Formation of Groups for Collaborative Learning: an approach based on profiles of individual self-reports
Collaboration is a coordinated and synchronous activity resulting from a continuous attempt to build and maintain a shared understanding of a problem [11]
One way to support collaboration is to be concerned with the formation of groups, which is considered crucial for triggering productive interactions between peers [6].
Poor group formations can be a trigger for undesirable situations, such as the isolation of some students, demotivation and even group work resistance [6]
The problem:

- How to form good groups?
- What is the best strategy for group formation?
How to form good groups to support collaboration?

1. Know the profile of the participants (socio-affective, economic, cultural, cognitive, ethnic, learning styles, ..., n)

2. Form homogeneous groups, heterogeneous or a mixture of the two?

3. Form groups randomly, by system or free form?
Socio-affective profiles
(self report)
The research question

"How to optimize group formations to enhance learning collaborative considering the positive characteristics of the individual?"
Methodological steps

Samples
- 02 student classes \((n_A = 36\) e \(n_B = 45\))

03 experiments
- 02 Class A
- 01 Class B

Measurement of self-report profiles
- Preparation of the virtual room

Group formation
- random
- by the system

Learning activities
- Variables \(x, y \rightarrow PCGj e PMOA\)

Evaluation of group collaboration
- Statistical techniques
- Correlation and linear regression
- regression line
- predictions

Experiment 1
- Experiment 2
- Experiment 3
Results, analyzes and discussions

A

Linear prediction of experiment 1
Random formations

\[ y = -0.5321x + 7.1152 \]
\[ R^2 = 0.8027 \]

B

Linear prediction of experiment 2
System formations

\[ y = 0.0162x + 0.6356 \]
\[ R^2 = 0.0841 \]

C

Linear prediction of experiment 3
Free formations

\[ y = -0.3572x + 9.2857 \]
\[ R^2 = 0.2404 \]

\[ y = -0.1802x + 9.8191 \]
\[ R^2 = 0.1411 \]
Conclusions

- The results showed positive evidences regarding the improvement of the performances of the groups when the formations of these occur by the system.
Conclusions

- The research demonstrated that the regression line equation allowed to use the self-report profile, self-esteem and self-efficacy to make predictions for the variables $PCG_j$ and $PMOA$. 
Future works

- To deepen the experiments in the light of the Theory of Activity, of the Standards of Collaboration and the Model of Tuckman;
- Construct a collaborative ontology considering individual self-report profiles
References


Thank you all for the attention