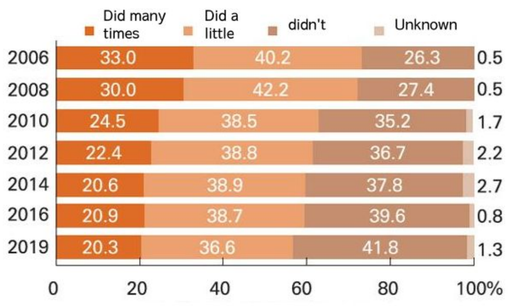
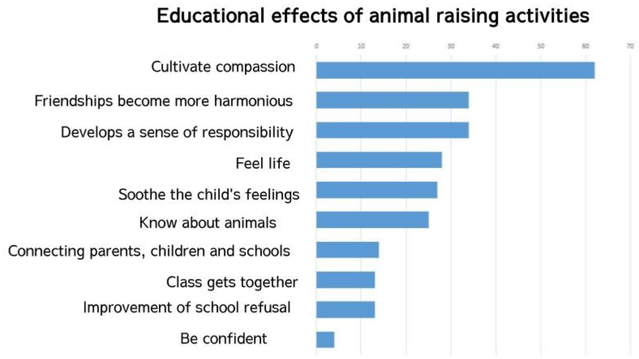
A System for Controlling Aquarium Environments for the Raising and Observation of Medaka

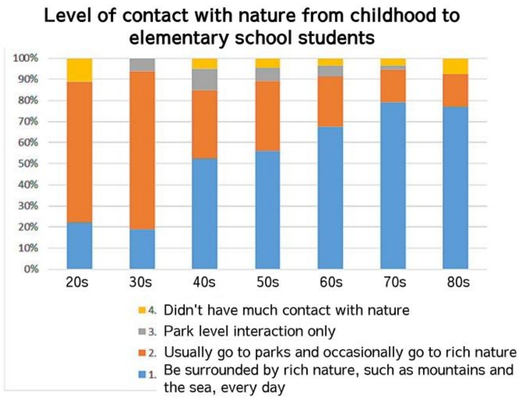
①Research Background

In recent years, the percentage of children who interact with animals has been declining due to the shift to nuclear families and changes in the residential environment.
Raising animals is a fun experience for children, and also has the advantage of improving emotional development.



Have caught insects and water creatures in childhood





https://www.nacsj.or.jp/2021/09/20780/
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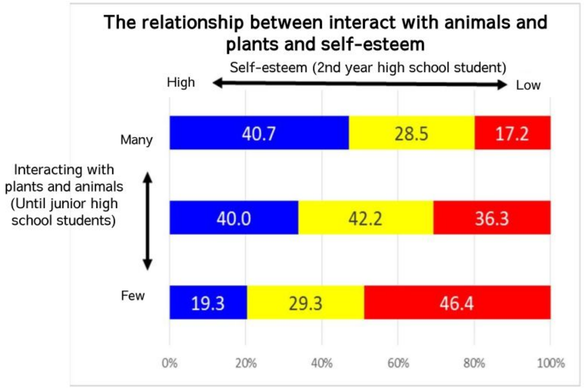


https://www.schoolanimals.jp/%E5%8B%95%E7%89%A9%E9%A3%BC%E8%82%B2%E3%81%AE%E6%95%99%E8%82%B2%E5%8A%B9%E6%9E%9C-1/%E5%8B%95%E7%89%A9%E9%A3%BC%E8%82%B2%E4%BD%93%E9%A8%93%E3%81%AE%E6%95%99%E8%82%B2%E5%8A%B9%E6%9E%9C

〈Objective〉 Give this generation of children a way to know the joy of raising animals.

〈Methods〉 Develop a system that supports the raising of medaka (Japanese rice fish) by using digital technology that is familiar to children today.

〈Hypothesis〉

①This will lower the hurdles to raising animals and make it easier to start raising animals.

②This will bring entertainment to raising and allow continued raising to be more enjoyable.

