Assessing Student Performance in Hybrid Learning

Coorganiza:

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Abstract

The health crisis triggered by the **COVID-19 pandemic** has forced many higher education institutions to move from traditional learning to online or **hybrid learning** by expanding their infrastructures through a **deep digitalization strategy**. This study conducts an **analysis of variance** to test the statistical significance of **students' performance** who experienced different learning approaches. The results show that the **grades** of those students who attended **face-to-face classes** are **significantly higher** than those who followed a hybrid learning approach.

Project description

This study aims **to test** whether there **exist differences** in **academic performance** between **hybrid** and **face-to-face learning.**

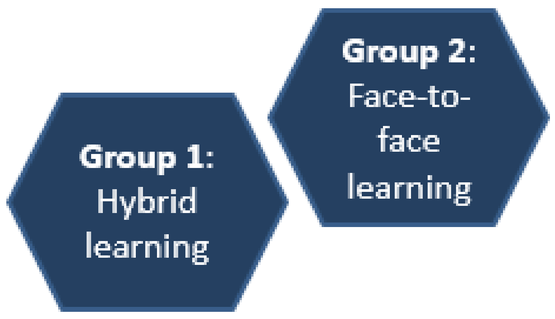
- **Hybrid learning** is a pedagogical approach that combines both face-to-face and online education. Half of the students attended classes on campus while the other half attended online.
- The introduction of **technologies** into the educational process is the main difference between hybrid and traditional learning.
- The following table exhibits the main **benefits** and **challenges** faced by both the faculty and students when managing hybrid learning:

Table 1. Benefits and challenges associated with hybrid learning

Benefits	Challenges
More inclusive education	Maximizing the social presence of students
Higher flexibility	Adequate technology ensuring lecture's quality
Reduction of location problems	Innovative methodologies to ensure the active behavior of students
Richer learning experiences	Miscommunication between professors and students
Conciliation between family-professional life	

Materials and methods

- **Evaluating** the **effectiveness** of the **hybrid learning** method has become **crucial** to design those learning programs that best meet the **current educational needs**.
- The **performance** of a group of students attending face-to-face classes [Group 2] and a group of students experiencing hybrid learning [Group 1] is measured by **course grades**.
- This research conducts an **ANOVA** to test the whether there exist **statistically significant differences** between the grades of traditional and hybrid learning groups of students.



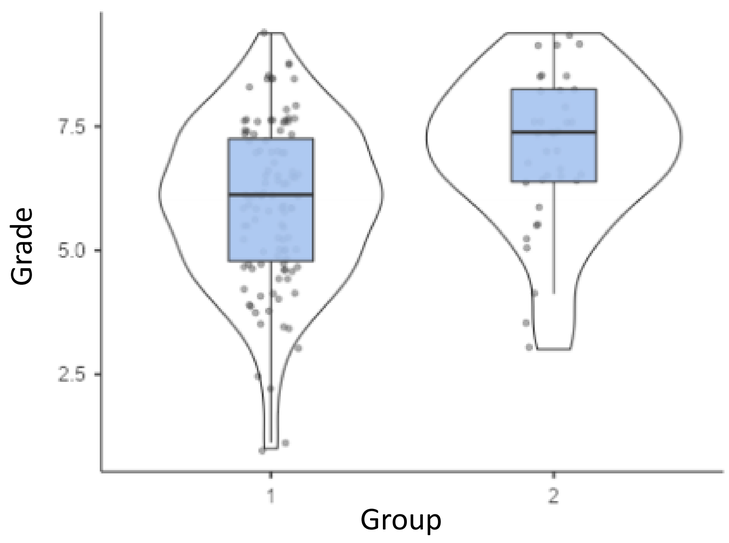
Hypothesis 1: Learning methods have an impact on student's performance.

Hypothesis 2: Students in hybrid learning have worse performances compared with those in traditional.

Results

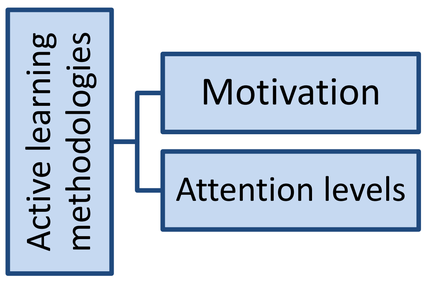
The graph exhibits that the **dispersion of grades of hybrid learning students is larger** compared with the spread of grades of students learning through traditional methods. Additionally, the **grades** of those students who attended **face-to-face learning** are **higher** than the grades of those students who engaged in hybrid learning. Results are statistically significant.

Table 2. Dispersion of grades of hybrid learning students



Conclusions

The study finds statistically significant differences between students' performance in hybrid and face-to-face learning. These **results suggest** that it is necessary to **reinforce the hybrid method** with **active learning methodologies** to enhance the students' experience, ensuring that motivation and attention levels are optimal.



This study should be replicated in order to generalize results due to the limitation of the small sample of students.