

# Development of Inverse Pedagogy Through the Implementation of a Wireless Response System: Lessons Learned from the Geomatics Course

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**Key words:** Education; ICT; education; technology; training; clicker

## SUMMARY

Geomatics is the science of engineering in charge of developing and implementing computational tools to collect and analyze geographic information or data that have a spatial component. Geomatics includes areas such as surveying and mapping when these are used with a high component in computer technologies. This area has become a fundamental knowledge for civil, environmental, architects, engineers and many other professions that require spatial data processing as tools gives analysis and presentation of results. Given its high technological component, the tools and methodologies of their practice are constantly changing so it is essential to have appropriate pedagogical tools for teaching.

By becoming a primarily technological area but with the need to provide accurate results, it is unknown whether the use of technology in pedagogy can improve student learning.

This research compares the teaching of Geomatics under the use of traditional methods (lectures and guided practice) with technological alternatives seeking reverse pedagogy. In particular, the advantages and disadvantages of using clickers and virtualization class material (videos) in teaching Geomatics was investigated.

The research methodology consisted of comparing two separate sections or classes of Geomatics at the University of the Andes. In each section, with teacher and different students, a different methodology development. However, both the issues and assessments were exactly the same for both groups of students.

Once compared purely academic aspects (such as grades), it was found that the use of virtualization tools and aids to class participation can improve up to 15% marks obtained by students. In addition,

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developed into account students with class teaching technologies suggest that use of these created a positive learning environment. The combination of the results of surveys and assessments suggest that the reverse was improved pedagogy with virtualization and participation tools.

In conclusion, this study achieved its objective of demonstrating that the use of technology helps improve teaching in a highly technical course. However, additional tests are required to understand what proportion each of the technologies used contributed to the case of Geomatics, situations in which new technologies complement and not replace traditional teaching.

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