My School Self-Powered

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This project aims to design a device that converts the kinetic energy into electrical energy in an unprecedented way; it investigates the students' kinetic energy during going up and down stairs to their classroom. This energy is used to supply the school with its self electricity without the need for an external source. The research problem estimated from the need to find alternatives for traditional energy due to lack of availability and high cost. The device contains mechanical and electrical parts and it was experimented several times to make sure it works properly and matched the scientific principle that it has been designed for. The works on the principle of pressing it down vertically by the students' movement through the transmission from serrated to another, the amount of displacement will be amplified, and transmitted to the electric generator, which will charge the batteries that will provide the power required for the inverter (12 volts), which will be converted to 220 volts. We would like to note here that we need to 6 days by 4 rounds a day on the device for charging the batteries. Therefore, the batteries will light the classroom with 20-watt capacity for 4 days with 5 hours average. The energy generated by the inverter approximately equals 400 watts per hour. This model which has been designed can be used in densely populated places, such as schools, hospitals, shopping centers and courts and thus would be a springboard for multiple applications point in a world moving towards alternative energy use.

Awards Won:
U.S. Agency for International Development: First Award of $2,000