③Results

〈What I used〉

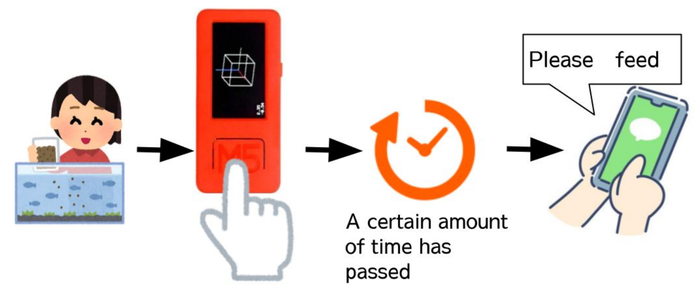
SystemA：LINE Notify

SystemB：M5StickCPlus、Water temperature sensor

Communication：Wi-Fi

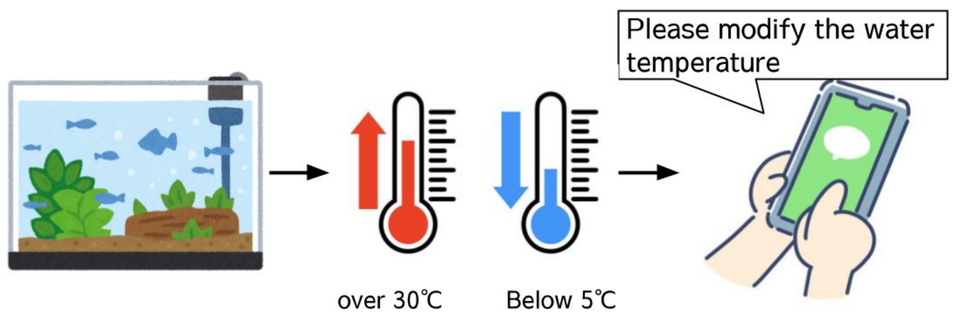
〈Function〉

（1）Feeding reminder



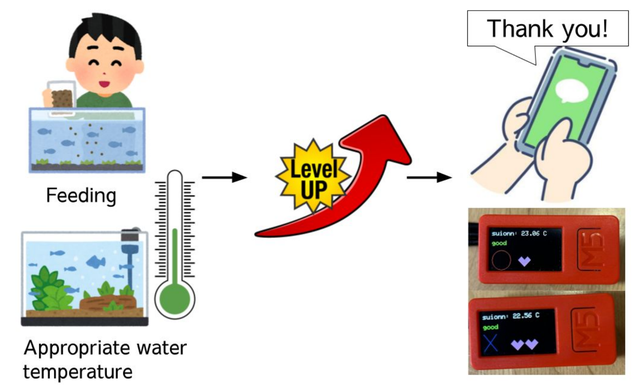
Remind children to feed the medaka.

（2）Monitor the water temperature



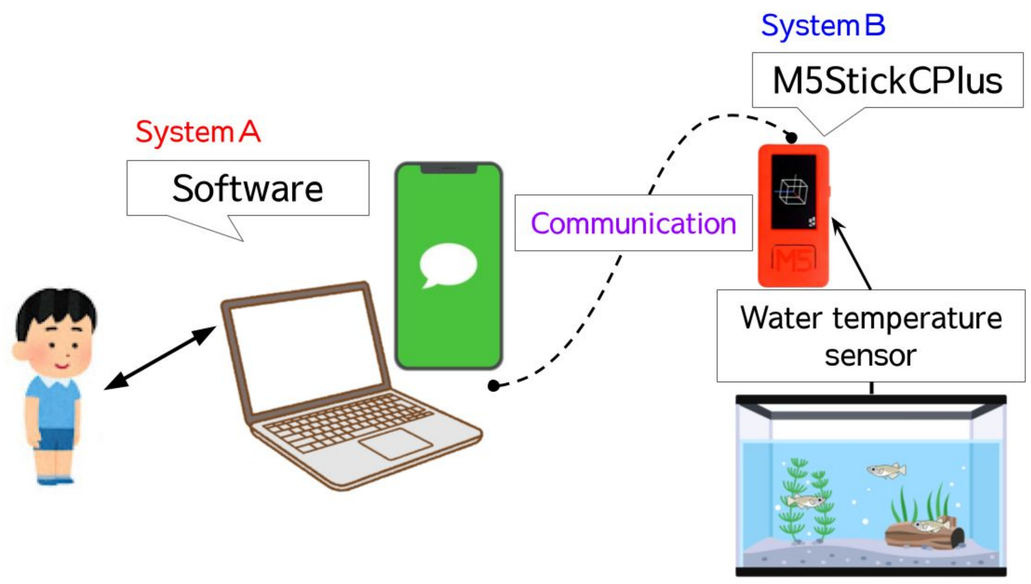
Maintain an environment suitable for the growth of medaka.

