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Project *Roshni*: On Finding the Light

Contrast: it's the one thing that sticks out in my memories of the place where I was born—a world irreconcilably different from where I live today. Not a mile away from magnificent palaces and grand temples, streets are riddled with poverty and hunger. The air is thick with the smell of food from street vendors and the sound of the hustle and bustle of daily life in spite of children that lay around the corner starving. The vibrant culture leads to festivals of vivid colors and brilliant lights, yet even in these joyous moments, darkness can be felt by those who are infinitely close to the light but cannot feel its warmth. This darkness tells a story of oppression at the hands of the corrupt, the fight to survive among raging storms, and the struggles of a society deeply rooted in tradition to face the challenges of the contemporary world.

Although India has one of the largest and most diverse economies in the world, its population of nearly 1.39 billion (2021 figure) makes it one of the poorest countries in terms of income and Gross National Product (Encyclopedia Britannica, 2019). In fact, reports by the Johannesburg-based company New World Health list India as the second-most unequal country in the world, with the top 1% in control of 53.1% of the nation's wealth, leaving a mere 4.1% for the poorest 50%. "Severe income inequality" has been cited as a major global risk for the past several years by the World Economic Forum's Global Risks Report. It has consistently demonstrated an association with social and health concerns, regardless of the wealth of the country (Agrawal, 2016). Potentially tracing its roots millennia prior to a society defined by castes and classes (Chabba, 2013), this disparity is visible in virtually every aspect of life.

It is particularly evident in India's largest industry, agriculture. Over half of the total land area is used for agriculture, and more than 60% of the population directly derives its income from it. Despite this, the agriculture sector accounts for only 15% of the country's economic output (Mashal et al., 2021). The average farm size of around 5 acres (2 hectares) masks a significantly skewed distribution of land ownership. The majority of farms have an area of fewer than 3 acres (1.2 hectares), and close to 30% of agricultural households do not have a claim to any land (Encyclopedia Britannica, 2019). A small group of landlords controls the rest of the land and the income granted to the people forced to work on it. Many can barely provide subsistence for their own families and must take on an additional occupation (often one associated with their traditional caste), which further reinforces the cycle of inequality (Encyclopedia Britannica, 2019).

Tensions reached a boiling point at the beginning of this year when farmers—already driven to the brink of desperation by the coronavirus crisis—were hit by new legislation that removed government protections of farmers in place of "market-friendly" policies that favored private businesses (Mashal et al., 2021). Their outcries have been largely ignored by the government, which went so far as to

temporarily cut internet services from areas that stood as centers of protests. In line with the marginalization of minority communities, a large part of the protesting farmers have been part of the Sikh religious minority hailing from the states of Punjab and Haryana. In clear statistics, the Gini Coefficient, which measures inequality on a scale of 0 to 1, in India's agricultural sector was calculated to be around 0.6 by a 2016 IGIDR study. The fragmentation of agricultural land and inconsistency in state-level regulations were determined to be a "root cause" of poverty and delayed development in India.

This is a problem that has gone unsolved for far too long, and it is closely intertwined with the patterns in educational attainment. 29% of children, many of whom come from disadvantaged castes or religious groups that are secluded minorities, drop out of school before completing elementary education (UNICEF India, 2021). The education of young children is often disregarded, with an estimated 20 million children not attending pre-school. There has been some attempted government intervention, but flaws in its design have limited its results. India's 2009 Right to Education (RTE) Act, for example, focuses on children ages 9-14, yet 90% of cognitive brain development occurs by age 5 (Arizona PBS). An IECEI study following a cohort of 14,000 Indian students in rural areas found that by this point, most children's school readiness levels are already far below expectation.

When the economic investments into these areas are examined, the situation comes to be nothing out of the unexpected. Only 3% of India's GDP goes towards education and only 1.1% towards health (Agrawal, 2016). This is quite low compared to other countries, and the lack of prioritization hits demographically disadvantaged youth the hardest. Education for young girls in India has always been a struggle, and for women engaged in agriculture, anywhere from 52-75% are illiterate. This is especially alarming in rural areas where as many as 84% of women rely on agriculture for their livelihoods (Rawal, 2014). These women tend to make only 70% as much as their male counterparts, reinforcing gender roles and divisions. Partially to blame is the fact that schooling is considered a "higher opportunity cost" for girls than boys, and they often have a host of family responsibilities thrust upon them (Chabba, 2013). Social mobility is low without educational attainment. It makes an escape from the cycle of limited land ownership and poverty nearly impossible, and inadequate access to information or new agricultural technologies exacerbates the deeply rooted disadvantages.

It is undeniable that there is a pervasive, systemic barrier to education and economic or agricultural growth. A viable solution to this challenge cannot fail to address the intersectionality between the discrimination of the marginalized—whether it's through gender, class, religion, or the rural-urban divide—and the correlations between their gaps in the educational, economic, and agricultural sectors. My proposed plan of action integrates existing approaches and heeds the long-term impacts on both families and the environment. Its name is Project *ROSHNI* (Reinventing Online Services in Holistic Nutritional Information). *Roshni* is the Hindi word for light, and it would be a collaborative effort between large governing bodies and non-profits in the form of an educational platform, technological access, and community integration. A case study will be examined for each of these three aspects: Khan Academy, the Aakash tablet, and Hello World.

