of the GEMS intervention using quantitative statistical methods, namely, linear regression for continuous outcomes to detect patterns, if any; and logistic regression for dichotomous (binary) outcomes. To measure the program effect, the interaction coefficient of survey time (baseline and endline) and exposure to GEMS intervention was used. Here, a positive coefficient denotes a positive program effect, while a negative coefficient implies a negative effect. Further, the multivariate linear regression method was used to compare outcomes (such as perception of school environment, gender attitude, self-esteem, self-efficacy, and child marriage attitude) at baseline and endline, and exposure to the GEMS intervention, adjusting for caste, religion, and wealth index. Religion, caste, and wealth index were included as control variables in the regression analysis, as the skewed distribution of maternal education and the strong correlation between maternal occupation and the wealth index could potentially confound the results. This was further assessed among sub-groups of students who were currently going to government schools (dropping those who were out of school or studying in private schools) as the GEMS intervention was implemented only in government schools.

5. **The General Self-Efficacy Scale** is a self-reported measure of self-efficacy. It is a ten-item scale and correlated to emotion, optimism, work satisfaction. Negative coefficients were found for depression, stress, health complaints, burnout, and anxiety.

Sample Profile

Among girls aged 10-14 years, 93% were currently enrolled in government schools, out of which 50% were exposed to the GEMS intervention (Table 3). Among girls aged 15-18 years, 67% were enrolled in government schools, out of which 71% were exposed to GEMS intervention. Among boys, current enrolment in government schools was 87%, out of which 50.3% were exposed to GEMS program.

Table 3: Sample distribution

Age Group	Enrolled in government school {Overall: Baseline & Endline (%)}	Exposure to Intervention {During Endline, if enrolled in government school (%)}
Girls aged 10-14 years	93	50
Girls aged 15-18 years	67	70
Boys aged 10-18 years	87	50

Maternal education data showed that at baseline, 60% to 70% of mothers were illiterate, which declined to 55% to 60% by endline for both boys and girls. In terms of maternal occupation, 57% of mothers of girls aged 10–18 years were engaged in unpaid household work at baseline, compared to 75% of mothers of boys in the same age group. By endline, this proportion had decreased to 47% for both groups. The father's occupation remained largely the same at the baseline and endline, namely, paid labour or domestic work.

Around 50% to 60% of students identified themselves as Hindus, while one-fourth to one-third identified themselves as Muslims (Annexure 1). The remaining students belonged to Sarna, Christian, or other religious groups, with a slight decline observed among girls by the endline as compared to the five percent increase among boys. In terms of caste, approximately 50% of both girls and boys were from the OBC category at baseline, rising to around 60% by the endline (Annexure 1).

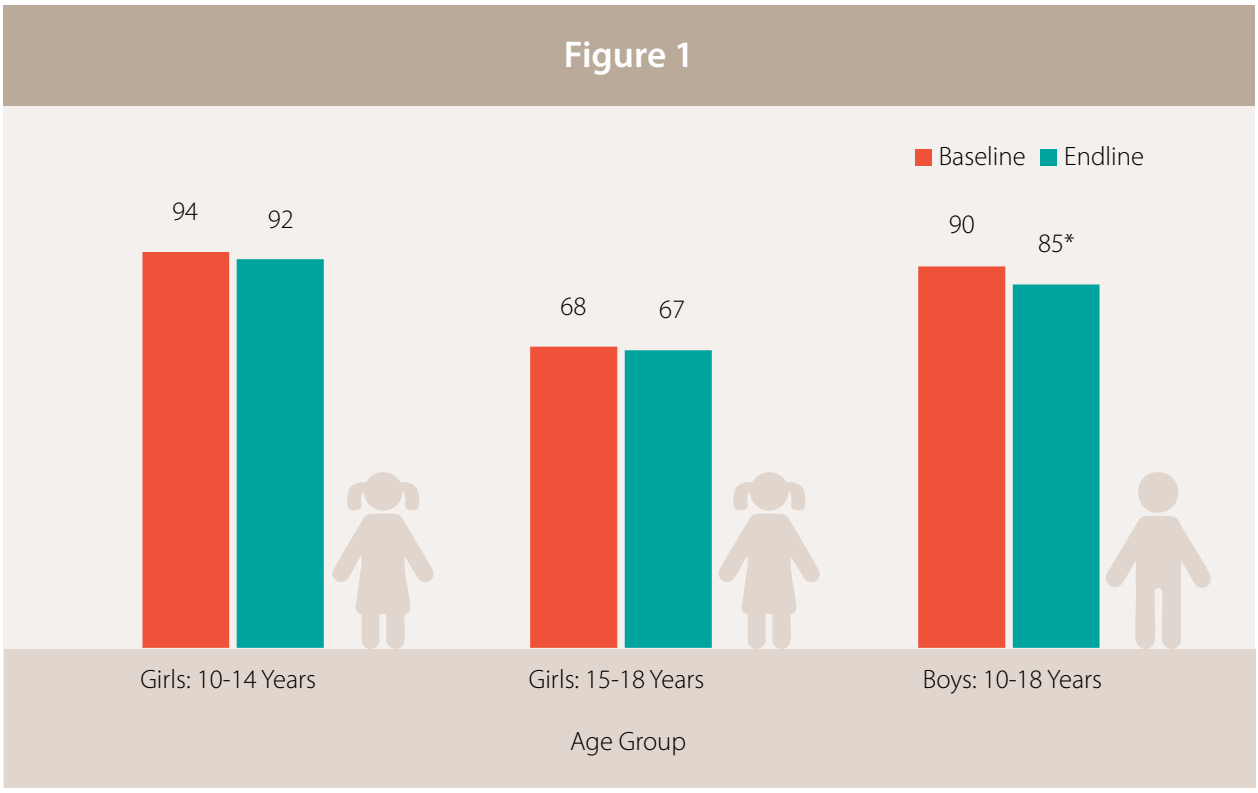
Evaluation Findings

This section presents the principal findings of the evaluation. The analysis is structured around thematic areas central to the program's objectives – namely school enrolment and retention, educational aspirations, perceptions about school, gender attitudes and levels of self-esteem and efficacy – highlighting both the progress achieved and persisting challenges.

School enrolment and retention

At the baseline survey in 2021, girls and boys were asked whether they were in school before it shut down in March 2020 due to the COVID-19 pandemic. While 94% girls in the age group of 10-14 years and 90% boys in the age group of 10-18 years reported being in school, the figure was only 68% for girls in the age group of 15-18 years (Figure 1). Endline data showed that there has not been any significant shift in the school retention of younger and older girls. However, a significant decline of five per cent is observed among boys from baseline (90%) to endline (85%).

