Activity

http://vr.kizilcece.com

How does coming to ELI and this session reinforce your most important values?
Step 1: Select cherished values

Here is a list of values or qualities, some of which may be important to you, some may be unimportant.
Select 2-3 values or qualities that are most important to you:

- Relationships with family or friends
- Creativity
- Sense of humor
- Spontaneity/living life in the moment
- Learning for the sake of learning
- Artistic skills/aesthetic appreciation
- Religious/spiritual values
- Sports and athletics
- Musical ability/appreciation
- Romantic values
- Physical attractiveness
- Business/managerial skills

Step 2: Contemplate their relevance

Considering the values which are most important to you:

How does taking this course reflect and reinforce your most important values?
Write at least a paragraph. Focus on your thoughts and feelings, don't worry about spelling, grammar, or how well written it is.

Step 3: Don't forget

Previous students really appreciated writing something to remind themselves about how their most important values are reinforced by taking this online course. To give you the chance to remind yourself, we would like you to write a note to your future self about your experience and what you've learned so far.

Write about how you can gain strength from the fact that taking this course reinforces your most important values.

We know it can be difficult to write that way, but we believe it will be particularly meaningful for you if you write as though your present self is speaking directly to your future self.

http://vr.kizilcece.com
“The central feature of the stigmatized individual’s situation in life...is a question of...acceptance”
– Erving Goffman, Stigma 1963
Psychological Threat

**Social Belonging Uncertainty** (Walton & Cohen, 2007, 2011)
Uncertainty about belonging in a situation because of one’s social group

**Social Identity Threat** (Steele, Spencer & Aronson, 2002)
Fear of being seen as less capable because of one’s social group

Impairs working memory, persistence, and learning >> contributes to U.S. academic achievement gaps (Schmader & Johns, 2003; Taylor & Walton, 2011)
Pipeline
22% Female

Effect of Cues on Female Participation

Gender ratio in STEM conference video (Murphy et al., 2007)

Gender-Stereotypical Classroom Decorations (Cheryan et al., 2009)

Visual Design of CS Course Website (Metaxa et al., 2018)

Gender of People in Background of Lecture Video (Brooks, et al., 2018)
Psychologically Inclusive Design

AN INCLUSIVE AND SUPPORTIVE ENVIRONMENT TO LEARN

This course aims to provide an accessible, inclusive, and supportive space to learn. Anyone can enroll for free from anywhere in the world. All learners, no matter what their gender, ethnicity, or socio-economic status, can be successful in this course. The primary goal is not to test and evaluate learners, but to offer a supportive environment to learn more about probability and statistics. Welcome!
Probability and Statistics

Now Open!
Develop an understanding of probability and statistics through this self-paced, interactive overview that covers these fundamental topics: Exploratory Data Analysis, Producing Data, Probability, and Inference. Learn through problem solving activities and simulations — “walk-throughs” that integrate voice and graphics to explain an example of a procedure or a difficult concept. This course includes the classical treatment of probability. (Free.) Learn More >

Now Open!
Now anyone can develop an understanding of probability and statistics with this self-paced, interactive course. Creative problem-solving activities and simulations walk you through the basics of exploratory data analysis, how to sample data, and how to draw inferences. The course provides a fair and inclusive learning environment to support learners of all backgrounds.
Enrollment: Free

LEARN MORE
Female Enrollment

+3.88pp (18% increase)  -2.35pp (8% drop)
Facebook Marketing

(a) Default

(b) Inclusive Image

(c) Inclusive Text

(d) Inclusive Image & Text
Facebook Marketing

female CTR vs. default

15% higher
P = .11

26% higher
P < .01

male CTR vs. default

20% lower
P = .016

Kizilcec & Saltarelli, 2019
Implications

• Cold, "techy" images on online course enrollment pages appear to discourage women from enrolling in STEM courses

• Psychologically inclusive cues (visual and verbal cues together) can improve female enrollment in STEM courses

• Inclusive cues may "backfire" with the majority group
Global Achievement Gap
Moocs, the new model of university education, have no race, colour, sex or wealth barriers, and can be accessed at a click

Anant Agarwal
Saturday 15 June 2013 17.39 EDT

“no race, colour, sex, or wealth barriers”
We envision a world where anyone, anywhere can transform their life by accessing the world’s best learning experience.
Global Achievement Gap in MOOCs

MOOC completion is higher on average in more developed (7.7%) than less developed (4.2%) countries


\[ N = 1.8 \text{ million people across 55 courses} \]
Free courses from Stanford
for anyone, anywhere, anytime
Reducing Social Identity Threat (SIT)

