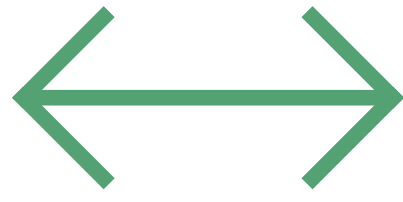


How do properties of open- and closed-ended play influence the experience of children from 8- to 10-year-old in physical activities?

CLOSED-ENDED PLAY

Predefined activity
Higher starting barrier
Clear situation
Predefined goal
Little improvisation
Limited



OPEN-ENDED PLAY

Undefined activity
Low starting barrier
Unclear situation
Creating own goal
Improvisation
Versatility

INTRODUCTION

In the research, the experience of exercise in open- and closed-ended play is evaluated and compared by observing how engaged children are, as it influences their motivation to exercise. A good experience stimulates motivation and thus increases engagement. The properties to evaluate engagement extends beyond their emotions and expressions to include vigor, dedication and absorption. Vigor refers to the intensity of physical activity that tires out a child which we measure by comparing the energy level of the child before and after play. Dedication looks at amount of effort a child is willing to put into play. Absorption occurs when a child is so focused on the game that (s)he loses track of time.

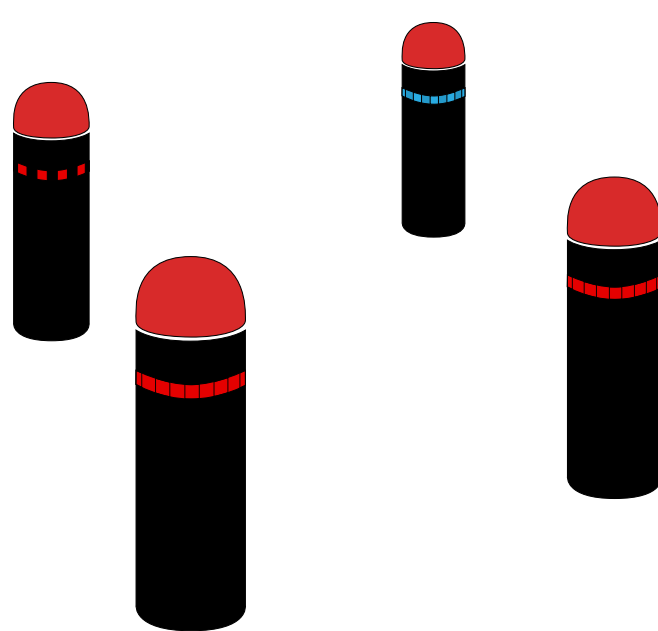
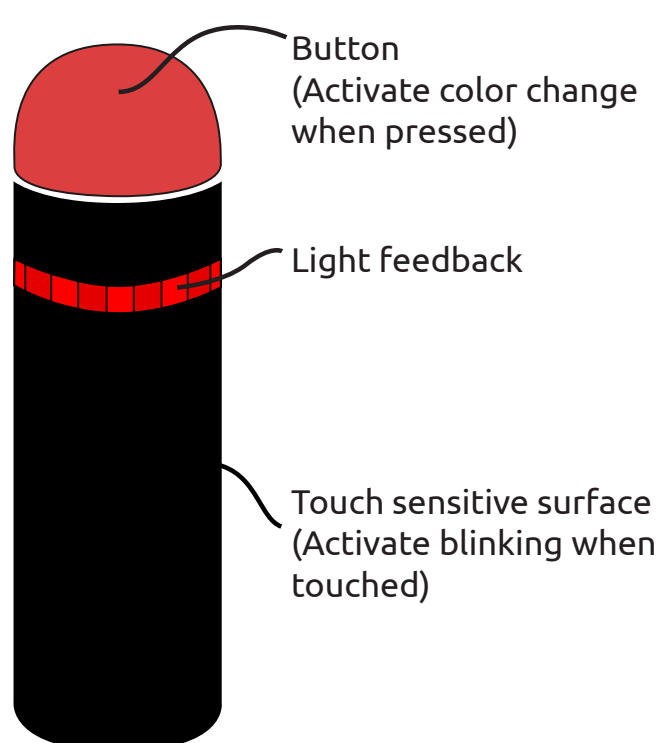


METHODOLOGY

The more “fun” the interactive system is, the better the experience and the more engaged the children are. Regarding the research question there was explored how open- and closed-ended games were experienced by the participating children. Three different classes were observed. These classes are described underneath.

Class	Groups	Children per group	Age	Kind of games
1	3	8	9 to 10	Open- and Closed-ended play
2	3	8	7 to 8	Closed-ended play
3	2	8	10 to 11	Open-ended play