Figure 1: School Enrolment and Retention Patterns: Proportion of girls and boys attending school at baseline and endline



Note: * - significant at p<.05

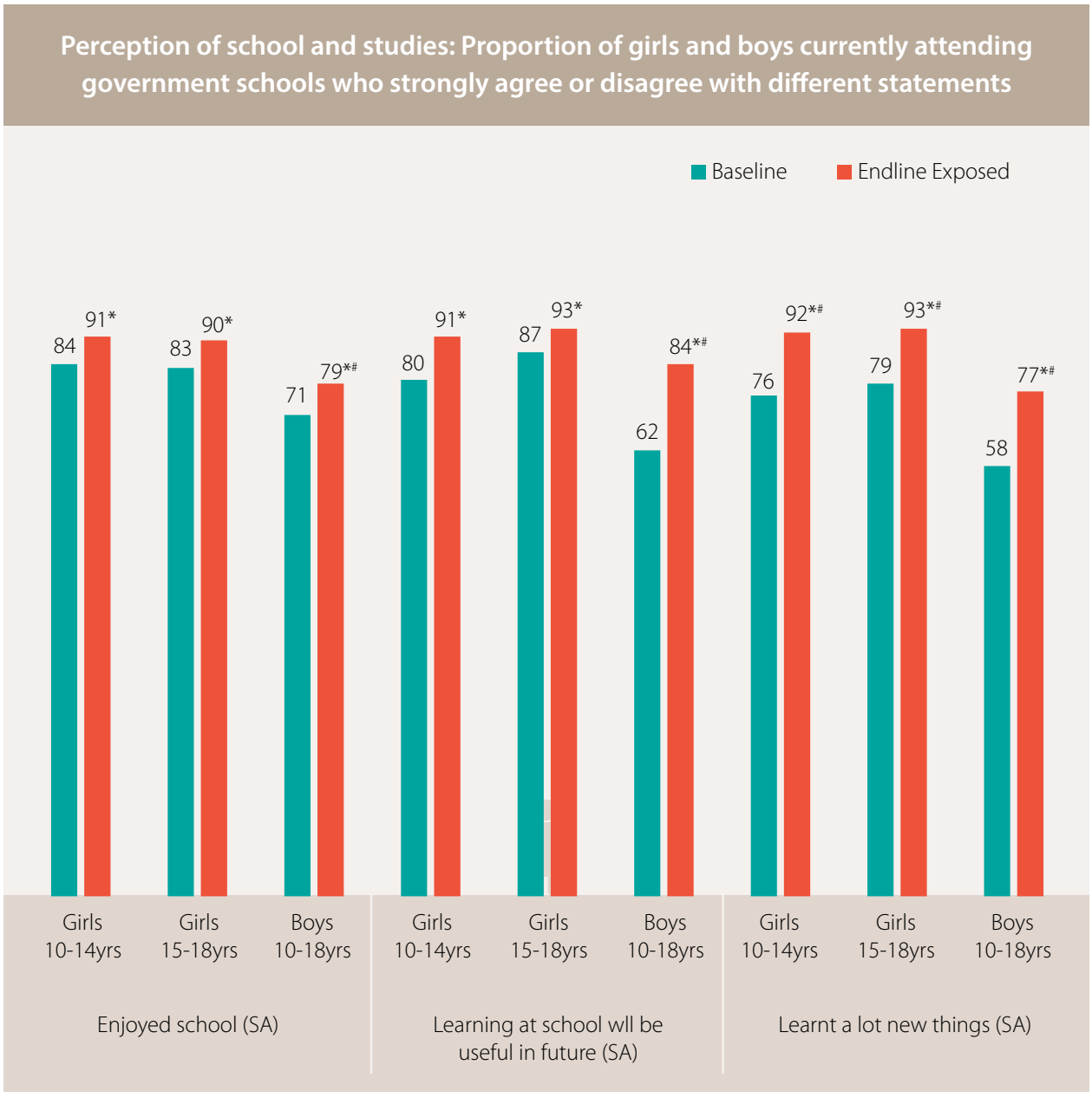
Perception on School and Studies

The **GEMS program enhanced the perception of students about school and studies.** Overall, both girls and boys reported positive views about their school and studies. On a scale of 9–36, average scores at baseline were 33 for younger girls, 33 for older girls, and 31 for boys. Among students from government schools and exposed to GEMS, the score for younger girls increased by one point from baseline to endline, while it increased by two points for older girls and boys (Table 4). Further, adjusting for caste, religion, and wealth, the increase in score on perception of students on school and studies from baseline to endline was significantly higher among those exposed to the GEMS program than those who were not (Table 4).

A statement-wise analysis (Annexure 2) reveals noteworthy trends. Across most statements, a significantly smaller proportion of boys had expressed strong positive responses compared to girls during baseline. For instance, at baseline, only 58% boys strongly agreed with the statement "You were eager to go to school" in contrast to approximately 80% of girls. However, both girls and boys showed a positive shift in responses at endline, as is illustrated in Figure 2.

Notably, there was a significant rise in the proportion of students – both girls and boys – who strongly agreed with the statement "you were motivated to work hard at school/college" at endline, indicating increased engagement at school. The most substantial improvement was observed in the belief that studies have meaning, especially among girls aged 15-18 years. The proportion of students who strongly disagreed with the statement "your studies did not hold any meaning" increased markedly from 57% to 85% among younger girls, 70% to 90% among older girls and 47% to 71% among boys. Similar upward trends were seen in responses related to motivation to study and reduced feelings of boredom at school. Additionally, at endline, a higher proportion of girls and boys who had been exposed to the program reported positive perceptions on two to three statements compared to their non-exposed peers. For example, on the statement – "You learnt a lot of new things at school" – 66% non-exposed boys strongly agreed compared to 77% exposed boys.

Figure 2: Shift in perception of government school students towards school and studies



Note: SA – Strongly Agree; * - significant variation with Baseline at p<.05; # - significant variation among exposed & not-exposed at Endline at p<.05

Educational Aspirations

GEMS program enhanced educational aspirations to complete graduation or above among girls and boys exposed to the program. One of the key areas of focus of the GEMS program has been towards building the educational aspirations of girls and boys. Endline results show a positive impact of the program in this regard (Table 4). Among younger girls in government schools, the aspiration to complete graduation or above rose from 25% to 36% among those exposed to the intervention, compared to 23% among non-exposed girls. A similar trend was seen among older students: aspiration increased by 14 points (from 53% at baseline to 67% at endline) among older girls exposed to the program, versus a five-point rise among non-exposed. For boys, aspirations rose from 40% to 51% among those exposed but dropped to 32% among the non-exposed.

The logistic regression, adjusted for caste, religion, and wealth, showed a significant increase in educational aspiration for higher education among those who were exposed to the program (Table 5). Younger girls exposed to GEMS intervention were 1.6 times more likely to aspire for higher education at endline compared to baseline, and 1.8 times more likely compared to the non-exposed girls at the endline. A similar pattern was observed among older girls. In the case of boys, while educational aspiration among non-exposed boys declined at endline (compared to baseline – Overall Result = 0.6), it remained the same among GEMS-exposed boys.

