Telepresence, Technology, and Cybersupervision

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Project Information

- **Project no:** C1617-7
- **Secondary:** Laura Gamble
- **Client name:** Ed U. Catin
- **Client degree:** PhD
- **Department:** Counseling
- **Statistical background:** Excel, SAS
  - TCE 613 - Qualitative Research Interpretation, Design, and Analysis in Counseling and CE
  - TCE 662/3/4 - CE Quantitative Research Methods 1/2/3
- **Major professor:** Deborah Rubel
- **Approximate timeline:** Defend November ’17

Assistance Requested

- Advice on analysis procedures
- Advice on interpretation of (computer) analysis
- A second opinion
- “Am I missing anything major?”
- Right assumptions?

Background and Objective

- Two Counselor Education (CE) programs
- Online counseling education, online counseling
- Online counseling - remote locations, agoraphobics, specialties, relocation
- Synchronous online supervision (SOS) - holistic approach to online education
- **Social presence**
  - Four aspects: telepresence, spatial presence, involvement, experienced realness
- **Barriers**
  - Two types: technological, interpersonal

Survey, Participants

- 55 item pencil-and-paper questionnaire, assessing four aspects of telepresence, and two barrier types
- Likert responses
- 29 of 31 CE students at OSU Cascades and OSU Corvallis responded
- 12 qualified for survey, with SOS experience
- No SRS, institutional review boards
- From client's draft: "...the ability to make broader inferences of the large population is limited by a lack of randomized sampling and selection."

Questionnaire

Questionnaire Part 1

Instructions: Circle the number you believe to be the most accurate response.

#	Item	Response *(circle one)*
A	Your Gender	1=Female 2=Male 3=Other
B	Your Race/Ethnicity	1=American Indian/Alaska Native 2=Asian, Black/African American 3=Hispanic/Latino 4=Native Hawaiian/Pacific Islander 5=White/Non-Hispanic 6=Two or More Races 7=Other/Unknown
C	Your Program	1=Master's 2=Doctorate
D	Your Age Range	1=Aged 20-29 2=Aged 30-39 3=Aged 40-49 4=Aged 50+
E	Your Current Clinical Class	1=Practicum 2=Internship
F	Your Current Supervision Structure	1=Individual 2=Triadic
H	Your Current Supervision Delivery Modality	1=Traditional, on-campus face-to-face 2=Adobe Connect
I	Your Supervisor's Gender	1=Female 2=Male 3=Other
J	Your Supervisor's Status	1=Faculty 2=Doctoral Student 3=Other

Questionnaire Part 3

Instructions: Now you'll see some statements about experiences about experiencing supervision in an Adobe Connect (AC) online environment. Please circle the number that best describes your experience given the verbal "anchors" provided. There are no right or wrong answers, only your opinion counts. You will notice that some questions are very similar to each other. This is necessary for statistical reasons.

#	Item	Response *(circle one)*
14	How aware were you of the real world surrounding while navigating in the Adobe Connect online environment? (i.e. sounds, room temperature, other people, etc.)?	extremely aware moderately aware not aware at all 1 2 3 4 5 6 7
15	How real did the Adobe Connect online environment seem to you?	completely real not real at all 1 2 3 4 5 6 7
16	I had a sense of acting in the Adobe Connect online environment, rather than operating something from outside.	fully disagree fully agree 1 2 3 4 5 6 7
17	How much did your experience in the Adobe Connect online environment seem consistent with your real world experience?	not consistent moderately consistent very consistent 1 2 3 4 5 6 7
18	How real did the Adobe Connect online environment seem to you?	about as real as an imagined world indistinguishable from the real world 1 2 3 4 5 6 7
19	I did not feel present in the Adobe Connect online environment.	did not feel felt present 1 2 3 4 5 6 7
20	I was not aware of my real environment.	fully disagree fully agree 1 2 3 4 5 6 7