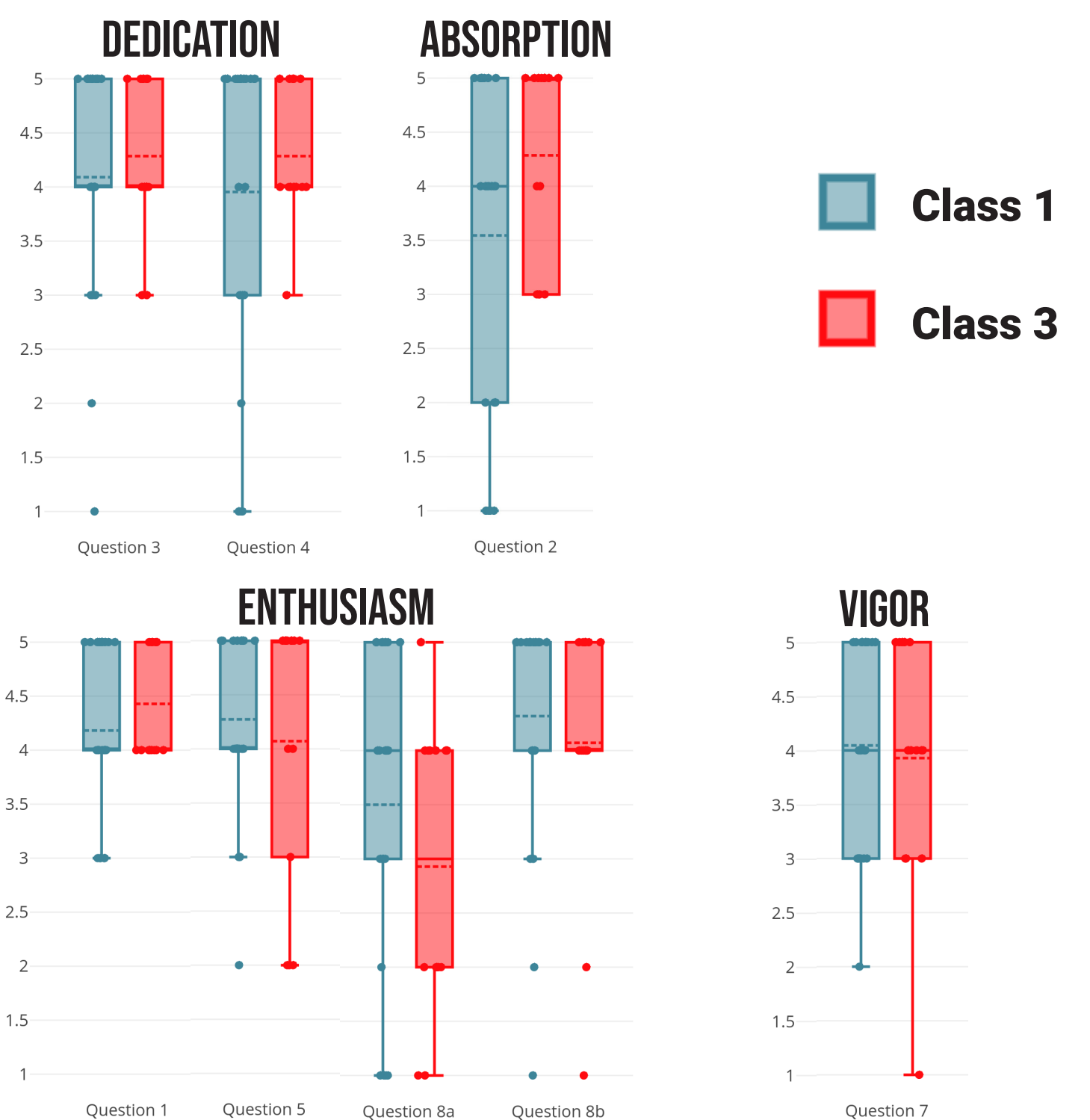
The children were observed while playing. Next to that, all children (excluding the youngest ones) were given a questionnaire in order to support possible findings.



An example of a setting with the poles

RESULTS

Experience	Question
Dedication (effort, involvement & sense of significance)	3. Excited to play again 4. Tried their best while playing
Absorption	2. Time flew by while playing
Enthusiasm	1. Fun while playing 5. Energized while playing 6. Feel after playing (describe) 8. Feeling before and after
Vigor	6. Feel after playing (describe) 7. Energy while playing



DISCUSSION

An increase in all 4 values of enthusiasm, vigor, dedication and absorption suggests a possible improvement of the children's experience of the games. To support these assumptions, the quantitative questionnaires are combined with the qualitative observations.

The results from the questionnaire concludes that class 3 (open-ended) scored better in terms of dedication, absorption, and enthusiasm. However, class 1 (open- and closed-ended) did better for vigor, which suggests that they could get rid of more energy during the play. This could be justified by the observations where open-ended play required additional time for children to discuss and collaborate at the start of each game, resulting in less time spent on vigorous physical play. However, since class 1 consists of both open- and closed- ended play, it cannot be fully concluded that closed-ended play results in better engagement.

Contradictory, by combining the results of the questionnaire and the observations, there seems to be an improved engagement in open-ended games compared to closed-ended ones, and thus an improved perceived experience. Observations showed that open-ended play caused more curiousness, which lead to enthusiasm and more engagement in the amount of time the games are played. Children were as enthusiastic about the open-ended games as they were about the closed-ended games, which could be the result of the new technology.

This applies at least for games fitting in a time span of 10 minutes. Long term effects could not have been studied due to the restrictions of the available time and participants, and are thus excluded from the conclusion.

CONCLUSION

All-in-all it can be stated that open-ended and closed-ended play have their positive aspects in many different ways. Open-ended play might trigger dedication, enthusiasm and absorption more than closed-ended. Nevertheless, open-ended play might not be optimal for every group since some children need guidance. This is why the best option would be to have the open-ended play with a little guidance such as “Come up with a game of tag while using the poles”.

Moreover, the appearance of the poles seemed to trigger enthusiasm, but it could not be shown whether it maintains its appeal on the long term.