Self-esteem and Self-efficacy

The **GEMS program succeeded in enhancing self-efficacy of adolescent girls.** Self-esteem and self-efficacy levels among both girls and boys improved from baseline to endline across all three respondent categories. However, while exposure to the intervention positively influenced self-efficacy, it did not have a significant impact on self-esteem. There has been an increase in mean score on self-efficacy levels from baseline to endline among those attending government schools and exposed to the GEMS program: from 30 to 32 among younger girls, 32 to 34 among older girls, and 30 to 33 among boys. Regression analysis, adjusted for other covariates, also indicated a significant increase in self-efficacy among girls and boys currently attending government schools and exposed to the GEMS program at endline compared to baseline (Table 5). However, the positive impact of the program exposure was significant only among girls (younger girls: β coefficient = 1.45, $p<0.05$; older girls: β coefficient = 0.7, $p<0.01$), not for boys.

Gender Attitudes

The **GEMS program demonstrated mixed results, with boys exhibiting greater improvements in gender attitudes than girls.** On the gender attitude scale (23-92), baseline scores averaged 60 for younger girls, 61 for older girls, and 56 for boys (Table 4). At endline, the mean score remained the same for younger and older girls but increased for boys. However, when analyzed by program exposure among those going to the government schools, the findings show that the program had a positive impact on gender attitudes among younger girls and boys, but not among older girls.

Regression analysis further confirmed these trends (Table 5). Boys in government schools who participated in the GEMS program showed a significant improvement in gender attitudes relative to both their baseline scores (β coefficient 3.5; $p<0.05$) and to non-exposed boys at endline (β coefficient 2.7; $p<0.05$). Among girls aged 15-18 years, exposure to the program was associated with improved gender attitudes compared to baseline (β coefficient 1.30; $p<0.05$). However, this improvement was not statistically significant when compared to non-exposed girls at endline. The pattern differed among younger girls: those not exposed to the intervention recorded lower scores at endline than at baseline, whereas the scores of those exposed remained stable. Consequently, at endline, exposed younger girls had significantly higher gender attitude scores than their non-exposed counterparts (β coefficient 2.1; $p<0.05$).

These patterns point to both progress and persistent resistance across different dimensions of gender attitudes, as reflected in the statement-level analysis across the subdomains of Role and Responsibilities, Masculinities, Gender Traits, Gender-Based Violence, Women's Rights and Women's Autonomy and Sexuality (Annexure 3).

With respect to **gender roles and responsibilities**, most girls and boys in government schools continued to endorse women's caregiving role. At the same time, there was strong support for men's involvement in household responsibilities and women's participation in paid work. Between baseline and endline, attitudes on this domain shifted positively overall, with limited but notable impact of program exposure. Out of five statements, younger girls exposed to the program demonstrated significant positive shifts on two. For instance, the proportion of younger girls who strongly disagreed with the statement "Women should not work outside home" increased from 47% at baseline to 76% at endline among the exposed group, compared to 68% among non-exposed peers. Among boys, those exposed to the program also recorded significant positive changes in attitudes towards girls' education, with strong disagreement rising from 50% at baseline to 74% at endline, compared to 64% among the non-exposed.

In relation to **women's rights,** 65% of girls and 44% of boys at baseline strongly supported girls' right to inherit parental property. Support weakened, however, when the condition of dowry was introduced ("Girls should have a right to parent's property even if she is given a dowry"). From baseline to endline, support for women's rights increased across groups; though, program exposure showed limited effect.

With respect to attitudes towards **women's autonomy and sexuality** as well, positive change can be seen from baseline to endline. For instance, among older girls exposed to the intervention, the proportion that strongly disagreed with the statement – "only bad girls make male friends" – increased from 54% at baseline to 69% at endline compared to 58% among non-exposed. Similarly, younger girls showed a positive shift on two out of three statements, while boys showed improvement on one.

Attitudes toward **gender-specific traits** showed significant variation. At baseline, between half and three-fourths of both girls and boys strongly agreed that women are capable of holding leadership positions. Conversely, 15% or fewer strongly disagreed with the statements that – "Men need more care as they work harder than women and "A wife should always obey her husband". Notably, exposure to the program was associated with a significant positive shift in these attitudes from baseline to endline. Both younger and older girls recorded improvements on two of the six gender-related statements compared to non-exposed peers, while boys showed improvement on one statement.

On **gender-based violence,** one-third or fewer girls and boys strongly disagreed at baseline with the two statements "A woman should tolerate violence in order to keep her family together" and "There are times when a woman deserves to be beaten". Girls did demonstrate a positive shift on these items; however, the magnitude of change was modest compared to other domains.

Finally, in the thematic area of **masculinities,** fewer than 20% of girls and boys at baseline strongly disagreed with the four negative statements. By endline, these proportions increased significantly – by up to ten percentage points across the three participant categories. Program exposure had a discernible effect only on one statement – a significantly higher proportion of both younger and older girls exposed to the program strongly disagreed with "The man should have the final say in all family matters" compared to those not exposed.

Attitudes towards child/early marriage

There was a positive shift in attitudes towards child marriage among all three study participant groups over time. Among younger and older girls, the increase in mean score on child marriage attitudinal scale from baseline to endline was two points (from 48 to 51) and three points (from 49 to 52), respectively (Table 4). Among boys, the increase was six points (from 44 to 50) during this period. Moreover, there was a significantly greater increase in positive attitudes towards child marriage among younger girls who were attending government schools and had been exposed to the GEMS intervention, in comparison to those who had not been exposed to the intervention. However, the program had no effect among older girls and boys. Regression analysis, adjusted for covariates, shows significant increase in mean score when compared with baseline, but not in comparison to the non-exposed group at endline.

Statement-wise analysis presented in Annexure 4 showed that the majority of girls and boys strongly disagreed with the notion that child/early marriage can protect family honor or resolve financial problems of the family or provide girls security, particularly at the endline. They also recognized adverse consequences of child marriage on education. Out of 15 statements, younger girls with program exposure showed a greater positive shift at endline than non-exposed girls on six statements, while the program exposed boys showed a positive shift on only one statement than non-exposed boys.

Table 4: Mean score or proportion of girls and boys across different age groups at baseline and endline with and without program exposure for different indicators