Heralded as the “largest school in the world” that is “reinventing education” (Noer, 2012), Khan Academy is the headquarter of learning for tens of millions of children. Its platform contains thousands of instructional videos that have collectively been watched over 200 million times. Topics range from elementary mathematics to college-level history to standardized testing (Khan Academy, 2021). Remarkably, this initiative is entirely funded by philanthropists, and its return on investment in operating budgets is seen to be as high as 1,000% (Noer, 2012). Online education has the figures to back it up: in a 2018 ConStat study, 90% of students and teachers indicated that Khan Academy was the most effective online learning tool for core curricula that they had used, and 88% of teachers found it to be trustworthy. Internet-based technology has the power to democratize education in developing countries. When applied beyond academics to areas such as basic hygiene, health, medical care, agricultural production, and land use, it could spearhead a revolution.

The second point of focus is the Aakash tablet. It followed in the footsteps of projects such as One Laptop Per Child, which aimed to create a low-cost $100 “notebook” with built-in connectivity that could be distributed to the developing world and would promote educational inclusivity (Linton, 2020). DataWind’s Aakash tablet was first launched in the early 2010s with a government-subsidized price tag of $38 (So, 2015). The founder of the project is from India himself, and he aimed to create technology that was powerful and affordable enough to give kids from low-income families necessary support and bring internet connectivity to millions of people. The venture has been funded by non-profit organizations including the Level Playing Field Institute and Geeks Without Bounds (So, 2015), demonstrating the power of philanthropy combined with modern technology.

A final piece to the puzzle of hardware and software requirements is the involvement of the local community. This is perhaps best exemplified through the work of Hello World, which “works with marginalized communities to provide access to online learning and bridge the digital divide” (Hello World website). Its solution to this problem is solar-powered, internet-enabled “Hello Hubs” built by the community, for the community. The Hello Hubs provide WiFi-enabled internet access to a thousand people each through multiple touchscreen tablets loaded with educational software, learning apps, and games. Environmental sustainability is an issue often left to be considered by countries in later stages of development, but tackling it from the start is future-thinking to prevent future problems. In Hello World’s current operations in Nepal and Uganda, over one-third of the openly accessible internet is used for education (Hello World 2020 Impact Report). Hubs have even been placed inside classrooms, where they support direct teacher learnings. In places with limited sun exposure, the hubs can be powered by something as simple as a bicycle pedal, a testament to the versatility of this concept.

Hello World’s model is sustainable, scalable, and affordable, coming in at a cost of just over $1 per day to educate a child. While this is still prohibitive for many families, it is significantly lower than traditional Indian private schools (the most dominant form of schooling), even the ones that are meant to be affordable (Majumdar 2018). The cost could also be supplemented by aid from grants, nonprofit organizations, and government programs. Another challenge to conquer is woven into the fabric of the nation itself: reflecting its diversity, 23 languages are officially recognized by the Constitution of India (New World Encyclopedia). To completely deliver on promises of accessibility,

resources developed by this project would need to be carefully translated. Ideally, this would be done with the help of native speakers and local teachers to ensure accuracy. Obstacles such as these will inevitably arise when attempting to tackle such a pervasive problem in a country of billions, but they must be faced in order to improve the lives of the people at the center of these issues.

Internet connectivity would need to be addressed to fully implement this solution: in urban India, 61.9% of people have an active internet subscription, but the figure is only 13.7% in rural India (Chabba, 2013). Improving these rates is a feasible task with the support of large governing bodies and private investors, since providing funding for internet access in schools, Hello Hubs, and other learning centers could expand connectivity to hundreds, if not thousands, of people at a time. Organizations such as the World Bank are committed to such causes. On its website, it lists maximizing private investment as a proposed solution to expand broadband access. In cases where private returns do not meet the social returns, the initial investments could be supplemented (World Bank). Partnerships between the public and private sectors are already underway, with the World Bank working with IFC and MIGA to bring on private investors, fund studies that drive policy reform, and finance grants. The development that comes with internet access is a large step towards reducing poverty, increasing shared prosperity, and improving social mobility.

A holistic solution arising from an evaluation of issues facing India and successful solutions in broadly applicable areas would revolve around hubs that distribute low-cost tablets that come equipped with educational materials pertaining not only to academics but also to personal finance, basic healthcare, and agricultural management. This is Project *Roshni*. Minimizing costs and maximizing community inputs, it places the power of change in the hands of the people that need it the most. It is a flexible model that can be applied in rural and urban areas, indoor and outdoor locations, and can serve people of all ages, backgrounds, and prior educational levels. Partnerships between the Indian government, UNICEF, the World Bank, and countless other organizations that are in support of goals aligned with this project are already underway. Accessible educational access reduces the need to forgo schooling for family or occupational duties; rather, targeted approaches can make both possible simultaneously. Understanding that these problems are interconnected and building a platform that aims to address them at once is central to facing these rising challenges.

Children should not be bound by the family they were born into, limited by the opportunities their communities have access to, discriminated against on the basis of gender, religion, or class, or otherwise be pitted into a system that promotes inequities and hinders the potential of young minds. The disparities between groups present today have persisted for hundreds of years and will continue to do so unless high-level action is taken to intervene. Project *Roshni*'s proposed solution combines an all-in-one digital educational platform with low-cost technology and environmentally sustainable, community-centered hubs to provide accessible education and equip all people to prosper. The end goal of this initiative would be to launch, finance, and connect educational centers with a digital infrastructure that supports marginalized communities across India and empowers young people to fight the systemic cycle of economic, educational, and agricultural inequality. This cycle was started by design, and it can only be ended with intent, with community input, and with an intersectional view of the issues facing this country.

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