

# Application of 3D Printing into Homemade, Electric Skateboards

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## **Background**

At the present, the use of skateboards to travel around campus is a popular commodity in many colleges. The relatively small size and lightweight design of longboards make of them the perfect mean of transportation for college students. As a result of the high demand of this product, skateboard companies are constantly considering new alternatives for innovation. Indeed, the development of self-propelled electric longboards is one of the most predominant features that are paying off in the market. The increasing competence between manufacturers has led to the creation of more powerful and lighter skateboards. The durability, weight and size of the electrical components are the main limiting factors that involve the complete design of board. Adapting the complete board to the electrical feature leads to an increase in the overall cost. Consequently, buying an electric board is not a good deal for students, considering that skateboards are not a primary need for them.

## **Purpose**

The purpose of this project is to make electric boards more accessible to college community. The idea is to design a mechanical system to be adapted in any skateboard, which also can be easily fabricated and adjusted to the student's budget.

## **Design/Method**

The homemade electric feature will be produced with a 3D printer and designed in such way that any person without any specific knowledge of engineering can easily assemble it into his/her own skateboard. An existing mechanism has been taken as a conceptual design to create the parts that will be shaped in the 3D printer.

## **Results**

The process of fabrication and materials employed to produce electric longboards reduce 60% of the cost offered in the market. The conceptual design of the electrical system was successfully designed, fabricated and integrated into a regular longboard. The printing process and selection of materials are still under research to fulfill the requirements of size, weight and durability.

## **Conclusions**

In conclusion, the present project will be able to produce more affordable electric longboards taking advantage of the fresher technology of 3D printing.