（3）Praise and encouragement



This becomes one of the motivations for raising.

②System Configuration Diagram



○SystemA

Software operated and viewed by children.
Functions：Feeding reminder, Monitor the water temperature, Praise and encouragement, Save observation diaries

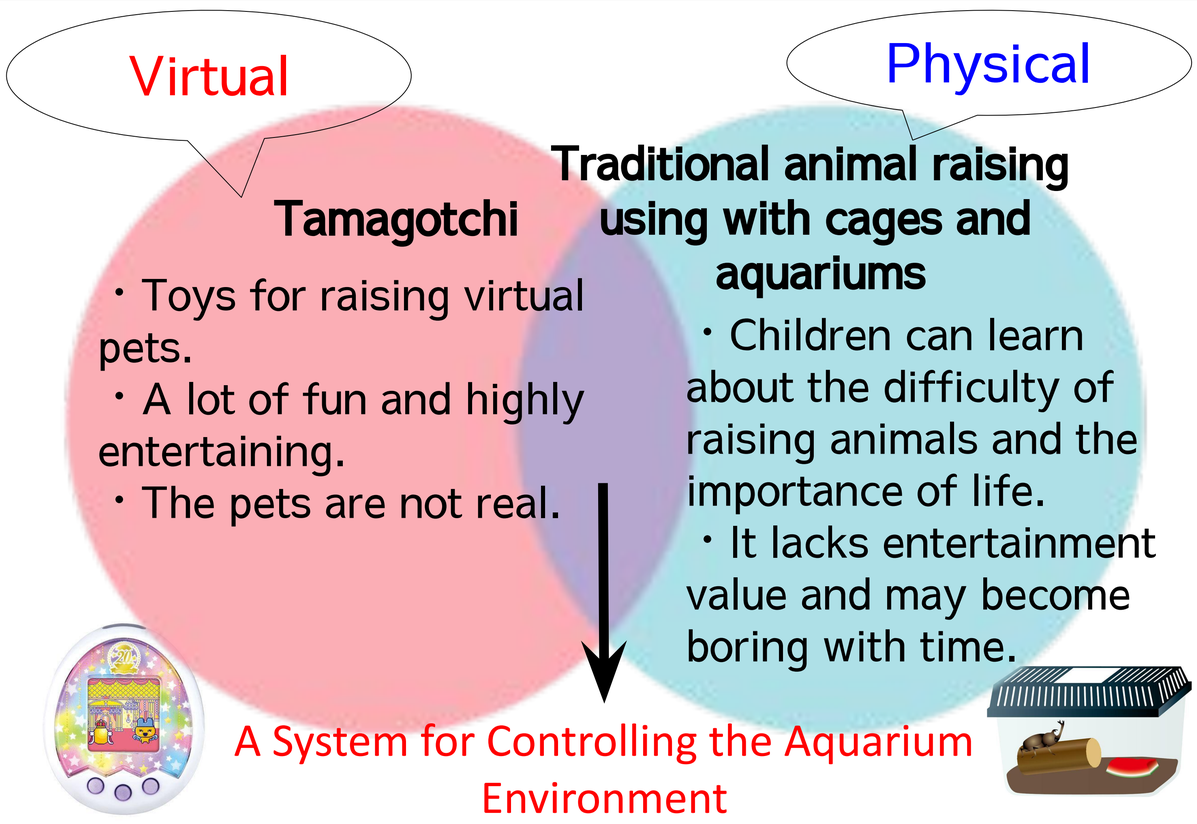
○SystemB

A small device that attaches to an aquarium.
Function：Water temperature sensor

○Communication

Via：Wi-Fi or USB

④Conclusion



・This system can create an opportunity for children to become interested in raising animals.

・By having a system to digitally support their medaka raising, children can gain a sense of accomplishment and self-affirmation.