Unlocking Abilities:
Keys to Developing Touchscreen Skills

Key 1: Experimental Learning

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Key 2: Making Something Happen

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Key 3: Mastering Skills for Access: Touchscreen Specific Skills

| **Targeting** | ←→ | **Advanced Touch Commands**
(Swiping, Pinching, Dragging and Dropping) |

Key 4: Choosing Independently

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Key 4A: Failure free choosing

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Key 4B: Finding the right one

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Key 5: Independently accessing a range of functional activities
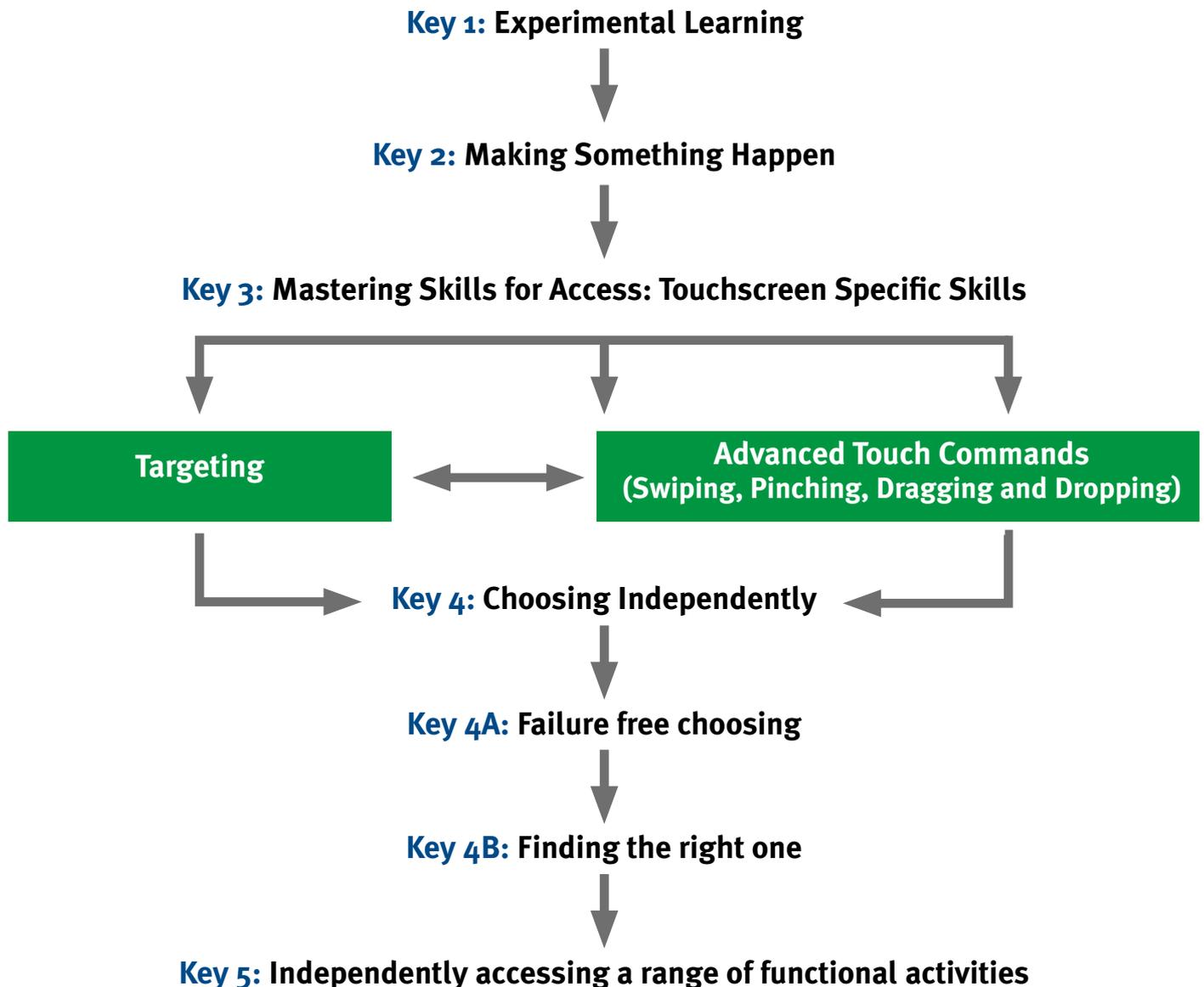
Adapted from;

