

## VR relax project

### Outline:

- Create a 5 min Video 360 segment with as pristine nature as possible>  
We can use one video or each institution can create a video from its own state/environment; each approach has advantages and disadvantages.  
For the sake of the research and keep it uniform, we can adhere to the length (5 min?), season (summer?) etc.
- The movie + Goggles is made available for students. They view the movie and we harvest their feedback. Ideally, the instrument to harvest their feedback is consulted with a licensed psychologist and/or someone who has strong background in: stress, stress relief, meditation, mindfulness, etc.
- Data is crunched, possible conclusions, possible recommendations

Goal: establish if new technologies, such as VR / Video 360 can alleviate stress, anxiety, seasonal disorders. Can the use of the technology improve psychological conditions/states etc.

### Objectives:

- Create the video
- Secure goggles for classes
- Secure students participation (talk to faculty and find appropriate classes?)
- Build the instrument
- Test the instrument
- Apply the instrument
- Collect and export data to SPSS
- Interpret data
- Write out data
- Publish

### Deadlines:

- September / October is the best time to visit classes and use the instrument. This may be the only sensitive deadline, since later dates may interfere with midterms and with the advance of the semester, both students and faculty fatigue grows.
- Shot videos with Mark Gill. Question: one and the same video or each college shoots their video?

### Literature:

<http://blog.stcloudstate.edu/ims/2018/08/10/remember-through-vr/>

Notes Plamen

August 13

- In the past week, Mark and I took videos with the Vuze: <https://vuze.camera/>

Vuze like Samsung is taking #60 degrees videos.

The advantage of Vuze over Samsung is that Vuze is doing also 3D, which contributes to the sensation for an immersive environment.

- Upon deliberation, Mark and I decided to take several segments of up to 5 min  
Mark can trim them and loop to extend the viewable period, if necessary.

We took video of two main areas:

The Munsinter Garden:

<http://www.munsingerclermens.com/the-gardens/munsinger-gardens>

And of

Beaver Island Trail: <https://www.traillink.com/trail/beaver-island-trail/>

*The goal is to find a tranquil place, which can help students immerse in a restful mode while viewing the 360 video.*

The Munsinger Garden is too close to a main road and Mark and I will be looking for an audio layover

The Beaver Island Trail is also in town, so residue of urban noise can be detected

- We intend to seek a focus group of students in relevant to the study class[es]. The students will be presented with 5-6 video clips and will rank them, coming from the position of : a) they being students, who identify with the general student population experiencing stress and evaluating which video is most prone to help them shake off the stress and b) they being future professionals, who can evaluate which of the videos might best provide their patients with stress relief
- We contacted faculty from Community Psychology and Communication Sciences and Disorders.  
Based on conversations with them, we intend to avoid for this POC the narrower scope of Seasonal Affective Disorder and seek the are of more generalized stress.
- Also, we intend to seek **two types of population** for the POC: one, which consists of students in classes. We will seek faculty in relevant classes to allow us access to their class sessions, where we can:

- Let the students watch the video clip using
  - Main screen
  - Goggles
- Fill out a short survey after they watch the clip

- The second type of population to experience the videos is the recurring visitors in two SCSU health-related offices. In the same fashion, they will be experiencing the video only through goggles and take the short survey after they watch the clip. The expectation is that a repeated use of the video will have stronger effect than one time view.

**From:** Plamen Miltenoff <pmiltenoff@stcloudstate.edu>

**Date:** Friday, August 24, 2018 at 11:03 AM

**To:** "Eggers, John M." <jmeggers@stcloudstate.edu>, "Karger-Gatzow, Erica H." <ehkargergatzow@stcloudstate.edu>, "Gill, Mark C." <mcgill@stcloudstate.edu>  
**Subject:** VRrelax project update

Folks,

I am at the zoom session: <https://zoom.us/j/7796063558>

If you want to meet and update each other on the progress of the project.

I "met" with Aura Lippencott on Wed and upon her insistence, she created the following plan:

<https://docs.google.com/spreadsheets/d/1BvaJOxmpjNaYoUvUR8IPzt64vIQwLt5jANkS6vR9vh4/edit?usp=sharing>

As you can see from the plan, it will be good to agree on the following issues:

- Are we using cardboard goggles with students' phones or Oculus Go
- Who and how is obtaining the Oculus Go, if we go with that on
- Are we using:
  - pre-existing video clips
  - Clips that Mark and I shot
  - Or both
- Can we discuss the how to combine the visual experience with a short survey thereafter (how to combine the interface), so we can measure the impact

Thank you and looking forward to hearing from you

Plamen

Outline of the project (2-3 paragraph):

Eica and Plamen - Wed Sept 12,  
questions to Kathy

- Is it possible to reconcile the rigid environment recommended by Kathy with Erica's office and John Egger. If they establish an environment close to the one Kathy wants for this semester
- 

Aura and Erica. Reaching out to someone on the campus

Aura and Leslie: update and change to video, in November or not be able to do it.

