VIRTUAL REALITY:

The Good, The Bad, & The Ugly

FINDINGS FROM A HYBRID DIESEL PROGRAM

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Presenter Introduction

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LACY FARR

Diesel by Distance Student

Diesel by Distance

WALLACE STATE COMMUNITY COLLEGE
DIESEL BY DISTANCE

WALLACE STATE
HANCEVILLE • ONEONTA

WALLACE STATE COMMUNITY COLLEGE
DIESEL BY
DISTANCE

WHAT IS

Virtual Reality?

THE BEGINNING OF VR & VR IN EDUCATION

In 1968,

Harvard Professor Ivan Sutherland and students created what was considered to be the first head-mounted display system for use in immersive simulation applications, called **The Sword of Damocles.**

Current State of VR

GROWTH

The industry is growing at a fast pace, with the global VR market size projected to increase from less than 12 billion U.S. dollars in 2022 to more than 22 billion U.S. dollars by 2025.

CHALLENGE

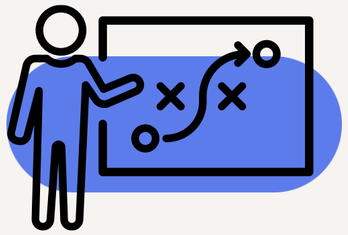
VR has not yet reached its full potential. More time is needed to make it more accessible and reduce development costs.

The GOOD

The GOOD

01. WORKPLACE TRAINING
02. THERAPY FOR PHOBIAS & PTSD
03. ENHANCED GAMING EXPERIENCES
04. VIRTUAL TOURISM
05. RECRUITING

The GOOD



ONE ON ONE WITH DIGITAL COACH

MEET THE STUDENT WHERE THEY'RE AT (ABILITY TO TRAIN ANYWHERE)

