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ROME • 16–19 OCTOBER

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Digital Game-Based Learning
get into the game

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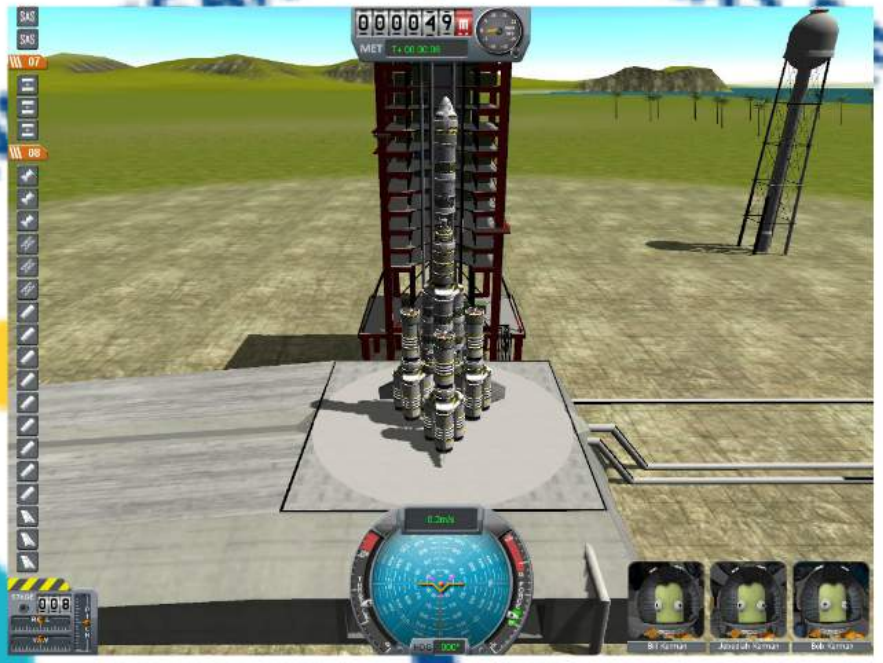
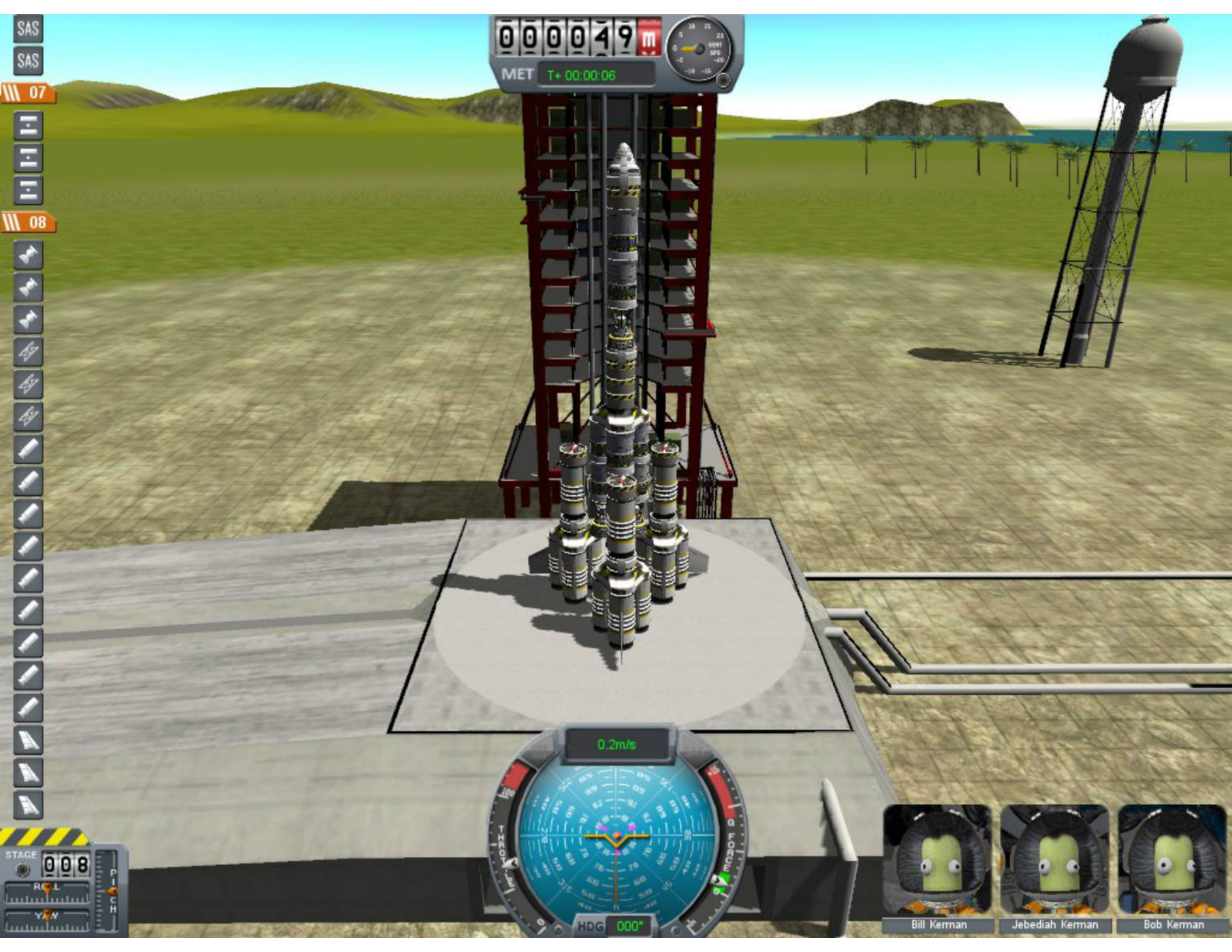
Digital Game-Based Learning

