TECHNOLOGY-9

SELECTIVE UNIT 4 (S04)

(Virtual Reality)
(July 2017)

Unit Statement: The student will explore virtual reality as an emerging technology, learn about it's positive and negative aspects, and delve into the unique possibilities it provides as a learning medium by exploring virtual environments, situations, and tools.

Essential Outcomes: (must be assessed for mastery)

1. **T**he **S**tudent **W**ill explore virtual reality as a universal learning medium.

2. **TSW** assess the positive and negative aspects of virtual reality.

3. **TSW** create content using virtual reality by utilizing the unique environment provided.

4. **TSW** explore and interact with a variety of environments using virtual reality.

5. **TSW** assess the practical and theoretical uses of virtual reality within the business, education, and personal spheres.

6. **TSW** examine and contrast virtual reality related hardware and software.

Introduced & Practiced Outcomes:

1. **T**he **S**tudent **W**ill handle and maintain their equipment with care.

Suggested Materials/Software:

In order to pursue this unit, the student must have access to virtual reality equipment. There are a variety of choices depending on resources available, budgetary concerns, and space.

Materials:

- HTC Vive - High end room scale VR equipment, with a focus on both educational and gaming software.
- Oculus Rift - Moderately priced room scale VR equipment, with access to both educational and gaming software.
- Google Cardboard - Low-priced VR equipment that requires a user provided smartphone to function. Access to both educational and gaming software based on Google services.

Software:

- Tiltbrush - Allows students to paint and create with both conventional and unconventional materials in a fully three dimensional space.
- Titanic Experience - An interactive historical experience that allow students to explore the sinking of the RMS Titanic.
- Mount Everest - Climb Mount Everest in a series of first-person challenges.
- Google Expeditions - Imagine exploring coral reefs or the surface of Mars in an afternoon. With Expeditions, teachers can take students on immersive, virtual journeys.
- Audioshield - Allows students to physical interact with music that can come variety of sources, including student created.
- MakeVR - Allows full interaction with a project using advanced freeform modeling. Projects can be printed to a 3D printer.
- The Lab - A variety of different VR based mini-experiences.
- The VR Museum of Fine Art - A virtual tour of famous historical art.
- Google Earth VR - Experience Google Earth in a fully immersive way.
- There is a huge amount of VR software available, with more being made every day.

Suggested Websites:

Destiny Webpath Express (found on QSI schools Library site)
Use this search engine to find age-appropriate websites that align with this unit.

ImmersiveVREducation - Website outlining recent developments in educationally themed VR applications.

DiscoveryVR - Virtual Reality can take you to new worlds like never before, immersing you in time, space and story.

Steampowered - Online software platform; search by tags for "VR" to find the latest and greatest in gaming and educational VR experiences.

Suggested Activities, Assessment Tools, & Strategies:
This section contains advice for teaching and assessing the different TSW's found in this unit. These methods are not mandatory, but are recommendations for teachers in need of assistance in teaching or assessing this unit.

*Teacher supervision, assistance and preparation in advance is expected in most of the following suggested tools and strategies.

(TSW 1-6) Students can explore the wide variety of experiences available to them in VR. Students could keep a journal of their experiences, or engage in conversation with the class with what they learned and how they learned it.

(TSW 2) Students can create a T-chart or Venn Diagram outlining the aspects of VR,

including things like cost, accessibility, hardware and software requirements, etc.

(TSW 3) Students can use Tiltbrush or MakeVR to create a digital representation of a subject relevant material from another course, such as Science or Cultural Studies.

(TSW 4) Students can utilize Google Earth VR to explore a variety of the world's environments.

(TSW 5) The students could take a topic from another subject and write a proposal for how they might teach or learn about that topic using VR.

(TSW 6) Compare and contrast available VR hardware and software, and create a virtual poster about their preferred items.

ASSESSMENT RUBRIC ON FOLLOWING PAGE…….

Assessment Rubric – S04 – Virtual Reality

Student Name:_____Date: _____

To receive a 'B' the student must show 'B' level mastery on ALL Essential Outcomes. (TSW's)
To receive an 'A', the student must show 'A' level mastery on 4 of 6 available and 'B' level mastery on all remaining TSW's.

TSW	'A' Level Mastery	'B' Level Mastery	'P' Comments
1. **T**he **S**tudent **W**ill explore virtual reality as a universal learning medium.	The student can explain and justify how virtual reality can be used as a learning medium for a variety of topics.	The student can describe how virtual reality can be used as a learning medium for a variety of topics.	
2. **TSW** assess the positive and negative aspects of virtual reality.	The student can discriminate between the positive and negative aspects of virtual reality.	The student can outline the positive and negative aspects of virtual reality.	
3. **TSW** create content using virtual reality by utilizing the unique environment provided.		The student can create content using virtual reality as a medium.	
4. **TSW** explore and interact with a variety of environments using virtual reality.		The student can explore and interact with a variety of environments using virtual reality.	
5. **TSW** assess the practical and theoretical uses of virtual reality within the business, education, and personal spheres.	The student can evaluate and justify their position on the practical and theoretical uses of virtual reality within the business, education, and personal spheres.	The student can assess the practical and theoretical uses of virtual reality within the business, education, and personal spheres.	
6. **TSW** examine and contrast virtual reality related hardware and software.	The student can appraise and justify virtual reality related hardware and software.	The student can examine and contrast virtual reality related hardware and software.	