

India's Progress Towards Achieving Quality Education: An Analysis of Key Indicators

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INTRODUCTION


Education is essential for individual and societal growth, providing numerous benefits that extend across various aspects of life. It is a crucial pillar for achieving sustainability, as outlined in the United Nations' Sustainable Development Goal 4 (SDG 4): "Quality Education."





OBJECTIVE

In this project, we aim to analyze India's progress in achieving the goal of quality education by 2030 using various indicators from the World Development Indicators. We will compare India's performance with other countries, evaluate education quality improvements over time, and assess the extent of the Indian government's contribution to achieving these educational goals.



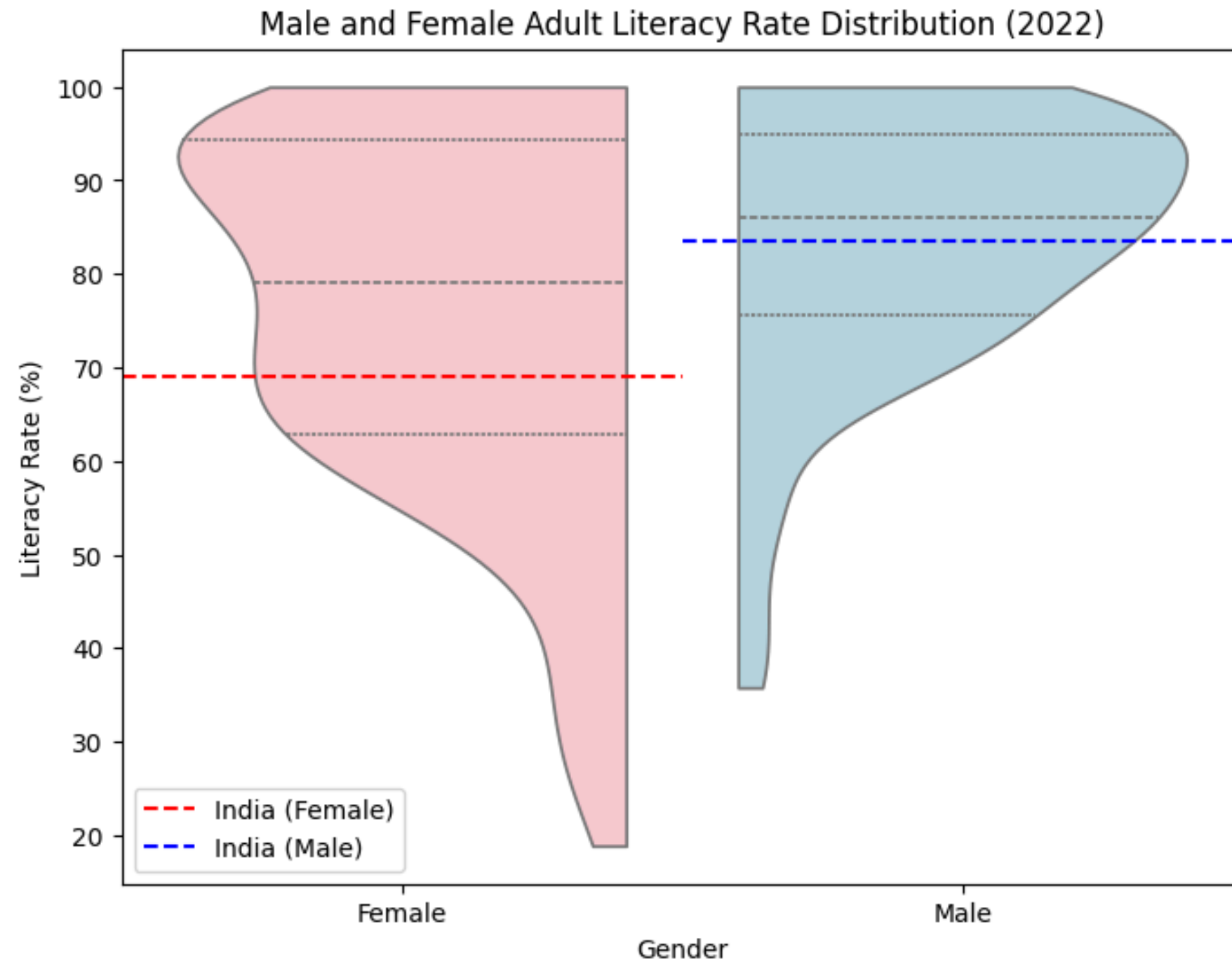
METHODOLOGY

Data for key indicators of education from the World Development Indicators database has been extracted using the World Bank API.

