

# School Health promotion and mobile applications



S·H·E

Schools for Health in Europe

Date of document: 16<sup>th</sup> October 2020  
Author: Caroline Moos  
Place: SHE secretariat, Denmark



This report has received funding under an operating grant from the European Union's Health Programme (2014-2020)



## Mobile applications

A 'mobile app' is a computer program or software application designed to run on a mobile device such as a phone, tablet, or watch. Apps are generally downloaded from application distribution platforms such as the iOS or Google Play Store. Some apps are free, and others have a price, with the profit being split between the application's creator and the distribution platform. It is important to note that mobile applications are different to desktop applications (designed to run on desktop computers), or web applications (designed to run on mobile web browsers rather than directly on the mobile device).

### Description of mobile app market

There are thousands of apps available today that are relevant in relation to school health promotion but each has a different focus point. This document aims to give an overall understanding of the breadth of this market. This report uses concrete examples of apps within different segments of the health and education app market. Please note that these examples are randomly chosen and ought not to be seen as recommendations from SHE.

Generally, the focus areas of these mobile health applications can be categorised as follows:

#### **Apps which focuses purely on the educational element of health promotion often with a gaming element**

##### Examples

*Awesome Eats* is a game that introduces children up to 5th grade to healthy food and eating habits. Children learn to sort and pack foods that move down the screen on conveyor belts. They have to swipe the screen to move fruits and vegetables and grains to the correct belt. There are 64 challenging levels, over 70 different characters and the app contain health eating tips and skill bonuses.

*Smash your Food* – is an app designed for children aged 8 years and older. They are given examples of different foods such as French fries or soda and need to guess how much sugar, salt and fat are in the food. After they have guessed, they tap a button to see the food being smashed. Children learn about the nutrition value such as actual amount of sugar, salt and fats in food and receive points for the accuracy of their guesses and receive health eating tips.



S·H·E

Schools for Health in Europe

### **Apps which focuses on a specific, often disease focused area of health for long term prevention or better care of an illness.**

These mobile applications provide both an education element and sometimes collect data which can be shared with a health care provider for improved care

#### Examples

*ReachOut Breath* is a mobile app that guides your breathing telling you when to inhale and exhale. It can also be used to measure your heart rate using the phone's camera with additional customization possible further.

*Self-help for Anxiety Management (SAM)* is an app that encourages older children and teenagers to think about situations that would make them anxious and how they would think and act in each scenario.

*Recovery record* is an app that eating disorder recovery and helps older children and teenagers stay motivated, remain connected and achieve recovery goals.

### **Apps which are designed specifically to collect data for health research purposes<sup>1</sup>**

#### Example

*Substance Abuse Research Assistant (SARA)* <sup>2</sup>– This is a mobile application developed for adolescents and emerging adults at risk for substance abuse. This application is novel as it integrates various kinds of rewards as an incentive for data collection. The key underlying idea to provide a multitude of different rewards to provide enough novelty so that participants bear the burden of data collection.

### **Apps which provide anonymous communication bridges between the child and a responsible adult or encourage healthy communication**

#### Example

*Worriots* is an app that allows children to share their worries and fears in a fun, safe and controlled environment and receive real time advice and help on how to deal with their feelings. This app has two parts one which is managed by the parent/guardian and the other which is put into children's hands as a fun app. These apps target the user directly.

'*Own it*' is a mobile health app launched in 2019 by the BBC targeting children's digital health. It's system monitors tone and language when children type messages to each other. It also helps children to manage the amount of time they spend online. The app can evaluate a child's mood and offer advice and encouragement about talking to trusted adults.

<sup>1</sup> Health behavior tracking via mobile games: A case study among school-aged children, Marjorita Sormunen & Hanna Miettinen, *Cogent Education* (2017), 4: 1311500.

<sup>2</sup> Rabbi M, Philyaw-Kotov M, Lee J, et al. SARA: A Mobile App to Engage Users in Health Data Collection. *Proc ACM Int Conf Ubiquitous Comput.* 2017;2017:781-789. doi:10.1145/3123024.3125611



### **Mobile applications which focus on providing support to the teacher within a specific learning environment.**

These are often pedagogy tools with a competitive element which the teacher can use with students in the classroom.