		Girls								Boys			
		10-14 Years				15-18 years				10-18 years			
Indicator		Baseline	Endline	Not Exposed to GEMS	Exposed to GEMS	Baseline	Endline	Not Exposed to GEMS	Exposed to GEMS	Baseline	Endline	Not Exposed to GEMS	Exposed to GEMS
Perception on School and Studies (9-36) 	Overall (Mean)	33	34*	34*	34*#	33	34*	33*	34*#	31	32*	32*	33*#
	Overall (N)	795	798	433	365	1193	1198	535	663	795	802	471	331
	Currently going to Government School (Mean)	33	34*	34*	34*#	33	34*	34*	35*#	31	33*	33*	33*#
	If currently going to Government School (N)	649	705	352	353	717	740	215	525	564	600	293	307
Educational Aspiration for Graduation or above among students who are currently going to school 	Overall (%)	26	31*	26*	36*#	56	66*	61*	68*	45	44	36*	52*#
	Overall (N)	200	238	103	135	464	532	163	369	331	304	138	166
	Currently going to Government School (%)	25	30*	23*	36*#	53	64*	58*	67*#	40	42	32*	51*#
	Currently going to Government School (N)	166	216	82	134	379	469	124	345	226	256	99	157
Self-Esteem (0-30) 	Overall (Mean)	21	23*	23*	23*	21	22*	22*	22*#	21	22*	22*	23*
	Overall (N)	800	808	443	365	1208	1206	541	665	802	807	476	331
	If currently going to Government School (Mean)	21	23*	23*	23*	21	22*	22*	23*	21	23*	22*	23*
	If currently going to Government School (N)	649	705	352	353	717	740	215	525	564	600	293	307
Self-Efficacy (10-40) 	Overall (Mean)	30	31	30*	32*#	31	33*	32*	34*#	30	32*	32*	33*
	Overall (N)	800	808	443	365	1208	1206	541	665	802	807	476	331
	If currently going to Government School (Mean)	30	31*	30*	32*#	32	34*	33*	34*	30	32*	32*	33*
	If currently going to Government School (N)	649	705	352	353	717	740	215	525	564	600	293	307
Gender Attitudes (23-92) 	Overall (Mean)	60	59	58*	60*#	61	60	59*	62*#	56	58*	56*	59*#
	Overall (N)	800	808	443	365	1208	1206	541	665	802	807	476	331
	If currently going to Government School (Mean)	59	59	58*	60*#	61	62	61	63	56	58*	57*	59*#
	If currently going to Government School (N)	649	745	352	353	717	740	215	525	564	600	293	307
Child Marriage Attitude (15-60) 	Overall (Mean)	48	50*	49*	50*#	48	51*	50*	51*#	43	49*	49*	49*
	Overall (N)	319	356	150	206	1154	1092	460	632	404	486	254	232
	If currently going to Government School (Mean)	48	50*	49*	51*#	49	51*	51*	52*	44	50*	50*	50*
	If currently going to Government School (N)	244	291	95	196	708	720	204	516	256	330	115	215

Note: *shows significant variation with baseline value at p<0.05; # shows significant variation among exposed to GEMS and Not exposed at endline at p<0.05.

Table 5: Regression Analysis Results

Outcome	Categories	Girls				Boys	
		10-14 Years		15-18 years		10-18 years	
		Not Exposed to GEMS	Exposed to GEMS	Not Exposed to GEMS	Exposed to GEMS	Not Exposed to GEMS	Exposed to GEMS
Perception towards school and studies	Overall	0.80**	1.28**	0.53**	1.42**	0.63**	1.50**
	If currently going to Government School	1.01**	1.38**	0.81**	1.08**	1.00**	1.44**
	If currently going to Government School (During Endline)		0.43**		0.26*		0.54**
Gender Attitudes	Overall	-1.51**	0.38	-1.44**	0.85*	0.71	3.40**
	If currently going to Government School	-1.29**	0.82	0.03	1.30**	0.70	3.52**
	If currently going to Government School (During Endline)		2.12**		1.23		2.67**
Self-Esteem	Overall	1.57**	1.30**	1.28**	1.64**	1.83**	1.95**
	If currently going to Government School	1.74**	1.35**	1.06**	1.34**	1.83**	2.09**
	If currently going to Government School (During Endline)		-0.35		0.30		0.29
Self-Efficacy	Overall	-0.16	1.14**	0.78**	1.95**	2.05**	2.32**
	If currently going to Government School	-0.09	1.29**	1.16**	1.89**	1.62**	2.40**
	If currently going to Government School (During Endline)		1.45**		0.73*		0.80
Child Marriage Attitude	Overall	1.59**	2.48**	1.67**	2.62**	5.55**	6.02**
	If currently going to Government School	1.54*	2.67**	2.24**	2.36**	5.79**	5.76**
	If currently going to Government School (During Endline)		1.24		0.12		0.14
Educational Aspiration for Graduation and above studies among students who are currently going to school	If currently going to Government School	0.91	1.63**	1.31	1.91**	0.60**	1.27
	If currently going to Government School (During Endline)l		1.84**		1.47**		2.10**

Note - Regression analysis adjusted to religion, caste, and wealth index. *significant at p<0.1 and **significant at p<0.05 for overall and if currently going to Government school with reference to baseline; while for If currently going to Government school (during endline) with reference to Not Exposed to GEMS

Discussion and Recommendations

The GEMS intervention, a gender-transformative school-based program, is being implemented across 270 schools in Godda and Jamtara districts to foster gender-equal attitudes and behaviors among adolescent girls and boys. The program aims to create an enabling school environment to support and encourage positive engagement with education, enhance educational aspirations and improve school retention. Building on the lived experiences of young people, GEMS emphasizes strengthening their agency and amplifying their voices. The evaluation findings highlight a mix of outcomes that help explain the varied impact of the program.

While there have been clear positive shifts in student perceptions of school and learning, educational aspirations, and self-efficacy, the program has had mixed impact on attitudes towards prevailing gender norms, gender-based violence, and child marriage (differing across age groups), and no discernible effect on school retention. These mixed results underscore both the promise and limitations of school-based gender transformative programs. On the one hand, they demonstrate the ability of such programs to improve student engagement with schools and their outlook on education. On the other hand, they point to the deep-rooted structural and contextual barriers that often hinder broader social and behavioral transformation that programs like GEMS alone cannot fully overcome. For instance, among all population groups covered in the survey, there is an improvement from baseline to endline in their perception of school & studies and overall aspiration to pursue higher education, particularly among those who were exposed to the intervention. The findings suggest a greater desire among students to attend school, stronger motivation to study, and more positive perceptions of teachers' involvement in their academic journeys.

These outcomes are consistent with the program's emphasis on fostering responsive and participatory school environments through enhanced student-teacher engagement, communication, and teacher capacity building aimed at promoting gender-equitable attitudes. The evidence thus points to the gradual impact of the program in shaping more inclusive and gender-equitable school spaces while simulatenously enhancing students' educational aspirations. Importantly, these findings are corroborated by existing research. Studies have shown that classroom inequities can undermine learning outcomes, whereas equitable practices foster improved performance. For instance, in an experimental study, Vallee et al. (2020) demonstrated that mixed gender debates in real classroom settings significantly reduced the negative academic effects (lower test score, long-term academic achievements) of the stereotype that girls perform worse than boys in mathematics. Similarly, Adams et al. (2006) found that teachers holding traditional gender beliefs tend to reinforce stereotypes and create unequal expectations, thereby negatively students' academic performance. Qualitative evidence from the Forum for African Women Educationalists (FAWE) gender-responsive pedagogy approach further supports this, showing that when teachers refrain from using harsh or abusive language and encourage open student-teacher interaction, both girls and boys engage more actively in learning (Wanjama and Njuguna, 2016). Collectively, this body of evidence substantiates the findings emerging from the evaluation, illustrating how equitable and responsive pedagogical practices can contribute to more positive learning environments and improved educational outcomes.