Seaborn and Matplotlib libraries are used to create charts and graphs.

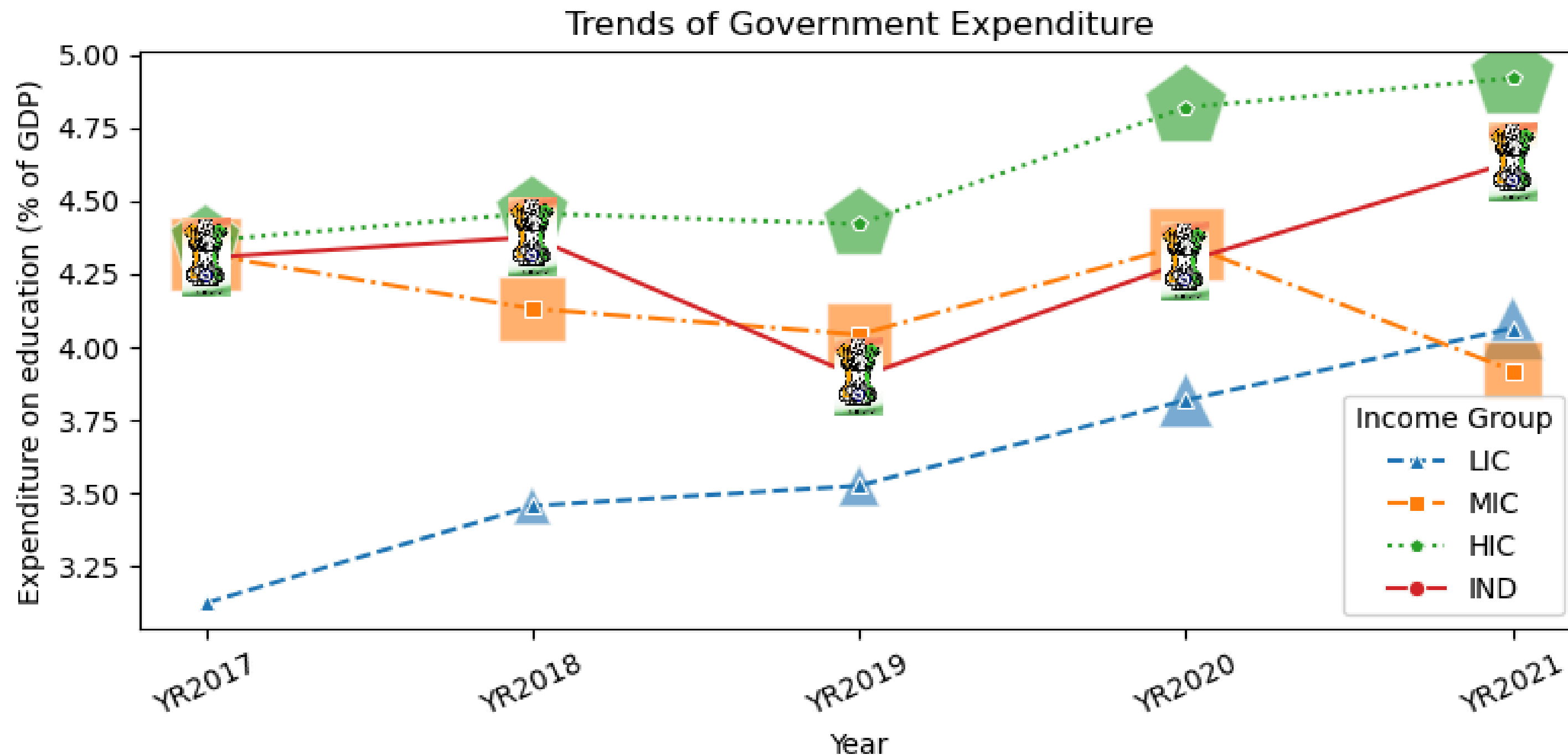


LITERACY RATE



- Literacy rates are a key metric in measuring basic education and are critical to individual empowerment
- The global gender wise distribution shows considerable disparity in male and female literacy rates
- This disparity is further amplified for India exemplifying the challenges to accessibility of education