get into the game


Untitled Space Craft
Propulsion




Untitled Space Craft
Propulsion
00
01
02
03
04
SAS


SAS
SAS
07
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MET
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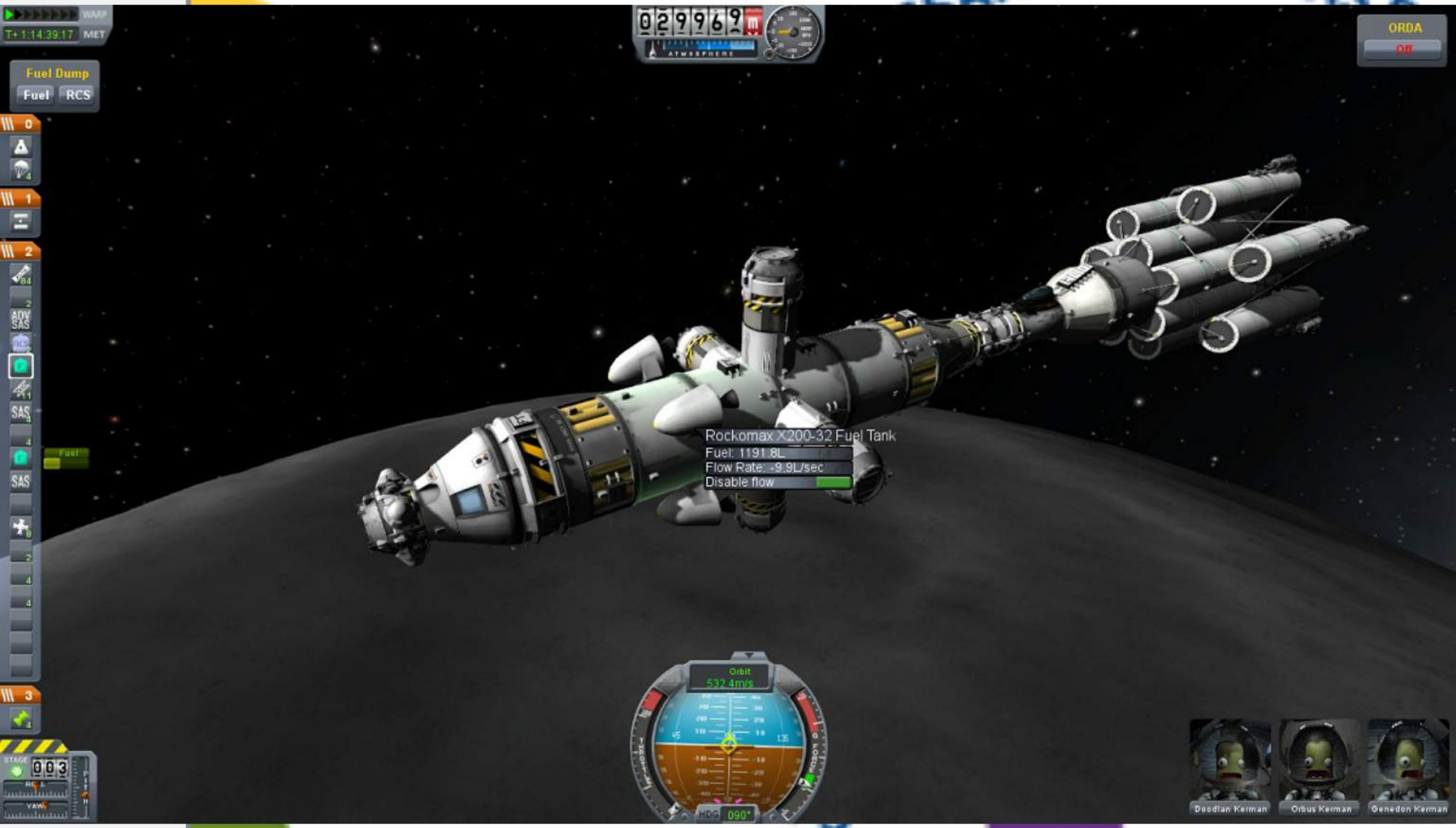
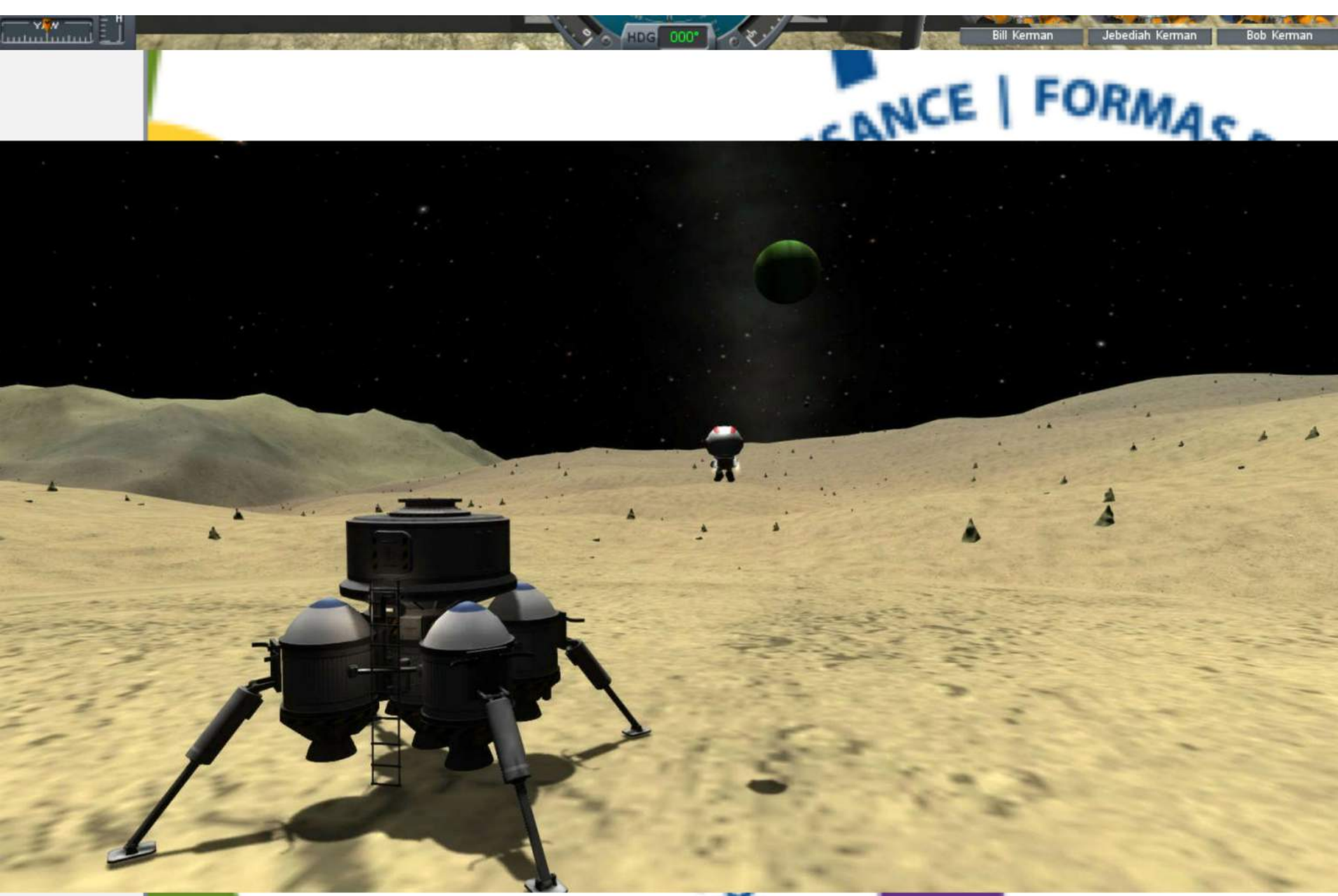
0.2m/s
HDG
000°
STAGE
008
ROLL
YAW
PITCH
THROT
G FORCE
Bill Kerman
Jebediah Kerman
Bob Kerman


