

IoT Piggy Bank for Money Saving Habit Instillation

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Date received: 18 December 2020

Date accepted: 24 September 2021

Date published: 18 October 2021

Abstract – Children nowadays are overwhelming with luxurious things and have only little or even no money concepts where most of the kids just reach out to their parents for buying anything they want. This could be an issue for parents, hence kids should be taught the value of money and knowing that save their own money is important to purchase anything they desired. This project proposed an innovative way to inculcate saving behaviours in children using an IoT Piggy Bank. This goal-directed approach allows children to set their saving goals (values of their desired items) and form a saving habit slowly through their saving routines toward their saving goals. Every saving made by the children will be tracked in a mobile app and a buzzer will be triggered as a reinforcer to alert children when they do not save regularly. The user acceptance testing (UAT) of the proposed prototype has shown the majority of the parents (90%) agreed that the proposed IoT piggy bank is very suitable for children to instil saving habit. Most of the children have reacted positively where they were having lots of fun when trying on the IoT piggy bank and expressed that they would continue to use it for saving in the future.

Keywords: IoT, piggy bank, saving behaviour, goal tracking, money management, goal-directed behaviour, prototyping.

1 Introduction

According to Cambridge Counselling Corporation (“Teaching Kids the Value of Money,” n.d.), kids nowadays have only little or even no money concept where most of the kids just reach out to their parents for buying anything they want. A study by Lewis and Scott (2000) has shown that the level of economic awareness and knowledge among older children are relatively limited. The never-ending demand from kids could be an issue for parents and shows a sign of inadequate economic awareness in kids. Therefore, kids should be taught about the value of money and economic knowledge through their daily economic transactions in their early childhood.

Saving is not easy for many people. According to Kamawar et al. (2019), saving is a skill that requires future expectation and self-control to do so. There is a direct relationship of self-control influence on saving behaviour as conveyed in Ghufron and Risnawitaq (2017) and Sirine and Utami (2016). Additionally, parents’ influences also play important role in instilling saving behaviour in early childhood. Firmansyah (2013) stated that the parents’ saving behaviours and support in saving promote children to save for their future. Another study by Chalimah et al. (2019) has also proven that the role of parents, financial literacy, and self-control and future perceptions has effects on saving behaviour of students. Save money for something their really want could be one of the determinants of children’s savings behaviours. The goal-directed approach with a proper application of reinforcements could stimulate the formation of saving habits in children more effectively.

There are some solutions on IoT piggy bank development that have been designed to serve different purposes from coins detection to saving behaviour tracking. However, there still lacks solutions for children to learn the value of money and to acquire saving skills in order to save up for the things they wish to own. This project proposed an innovative way to inculcate saving behaviours in children using an IoT Piggy Bank that allows children to set their saving goals based on the values of their desired items and form a saving habit slowly through their saving routines toward the saving goals. For every saving they made, the money will be tracked in a mobile app and a buzzer is used as a reinforcer to alert children when they do not save regularly. With this goal-directed approach, saving coins in piggy banks becomes more interesting compared with the traditional piggy banks.