DIFFERENT, FUN, INTERACTIVE TRAINING LIKE NEVER BEFORE IN A DIESEL PROGRAM

RECRUITING

OFFER OPPORTUNITIES YOU COULDN'T BEFORE

The **BAD**

The **BAD**

01. HEALTH CONCERNS

02. TECHNOLOGICAL LIMITATIONS

03. COST AND ACCESSIBILITY

04. PRIVACY AND DATA SECURITY

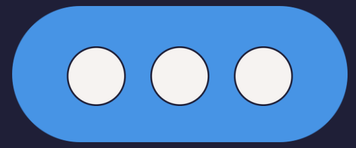
The **BAD**

ABILITY TO TRAIN ANYWHERE... WITHIN REASON, WIFI NEEDED, SPACING

EXPENSIVE TO DEVELOP AND MAINTAIN

TENDS TO ATTRACT THOSE WHO HAVE NO INTENTION OF TAKING A DIESEL PROGRAM, JUST WANT TO USE AN OCULUS

GETS THEM FAMILIAR BUT NOT EXACT, CAN'T DETERMINE WEIGHT, HOW DIFFICULT TO GET IN AN AREA



NOT FOR EVERYONE, PEOPLE WITH DISABILITIES

The UGLY

The **UGLY**

01. ADDICTION AND ESCAPISM

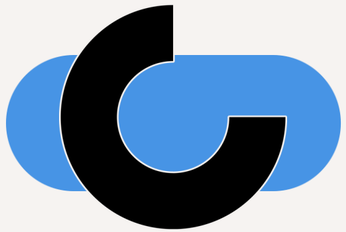
02. SOCIAL ISOLATION

03. DIGITAL DIVIDE

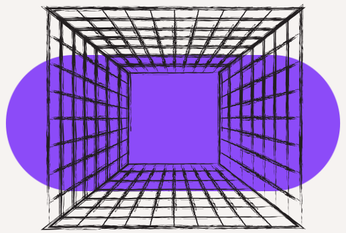
04. INJURIES & PROPERTY DAMAGES

The **UGLY**

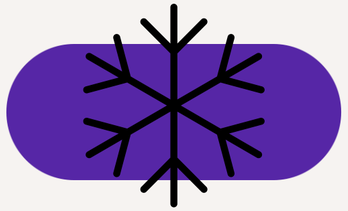
SICKNESS



WILLINGNESS TO COMPLETE THE SIMULATIONS



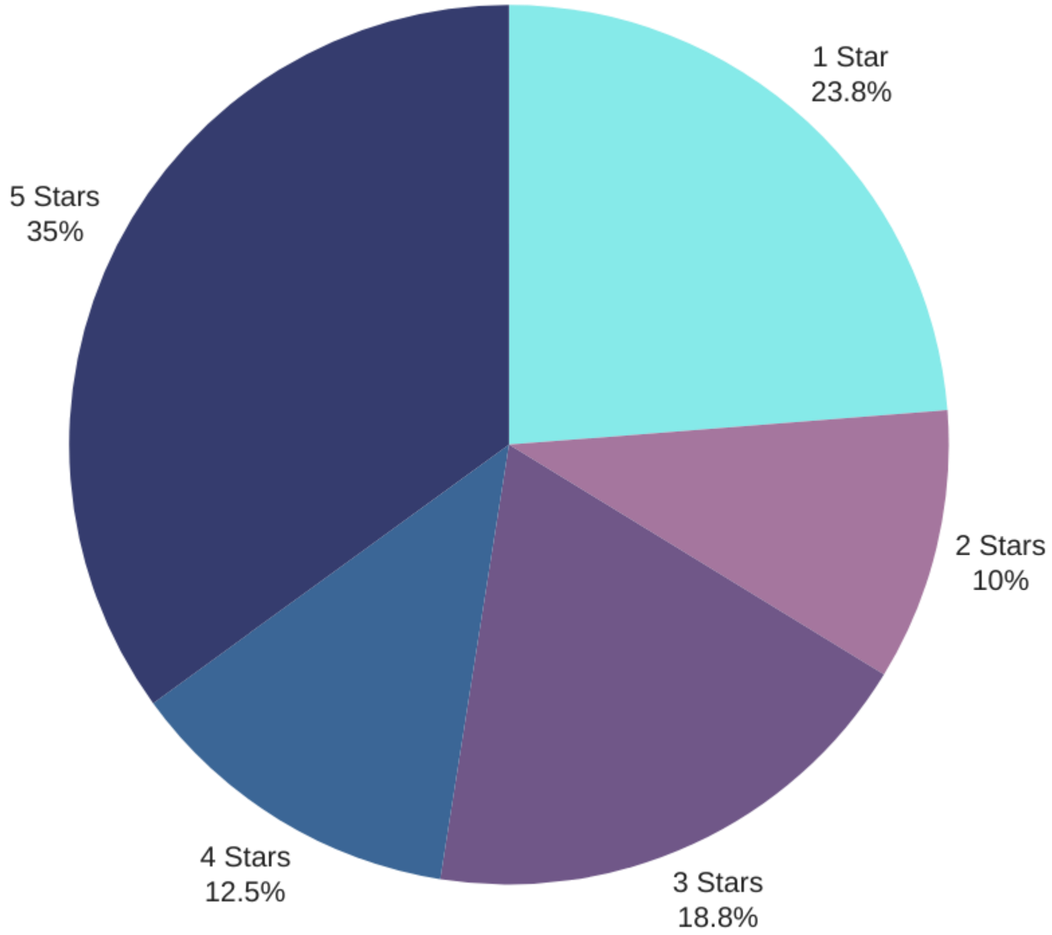
FALSE SENSE OF REALITY



FREEZES/GLITCHES

DISCOMFORT

STUDENTS RATE VR



1 STAR

2 STARS

3 STARS

4 STARS

5 STARS

Preventative Maintenance Simulations

1. Lifting Devices
2. Tire Inspection
3. Tire Replacement
4. Oil and Filter Service
5. Fuel and Air System Filter Service
6. Fundamental Analysis - Air Compressor Replacement
7. Fundamental Analysis - Air Distribution System
8. Fundamental Analysis - Valve Arrangement
9. Drum Brake Inspection and Repair
10. Parking Brakes Analysis and Repair
11. CAM Brake Replacement
12. Wheel Ends
13. Steering Gearbox Replacement
14. Tie Rod End Replacement
15. Remove & Replace Steering Linkages
16. Kingpin Assembly Inspection
17. Kingpin Replacement
18. Shock Absorber Replacement
19. Leaf Spring Replacement
20. Drive Train Inspection
21. Battery Replacement
22. Starter Replacement
23. Engine Analysis

Engine Analysis Simulations

1. Turbocharger, Exhaust Manifold and Thermostat Housing Removal & Disassembly (Exhaust System Removal)
2. Air Intake, EGR and Crankcase Ventilation Removal
3. Fuel Supply System and Cam Gear Removal
4. Valve Train, Valve Camshaft, Injector Camshaft and Cylinder Head Removal & Disassembly (Cylinder Overhaul)
5. Cylinder Head Analysis
6. Cylinder Head Integrity Process
7. Cylinder Head Disassembly and Assembly
8. Cylinder Liner and Head Valve Protrusion Tests
9. Cylinder Head Installation
10. Dual Overhead Cam and Valvetrain Installation
11. Fuel Supply System Installation
12. Air Intake, EGR, and Crankcase Ventilation Assembly
13. Turbocharger, Exhaust Manifold and Thermostat Housing Installation & Assembly (Exhaust System Installation)
14. Valve and Injector Adjustments
15. Timing and Backlash Procedure Part 1
16. Timing and Backlash Procedure Part 2
17. Crankshaft Removal
18. Piston and Connecting Rod Removal
19. Cylinder Liner Removal and Reinstallation
20. Main Bearing Replacement
21. Crankshaft End Play Measurement
22. Piston Assembly and Measurement
23. Piston and Bearing Installation

Future of VR

TECHNOLOGICAL ADVANCEMENTS

- Improved hardware and software
- Integration with AI and other technologies

POTENTIAL SOLUTIONS TO CURRENT ISSUES

- Addressing health concerns
- Improving accessibility and affordability

EXPANSION

- New fields adopting VR technology
- Potential societal impacts

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Conclusion & Takeaways

Not for everyone - offer trainings with multi-device capabilities

Balancing the good, the bad, and the ugly

AR or mixed reality in place of VR

VR advancements will improve overall useage

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