Fuel Dump
Fuel
RCS
ORDA
Rockomax X200-32 Fuel Tank
Fuel: 1191.8L
Flow Rate: -9.9L/sec
Disable flow
Orbit
532.4m/s
HDG 090°
Doodlan Kerman
Orbus Kerman
Genedon Kerman


HDG 000°
Bill Kerman
Jebediah Kerman
Bob Kerman

Thrust to Weight Ratio (TWR)

→ *See also: Thrust-to-weight ratio*

This is Newton's Second Law. If the ratio is less than 1 the craft will not lift off the ground. Note that the local gravitational acceleration, which is usually the surface gravity of the body the rocket is starting from, is required.

$$\mathrm{TWR} = \frac{F_T}{m \cdot g} > 1$$

Where:

- F_T is the thrust of the engines
- m the total mass of the craft
- g the local gravitational acceleration (usually surface gravity)

Combined Specific Impulse (I_{sp})

→ *See also: Specific impulse*

If the I_{sp} is the same for all engines in a stage, then the I_{sp} is equal to a single engine. If the I_{sp} is different for engines in a single stage, then use the following equation:

$$I_{sp} = \frac{(F_1 + F_2 + \ldots)}{\frac{F_1}{I_{sp1}} + \frac{F_2}{I_{sp2}} + \ldots}$$

Delta-v (Δv)