At the same time, the results highlight the limits of school-based interventions in addressing entrenched structural barriers. Despite positive shifts in classroom dynamics and aspirations, there was no significant improvement in school enrolment and retention for girls, while boys enrolment declined by five percentage points. These trends must be understood within broader socio-economic constraints, such as low household income and pressures of early marriage, which often push older adolescents out of school. They also need to be situated against the backdrop of the COVID-19 pandemic – a period of widespread socio-economic disruption that severely affected adolescents' ability to remain in school (Gogoi et al., 2023). Children from low-income households were particularly vulnerable, as job losses and financial instability compelled many to enter the workforce to support their families, interrupting their education. These challenges were more intensely experienced in regions with existing economic hardship and high rates of seasonal or permanent migration—conditions that are especially prevalent in states like Jharkhand (Mitra and Singh, 2020). Several studies conducted during and shortly after the COVID pandemic predicted a decline in school retention of girls, particularly in low-income settings (Ghatak et al., 2020; Global Education Monitoring Report, UNESCO, 2021; Wafubwa et al., 2024). Consistent with these concerns, the UMANG evaluation (Verma et al., 2024) carried out in the same region found that school enrolment among girls aged 15-18 years declined in the control areas from pre- to the post-pandemic period. By contrast, enrolment rates

among girls remained stable in the GEMS coverage areas, indicative of the potential of comprehensive school-based or community programs to sustain and in some cases improve school enrolment, as demonstrated by the findings of the UMANG study as well (Verma et al., 2024). Notably, despite the fear and uncertainty created by the pandemic, the challenges of low attendance, and pressures to catch up on the academic syllabus, the program was able to reach over 31,000 girls and boys.

Having said that, the decline in school retention among boys is a concerning trend – and matched by current global trends. According to UNESCO (2022),132 million boys of primary and secondary school age were out of school in 2020. The report further notes that boys in many countries are more likely than girls to repeat grades, fail to complete education cycles and demonstrate poor learning outcomes. While this disadvantage was once most visible in high- or upper-middle income countries, it is now increasingly evident across low- and lower-middle-income settings as well. Such global patterns suggest that boys' drop-out is shaped by multiple intersecting factors, including entrenched traditional gender norms that position men and boys as primary breadwinners, often compelling them to leave school prematurely to support household income, particularly in economically disadvantaged communities. Additionally, existing research highlights that boys are often subjected to harsher punishment in schools, leading to reduced desire to attend school as well as reduced academic achievement in school.

Taken together, these findings relfect the dual challenges faced by education systems: sustaining girls' enrolment amidst structural barriers such as poverty and early marriage, while simultaneously addressing the growing vulnerability of boys to early school leaving. Against this backdrop, the GEMS program's role in fostering positive shifts in gender attitudes among adolescents becomes particularly significant. While the magnitude of attitudinal change varied – with encouraging progress in certain domains and persistent resistance in others – the evidence underscores both the transformative potential of school-based interventions and the deep-rooted nature of social norms that require sustained, long-term engagement. Notably, positive change was observed in domains such as women's rights, autonomy, early marriage as well as gendered division of labor. These findings are consistent with a growing body of literature demonstrating that interventions directly engaging with unequal gender norms and attitudes are particularly effective in fostering change. For instance, Gupta et al. (2013) showed that incorporating structured dialogues on gender norms significantly reduced intimate partner violence among rural women in Cote d'Iviore, illustrating the value of facilitated reflection and discussion. Similarly, a World Health Organization (WHO) review (2007) emphasized that programs involving men and boys in the promotion of gender equity yielded the greatest impact when they explicity addressed issues of gender and masculinity, rather than treating them as peripheral. This evidence supports the GEMS program's strategy of using dialogue-based and participatory approaches within schools to promote critical reflection. While context-specific adaptation is necessary, structured school-based discussions have shown promise in shifting gender norms (Achyut et al., 2017). Encouraging young people to critically reflect on personal and societal norms can be particularly impactful in schools, especially when participation is mandatory and students are still in formative stages of identity development, making them more open and responsive to change (Dhar et al., 2022). Collectively, these studies substantiate the GEMS findings, underscoring the importance of structured, context-sensitive, dialogue driven interventions for promoting gender-transformative change.

However, the evaluation also underscores that not all domains respond equally to school-based programming. Norms surrounding violence, gendered traits, and family authroity remain far more entrenched, reflecting broad structural and cultural barriers to gender-equitable change. Shifting these norms remains a significant challenge, as they are rooted in long-standing beliefs about gender roles, power dynamics, and social expectations—many of which are subtle and not always openly expressed. These norms are reinforced by a complex web of behaviors, traditions, and institutional structures, making it difficult to create lasting change through individual-focused efforts alone. This complexity is also evident in the mixed results regarding attitudes toward child and early marriage. While there is encouraging evidence of a decline in the perceived 'value' of early marriage for girls, there is also a notable increase in agreement across all groups with the idea that girls should honor family decisions regarding marriage—even when it goes against their own wishes. This highlights the enduring influence of parental and elder authority in shaping children's life choices, and the importance of addressing these social dynamics in efforts to promote gender-equitable attitudes.

Recognizing the complexity of addressing gender inequity in schools, the GEMS program has deliberately adopted a comprehensive and ecosystem-based strategy, ensuring that the intervention is not restricted only to students but extends to multiple actors who influence the school environment. The program acknowledges that meaningful and sustained change requires the active participation of school leaders, teachers, and the wider community, each of whom plays a critical role in shaping attitudes, practices, and norms around gender. To this end, GEMS has organized multiple capacity-building sessions with HMs, BRPs, and CRPs, orienting them to the program's objectives, the significance of gender equity, and other related themes in the GEMS curriculum. In addition to these stakeholders, nodal teachers – who are responsible for the direct implementation of the program – have also been provided with sustained training and guidance. The orientation of these school-level stakeholders, particularly HMs, has proven to be quite impactful. Many of them have become active champions of the program, facilitating teacher participation, nudging them to hold GEA sessions and extending support to both teachers and external program facilitators in organizing activities within the schools. Their involvement has been instrumental in legitimizing the program at the school level and ensuing that it is taken seriously by staff and students alike. However, it is important to acknowledge the practical constraints faced by them. Many HMs and other school-level officials cite the burden of administrative responsibilities as a limiting factor in their ability to play a more hands-on role in the program, while academic oversight-level officials cite the burden of administrative responsibilities, academic oversight, and other institutional priorities. As a result, the responsibility of day-to-day program execution falls primarily on the nodal teachers, who are the primary drivers of GEMS-related activities.

To support nodal teachers in this role, the program has created multiple channels of engagement, including capacity-building workshops, monthly review meetings and shorter issue-based discussion sessions. These platforms not only build technical familiarity with the curriculum but also create space for teachers to reflect on their own beliefs, biases and experiences related to gender. Yet, the program recognizes that perspective transformation on gender inequity and discrimination is not immediate. Since these attitudes are shaped into long-standing and deeply entrenched social norms, the process of unlearning and challenging them will require time and consistent reinforcement. School-based efforts, while critical, must therefore be complemented by community-level engagement, so that changes in the classroom are supported and reinforced in children's homes and neighborhoods.