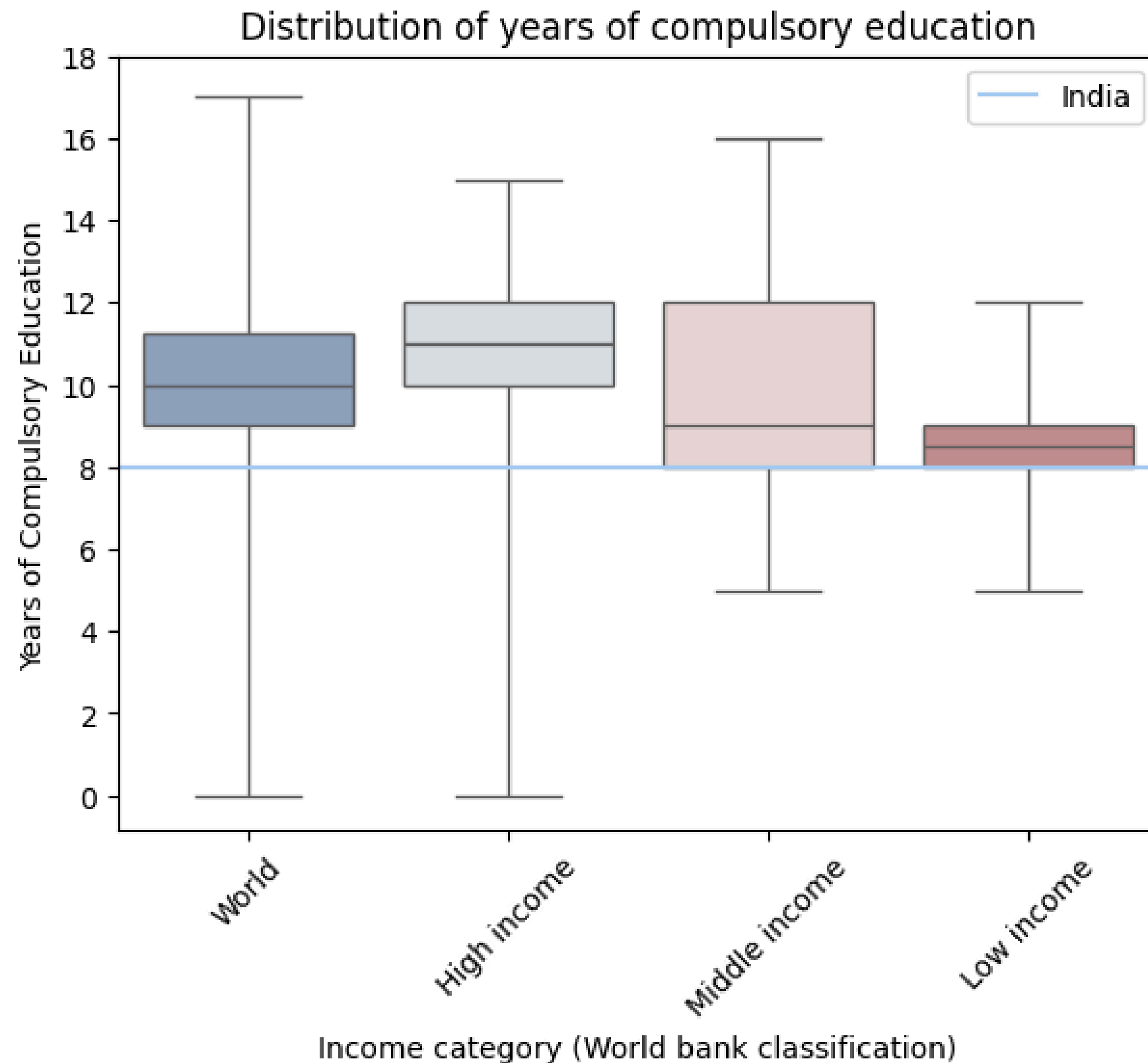
EXPENDITURE ON EDUCATION



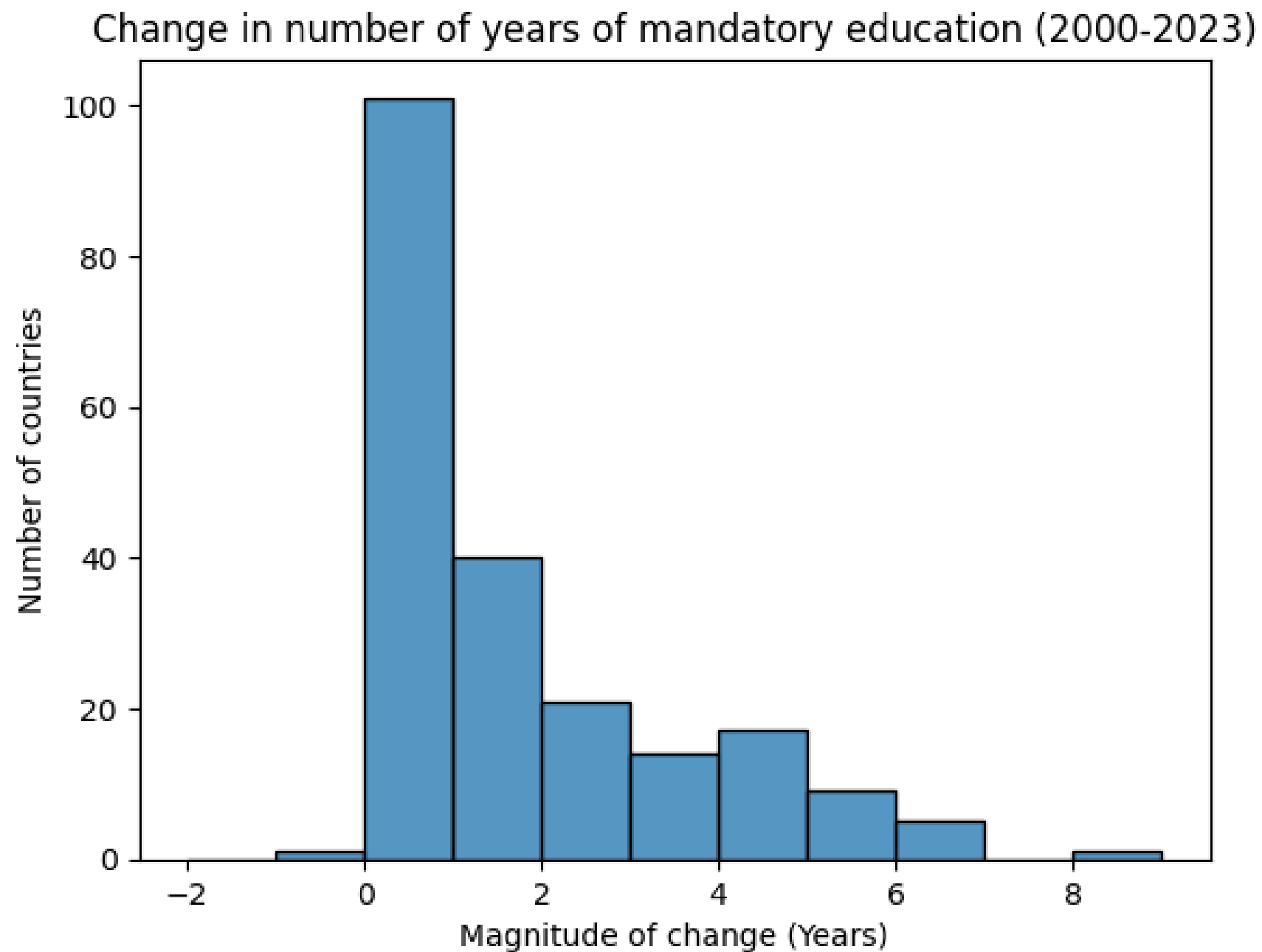
- Now, we want to see what government has done to improve the state of education in India.
- The graph highlights fiscal intervention by the government.

