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Virtual Reality

Learning Goals

ISTE STANDARDS
http://www.iste.org/standards/iste-standards
# # #

Digital Citizenship
- Exhibit leadership for digital citizenship
- Demonstrate personal responsibility for lifelong learning
- Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity
- Demonstrate understanding of and adherence to rules and laws related to technology and practice legal and ethical behavior
- Advocate and practice safe, legal, and responsible use of information and technology

critical thinking, decision making, and problem solving
- Plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources
- Identify and define authentic problems and significant questions for investigation
- Plan and manage activities to develop a solution or complete a project
- Collect and analyze data to identify solutions and make informed decisions
- Use multiple processes and diverse perspectives to explore alternative solutions

Creativity and innovation
- *Demonstrate creative thinking, construct knowledge, and develop innovative products and processes using virtual reality technology*
  - Identify trends and forecast possibilities
  - Use models and simulations to explore complex systems and issues
  - Apply existing knowledge to generate new ideas, products or processes
  - Create original works as a means of personal or group expression
- Develop cultural understanding and global awareness when interacting with learners around the globe

communication and collaboration #
- Facilitate synergy between group members
- Interact, collaborate and publish with peers, experts, or others
- Communicate information and ideas effectively to multiple audiences

Research and information fluency
- apply digital tools to gather
  - Evaluate and select information from sources and digital tools based on the appropriateness to specific tasks
  - Plan strategies to guide inquiry
  - Locate, organize, analyze,evaluate, synthesize, and ethically use information from virtual reality sources
- Process data and report results

Technology operations and concepts
- Demonstrate a sound understanding of technology concepts, systems and operations #
  - Troubleshoot systems and applications
  - Understand and use technology systems
  - Select and use applications effectively and productively
  - Transfer current knowledge to learning of new technologies

Learning Activities

Tasks

Creative Learning # #
- Experimental - Simulations
  - Working to help students grasp complex concepts and builds collaborative skills. Students can perform tasks that are often impossible in the real world.
    Example: Zspace and Immersive VR education
- Role Playing
  - Ability to immerse into a virtual world to learn social and life skills
    Example: Social Skills training for Aspergers Syndrome
- Storytelling
  - Ability to immerse the student inside the story
    Example: Virtual Story

Cultural Exchange #
- Language Training
  - Immersion programs to memorize foreign language words.
    Example: House of Languages
- Field Trips
  - Ability to Immerse Students into new experiences.
    Example: Google Expeditions

Medical Training
- Healthcare professionals are able to learn new skills as well as refreshing existing ones in a safe environment without causing any danger to the patients.
  Medical Simulaton Example: Zspace

Job Training/ Simulation
- Military Training
  - Training soldiers for combat situations or other dangerous settings where they have to learn how to react in an appropriate manner.
    Flight / Battlefield Simulation example
- Trades
  - Training in trades allows less funding to be spent on materials to practice on, and the trainees can repeat the task as many times as needed to perfect their skills.
    Tube Welding Training
- Driver Simulations
  - Educate teenagers and parents about distracted driving.
    Driver Simulation Example: Distracted Drivers-Toyota
- Training for athletes
  - Accelerate a player's ability to prepare for upcoming games and to learn from previous games.
    Athletic Example: Strive Labs

Presentations and speeches
- Ability to practice presentations and speeches improve their presenting skills with the ultimate goal of overcoming speech anxiety and to become a confident public speaker.
  Presentation Example: Presentation Simulator-Oculus

Play
- Games can be used as a tool for allowing participants to practice social behaviors in role-play situations, while also providing a safe environment for learning rules and directions and repetition of skills.
  Games/Play example: 2nd Life

Collaboration/ Social Interaction

Teacher Roles

INSTRUCTIONAL DESIGNER # #
- *Designing and organizing lesson activities #*
- *Integrating virtual reality device training into lesson*
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- *Planning lessons to incorporate virtual reality*
  Virtual Reality Lesson Ideas for Every Subject
- *Aligning lessons to curriculum # #*
  - *Ensuring lessons align with state and national standards*
  - *Looking for links to other disciplines*

TRAINER
- *Ensuring device and software are used correctly*
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- *Provides remedial instruction in use of virtual reality device*
- *Monitoring appropriate student use of app with resources*
- *Provides individualized and/or group instruction in use of device and software*
- *Models use of virtual reality device and software*
- *Gives examples of potential uses of device and software*

COLLABORATOR
- *Works with fellow instructors to improve instruction*
  - *Team teaching opportunities*
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  - *Grade level or interdisciplinary activities*
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  - *Informal sharing of successes and failures*

COORDINATOR
- *Assigns students to individual projects*
- *Assigns students to teams for projects*
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  - *Provide collaborative learning opportunities*
  - *Provide peer-tutoring opportunities with students of varying abilities*
  - *Group students according to individualized learning style and needs*
- *Groups or separates students according to individual learning styles and needs #*

ADVISOR
- *Gives assistance, advice, suggestions, or thought-provoking questions*
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  - *Promoting self-guided learning behaviors*
  - *Promoting greater personal ownership of learning task outcomes*

MONITORING AND ASSESSMENT SPECIALIST # #
- *Evaluates student and instructor performance for improvement*
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  - *Tracks evaluation scores for individual students or groups in need of improvement*
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  - *Tracks whole class performance for instructional areas in need of improvement*
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  - *Provides feedback for students to improve their skill and learning*
  - *Provides self-evaluation opportunities for students*
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  - *Provides peer-evaluation opportunities for students*
- *evaluates learning*
- *facilitates learner-centered environment*
- *provides social learning opportunities*
- *contextualizes and shares learning experiences*
- *guides learning experiences*
- *structures learning experiences*

Learning Assessments

Norm Referenced Testing
- https://www.youtube.com/watch?v=7DnqUjO3Ygk
- Testing how students perform against the achievements of others

Diagnostic Testing
- https://www.youtube.com/watch?v=fTS-Y9_-5Z
- Determining what the students may already know

Formative Assessments
- https://www.youtube.com/watch?v=UgKxfcUn8ko
- Monitoring student learning throughout to help students improve their learning

Criterion Referenced Testing
- Testing to determine if students have achieved a specific skill
- https://www.youtube.com/watch?v=H8EMDCFLs6M

Summative Assessments
- https://www.youtube.com/watch?v=SJUMCRCVG8I
- Evaluating learning at the end of a unit to determine if learning objective has been met.