With this understanding, GEMS has also sought to extend its outreach to parents and community members, particularly through existing forums such as SMCs and Parent-Teacher Meetings (PTMs). These spaces have been used to sensitize parents and community members on gender-related issues, share updates on program activities, and encourage parental support for GEA sessions. While such efforts have helped build a more enabling environment for the program, challenges remain. Many SMCs across schools are inactive or function only in a tokenistic manner, which limits their effectiveness as spaces of engagement. This underlines the need for GEMS to strengthen and expand its strategies of community inclusion, ensuring that families and community members are meaningfully involved in discussions on gender equity. Since parents and community elders often hold significance over children's behaviors, aspirations and opportunities, their support is critical to achieving sustained, meaningful and long-term change in gender norms both inside and outside the school-setting. This would require significant and sustained time as well as resource allocation towards community engagement efforts.

Therefore, the GEMS intervention demonstrates both the promise as well as the complexity of advancing gender equity through school-based programs. The evaluation findings underscore that while schools can serve as powerful spaces for fostering critical reflection, agency, and positive aspirations among adolescents, structural and normative barriers – such as economic pressures, parental authority and deeply entrenched beliefs around gender roles – continue to limit the extent of change. By working simultaneously with students, teachers, school leadership as well as facilitating limited engagement with community members, GEMS has begun to create an enabling environment for dialogue and reflection, while also signaling the importance of long-term, multi-level engagement to achieve sustained transformation. The mixed but encouraging outcomes reaffirm the need for gender-transformative approaches that not only strengthen school-based capacities but also extend to families and communities, bridging the gap between classroom learning and everyday social realities. The following section identifies and highlights recommendations that would support long-term sustainability of gender-transformative programs, such as GEMS.

Recommendations for long-term sustainability of gender transformative programs

Engaging parents and community

As discussed above, transforming rigid gender norms requires a holistic approach that engages multiple stakeholders across different levels of society. Without such an ecosystem, the burden of resisting or renegotiating entrenched expectations often falls unfairly on individual adolescents, leaving them vulnerable to backlash or social isolation. Hence, it is important to expand the scope of gender transformative school-based programs such as GEMS to involve stakeholders beyond the school system actively. While GEMS has attempted to engage with parents and community members through school-level platforms, it is essential to tap into other community platforms as well and develop strategies that aim to simultaneously engage multiple stakeholders to reinforce supportive messages and practices collectively. While schools are critical entry points for shifting attitudes during formative years, their impact is amplified when complemented by supportive family, community and institutional environments.

Convergence of GEMS curriculum with regular school curricula

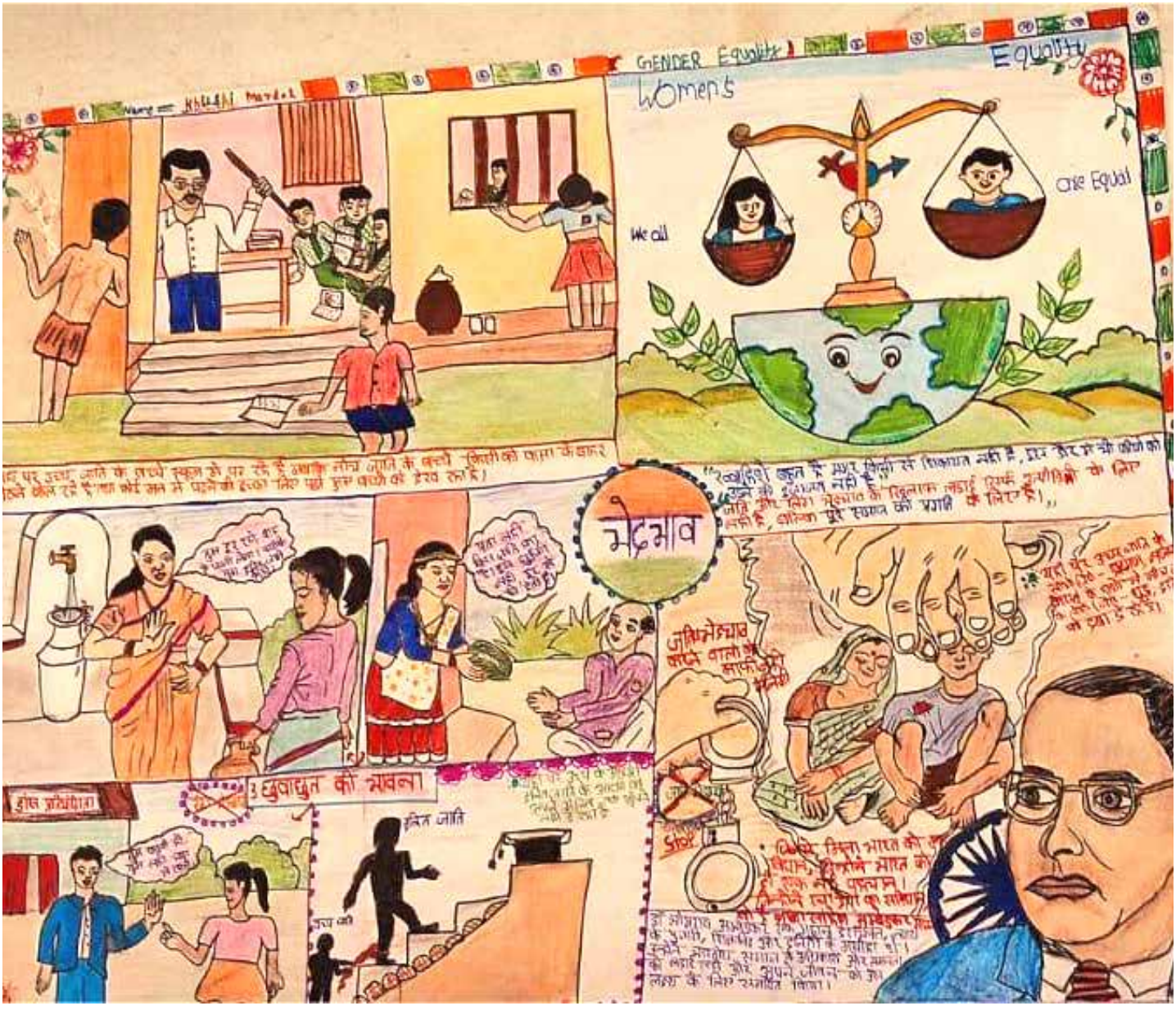
Through capacity building sessions and discussions with teachers, it has become clear that teachers face a significant burden of teaching and administrative responsibilities. Additionally, some schools have very few teachers, which makes it challenging to provide an adequate number of teachers to lead the GEMS sessions. This burden has had a negative impact on the motivation of existing teachers to take regular GEMS sessions, using participatory methods. Teachers cite their work burden to argue that they are often unable to take sessions regularly. It is important to establish convergence of programs such as GEMS with any other state-level curriculum that may be operational, such as Health and Wellness curriculum, so as not to add to the work burden of teachers. Developing additional resources that offer teachers opportunities to engage students with tools aside from the curriculum can help provide them with a break from their demanding workloads and enhance their motivation.