- The graph reflects the varying levels of commitment to educational spending across income groups.
- While HICs consistently allocate the highest percentage of GDP to education, LICs and India are progressively increasing their expenditure (rising from 3.5% to about 4.25%, indicating a growing focus on education)
- The trends suggest a commitment to enhancing educational investment, particularly in India, which is significant given the country's developmental context.

COMPULSORY EDUCATION

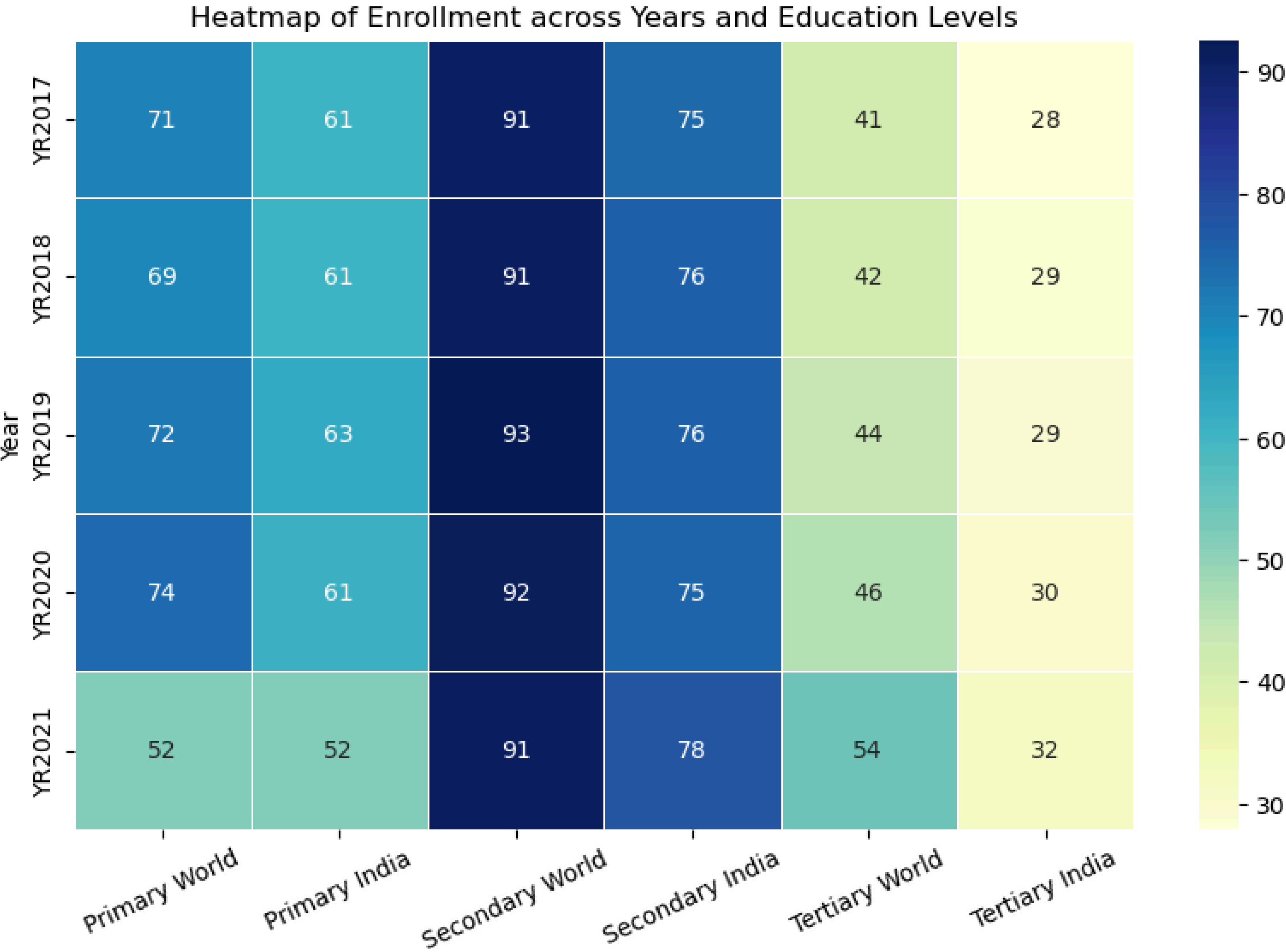


- Legally mandated number of years of compulsory schooling represents one of the legal interventions the government can make towards improving education
- International median is 10 years of compulsory schooling
- Shows significant variation, from having no legal mandates to up to 17 years of compulsory schooling
- In general higher income countries have more years of compulsory education
- India however falls in the first quartile not only when considering all countries, but also when aggregating by Income category



