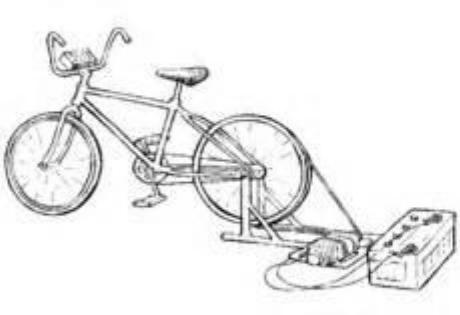
PROPOSAL FOR PROJECT K 171-2024

AIM:

Design and development of a prototype bicycle generator for charging mobile phones.



METHODOLOGY:

Challenge-based learning.

PHASE 1: BEFORE MOBILITIES: The idea will be presented to the Burundian students and they will be asked to design the electrical, mechanical, and electronic parts.

a. Electrical part design.

   The group of students will have to give two technical solutions for choosing an electric generator to adapt to the bicycle.

b. Mechanical design

   Once the generator has been chosen, the students will have to design:

   i. Support to hold the stationary bike
   ii. How to adapt the generator to the bicycle (by belt or by roller friction)

c. Electronic design

   Knowing the main parameters of the generator and the requirements for charging a mobile phone, students will have to design the electronic circuit and select the components to make the prototype.

PHASE 2: BEFORE MOBILITIES: The different solutions provided will be discussed and the one that seems most appropriate will be chosen.

PHASE 3: DURING THE MOBILITY OF BURUNDI TEACHERS: Students from Spain, together with teachers, will develop the prototypes.

PHASE 4: DURING THE MOBILITY OF THE TEACHERS FROM SPAIN The students from Burundi, together with the teachers, will test the prototypes and take measurements.

TIMING

PHASE 1: OCTOBER-DECEMBER

PHASE 2: DECEMBER-JANUARY

PHASE 3: FEBRUARY-MARCH

PHASE 4: MARCH-APRIL