Basic calculation

→ *See also: Tutorial:Advanced Rocket Design*

Basic calculation of a rocket's Δv. Use the atmospheric and vacuum thrust values for atmospheric and vacuum Δv, respectively.

$$\Delta v = ln\left(\frac{M_{start}}{M_{end}}\right) \cdot I_{sp} \cdot 9.81\frac{m}{s^2}$$

Where:

- Δv is the velocity change possible in m/s
- M_{start} is the starting mass in the same unit as M_{end}
- M_{end} is the end mass in the same unit as M_{start}
- I_{sp} is the specific impulse of the engine in seconds

True Δv of a stage that crosses from atmosphere to vacuum

Body	Δv_{out}
Kerbin	1000 m/s^2
other bodies' data missing	

Calculation of a rocket stage's Δv, taking into account transitioning from atmosphere to vacuum. Δv_{out} is the amount of Δv required to leave a body's atmosphere, *not* reach orbit. This equation is useful to figure out the actual Δv of a stage that *transitions* from atmosphere to vacuum.

$$\Delta v_T = \frac{\Delta v_{atm} - \Delta v_{out}}{\Delta v_{atm}} \cdot \Delta v_{vac} + \Delta v_{out}$$

AMERICAN PSYCHOLOGIST

Journal of the American Psychological Association
December 2014 Volume 69 Number 9 ISSN 0003-066X

Reports of the Association

Capitol Park Peninsula Blue Hargood

The Benefits of Playing Video Games

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Video games are a ubiquitous part of almost all children's and adolescents' lives, with 97% playing for at least one hour per day in the United States. The vast majority of research by psychologists on the effects of "gaming" has been on its negative impact: the potential harm related to violence, addiction, and depression. We recognize the value of that research; however, we argue that a more balanced perspective is needed, one that considers not only the possible negative effects but also the benefits of playing these games. Considering these potential benefits is important, in part, because the nature of these games has changed dramatically in the last decade, becoming increasingly complex, diverse, realistic, and social in nature. A small but significant body of research has begun to emerge, mostly in the last five years, documenting these benefits. In this article, we summarize the research on the positive effects of playing video games, focusing on four main domains: cognitive, motivational, emotional, and social. By integrating insights from developmental, positive,

pulses out urgent warnings against the perils of addiction to these games and their inevitable link to violence and aggression, especially in children and adolescents. Indeed, the vast majority of psychological research on the effects of "gaming" has been focused on its negative impact: the potential harm related to aggression, addiction, and depression (e.g., Anderson et al., 2010; Ferguson, 2013; Lemola et al., 2011). It is likely that this focus will not diminish in the near future, in part because of the enormous media attention garnered when mass killings (e.g., the Columbine High School slayings in 1999) are associated with youth who play violent video games (Ferguson, 2007). Most recently (December 2012), the revelation that the Sandy Hook Elementary School gunman played shooter games directly resulted in President Obama requesting Congress to allocate $10 million for research on the effects of violent media, especially video games (Obama & Biden, 2013).

Decades of valuable research on the effects of violent video games on children's and adolescents' aggressive


Sedated?

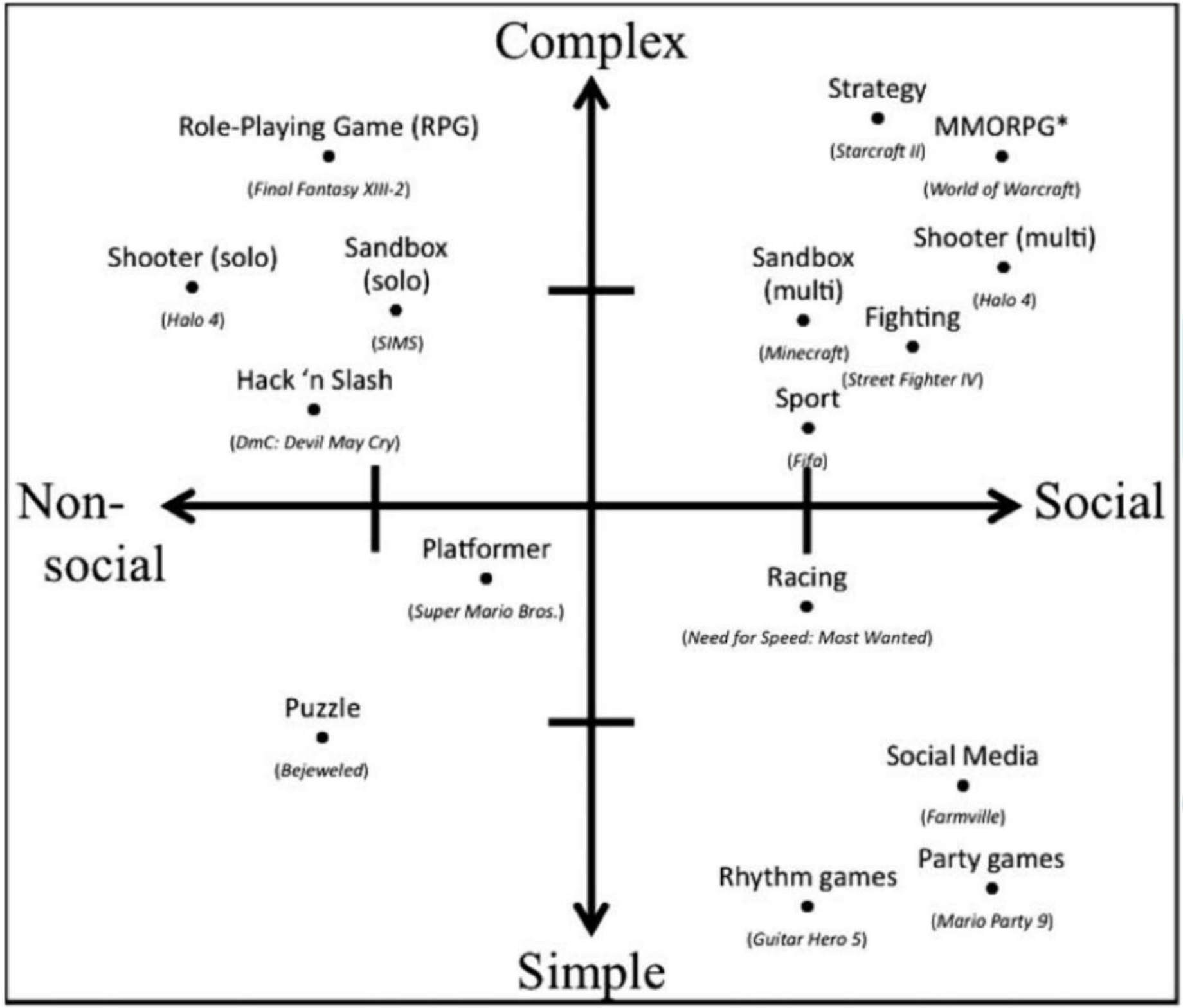
Or intensely focused?

