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Parents' Perception Toward Topobo

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Introduction

In recent years, robots were received more attention in educational fields (Liu, Lin & Chang, 2010). Liu（2010）interviews 48 elementary school students, included fourth, fifth and sixth graders, and found that students perceived educational robots as a plaything, source of employment, and way to high technology. Moreover, the result reflects that the parents start focus on children's technological capabilities from students' perception of educational robots. The previous study (Liu, 2010) did not collect the perceptions of parents, however the parents is the most important person in deciding whether or not to attend the robotics course. Therefore, the purpose of this study is to investigate parents' perception of programmable bricks.

Methods

1.1 Participants

The questionnaires were sent to 55 parents whose children were study in a kindergarten in northern Taiwan, and 26 questionnaires were returned. All the 26 questionnaires were valid. The response rate is 47%. Among the 26 parents, 10 were male, 16 were female. This kindergarten is in a research-oriented university, and 1 parent were 26 to 30 years of age; 9 parents were 31 to 35 years of age; 12 parents were 36 to 40 years of age; 4 parents were above 40 years of age.1 parent graduated from elementary school, 2 parents graduated from senior high school, 11 parents held bachelor's degree, and 12 parents held master's degree.

1.2 Instrument

The scale developed from Liu (2010) was adopted to evaluate parents' perception of programmable bricks. This questionnaire included two subscales: usefulness of programmable bricks; confidence in teaching kindergarten children with programmable bricks. The exploratory factor analysis was used in this study. The factor loading for all the item were higher than .70, and the total variance explained reached 77.76%. It showed this questionnaire has construct validity. The value of Cronbach's α of this questionnaire were ranging from .768 to .928, and it showed this questionnaire is reliable.

Results

The result showed that the mean of the subscale, usefulness of programmable bricks (M=4.51, SD=.84), was significantly higher than the score of the subscale, confidence in teaching children with programmable bricks (M=3.35, SD=1.15) ($t= 5.00$, $p<.001$). The result showed that parents considered that programmable bricks were beneficial for their children. However, the parents are not confident that to teach their children with programmable bricks.

Conclusion

This study found that parents' perception of usefulness of programmable bricks is positive, and the result enhances the potential of using programming bricks in children education. However, mention to the confidence in teaching children with programmable bricks, the result showed that parents did not have much confidence to teach their children with programmable bricks. The future study may further investigate what kinds of training or support do parents need, and design related training courses to help them improve the knowledge or skills to play programmable bricks with their children.

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