Bean, Ian. (2011) Inclusive Technology, Learning Journeys: Switch Progression Road Map. Retrieved from http://www.ianbean.co.uk

Burkhart, L. (2012) Stepping Stones To Switch Access (Two Switch Step Scanning). Retrieved from http://lindaburkhart.com

Inclusive Technology Ltd., Learning at Your Fingertips: Interactive Whiteboards for learners with Special Educational Needs. Retrieved October 7 2016 from http://www.inclusive.co.uk

Tobii Eye Gaze Learning Curve: A clear pathway to success with Eye Control and Gaze Interaction. Retrieved October 7, 2016 from http://www.tobiidynavox.com

There are many cognitive and motor skills a student needs to learn before being able to use touchscreen for a range of everyday activities. Not all students may progress to using a touchscreen for communication and computer access, however any progression in their touchscreen skills will improve their opportunities for active participation in learning and daily activities.

This framework is not a fixed progression, students may working on multiple keys at once and may need to take a step backwards at times to consolidate their skills.

Key 1: Experimental Learning

This is about the student becoming comfortable with a touchscreen and engaging with an activity on the touchscreen (looking, listening, reacting). We want to look at games that provide a range of sensory experiences (sight, sound, movement, patterns). This stage may include modelling, incidental activation of the touchscreen and some physical assistance.

Objectives:

1. The student will tolerate a touchscreen being positioned near them.
2. The student will look, react or respond to an activity on the touchscreen.

Tip and Tricks:

- Find apps or games that relate to the student's interests.
- Position the touchscreen so that the child may incidentally activate it.
- A durable case can be beneficial, as the student may be more interested in exploring the device itself rather than on the activity being presented.
- You may find it beneficial to mount the device to keep it in a stable position.

Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout.

Key 2: Making Something Happen

We want the student to learn that they are controlling the activity via the touchscreen (often referred to as 'cause and effect').

Objectives:

1. The student will independently activate the touchscreen to produce a desired effect.
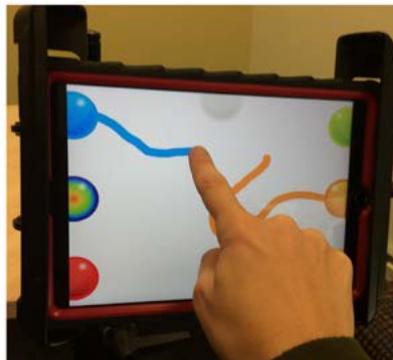
Tips and Tricks

- Use apps or software that provide a reaction no matter where on the screen you touch.

- Use apps or software that provide a short but big reaction (noise, colours, lights, favourite music). Having a short reaction can help the student attribute their action to the reward.

- On an iPad use the 'guided access' feature to stop the child accidentally exiting the app. https://support.apple.com/en-au/HT202612

- Lots of repetition with moderate difference will be required at this stage for the student to learn the motor pattern and make it automatic.

- Ensure the student is looking and attending to the desired effect rather than swatting at the screen. If they are swatting at the screen, change the activity or try some turn taking with the activity.

Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout.

- Use keyboard or drum apps to participate in music class.

- Use music player apps to control the music for musical chairs or dancing

Unlocking Abilities: Developing touchscreen, switch and eye gaze skills for learning and beyond
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Key 3: Mastering Skills for Access: Touchscreen Specific Skills

We are teaching the student to use precise touch (finger pointing or using a stylus) to select targets and to use a range of touch commands that will enable them to use a range of apps/software on a touchscreen.