- Using intercultural understanding to interpret communication
- Negotiating ideas and knowledge with peers
- Delegate and share responsibility for decision-making
- Help others to succeed
- Manage and resolve conflict, and work collaboratively in teams
- Negotiate effectively
- Exercise leadership and take on a variety of roles within group
- Demonstrate persistence and perseverance
- Practise strategies to reduce stress and anxiety
- Practise “bouncing back” after adversity, mistakes and failures


Sedated?

Cognitive

Compared to control participants, those in the shooter video game condition show faster and more accurate attention allocation, higher spatial resolution in visual processing, and enhanced mental rotation abilities (for a review, see C. S. Green & Bavelier, 2012). A recently published meta-analysis (Uttal et al., 2013) concluded that the spatial skills improvements derived from playing commercially available shooter video games are comparable to the effects of formal (high school and university-level) courses aimed at enhancing these same skills.


Complex
Simple
Non-social
Social
Role-Playing Game (RPG)
(Final Fantasy XIII-2)
Strategy
(Starcraft II)
MMORPG*
(World of Warcraft)
Shooter (solo)
(Halo 4)
Sandbox (solo)
(SIMS)
Sandbox (multi)
(Minecraft)
Shooter (multi)
(Halo 4)
Fighting
(Street Fighter IV)
Hack 'n Slash
(DmC: Devil May Cry)
Sport
(Fifa)
Platformer
(Super Mario Bros.)
Racing
(Need for Speed: Most Wanted)
Puzzle
(Bejeweled)
Social Media
(Farmville)
Party games
(Mario Party 9)
Rhythm games
(Guitar Hero 5)

Motivational

Immediate and concrete feedback in video games (e.g., through points, coins, dead ends in puzzles) serves to reward continual effort and keep players within what Vy- gotsky (1978, p. 86) coined the “zone of proximal devel- opment.” This motivational “sweet spot” balances optimal levels of challenge and frustration with sufficient experi- ences of success and accomplishment (Sweetser & Wyeth, 2005).

Emotional

Gaming may be among the most efficient and effective means by which children and youth generate positive feelings. Several studies have shown a causal relation between playing preferred video games and improved mood or increases in positive emotion (e.g., Russoniello, O'Brien, & Parks, 2009; Ryan, Rigby, & Przybylski, 2006).

Social

In these virtual social communities, decisions need to be made on the fly about whom to trust, whom to reject, and how to most effectively lead a group. Given these immersive social contexts, we propose that gamers are rapidly learning social skills and prosocial behavior that might generalize to their peer and family relations outside the gaming environment (Gentile & Gentile, 2008; Gentile et al., 2009)

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Death and Dying in DayZ

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ABSTRACT
Avatar death is essentially universal in combat games, and ubiquitous in all other genres; death of a player's materialization in the game space is used to identify the player's failure and temporary removal from play. Yet the possibilities for creating interesting social dynamics and game play experiences through the design and configuration of death mechanics in games remains largely unexplored. In this paper we discuss the first person shooter game *DayZ*, which has configured death with an extreme level of consequentiality not found in other online first-person-shooters. We examine the affect of this consequentiality on the player experience and attitudes towards death and dying in *DayZ*. On the basis of our research data, we find that the increased consequentiality of death in *DayZ* principally affects the game experience by intensifying social interactions, raising a player's perceived level of investment and invoking moral dilemmas.

