

## Robot analytics to identify metrics of exploration in a robot mediated activity and their correlation with the learner's performance

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### MOTIVATION

highlighting the potential of analyzing learners' behaviors by coupling robot data with the data from conventional methods of assessment through quizzes in educational settings and showcasing the classification of learners in the behavioral feature space with respect to the task performance, giving insight into the relevance of behavior patterns for high performance in a robot mediated activity that

exploration with the Cellulo robots and correlating them with students' performance in the activities and their learning .

### RESULTS

After conducting many steps of analysis on the collected data we can conclude that :

1: The Quantity of exploration ( the distance moved by each team robot in each stage) does not correlate positively with the learners' performance and their overall learning between the stages .

2: The Quality of exploration (the distribution of the exploration over the different zones of the map) seems to be correlated to the learners improvement in performance and their overall learning between the two stages .

3 : The exploration strategies (the different sequences of attempts for each team) seem to differ between the teams , and the length of these attempts seems to be the primary variable that determines and identifies different behaviors in the students' approach to find the optimal path from home to destination .



consists in a path planning activity with 12 teams of students (learners) divided into two stages .

### METHODS

Exploiting patterns of interaction with the robot that could lead to better performance by conducting all sorts of analysis and classification techniques on the log data to identify metrics of students'