Objectives

1. The student will independently select a target on the screen to achieve a desired effect.
2. The student will swipe across the screen to control a desired effect in an activity.
3. The student will drag and drop or pinch targets in a game to complete the activity.

Tips and Tricks

- Keep the cognitive demands of the games/ activities low at this stage, as the student is learning new motor patterns.
- Start with large targets and decrease the size of targets on the touchscreen as the student's skills improve.
- Ensure targeting activities involve all areas of the screen to ensure the student can see and physically access all areas.
- Consider the use of a stylus if the student is having difficulty with precise touch.

Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout.
- Use painting or drawing apps to make pictures. Print them out to use them in artwork or on cards.

Key 4: Choosing Independently
Key 4A: Failure Free Choosing

We are now looking at introducing the student to the concept of choosing using the touchscreen. At first we want to encourage the student to make choices without there being a wrong answer. Any option they choose is reinforced and rewarded to teach them that their choices are controlling what happens.

Tips and Tricks

- Use failure free choosing games, where whatever the student chooses they receive a reward.

- Create customised choosing activities that involve interaction with others to increase motivation; e.g. Choosing from 'jumping', 'dancing', 'singing'. Whichever the student chooses, you do.

Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout

- Choosing the classmate they get to sit next to or play with

- Choosing the musical instrument they get to use in music class

- Choosing the next ingredient to go in the blender to make a milkshake

Objectives

1. The student will choose one item from three or more on-screen options, where there is no correct answer and any choice is rewarded.

Find Mum

Find Mum

Key 4B: Finding the right one

This is about the student being able to select the option they want or being able to make a choice to answer a question using the touchscreen. These skills can enable the child to communicate, have control over their environment and demonstrate their learning.

Objectives

1. The student will choose one item from three or more on-screen options in regards to a request or question.

Tips and Tricks

- Start out using concepts that are familiar to the student to reduce the cognitive demands of the activity.

- You can begin by offering choices with blank squares and only the right answer. Add in more options once the child masters this.

- Increase the number of options the student has to choose from as their skills improve. Their motor, cognitive and visual skills need to be considered in providing an appropriate number of choices.

- Provide as many choices as they can manage. We do not want to unnecessarily limit what the student can choose from.
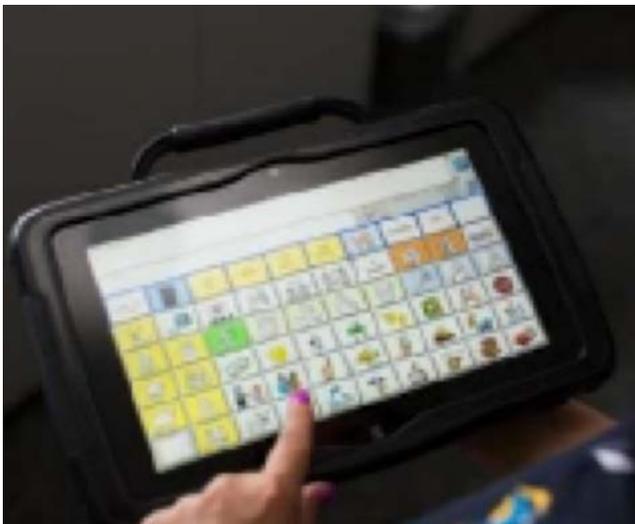
Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout

Key 5: Independently accessing a range of functional activities

By now the student has mastered the skills needed for them to start using the touchscreen functionally, for whatever their goals are, whether this be communication, reading books, writing, taking photos, making phone calls or playing music.

Objectives

1. The student will use the touchscreen independently to participate in one or more functional activities (communication, computer access, educational activities, environmental control).

Tips and Tricks

- You may still need to consider the size of targets on the screen or alternative accessories such as keyguards and styluses to ensure the student's success in the functional activity.

- Consider ways the touchscreen can be easily accessible for the student at all times, so they can use it as needed. E.g- straps or bags, mounting the device.

Activity Ideas

- See 'Software for Developing Touchscreen Skills' Handout