Categories and Subject Descriptors
K.8.0 [**Personal Computing**]: General - *Games*

General Terms
Design, Human Factors, Theory.

Keywords
DayZ, Death, dying, perma-death, character death, avatar death, nightmare mode

1. INTRODUCTION
I might have died, but I felt very much alive afterwards

Avatar death is essentially universal in combat games; death of a player's materialization in the game space is ubiquitously utilized as a mechanic to mark the player's failure and temporary removal from play. Indeed, death is ubiquitous in most genres; it is found in first-person shooters, MMORPGs, puzzle games, children's zombie first-person-shooter (FPS) *DayZ,* which has implemented *character-death* (or 'perma-death') rather than mere *avatar-death.* In accordance with its ruthless post apocalyptic survival narrative, *DayZ* characters begin with only a few rudimentary items, and no weapons, and must scavenge food and water to survive for more than a short period. Advancement in the game is highly dependent on accumulating resources and weapons. *DayZ* also has a persistent character identity system, allowing players to build and improve their character over multiple play sessions. This lends DayZ a significant role-playing game mechanic for character progression, though without skill or ability progression. Unlike other FPS games, in which death is a minor 2-10 second setback before rematerialization, death in *DayZ* involves the permanent death of this character, and loss of all items and advancement. In this paper we analyse interview data and publicly available player texts and videos to understand the impact that such dramatic reconfiguration of death has on the game experience, and further explore this distinction between avatar-death and character-death.

We will begin by reviewing the academic literature on death and its impact on game experience, before providing a brief description of the *DayZ* mod. We conclude that the increased consequentiality of death affected the game experience principally by intensifying social interactions, increasing players' perceived investment and invoking moral dilemmas.

2. PRIOR WORK
There is surprisingly little academic work on the game mechanic of death; notable exceptions being Emily Flynn-Jones' in-depth analysis of in-game death [14] and Lisbeth Klastrup's chapter on death and dying in the *World of Warcraft Reader* [19]. Klastrup notes that, "*in online worlds such as World of Warcraft, characters in game worlds die repeatedly, whereas the players playing them never (normally) die. The experience of "death" is thus not one of termination, though it may definitely cause a*

GAMING

in the Classroom

Why bring electronic games into the classroom?

Why bring electronic games into the classroom?

It's user-friendly educational technology (which kids love)

When asked about digital content in schools, administrators said that it:

74% Increases student engagement

50% Helps to personalize instruction

Kids love games!

9 out of 10

school-aged children (2-17) in the U.S. play electronic games.

They're familiar tools to kids

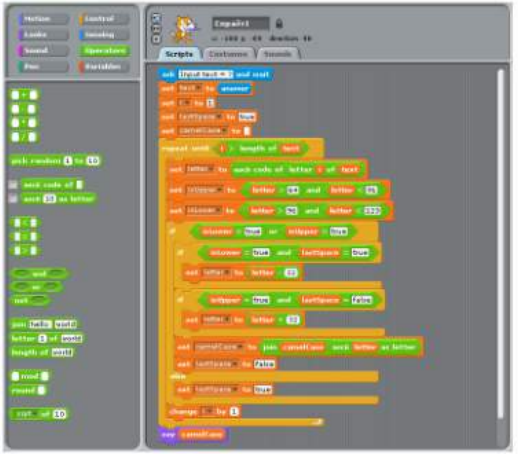
Today's K-12 kids have grown up with digital technologies, and they're used to creating, learning, and communicating through new media.

How do games help kids learn?