#### Example

*Kahoot* - digital game-based targeting children in grades 3 to 12. It is a response system that allows teachers and learners in classroom settings to interact through competitive knowledge games

*Poll Everywhere* is a dynamic online polling platform that allows children aged 13 or older to vote on custom teacher-generated polls through text messaging (SMS), smartphone, or computer by visiting this website.

The mobile app development market is one of the fastest growing industries and in particular education apps are one of the most popular categories of mobile apps. Health apps are often described separately to education apps. The safety of health apps is emerging as a mandatory public health issue with reporting of safety concerns, peer review, validation and evidence base all being unmet needs in the current marketplace<sup>3</sup>.

It is well known that choosing the most appropriate evidence based educational apps for children is difficult and problematic for both teachers and parents<sup>4</sup>. As can be seen with the applications described above, mobile applications are often separated into either being an application with health outcomes as the endpoint or education outcomes as the endpoint. There are few resources for users to compare the useability, suitability, price etc of relevant apps. A systematic review published in 2018 focused on the effectiveness of mobile apps to improve health behaviour in school age children<sup>5</sup>. The review included apps targeting outcomes such as physical activity, alcohol, diet, adherence to medication, preparation before a medical procedure, pain management, pregnancy management, weight loss, reacting to heart failure, suicide prevention and smoking. Despite this review highlighting the urgent need of objective research and reporting on the effectiveness of health apps, the review focused on apps with the main aim of disease/risk prevention without a more general educative or health promotion perspective.

There are some (but scarce) online resources which attempt to offer a summary of health mobile apps. For example, The College of St. Scholastica's (USA) library<sup>6</sup> offers a summary of mobile health apps and includes peer reviews. However, this platform also splits health care and education apps into two separate categories. There are other online resources for parents<sup>7</sup> include which review apps for children categorizing them according to age group, whether or not wifi are required, apps with good privacy policies, apps which focus on mental health, apps which don't involve a trigger, apps that focus on maths and reading and many more.

<sup>3</sup> Akbar 2020 Safety concerns with consumer-facing mobile health applications

<sup>4</sup> Papadakis, Stamatios & Kalogiannakis, Michail. (2017). Mobile educational applications for children. What educators and parents need to know.. International Journal of Mobile Learning and Organisation. 11. 1. 10.1504/IJMLO.2017.10003925

<sup>5</sup> Han M, Lee E. Effectiveness of Mobile Health Application Use to Improve Health Behavior Changes: A Systematic Review of Randomized Controlled Trials. Healthc Inform Res. 2018;24(3):207-226. doi:10.4258/hir.2018.24.3.207

<sup>6</sup> <https://libguides.css.edu/c.php?g=41784&p=265567>

<sup>7</sup> <https://www.commonssensemedia.org/app-lists>



S·H·E

Schools for Health in Europe

A recent systematic review on mobile apps and learning in young children (<6 years) reported that there was evidence of a learning benefit in early academic skills in particular mathematics<sup>8</sup>. Other research papers call for educational apps to be designed and then later assessed with in relation to the principles of the Science of learning<sup>9</sup>.

SHE recognizes mobile apps as useful tools in disseminating knowledge and best practices about school health promotion. SHE is working with members to design a strategy as to how SHE can tap into the marketplace of mobile apps to target schools, teachers and children.

---

8 Griffith SF, Hagan MB, Heymann P, Heflin BH, Bagner DM. Apps As Learning Tools: A Systematic Review. *Pediatrics*. 2020;145(1):e20191579. doi:10.1542/peds.2019-1579

9 Hirsh-Pasek K, Zosh JM, Golinkoff RM, Gray JH, Robb MB, Kaufman J. Putting education in "educational" apps: lessons from the science of learning. *Psychol Sci Public Interest*. 2015;16(1):3-34. doi:10.1177/1529100615569721