

Special Purpose Machine to Improve Eye-Hand Coordination for Special Children

Submitted By

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ABSTRACT

Irrespective of physical and mental situation every child must get an opportunity to learn alongside playing. Unfortunately this does not holds good in case of children with special need.

The actual challenge comes into picture during the initial phase of learning. In most of the cases the incorporated traditional methods fails to get the attention of the child throughout the therapy session and they are quite human resource intensive. Teaching the special children within stipulated time with more efficiency and interactive manner with precise and modeled results is quite a challenge in itself.

Analyzing all the above problems the design has been proposed which can be used to train and enhance gross motor skills, eye-hand coordination and is an attention seeking device. The design houses a powerful microcontroller unit which handles complex algorithms and tasks with highest efficiency and precision. This design has visual, audio as well as a tactile (vibration) feedback associated with individual tasks to make every task interesting and interactive for the children.

The proposed design is light-weight, highly durable and a well-built with all the safety protections along with the precautions.

1. INTRODUCTION

The term special need is a catch-all phrase which can refer to a vast array of diagnoses and/or disabilities. Children with special needs may have been born with a syndrome, terminal illness, profound cognitive impairment, or serious psychiatric problems. Other children may have special needs that involve struggling with learning disabilities, food allergies, developmental delays, or panic attacks.

The designation “children with special needs” is for children who may have challenges which are more severe than the typical child, and could possibly last a lifetime. These children will need extra support, and additional services. They will have distinct goals, and will need added guidance and help meeting academic, social, emotional, and sometimes medical milestones. Persons with special needs may need lifetime guidance and support while dealing with everyday issues such as housing, employment, social involvement, and finances.

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2. LITERATURE

Literature survey is an important part of the project. It enables assimilation of knowledge required for the project right from the problem definition, finding a solution for the same and its execution. The following section summarizes the literature survey carried out for the project.

Filomena Soares [1] and coauthors discuss about a Game directed to children with special needs, to promote the development of social skills in different contexts.

Wang Jiali [2] emphasizes role of verbal and visuo spatial memory abilities in cerebral palsy patients and importance of visual and audio feedback.

Alexis Rougnant [3] The author discusses about a co-designed touch-ready game for children with special needs to assess and improve visual perception skills challenges involved in accessing specific skills assessments and training programs for children with special needs.

Jara G *et al* [4] in their work have focused on the contribution of new technologies in the teaching-learning process of children with Special Education Needs (SEN). The main objective of this work was the development of a didactic game which allows the support of children with special education needs on their educational, social, and personal development processes.

Lin *et al* [5] purpose of this study was to develop a serious game to stimulate older adults' cognitive and physical functions in which the processing speed, short-term memory, working memory, and eye-hand coordination are significantly declined with age. The author utilizes sensors, a microcontroller, gaming technologies to create a cost-effective serious game.

3. CONCLUSION

This review is based on various teaching learning aids and it also focuses on various diseases that are present. There are various discussions done related to new technologies and also these mainly emphasize on the techniques that are used to overcome the difficulties of special community. This review also emphasizes various different fields that are associated with Special Community such as Special Education, Special School and so on.

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