Pod #4: Aneka, Mahi and Slater

**Learning Resource – DRAFT**

**Overview**There are many benefits to using online games as an educational tool to teach and practice academics. Video games have the capability of engaging children and teaching them important skills that can sometimes be disinteresting in other forms. They are engaging and can provide interactive learning that is at the pace of whoever is playing (levels in a game). Many online games can let the player use trial and error to figure out what to do while providing instructions and guidance. Online games can also link peers together and they are able to provide feedback and learn from each other which benefits both students learning (Konert, 2015, p.104). Hands-on learning is not always possible but teaching through educational games is a great alternative. Scratch is a browser based educational programming environment. It lets anyone learn the basics of programming by snapping blocks together to create games. The software is designed to teach anyone the basics of programming in a simple and fun environment. A common misconception is that video games are a distraction from learning, instead some games can be educational and something children are able to learn from. This is an easy assumption to make because video games are often associated with violence and aggression which is the furthest thing from education. This being said, specific games are designed to teach children using interactive and visual learning techniques. A great example is a website called Cool Math Games which is an entire website dedicated to fun games for children to play that all revolve around learning elementary math. Overall, there are many useful ways to use games in an educational way and a great place to make those games is on Scratch.

**Learning Theory Description and Rationale**Our resource is based on constructivism. This means we want to let learners be free to create anything they would like within Scratch, continuously evolving their ideas as they create. When it comes to programming creative freedom is extremely important, to succeed in the world of software you need to be bold and innovative. Scratch lets students do that perfectly without needing the technical skills that a developer would have.

**Learning Design Description and Rationale**Experiential learning is a learning process where students can take more ownership over their learning and do it in a more hands-on way, they can also reflect throughout the experience. Kolb’s cycle has four stages to break down the rotation of exponential learning. There is a stage of concrete experience where one is doing or having an experience (Kolb, 1984). After this stage, there is reflection and observation where the individual reviews what they have done in the experience (Kolb, 1984). Next comes the abstract conceptualization, this is when one can learn and create new ideas from their experience (Kolb, 1984). Following abstract conceptualization is active experimentation, in this stage, new ideas can be tested, and individuals can use what they have learned so far (Kolb, 1984). The cycle then repeats by going back to engaging directly in an experience, then reflecting, followed by learning, resulting again in an experimentation stage. The cycle just continues to repeat itself as the learner continues growing their knowledge. In experiential learning students are guiding their learning as they are the ones taking initiative, this means they are responsible for the outcome and there is much to learn from both their success and ideas that do not have the predicted outcome.

Experiential learning aligns with our method. Our pod is using Scratch, which uses hands-on learning that is trial, and error based. This relates to Kolb’s cycle in that learners have the experience of trying a possible combination, reflecting on the outcome, learning what may or may not work, creating a plan with the knowledge they just learned, and then they can try again.

**Learning Context Description**The group of people that this learning resource is directed to is high school students or adults however, there is no age restriction or requirement. The website itself is very user friendly and straightforward. Very young children may not be able to create games however, anyone can play them. Scratch is especially appealing because it uses lots of colours and animations to incorporate engaging visuals. The games are all about trying different combinations and experimenting so children of all ages can play.

**Learning Outcomes**1. Apply basic concepts of programming. Functions, Hierarchy, Reasoning systematically.
2. Know how to make a basic game using scratch or a similar tool.

**Topics and Activities**

* Defining our topic
* All the benefits of educational games
	+ Self directed / at the students own pace (often games have levels)
	+ Teaching the information in a way that is engaging and fun
* The basics of how to use scratch and what it is
	+ the online program where those who use it can learn elementary programming
	+ Snap different blocks together (trial and error) to find the right combinations
* Clearing up confusion people have about the topic
* That videogames are non capable of being beneficial to a child’s education
	+ The stereotype of them promoting violence
	+ Distraction from school
* Explain how beneficial learning through games can be and Examples of educational games
Benefits:
* Interactive
* Creates peer connection
* Engaging
* Goes at the pace of the student

Examples:

* Scratch
* Duolingo
* Cool math games
	+ [Cool Math Games - Free Online Math Games, Cool Puzzles ...](https://www.coolmathgames.com/)<https://www.coolmathgames.com>
* Mine craft
* Introducing a platform for creating games for children (Scratch)
* An article about all the things you can learn using scratch
* Visual representation of what learning on scratch looks like
* Demonstrating how to create an educational game using scratch’s platform
* On scratch website
* with step-by-step instructions
	+ Video or slides directing how to create the game
* A walk through of playing the game and what the children playing the game would be learning
* Introducing how to play the game
* Demonstrating what you can learn- showing the trial-and-error aspect
* Describing what you can learn while playing

**Interactive Activities**Know how to make a basic game using scratch or a similar tool : A YouTube video demonstrating how to make a basic game on scratch https://www.youtube.com/watch?v=8RIJqEqZ\_zU

basic concepts of programming such as Threads, Variables, Functions and more: An article about Using scratch to Learn Programming Concepts

​​https://technologyforlearners.com/using-scratch-to-learn-programming-concepts/

**Assessment Plan**

**Inclusion of Diverse Learners**In order to design for inclusion of English language learners, Scratch offers the option to select a language at the bottom of every page. Additionally, Scratch only involves very simple sentences such as “When space is pressed” which could very well be beneficial for learning english.

To include anyone that might not have their own computer or mobile device there will be options available. Since this plan is targeted for students, labs would be booked out for the lessons, chromebooks or any electronic devices that the school offers.

**References**

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Englewood Cliffs, NJ: Prentice-Hall.

Konert, J. (2015). *Interactive multimedia learning: Using social media for peer education in single-player educational games*. Springer.