Linking gender transformative programs with a skilling component

Capacity building sessions with teachers highlighted a disconnect that students often feel between the aspirations and empowerment fostered by programs like GEMS and the limited skills or opportunities available to pursue these goals after school. Their perspective has been that while programs like GEMS aim to shift gender norms, foster critical thinking, and build confidence, students may lack the practical skills to act on this awareness – whether in pursuing economic independence, leadership roles, or higher education. Thus, to enhance the impact of gender transformative programs, it is crucial to integrate a skilling component that equips adolescents with practical and livelihood-oriented skills. Skilling provides adolescents – especially girls – with tangible competencies (e.g., digital literacy, communication, financial literacy, vocational training) which can have the effect of enhancing their sense of agency. For instance, a girl who learns about gender equality in the classroom is further empowered when she gains skills that allow her to earn, negotiate or lead. Developing these competencies alongside gender equity education can empower both girls and boys to challenge restrictive norms while building their economic independence. A skill-based approach not only reinforces gender-equitable attitudes but also increases opportunities for meaningful participation in the workforce, delaying early marriage and fostering long-term empowerment. Collaboration with local industries, training institutions, and community stakeholders can further strengthen this integration, ensuring that adolescents—especially girls—are equipped with the confidence and resources needed to transition successfully into higher education and employment.

Need to start early

Gender attitudes tend to form very early in life. According to the 2022 study by Tran and Olshan, for instance children are exposed to gender stereotypes from a young age and through various sources such as their family, peer groups, community, and the media. The Report of the Commission on Gender Stereotypes (2020) reinforces the criticality of the 7-10 years age-period, when "children move from beginning to label based on gender; to being conscious of gender norms and their own identity; to developing a socially informed sense of how girls and boys are supposed to behave". By the time students are introduced to concepts of gender inequity and discrimination through such programs, they are already adolescents with well-established gender attitudes. Hence, it is important to design and develop gender-transformative school interventions for a younger age group, so that the groundwork for viewing the self and the world through a non-judgmental, gender-equitable lens is laid early and attitudes are more amenable to change as they grow older.



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Annexures

Annexure 1: Demographic Profile of girls and boys at baseline and endline (%)

	Girls				Boys	
	10-14 Years		15-18 Years		10-18 Years	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Religion*						
Hindu	57.1	53.5	57.9	55.5	61.5	55.4
Muslim	28.2	33.6	25.8	31.4	25.8	27.0
Others	14.7	12.8	16.3	13.1	12.7	17.6
Caste*						
SC/ST	35.1	27.2	38.2	27.1	41.86	33.92
OBC	52.5	65.1	47.5	64.9	52.58	60.12
General	12.4	7.7	14.3	8.0	5.55	5.96
Wealth index*						
Poor	39.5	32.4	31.7	29.0	40.0	30.6
Moderate	33.4	31.7	35.1	32.1	34.8	32.8
Rich	27.1	35.9	33.3	38.9	25.2	36.6
Mother's Education*						
No education	66.9	55.9	74.5	63.1	65.3	53.6
Primary	16.7	22.0	12.6	20.8	17.6	27.2
Secondary or Senior Secondary	10.8	15.3	9.4	11.8	11.6	12.3
Higher	5.6	6.9	3.5	4.4	5.6	6.9
Father's Education*						
No education	37.1	29.1	40.3	34.9	35.8	28.4
Primary	21.0	24.7	18.9	21.1	20.0	29.2
Secondary or Senior Secondary	24.6	26.8	22.4	24.3	26.5	25.5
Higher	17.3	19.4	18.3	19.7	17.7	16.9
Mother's Occupation*						
Cultivator	22.5	27.7	20.3	28.1	11.6	29.0
laborer or domestic worker	12.6	16.9	10.2	15.0	7.6	13.4
Salaried	5.0	6.4	8.1	7.0	3.6	4.7
Household Work	57.2	46.6	56.8	46.6	74.8	49.8
Other	2.7	2.4	4.5	3.4	2.4	3.1
Father's Occupation						
Cultivator	12.6	11.2	17.7	16.5	17.3	20.3
laborer or domestic worker	60.4	62.3	49.2	52.6	57.5	53.6
Salaried	21.2	21.1	23.1	22.1	19.0	17.8
Other	5.8	5.3	10.0	8.8	6.2	8.4
Total	**800**	**808**	**1,208**	**1,206**	**802**	**807**

Except for Father's occupation, there is significant variation* (p value <0.05) in Religion, Caste, Education, Mother's Occupation and Wealth index from baseline to endline

Annexure 2: Perception of school and studies: Proportion of girls and boys currently attending government schools who strongly agree or disagree with different statements

Statements (%)	Girls: 10-14 Years				Girls: 15-18 Years				Boys: 10-18 Years			
SA- Strongly Agree SD- Strongly Disagree	Base-line	End-line	End-line Not Ex-posed	End-line Ex-posed	Base-line	End-line	End-line Not Ex-posed	End-line Ex-posed	Base-line	End-line	End-line Not Ex-posed	End-line Ex-posed
A. You enjoyed school/ college **(SA)**	84	89*	88*	91*	83	89*	87*	90*	71	75	70*	79*#
B. You were motivated to work hard at school/college **(SA)**	69	81*	81*	82*	78	86*	84*	87*	52	69*	70*	68*
C. You got bored at school/college **(SD)**	43	61*	60*	62*	46	59*	57*	60*	36	48*	51*	46*
D. What you learnt in school/college will be useful in future **(SA)**	80	91*	91*	91*	87	93*	93*	93*	62	80*	76*	84*#
E. You wanted to quit school **(SD)**	72	88*	87*	89*	78	91*	91*	91*	58	70*	69*	71*
F. You learnt a lot of new things at school **(SA)**	76	88*	84*	92*#	79	92*	88*	93*#	58	71*	66*	77*#
G. You were eager to go to school/college **(SA)**	80	89*	88*	90*	81	91*	87*	92*#	58	68*	65*	71*
H. My teachers in school/ college wanted you to do well **(SA)**	75	88*	86*	90*#	84	93*	92*	93*	63	69	66	72
I. You felt your studies did not hold any meaning (SD)	57	85*	83*	87*	70	90*	87*	92*#	47	71*	69*	73*

Note: *shows significant variation at endline compared to baseline at p<0.05; #shows significant variation at endline between those with program exposure and not exposed.

