Constructing "Authentic" Science

Results from a University-High School Collaboration Integrating Digital Storytelling and Social Networking

Stacy Olitsky, Ph.D.

Assistant Professor,
Teacher Education

solitsky@sju.edu

Elizabeth Becker, Ph.D.

Assistant Professor,
Department of Psychology

ebecker@sju.edu

Joe Montcalmo

Senior Director,
Instructional Technology
& Design Services

joe.montcalmo@sju.edu
@namdlab

VISION and CHANGE

Issues with a Static View of "Authentic" Science

Science is not predetermined, as students' voices can have a role in determining "what counts" as science (Barton & Yang, 2000).

Issues with a Static View of "Authentic" Science

Students may feel disconnected from professional scientists, as science is often portrayed as "too hard" (Lemke, 1990).

Issues with a Static View of "Authentic" Science

Authenticity is emergent, and participants can transform learning environments (Rahm, Miller, Hartley & Moore, 2003).

Our study explores how student-directed research, social networking sites, and university/high school partnership can lead to

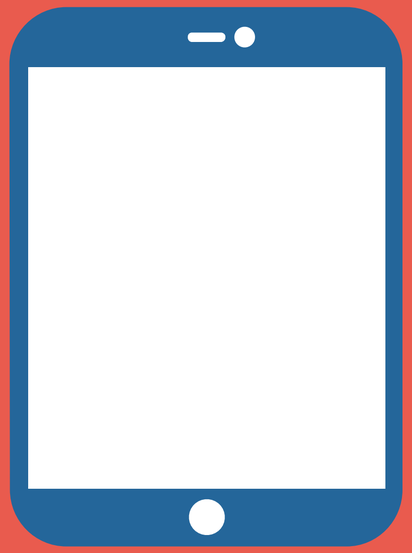
an emergent notion of authenticity

that involves ideas and experiences of all participants.