Erica, is it possible to advertise at your office and with students services for volunteers 30 min research

Amistad update: SCSU history dept.

EduCause NERComp - half day program. ID2ID reflection.

Aura and Plamen meeting: Sept 17

- Participants how to ensure.
- Waiting for Kathy.
- HPX - health program. Erica has the contact info

- Plamen let the SCSU history dept know about the VR Amistad
- Webinar next week ID2ID.

**Topic for a VR librarian** - Macalester Tech Conference with Aura.

Generate VR content for faculty and students on Oculus Go: Preliminary

- Oculus Go, like Google Glass is networked directly to Wi-Fi. Some of the content is downloaded on the device, some of the content can be streamed live.
- The VeeR app, <https://veer.tv/>, collects video 360 content, which is available through VeeR, YouTube and, upon downloading the VeeR app on Oculus Go, through the goggles.
- Oculus Go also allows videorecording of the content as well as live streaming
- Oculus Go, similarly to any other personal device (smart phone, tablet) and some social media (Facebook) does not allow multiple accounts, which poses an issue for Oculus Go to be used in education

<https://skarredghost.com/2018/05/17/how-to-record-and-stream-videos-with-the-oculus-go/>

How to stream content from Oculus Go

**THEORETICAL FRAMEWORK** In order to produce a holistic understanding of the impact of VR on student learning in a real-world educational context, in designing our research methodology we drew on a theoretical framework that enables analytic insight into changes to students' beliefs (drawing on self-efficacy theory) and their interpretations of their embodied experiences (drawing on interpretive phenomenological analysis). Self-efficacy theory helped guide the development of the surveys we used. The pre- and post-test surveys were designed to measure dimensions of students' self-reported self-efficacy, with changes in scores reflecting the impact of the VR activity. This theory was first developed by Bandura (1977) and has seen a variety of applications in psychology and education research. Abbitt (2011) explains "self-efficacy theory suggests that the beliefs concerning one's ability to affect a desired outcome influences both thought and action. In general, it is expected that higher self-efficacy beliefs will function as a positive support for action, whereas lower self-efficacy beliefs can have hindering effects on the decision to proceed with a particular course of action" (p.136). Using self-efficacy theory enables a more holistic understanding of the impact of VR use on students compared with using task completion metrics of efficiency and speed (as in Laha, et al., 2014). Abbitt (2011) suggests that improvements to self-efficacy may depend on embodied experiences and affective dimensions related to the success or failure of task completion and their perceived difficulty. To complement the analysis of self-efficacy, we turned to interpretive phenomenological analysis (IPA) to guide the generation and analysis of qualitative data (analysis of this data is ongoing and will appear in a future paper).

(p.3, Lischer-Katz, Cook, Boulden, n.a.) [a Virtual Reality Workstation in an Academic Library-2n0717b](#))

Meeting notes for Wed, Oct.3

Pls can we assume that we had agreed on the following:

1. Kathy's students from one of her classes will be the subjects of the research
2. Each student will enjoy Oculus go video clip(S???) for ~ twenty minutes in the same room (secured my Mark Gill)
3. Erica's GAs (?) will meet the students and walk them through
4. At the end of the session, students will take a survey

If any changes in the rough plan above, please think about it and let's attempt to decide at this meeting, so we can move forward

Can we decide on the video content? Mark, can you have ready on Oculus the following selection:

- The MIT professor's "yoga" mediation platform
- 2 hi res professional videos from "exotic" places: one beach and one mountains, but in the summer
- Our (Mark and Plamen) video from the river

And lets vote on them, so we can narrow down the 20 min content

Kathy, do you think, we can discuss the instruments (the survey)? Questions etc

Mark, I uploaded in Veer several "relax" videos; can you please have Erica and Kathy watch them today, if I don't make it to the meeting:

<https://veer.tv/videos/varna-sea-garden-222913>

<https://veer.tv/videos/rhodopa-mountain-bulgaria-223319>

You can certainly watch them also on your computers.

**rom:** "Mayhew, Kathryn P." <[kpmayhew@stcloudstate.edu](mailto:kpmayhew@stcloudstate.edu)>

**Date:** Wednesday, October 3, 2018 at 1:50 PM

**To:** Plamen Miltenoff\_old <[pmiltenoff@stcloudstate.edu](mailto:pmiltenoff@stcloudstate.edu)>

**Subject:** Re: Narrow down our plan for the VRrelax project

Yes, we would need something for blood pressure (borrow from Nursing) and a student that knows how to take a pulse with a watch for 15 seconds (multiplied by 4 for a full minute). Also, I am checking into the app for the smartphone cortisol analysis using saliva (cortisol is a hormone secreted when stressed). I want to check some more

research to determine if our perceived self report is the best way to go. Finally, each of these physiological assessments and the perceived self report will be done before visualization, immediately after and 10 minutes after. In some of the studies I have looked at, they state that data collected related to cortisol should always be done in the afternoon when levels are more consistent and representative. Let me know if you have questions. Kathy