- Many countries including India, in pursuit of improving the state of education have either set up new legal mandates or increased the number of years of compulsory schooling
- India set up its mandate in 2009, But has never since raised the number of years of compulsory schooling despite being in the lower quartile of countries with compulsory education policies.

SCHOOL ENROLLMENT

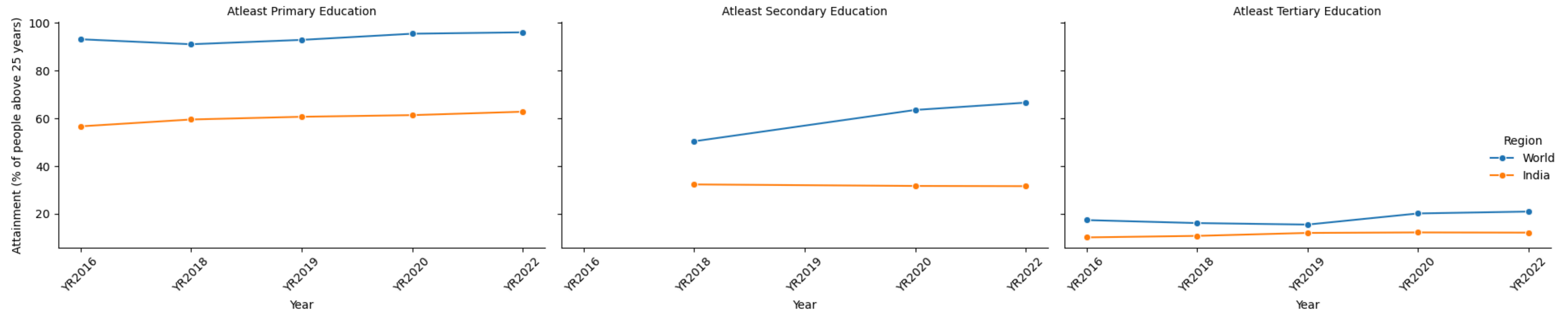


We now want to see how the initiatives by the government has improved the situation by looking at Indian enrollment rates at the primary, secondary and tertiary levels, while also comparing these rates with global trends.

The heatmap displays enrollment percentages across different education levels (Primary, Secondary, and Tertiary) for both the world and India from 2017 to 2021.

- Primary and Secondary Enrollment: High globally and in India, with values mostly above 70%, indicating strong participation at these levels.
- Tertiary Enrollment: Lower, particularly in India, but shows a slight increase over time (India rises from 28% in 2017 to 32% in 2021).