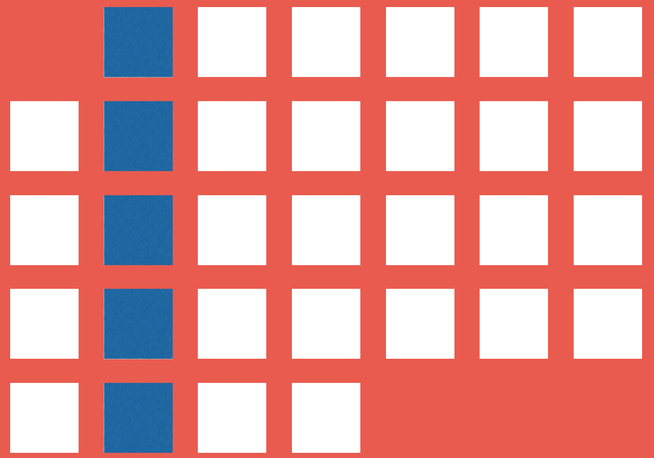
Implementation
Overview

THE SETUP
THE BODY
THE CONCLUSION

Instructional Features



iPads



Weekly Assignments

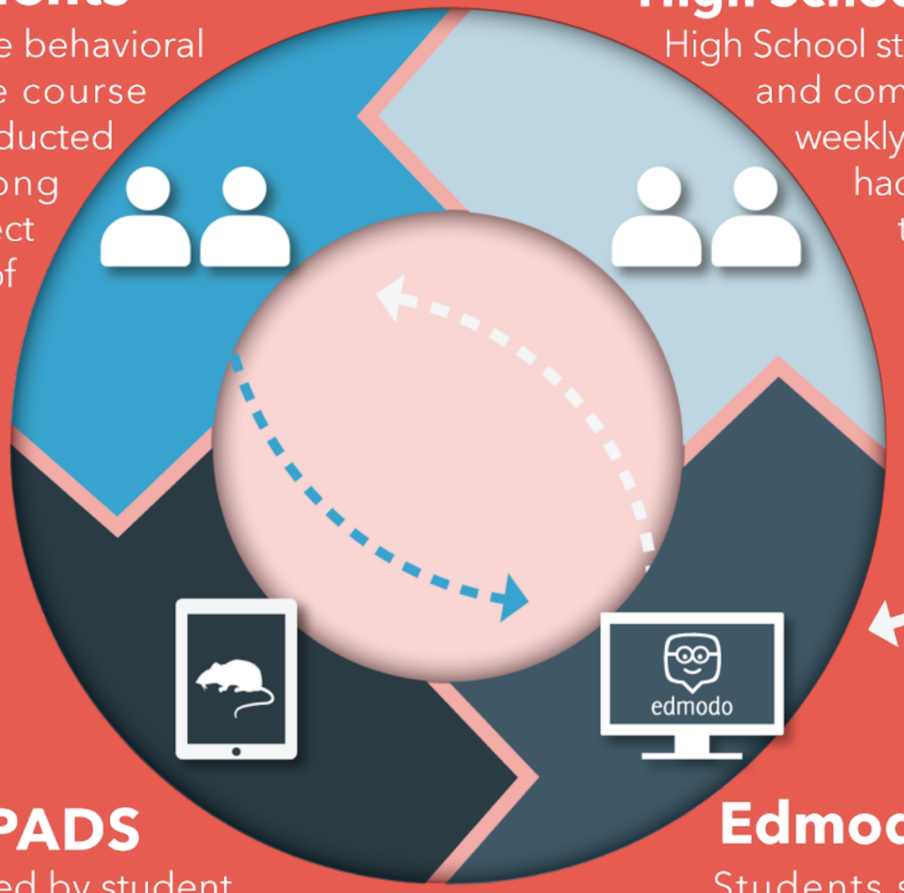
Final Project

SJU Students

Students in the behavioral neuroscience course (PSY 206) conducted a semester long research project on the effects of brain lesions on behavior.

High School Students

High School students followed and commented on the weekly posts. They also had an opportunity to visit on one of 3 trips to SJU.



iPADS

iPads were used by student pairs to document their work using videos and photos.

Edmodo Blog

Students shared weekly updates (blog posts) with local high school students via Edmodo.

Weekly Assignments

Frameworks

- **Authenticity** as taking as "its starting point the interests, perspectives, desires, and needs of the students." (Buxton, 2006).
- **Interaction ritual theory (**Collins, 2004)
- **Frontstage and Backstage** performances in workplaces (Goffman, 1959)

Humor and Emotion
Backstage

Humor and Emotion

Backstage

Humor and Emotion
Backstage

"You guys did a really great job at clearly explaining everything and also making the posts entertaining. I really enjoyed reading your posts every week and I did learn a lot. Thank you guys so much for allowing us to experience this with you guys!"

Humor and Emotion
Backstage

"I have to say it looked like you guys had a lot of fun with your experiment and shared the knowledge you guys had learned in a pretty clever/funny and easy to understand way. I hope you guys go on and do something great and thank you for the great in depth experience!"

Humor and Emotion
Backstage

"Because the type of rats that are being used aren't very aggressive in general, how do you think your rat will behave now that the surgery is over? I know you are testing for a decrease in aggression but how do you think he will behave?"

Role of Communication

Role of Communication

"I thought it was really cool that we were given iPads…Today's society is so wrapped up in social media, and I think it is so important to be able to translate scientific findings into a format that may be accessible to all types of audiences, not just academia."

Role of Communication

"For this class we had people that we needed to answer to and it wasn't only our teacher; it was our high school 'shadow'. These students were expecting weekly updates or our research... no longer will I think that the purpose of my lab work is receive a grade in a class."

Role of Communication

"The part of the class that I learned the most from is the blogging and sharing with the high school students… the experience of interpreting, relaying and explaining both pertinent background material as well as our project and progress…"

Reduced **Social Distance** and **Increased Accessibility**

SJU Saint Joseph's University

live greater.