THREE

Students as Game Designers

SCRATCH 2.0



Educational Games

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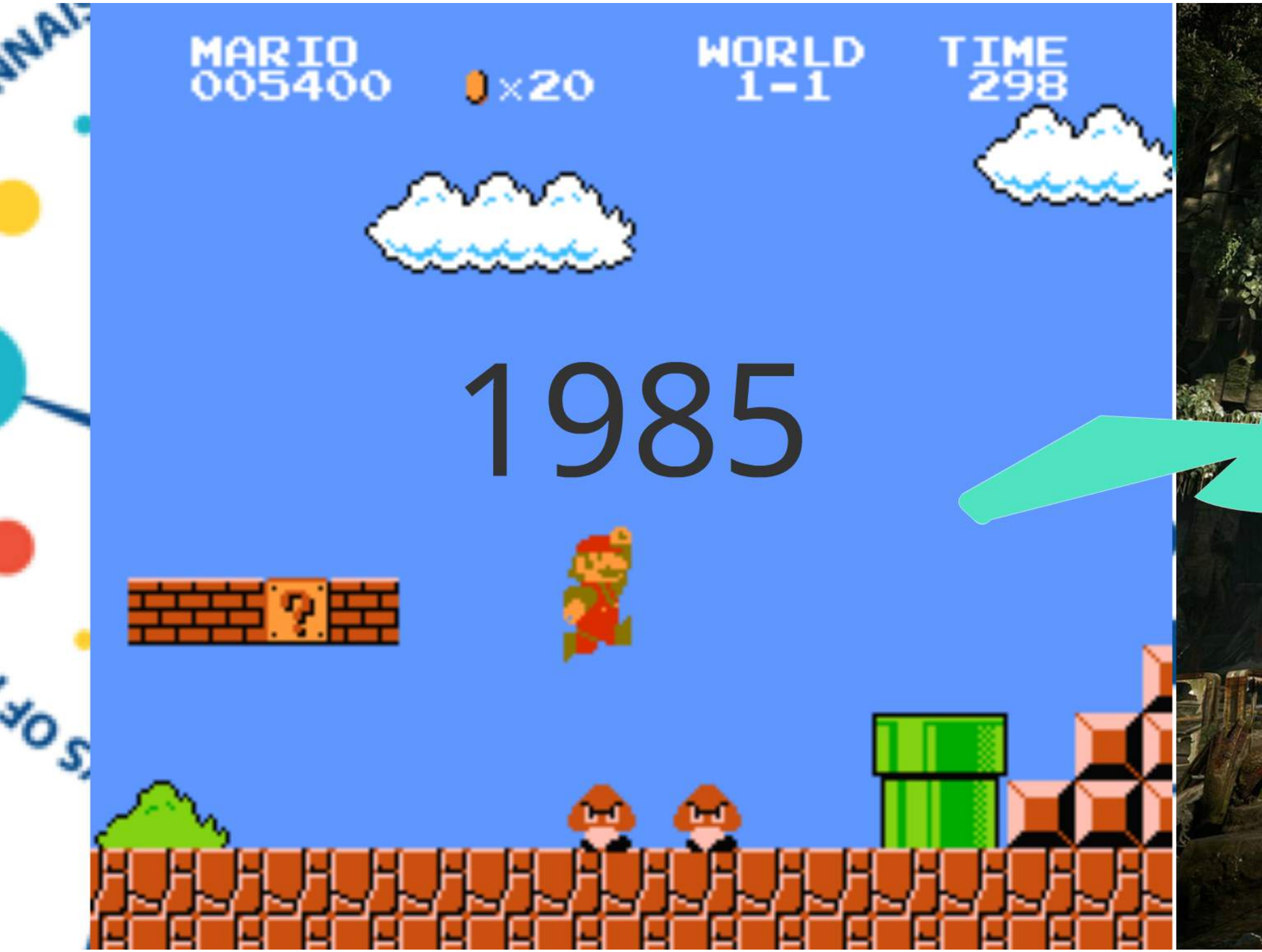
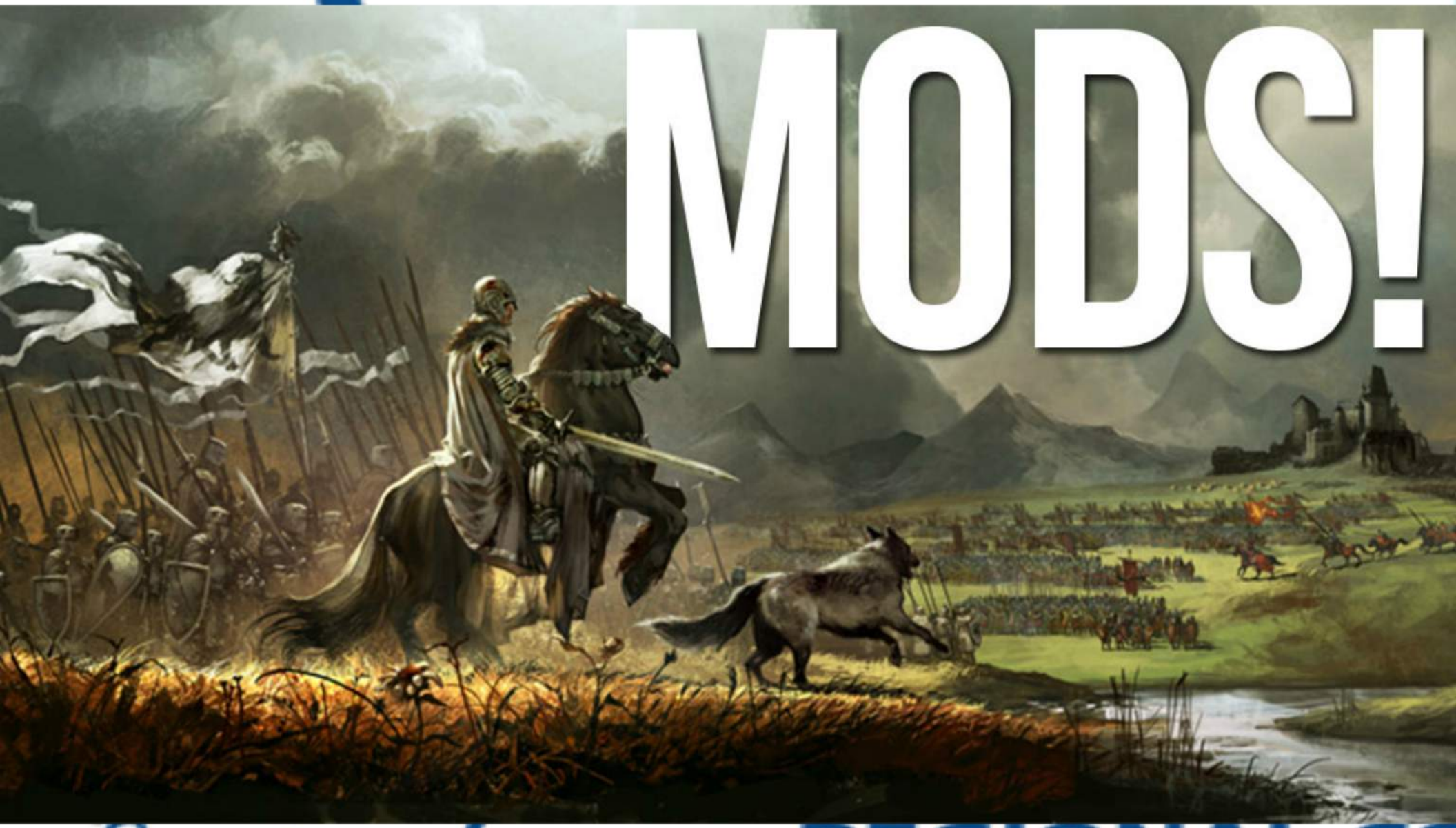
Commercial Off the Shelf Games