Raw Data

- Rows = students
- Columns = survey item
- Data point = Likert score

	Demographics										Supervision Satisfaction Survey													iGroup Presence Questionnaire					
Part. #	G-Campus	A-Gender	B-Race	C-Program	D-Age	E-Class	F-Structure	H-Modality	I-Sgender	J-Sstatus	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	1	1	5	1	1	2	1	1	1	1	6	6	6	7	7	6	6	6	4	4	5	6	2	3	4	4	6	5	3
3	1	1	5	1	1	2	1	1	2	3	7	7	7	7	7	7	7	7	7	7	7	7	1	3	5	5	5	3	3
6	1	1	5	1	1	2	1	1,5	1,5	2,5	6	6	6	7	7	7	7	7	6	6	7	7	1	5	2	1	6	4	7
11	1	1	7	1	2	2	1	2	1	2	6	5	5	7	7	6	6	6	6	6	7	7	2	1	7	5	2	2	5
13	2	1	5	1	1	1	1	2	2	2	5	7	7	7	7	7	7	7	7	7	*	7	1	1	1	1	4	6	7
14	2	1	5	1	1	1	1	2	1	2	7	7	7	7	7	7	7	7	7	7	7	7	1	6	1	7	7	7	7
15	2	1	5	1	1	1	1	2	1	2	6	6	6	7	6	7	7	5	5	5	6	6	1	4	6	3	1	5	4
16	2	2	5	1	1	1	1	2	1	2	7	7	7	7	7	7	7	7	7	7	7	7	1	3	3	1	4	3	7
17	2	1	5	1	2	1	1	2	1	2	7	6	7	7	7	7	6	6	7	6	7	6	1	2	1	2	1	1	7
18	2	1	5	1	1	1	1	2	1	2	7	7	7	7	7	7	7	7	7	7	*	7	1	2	4	2	5	4	6
19	2	1	5	1	2	1	2	2	1	2	7	7	7	7	7	7	5	5	7	*	7	7	1	6	2	4	6	5	5
20	2	1	5	1	1	1	1	2	2	2	7	6	6	7	7	7	6	6	6	6	7	7	2	4	3	5	6	5	7

Research Questions

1. Is there a relationship between **type of technology hindrance** and **level of telepresence**?
2. Is there a relationship between **type of technology hindrance** and **level of spatial presence**?
3. Is there a relationship between **type of technology hindrance** and **level of involvement**?
4. Is there a relationship between **type of technology hindrance** and **level of experienced realness**?

Analysis by Client

- Three statistical tests, eight contingency tables
  - chi-squared test
  - Mantel-Haenzel chi-squared test
  - Fisher's exact test
- Two significant chi-squared test p-values (0.046)
  - Pure technology barrier: high hindrance $\rightarrow$ low realness
  - Interpersonal barrier: high hindrance $\rightarrow$ low realness

Contingency Table

Involvement \ Interpersonal Hindrance

Inv \ Int	High	Low	Total
High	3	4	7
Low	3	2	5
Total	6	6	12

$\longrightarrow p = 0.5582$

Contingency Table

Realness \ Technological Hindrance

Real \ Tech	High	Low	Total
High	3	6	9
Low	3	0	3
Total	6	6	12

$\longrightarrow p = 0.0455$

Initial Suggestions

- No randomized sampling $\rightarrow$ no inference to parent population $\rightarrow$ these three statistical tests do not make sense
- Case study, case study techniques
- Randomization tests [Manly, 2006]

Randomization Tests

"Randomization, Bootstrap and Monte Carlo Methods in Biology" [Manly, 2006]

- "Hypothesis" under investigation: pattern in data
- Null hypothesis: randomness
  - If there is a pattern, it's by chance.
- Alternative hypothesis: nonrandom
  - The pattern is so unlikely to have occurred by chance that it is more reasonable to consider it... a pattern.
- Statistic measures pattern strength
- Compare observed value of statistic with **randomization distribution** of statistic

Randomization Tests (continued)

"Randomization, Bootstrap and Monte Carlo Methods in Biology" [Manly, 2006]

- Advantages
  - Valid without random sample
  - Nonstandard test statistics okay (theoretical reference distribution not an issue)
- Disadvantages
  - Not necessarily okay to infer to population of interest
  - Test assesses uniqueness, unexpectedness **of the data**
- The kicker: "The generalization of results then rests on the assumption that the sample obtained is effectively the same as a random sample. This nonstatistical judgement..." [Manly, 2006]

Contingency Table

Involvement \ Interpersonal Hindrance

Randomization test, with chi-squared test statistic

```
InvolxInter <- matrix(
  c(3, 4,
    3, 2),
  nrow = 2, byrow = TRUE
)
chisq_test(as.table(InvolxInter), distribution=approximate(B=10000))
```

Inv \ Int	High	Low	Total
High	3	4	7
Low	3	2	5
Total	6	6	12

$\longrightarrow$ p-value = 1

$\vdots$

chi-squared test: p = 0.5582

Contingency Table

Realness \ Technological Hindrance

Randomization test, with chi-squared test statistic

```
RealxTech <- matrix(
  c(3, 6,
    3, 0),
  nrow = 2, byrow = TRUE
)
chisq_test(as.table(RealxTech), distribution=approximate(B=10000))
```

Real \ Tech	High	Low	Total
High	3	6	9
Low	3	0	3
Total	6	6	12

$\longrightarrow$ p-value = 0.1843

$\vdots$

chi-squared test: p = 0.0455

Bryan F.J. Manly. *Randomization, bootstrap and Monte Carlo methods in biology*, volume 70. CRC Press, 2006.