# **Supporting children and young adults who are blind or have low vision in learning the gestures and concepts of VoiceOver on an Apple iOS touch device**

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## **Introduction**

Sonokids’ acclaimed and popular ‘Ballyland’ Early Learning software series has recently been expanded with two more accessible iPad apps. Sonokids recently released similar Tech Education game apps for young adults who are blind or have low vision as well. This paper will demonstrate how these apps can be utilised to support digital skills learning by students with vision impairment. Almost all jobs of the future will require some ‘STEM’-related skills, and the skills to use a computer or mobile touch screen device enable inclusion in the classroom as well as social inclusion. The apps make learning fun, and require very few technology skills from teachers supporting the student. Of course educators may also use the apps to broaden their own understanding and skills of VoiceOver, to better support their students.

## **VoiceOver**

For a person who is blind, VoiceOver, Apple’s built-in screen reader on iOS touch devices, is the only way to effectively use an iPad, iPhone or iPod Touch. When VoiceOver is turned on, all interaction is supported by audio feedback. You can hear what happens when you make certain touch and finger gestures on the screen. It’s important to note that VoiceOver also requires the use of other gestures than are generally used for navigation on the touch tablet, so specific gesture skills need to be acquired to be able to use VoiceOver. Also, for this to be successful, a young student who is blind will need to develop sufficient fine motor skills, conceptual understanding as well as listening skills, which need to work in neatly with their gesturing on the screen. For adolescents, who may have lost their sight at a later age, using VoiceOver also requires a new approach to the touch tablet, and adaptation to the new digital skills that are required.

## **Gamification of Tech Education**

Through the gamification of the learning process, Sonokids apps enable students as well as those who support them in their learning, to build skills in a fun and confident way. The game apps don’t use VoiceOver – because that’s what you need to learn – but they effectively simulate its use. The big advantage of this concept is that nothing can really go wrong, even if you don’t make the exact correct gesture. The educational game apps offer scaffolding of skills and a chance to gradually build touch gesture skills and conceptual understanding of iOS accessibility. They provide beginning learners of VoiceOver with opportunities to gain the required foundation skills to use the iPad or iPhone independently.

## **Supporting the learner**

As an educator, it is important to be aware of possible limitations in fine motor skills of very young children, who need practice and support to develop these skills. Ideally, spatial concepts (corners, top, bottom of the screen) and directional concepts (left, right movements, are introduced before a student starts using a touch device. In my presentation, real-life examples illustrated the different ways students with vision impairment may use touch gestures on a touch screen, providing educators with inspiration to improve students’ learning outcomes. More information, tips and guidelines can be retrieved from the Sonokids website at [www.sonokids.org](http://www.sonokids.org). Sonokids has also developed 3D learning tools which can help prepare young student for playing and learning with the apps.

## **Ballyland 3D learning tools**

From the website you can download (for free) print files with which you can print a 3D model of Squeaky, Wheelie and Ballicopter. You can print the 3D models with your own 3D printer, at school or in your organization, or via a third party 3D print service. All 3D learning tools allow children to tactually explore the Ballyland characters, which play such an important role in the Ballyland software. Ballicopter’s 3D learning tool specifically supports the development of the rotor gesture by way of his propeller. The same gesture with two fingers that makes his propeller turn, can be transferred and applied onto the screen of the touch tablet, to effectively perform the slightly advanced VoiceOver ‘rotor’ gesture.

The rotor concept is specifically taught in the Ballyland Rotor app, in which Ballicopter goes on an adventure. For a short video about the rotor gesture, please visit the Sonokids website.

## **Educational game apps, building blocks for development of digital skills**

### Ballyland Early Learning software for children who are blind or vision impaired

* **Ballyland Keyboarding** software for PC’s and Mac computers is specifically designed to enable very young children to independently explore and play on a computer keyboard, and to develop foundation technology skills in the process.
* **Stay Still, Squeaky!** is an accessible audio eBook for iPad. It doesn’t require any specific formal VoiceOver gestures, which makes it the perfect first introduction to touch tablet interaction.
* **Ballyland Magic** is a game app for iPad that enables children to learn accessibility concepts and fundamental finger gestures for VoiceOver.
* **Ballyland Rotor** is the sequel to Ballyland Magic and helps children learn and practice the gestures for the ‘Rotor’, a slightly advanced concept and gesture in VoiceOver.
* **Ballyland Sound Memory** is a new sound-matching game app for iPad. While busy navigating the game to locate, memorize and match the Ballyland sounds, children will get a basic understanding of a digital math grid.

### Apps for mature learners/adolescents (14+)

* **VO Lab** provides beginner learners of VoiceOver with opportunities to gain the required foundation skills to use the iPad or iPhone independently. The app is designed for adolescents (and older users) and is both entertaining and educational.
* Sound Memory game app for iPad (advanced, coming soon). Teaches students an understanding of a digital math grid with rows and columns.

## **Contact Information**


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