Huge R&D Budgets


MARIO
005400
×20
WORLD
1-1
TIME
298
1985


POST
NO
BILLS
2013



REGIONAL CO

SIMCITY edu

[redacted]

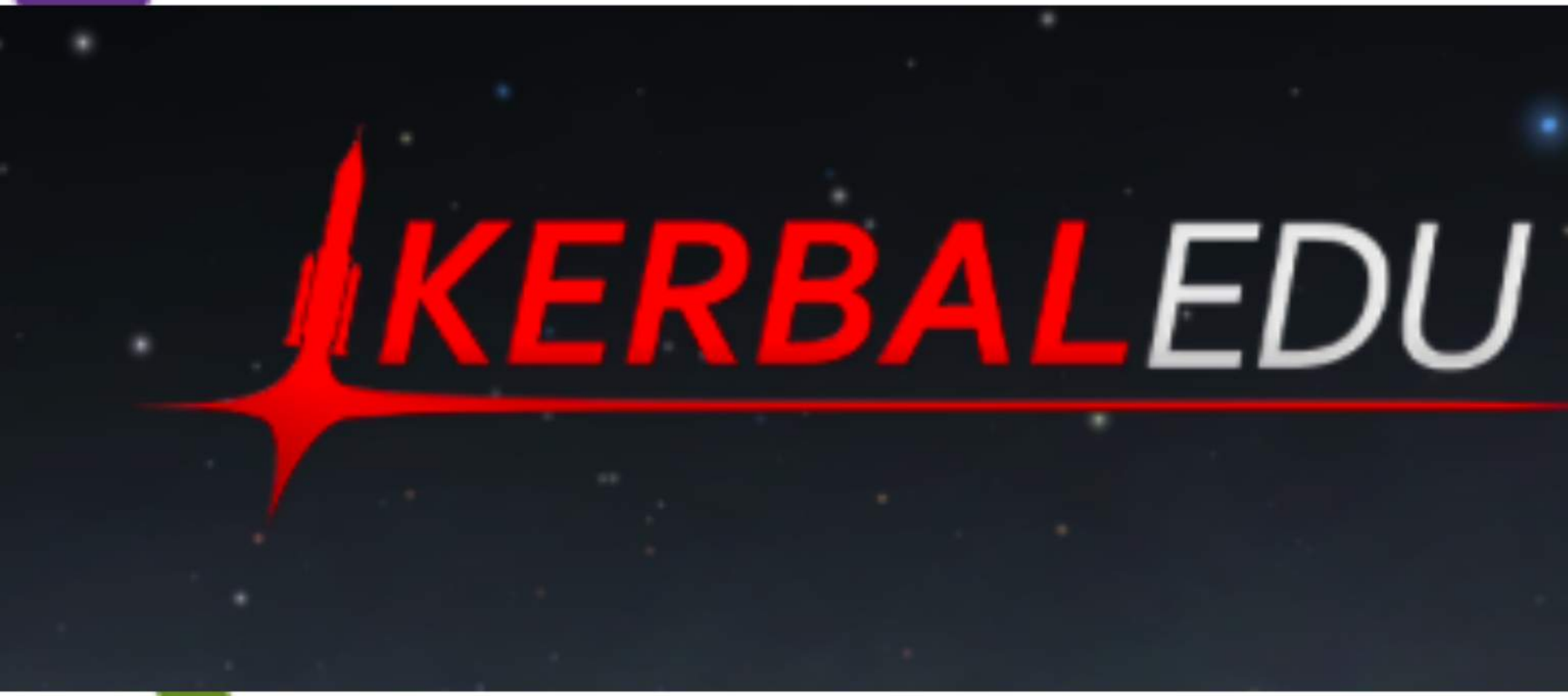
http://www.simcityedu.org

INSTITUTE of PLAY


PORTAL 2
http://www.teachwithportals.com

MINECRAFTEDU

http://minecraftedu.com



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TeacherGaming

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