On Oct 3, 2018, at 1:03 PM, Mayhew, Kathryn P. <[kpmayhew@stcloudstate.edu](mailto:kpmayhew@stcloudstate.edu)> wrote:

Hi everyone,

I am not able to come at 3:30PM. I have another meeting at 4:15 and it is 30 minutes away. So, this is my response. Currently, we will need a baseline measure of stress and a follow-up measure after the Virtual viewing and a delayed 10 minute measure after the viewing. I would like physiologic measures of heart rate and blood pressure. In addition, I am looking at a smartphone app. that can measure cortisol levels. I am checking on availability and may have a lead on the cortisol app. I also think that a measure like the "perceived stress measurement scale" (even though it has good validity and reliability) would not be appropriate for this type of brief intervention. Therefore, a self perceived stress rating on a scale of 1-10 with 1 being low and 10 being high is what I am considering. The self-rating I am still exploring.

I will ask my undergraduate students to participate for extra credit and hope to get a minimum of 30. I also would like to incorporate my graduate students in MFT 677 (Research Assessment and Statistics) to help with the data analysis and research design if this is acceptable (if not I would at least like to discuss the project with them).

I am attaching some information on the smartphone app. for measuring cortisol

*(PDF) Real-time measurement of human salivary cortisol for the assessment of psychological stress using a smartphone.* Available

from: <https://reader.elsevier.com/reader/sd/pii/S221418041400021X?token=48951811F44BDCD D03C0B9892FF601FE705B4E1FFD2DAD7D786D33F41EC4A82ADB1BBE90720B5A96994 95F3CCA0BD56A>

Please let me know what you think. I have other specifics about the research design that we can discuss at a later time. Plamen, 2:30PM is typically a good time for me to meet on Wednesdays. We should schedule a meeting when we can all meet ASAP. Kathy

On Oct 3, 2018, at 2:27 PM, Karger-Gatzow, Erica H. <[ehkargergatzow@stcloudstate.edu](mailto:ehkargergatzow@stcloudstate.edu)> wrote:

We would need to talk more about the time commitment before I could offer any of my students to help administer. It will be also challenging for my students to help administer if it is not happening within Atwood.

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**Erica Karger-Gatzow** LICSW  
Assistant Director for Health Promotion & Marketing  
Student Health Services  
St. Cloud State University  
320.308.4874

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Notes of October 9, 2018 meeting

Folks,

Please have my notes from the meeting today. Erica took also notes, so please feel most welcome to share here:

<https://docs.google.com/document/d/1kOggC7vUaBtOEDaB6ZF-ayEyVw2yBmB0fHXWrrcFkB4/edit?usp=sharing>

the same document contains the literature gathered (toward the bottom of the document) and if you wish, pls add your findings there and/or email to me and I will add them, so we can compile our bibliography for the literature overview later on.

Today we discussed the necessity to determine and limit variables, if necessary, so we can keep the research in its initial phase. E.g. we discussed the difficulty to determine and separate students' overall stress from the stress, possibly caused by the use of the technology (the OculusGo)

We also discussed the length of the session for each research subject and it seems that we agreed to reduce the session from 20 min, down to 10 min

We seem to agree with Kathy's proposal to have another 10 min segment of relaxation after the 10 min of OculusGo use.

We agree to use one particular setup from the VR of the MIT professor.

We agreed to contact students from Erica's recruitment and students from Kathy's class. We hope to have these (one and the same) students go through three consecutive sessions, so we can compare the measurements of (relatively) same subjects through three consecutive sessions of VR use.

Kathy will check and confirm with her GA to be the facilitator of the sessions in a room provided by Mark Gill. Erica will make available a "neutral" account with a STAR ID different from the GA's

personal STAR ID. Students from Erica recruitment and Kathy's class will be contacted from that account. The Outlook calendar of that account will be populated with the facilitator's availability. After that students will be invited to request 3 'meetings' of two weeks apart with the facilitator, according to her availability. Meetings will be scheduled for the afternoon.

The facilitator will be collecting data. Data will consist of demographics, such as: year in college, gender, (pls help here, so we can compile the instrument). Data will consist also of questions (please help here with the questions, so we can compile the instrument). Date and time of the session for each student will be part of the measurements.

Data will be collected not electronically, but paper and pencil. Then it will be data entered by Erica's students in spreadsheet (Kathy help me here: what is the best format to import in SPSS? Can we create the spreadsheet?)

After the end of the session, facilitator helps/directs the student to write h/er name on a "certificate," which student delivers to Kathy for the bonus points.

We meet again via Zoom on Tuesday, Oct 23, 3PM Aat <https://zoom.us/j/7796063558>