Annexure 3: Gender Attitude: Proportion of girls and boys currently studying in government schools who strongly agree or disagree with statements on gender norms

	Girls: 10-14 Year				Girls: 15-18 Year				Boys: 10-18 Year			
GEMS Statements (%) SA- Strongly Agree SD- Strongly Disagree	Baseline	Endline	Endline Not Exposed	Endline Exposed	Baseline	Endline	Endline Not Exposed	Endline Exposed	Baseline	Endline	Endline Not Exposed	Endline Exposed
Roles and Responsibilities												
A. Woman's most important role is to take care of her home and cook for her family **(SD)**	6	7	4*	10*#	10	17*	12*	19*	1	3*	3	3
D. Women/girls should work only if there are monetary needs in their family **(SD)**	20	38*	36*	40*	30	55*	51*	56*	19	28*	27*	28*
E. Men should share the work around the house with women such as doing dishes, cleaning and cooking **(SA)**	65	82*	79*	84*	67	83*	83*	83*	52	61*	61*	61*
G. Women should not work outside the home. **(SD)**	47	72*	68*	76*#	56	78*	75*	80*	25	45*	45*	44*
W. Girls should complete schooling up to class 12. **(SA)**	74	94*	94*	94*	78	94*	93*	95*	50	69*	64*	74*#
Women's Rights												
P. A girl should have a right to inherit parental property **(SA)**	65	81*	81*	81*	65	80*	77*	81*	44	65*	60*	70*#
Q. Girls should have a right to the parent's property even if she is given a dowry. **(SA)**	48	63*	62*	65*	41	61*	57*	62*	27	39*	39*	40*
V. Instead of spending money on a girl's education, it should be saved for her dowry. **(SD)**	56	78*	75*	81*#	66	79*	76*	81*	51	56	56	57
Women's Autonomy and Sexuality												
R. Only bad girls make male friends **(SD)**	46	58*	53*	63*#	54	66*	58*	69*#	28	50*	49*	50*
S. A family's honor lies in the hands of the woman **(SD)**	8	13*	9*	16*#	11	20*	15*	21*	5	6	3*	9*#
T. Good girls do not roam around in public spaces **(SD)**	33	59*	59*	60*	41	66*	60*	69*	19	35*	34*	36*

GEMS Statements (%) SA- Strongly Agree SD- Strongly Disagree	Girls: 10-14 Year				Girls: 15-18 Year				Boys: 10-18 Year			
	Baseline	Endline	Endline Not Exposed	Endline Exposed	Baseline	Endline	Endline Not Exposed	Endline Exposed	Baseline	Endline	Endline Not Exposed	Endline Exposed
Gender specific Traits												
H. Boys are naturally better than girls in studies **(SD)**	29	43*	41*	46*	36	49*	41*	52*#	11	18*	16*	20*
I. Women can hold leadership positions (e.g. girl leaders in school, or women panchayat leaders in the village) **(SA)**	68	83*	80*	86*	78	88*	85*	90*	50	59	58	60
J. Men need more care as they work harder than women. **(SD)**	10	15*	12*	19*#	15	22*	17*	24*	6	8	7	9
K. A wife should always obey her husband. **(SD)**	7	11*	7*	16*#	11	20*	16*	22*#	4	3	1*	5*#
L. Boys are violent by nature. **(SD)**	20	22	20	23	22	27*	23*	29*	13	32*	29*	34*
M. Girls are more tolerant than boys by nature. **(SD)**	2	3	4	2	3	4	4	4	4	7	6	8
Gender-based Violence												
N. A woman should tolerate violence in order to keep her family together. **(SD)**	21	22	20	24	24	30*	26*	31*	18	14	14	14
O. There are times when a woman deserves to be beaten **(SD)**	35	41*	44*	39*	34	34	36	33	25	26	29	23
Masculinities												
B. If someone insults a man, I would expect him to defend his reputation with force if he has to **(SD)**	5	12*	13*	12*	8	13*	12*	13*	5	9*	10	9
C. To be a man you need to be tough **(SD)**	11	12	13	12	14	15	15	15	3	4	3	5
F. The man should have the final say in all family matters. **(SD)**	11	15*	11*	19*#	18	28*	22*	31*#	6	5	3	7
U. Men should be more educated than their wives **(SD)**	10	26*	25*	26*	18	36*	33*	37*	3	12*	10*	15*

Note: *shows significant variation at endline compared to baseline at $p<0.05$; #shows significant variation at endline between those with program exposure and not exposed.

Annexure 4: Attitude towards Child Marriage: Proportion of girls and boys currently studying in government schools who strongly agree or disagree with statements on norms around child marriage

	Girls: 10-14 Years				Girls: 15-18 Years				Boys: 10-18 Years			
Child Marriage Attitude (%) (15 Statements) **SA- Strongly Agree** **SD- Strongly Disagree**	**Baseline**	**Endline**	**Endline Not Exposed**	**Endline Exposed**	**Baseline**	**Endline**	**Endline Not Exposed**	**Endline Exposed**	**Baseline**	**Endline**	**Endline Not Exposed**	**Endline Exposed**
A. Marrying girls young can help protect family honor/ reputation **(SD)**	53	61*	53*	65*#	53	65*	64*	66*	19	58*	59*	57*
B. Marrying girls young can help resolve financial problems in the family. **(SD)**	46	52	54	51	52	63*	59*	65*	29	52*	54*	51*
C. Marrying girls young can provide them security. **(SD)**	49	68*	66*	70*	53	75*	78*	74*	27	57*	63*	53*
D. Marrying girls young can help prevent them from facing sexual violence, assault and harassment. **(SD)**	49	64*	62*	65*	52	69*	70*	68*	18	51*	50*	52*
E. Marrying girls young is likely to have a negative impact on a girl's education. **(SA)**	56	71*	66*	74*	60	76*	79*	75*	47	66*	67*	66*
F. Marrying girls young is preferable because younger brides are more obedient and respectful of their husbands. **(SD)**	39	43	33*	48*#	40	51*	48*	52*	16	44*	42*	45*
G Younger brides require a lower dowry than older brides. **(SD)**	41	54*	48*	57*	44	60*	56*	61*	28	47*	52*	44*
H. Since girls have to get married, they should not be sent for higher education. **(SD)**	57	73*	70*	74*	62	75*	71*	77*	38	53*	61*	48*
I. A girl should be married only after she has been able to attain her educational and career aspirations. **(SA)**	74	83*	75*	86*#	75	87*	86*	88*	52	66*	74*	61*#
K. Even if a girl does not want to be married, she should honor the decisions/ wishes of her family. **(SD)**	8	9	4	12#	9	15*	13*	16*	8	12	10	13
L. It is appropriate for girls to express displeasure if they do not like the groom chosen for them. **(SA)**	54	64*	63*	64*	54	67*	68*	66*	21	46*	47*	46*
M. Girls should be allowed to decide when they want to marry. **(SA)**	62	72*	71*	72*	60	78*	80*	76*	26	46*	48*	44*
N. Girls should be allowed to say no to an early marriage **(SA)**	63	73*	66*	77*#	67	80*	78*	81*	29	54*	60*	50*
O. Boys should be allowed to say no to an early marriage. **(SA)**	62	73*	61*	79*#	64	78*	76*	79*	28	55*	60*	52*
P. A girl should never be forced or compelled into marriage. **(SA)**	59	74*	66*	77*#	65	80*	78*	81*	40	61*	68*	57*

Note: *shows significant variation at endline compared to baseline at $p<0.05$; #shows significant variation at endline between those with program exposure and not exposed.

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