**Essay Topic:** If I Could Invent Something New

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**Solar Lanterns for Underserved Communities**

**Introduction**

Solar lanterns are small, portable lighting systems that use sunlight as their sources of energy. Typically, they comprise a tiny solar panel used for collecting sunrays during the day, a rechargeable battery which stores the energy and LED lamps that provide light at night. They are meant to last long, mobile, easy portable and efficient thus fit for communities without or with limited electricity supply.

In many rural areas around the world, especially the underserved communities, unreliable and affordable electricity remains a significant problem. According to Lemaire (2023), over 70 percent of rural communities (particularly underserved) do not have access to solar lanterns. The solution is solar lanterns, which are cheaper and sustainable.

**How Solar lanterns Work**

Solar lanterns function by capturing sunlight to provide lighting. They mainly consist of three parts, which are the solar panel, rechargeable battery and LED lights. The solar panel is made up of photovoltaic cells that trap sunlight during the day and convert it into electrical energy while at night this energy is kept in a rechargeable battery located within the lantern.

During darkness, lights are powered using the stored energy resulting into vibrant and effective lighting provided by LED’s. Selecting LED bulbs for this purpose has been done due to lower power consumption and longer life span compared with conventional bulbs. Typically, these lanterns integrate control circuits that regulate charge/discharge so as to enable efficient utilization of the stored power.

This technology provides a good solution for poor communities with little electricity access (Solar Sister). Solar lamps offer cleaner, cheaper renewable light sources as well as improving safety during daily operations thereby minimizing dependence on dangerous kerosene lamps.

**Social and Economic Impact of Solar Lanterns**

The importance of having solar lanterns in communities lacking adequate power sources cannot be overemphasized. These lanterns make use of the sun’s energy that is widely available and does not pollute the environment, making it a sustainable source of lighting. Solar lanterns are helpful since they increase study, work and other activities’ hours for people who stay up late in night.

Moreover, solar lanterns help reducing dependence on dangerous kerosene lamps which pose risks to health and cause fire outbreaks. Solarway bulbs offer an eco-friendly alternative to traditional light sources that are harmful; as such there they are safe, income generating activities take place and long-term environmental protection achieved in isolated areas of the world hence promoting self-sufficiency and general welfare of these societies.

**Challenges**

Though there are numerous benefits of solar lanterns, the challenges include access to it and its maintenance cost.

**Conclusion**

Solar Lanterns invention is very important in changing the lives of underserved communities globally. By using the power of the sun, these lanterns provide reliability, sustainability and eco-friendly source of light that can help students in reading, creates employment opportunities and improve health and safety. Therefore, manufacturing and its access should be made available to rural communities.