

Tangible Objects in ESL Classroom

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Problem

Can tangible objects improve students' results in learning English?

Hypothesis

- Coding tangible objects can enlarge children's vocabulary
- Coding tangible objects can improve Students' communication skills
- Coding tangible objects can improve students' collaboration skills

Project Overview

- With the launch of the ImpactEDTECH / European Schoolnet Program, several European schools were selected to test, in a pedagogical environment, innovative solutions in the field of Programming and Robotics. Sponsored by the European Commission, this project allowed several schools to have access to innovative materials, still being put on the market, and, in exchange, to test their pedagogical potential. In the specific case, on which we will focus in this article, we will evaluate the impact of the application of small robots, assembled entirely by the students, on the learning of a foreign language, English, as well as on the improvement of the students' communication skills.

Variables / Research

Controlled variables

- ESL curriculum

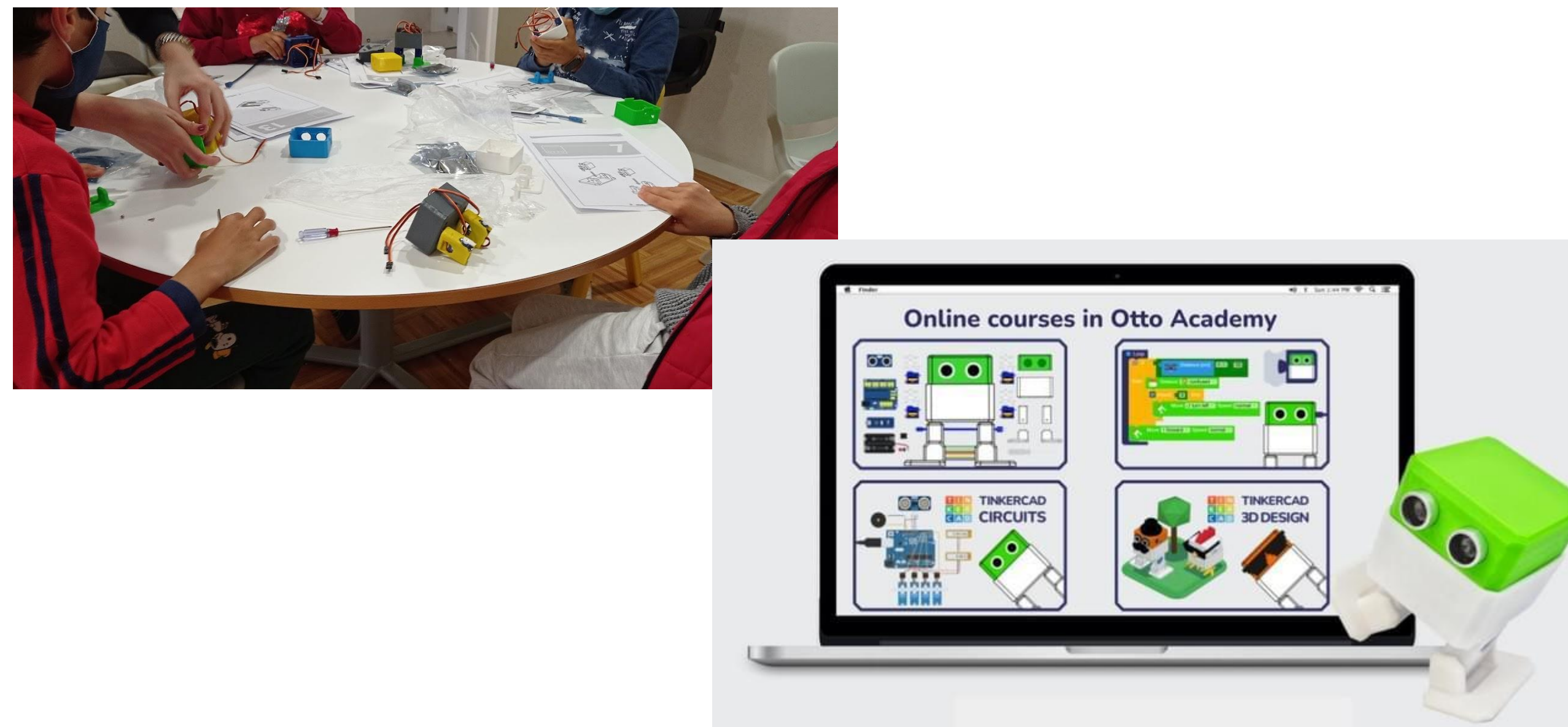
Independent variable

- Application of tangible objects

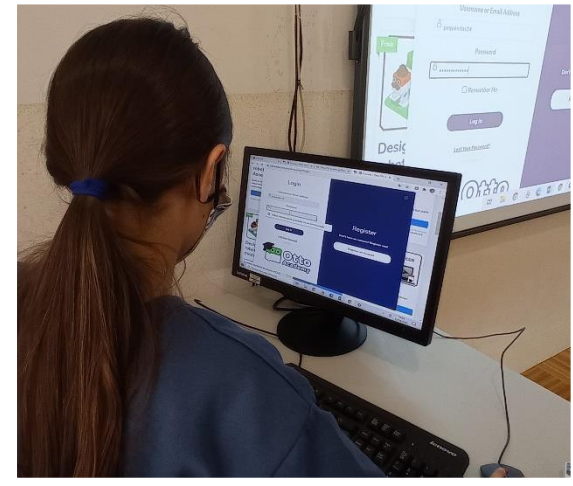
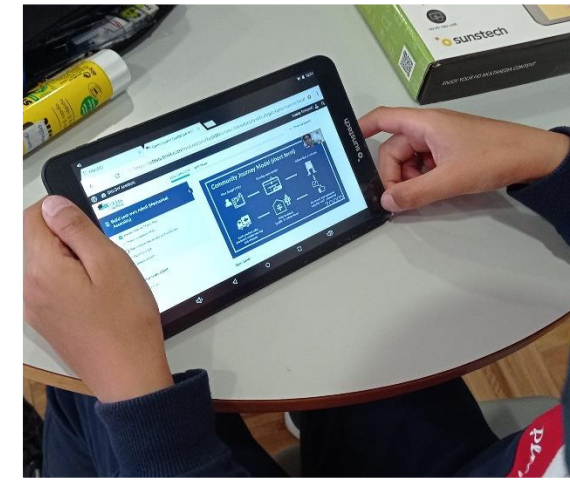


Dependent variable

- Students' academic results
- Comparing Students' results before and after Tangible Objects application