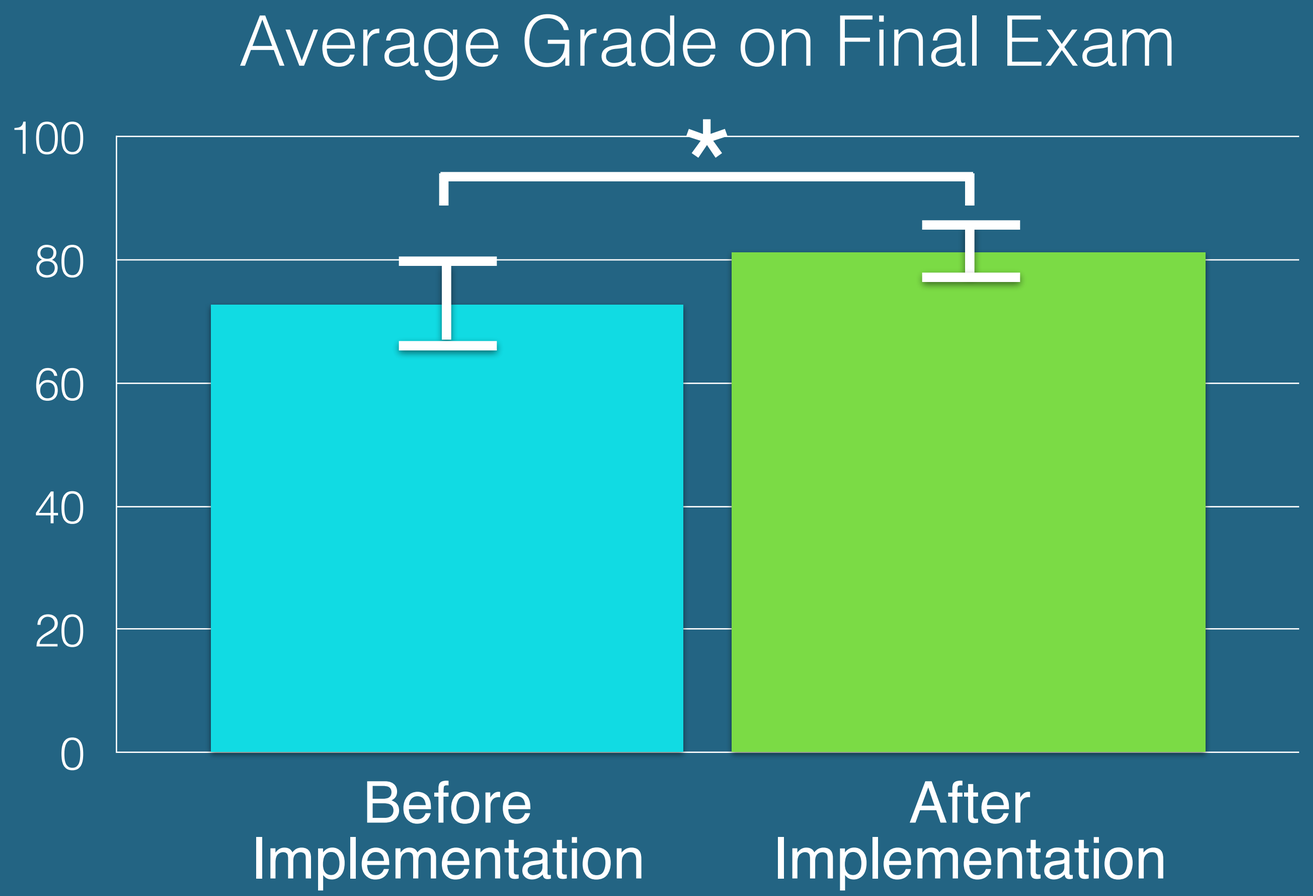
Reduced **Social Distance** and **Increased Accessibility**

"I thought it was interesting to talk to college students about the project, and with them being not much older than you, they know how your mind works. What I mean is, if you asked a question they answered it in your dialect rather than using a whole lot of terms, that you had no clue what they meant. I think they should do this next year, it was a lot better than just sitting in a class learning, you learned from older peers."

Overall Impacts

- View of science as high status knowledge was referenced and undermined.
- Visible “backstage” increased perceptions of the accessibility of behavioral neuroscience.
- “Authenticity” entails communication to general audiences rather than just professional communities.
- Instructional reforms led to learning gains on final exams.

Learning Gains



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12 Students in 2013
12 Students in 2014

p = .008

Conclusions

Different formats that incorporate students' communication practices can:

Incorporate **Student Voice**

Integrate **Emotional Content**

Portray the **"Backstage" of Interactions**

Question the Idea of Science as **Objective and Too Hard**

Break Down the Barriers of **"Formal Science"**

Implications

Technologies that are familiar to youth
(IPads, social networking, multi-media presentations)
can **promote a more inclusive view of science and prioritize student voice.**

Acknowledgements

Co-Authors

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Don Lowing, Stephanie Mosher, Karen Pinto,
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Stacy Olitsky, Ph.D.

Assistant Professor,
Graduate
Teacher Education

solitsky@sju.edu

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