EDUCATIONAL ATTAINMENT



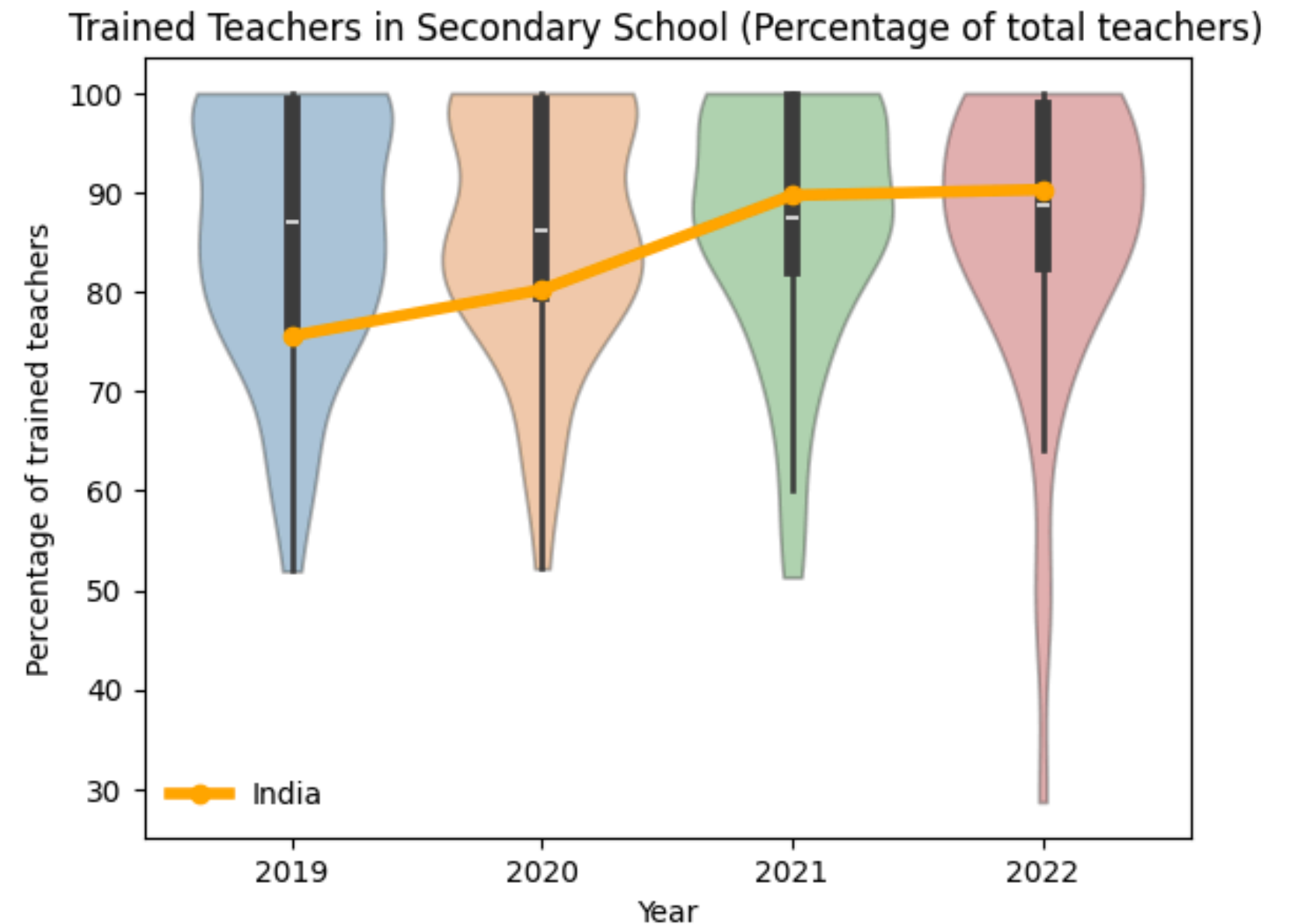
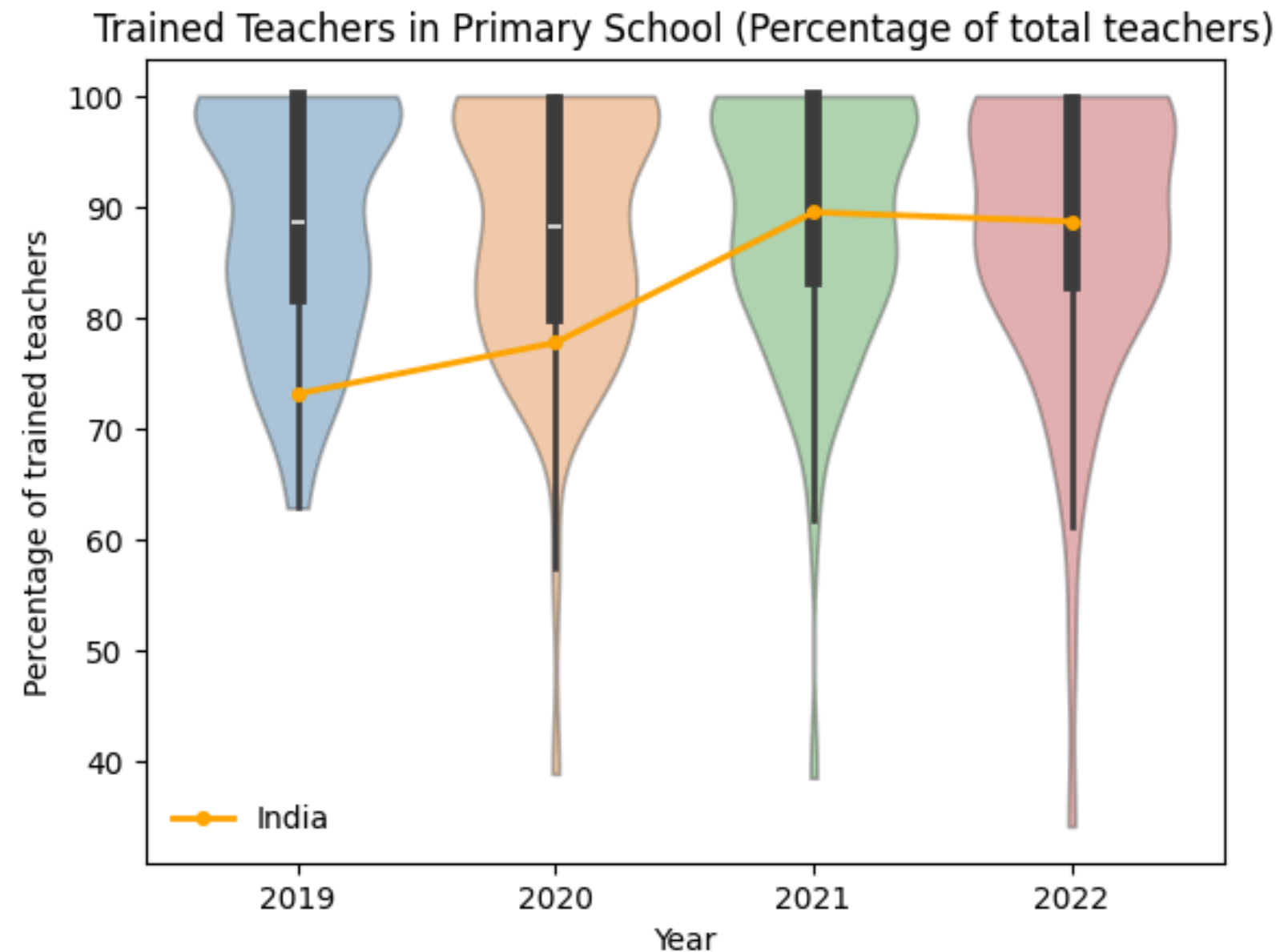
Since enrollment alone does not fully measure the effectiveness of the initiative, we will also examine completion of education by comparing the median attainment of education of the world with that of India across different levels of education over the years.

India's educational attainment is lower than the global average across all levels:

- Primary: India shows steady improvement but remains below global levels.
- Secondary: Minimal growth, still significantly behind the global trend.
- Tertiary: Low attainment with slight improvement, far below the global average.

India needs further progress, especially in secondary and tertiary education.

QUALITY OF EDUCATORS



The earlier metrics emphasized the quantity and accessibility to education while now we look at the quality of education by looking at the percentage of teachers who have received minimum organized teacher training (pre-service or in-service)

QUALITY OF EDUCATORS

- India has been consistently improving on the quality of teachers front
- We can see that India has been steadily moving up both in absolute terms and in relative position in the distribution over the years from 2019 to 2022
- Although the fraction of teachers with organized training captures only a small part of the quality of education provided, this is still a significant indicator, especially for the lower levels of education

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THANK YOU