Materials

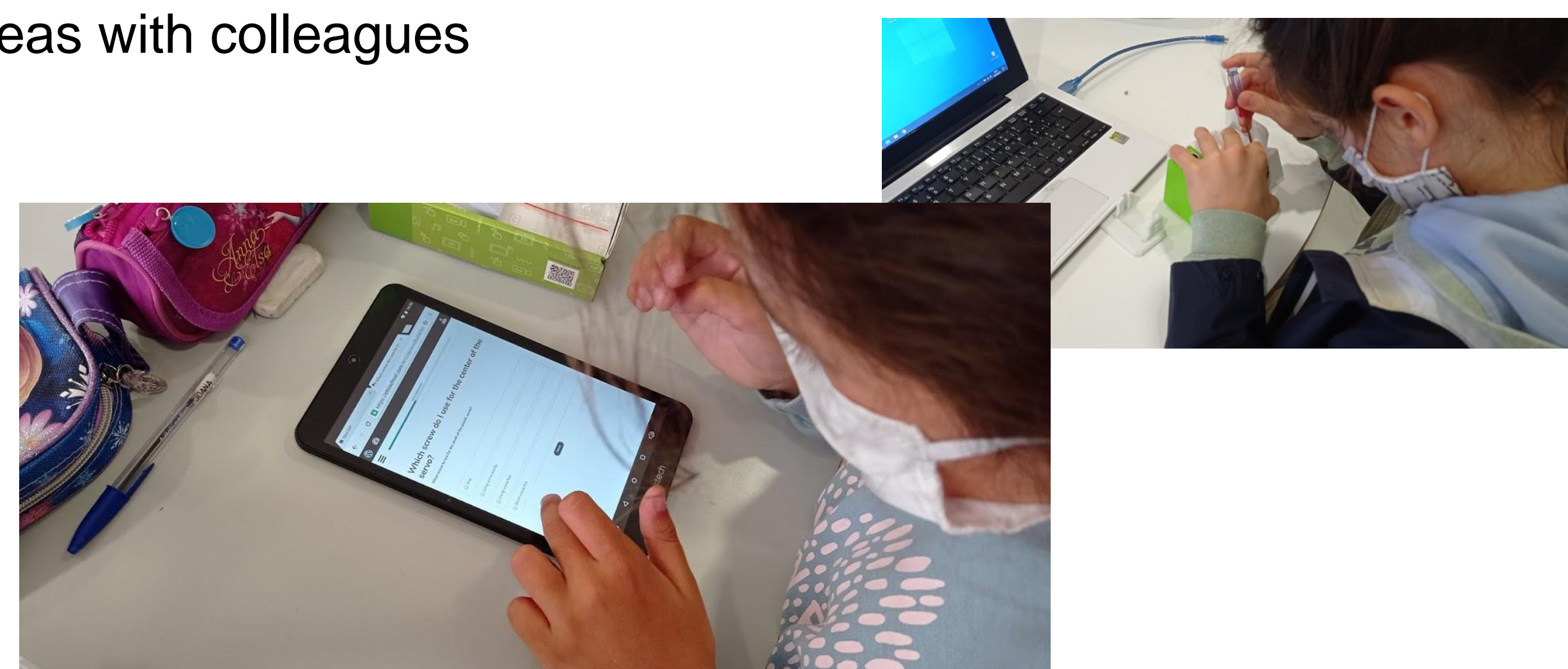


Procedure

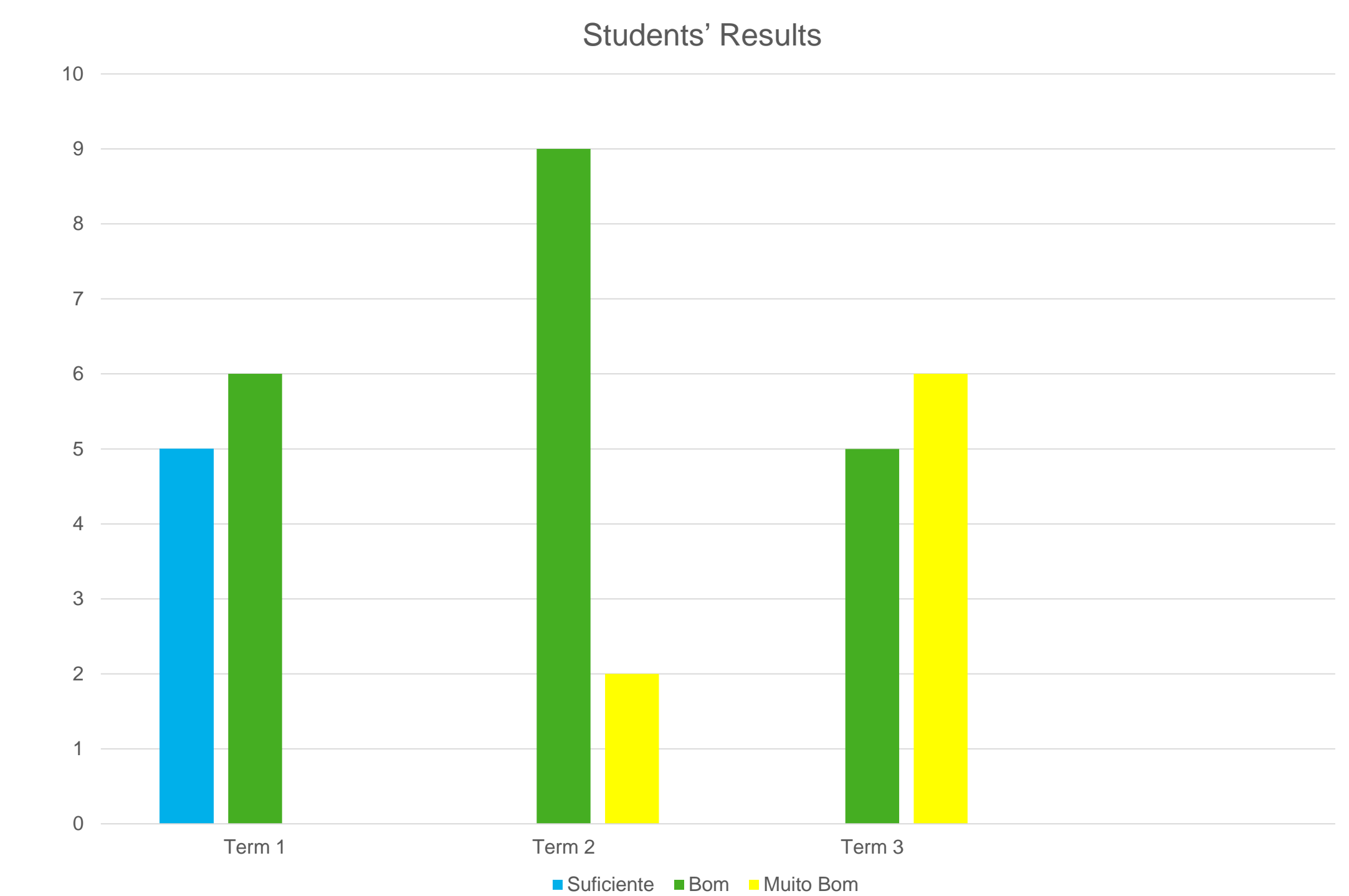
Step 1	Step 2	Step 3	Step 4
			
Create Students Accounts	Take online course in Otto's Academy Platform	Assemble Robot	Code Robot and share experiences

Data / Observations

- Students were highly motivated
- Students engaged deeply in Otto's Online Platform
- Students revealed commitment in performing the tasks and share ideas with colleagues



Results



- Timeline:
- Term 1: before Project implementation
- Term 2: Results after starting the Piloting Project
- Term 3: end of School year Results

Conclusion

- In this Study we verified Students' academic results improved with the introduction of Tangible Objects in classroom
- As we can see from Students' results along the School year, a significant improvement has occurred
- Helping Students overcome the Status Quo and become content producers, as opposed to content consumers, helps them develop communicational and collaborative skills

Works Cited

- Impact EdTech, site oficial: <https://impactedtech.eu/impact-edtech/>
- OttO DIY, site oficial: <https://www.ottodiy.com/>
- Thomas, R. (2003). Blending qualitative & quantitative: Research methods in theses and dissertations. London: Corwin Press, Inc - A Sage Publications Company
- Martins, F. N., Oliveira, H. C., & Oliveira, G. F. (2012). Robótica como Meio de Promoção da Interdisciplinaridade . Anais do Workshop de Robótica Educacional.
- Gartner. (19 de 10 de 2020). Obtido de Smarter With Gartner: <https://www.gartner.com/smarterwithgartner/gartner-top-strategic-technology-trends-for-2021/>



<https://qrgo.page.link/tsNVK>