**Social-Belonging Intervention**  (Walton & Cohen, 2007, 2011)
Re-attributing concerns about fitting in away from one’s social identity (normalizing fears)

**Value Relevance Affirmation**  (Cohen et al., 2009; Harackiewicz et al., 2014; Miyake et al., 2010; Yeager et al., 2016)
Boosting sense of self integrity and increasing goal-directed motivation
Two Randomized Experiments

First Experiment
• N = 2,286 in Stanford MOOC on Computer Science
• Self-paced, 90 lectures, 196 quizzes

Replication Experiment
• N = 1,165 in Harvard MOOC on Public Policy
• Six weeks, weekly new materials, final exam

Intervention embedded in survey at course start, median duration < 5 minutes

Kizilcec et al., *Science* 2017
Study Design

Open “Pre-Course Survey”

Report Prior Experience, Intent to Complete

Control (Study Skills)

Social-Belonging Intervention

Value Relevance Affirmation

Social-Belonging Intervention

1. Read testimonials from successful students about how they first worried but then came to feel that they belong in the course

2. Write about the experience of the students, describe how it unfolded

3. Write a note for an incoming student about how they may also feel unsure at first but then come to feel that they belong

Taking an online course can be daunting at first.

Here are a few student quotes describing their experiences taking an online course.

Please read them carefully.

"When I first started the course, I worried that I was different from the other students. Everyone else seemed so certain it was the right level for them and were so happy to take it. But I wasn’t sure I fit in – if I would make friends, if people would respect me. Several days after I started, I came to realize that almost everyone who takes the course feels uncertain at first about whether they fit in. It’s something everyone goes through. Now it seems ironic – everybody feels different at first, when really we’re all going through the same things."
- Karen

"I loved the course and I wouldn’t trade my experiences for anything. I’ve made new friends on the forums, and I’ve learned a lot. Still, it was a difficult transition. In the first few days, I think, I was intimidated. I dreaded the discussion forums. I worried other people wouldn’t take me seriously or listen to my ideas. But then the course instructor asked a question to the group that I was excited about – the question was about the kind of problem that I enrolled in the course for. So I spoke up more on the forum, and shared more ideas. For the most part, people were eager to listen – to hear to what I had to say. In time, I learned that in the course, everyone is pulling together; it’s about us not me – how do we solve this problem? I’ve contributed to solving problems in engineering, and I’m proud of that."
- Mike

"I always had really small, close-knit classrooms in high school, and I really appreciated that. My first experience in an online course was a huge contrast. To be honest, I felt a lot like a very small part of something very big at first. It took me a little while to get used to it, and to realize that, just because there were a lot of people in the course, it didn’t mean that my peers and the instructor cared any less about me. Once I figured this out, I started to take a lot more initiative in talking with my peers on the discussion forum. When I made the effort, I found that people really were invested in me and in my doing well. It’s great to actually participate in a global community of online learners."
- Beth
Response to social-belonging activity

“Experiencing something for the first time is always very full of anxiety and challenges […] there is always this sense of apprehension of being judged by others, of being lying exposed in front of others and an inherent feeling of doubting oneself.”

“Discussion forums are particularly intimidating because people have to put their questions out there for everyone to see and the first thought is that their questions will be seen as stupid.”
Value Relevance Affirmation

1. Pick 2-3 values that are most important to you, e.g. family, friends, religion

2. Write about how taking this online course reflects and reinforces your values

3. Write a note to your future self about remembering your values while in the course

Steele, 1988; Sherman & Cohen, 2006
Scalable, Low-cost Implementation

Below is a list of characteristics and values, some of which may be important to you, some of which may be unimportant.

Please select the 2 or 3 values or qualities that are most important to you.

- Artistic skills/aesthetic appreciation
- Sense of humor
- Relationships with family or friends
- Spontaneity/living life in the moment
- Learning for the sake of learning
- Religious/spiritual values
- Sports and athletics
- Musical ability/appreciation
- Physical attractiveness
- Creativity
- Business/managerial skills
- Romantic values

Now consider the values which are most important to you:

Relationships with family or friends, Creativity

How does taking this course reflect and reinforce your most important values?

Please write at least a paragraph. Focus on your thoughts and feelings, and don't worry about spelling, grammar, or how well written it is.
Response to affirmation activity

“[E]xploring some unknown knowledge is the most enjoyable thing in my life. [...] I want to learn what interests me, not for my job, not for my graduate degree, not for the success in future. I learn, just for the sake of learning.”
Interventions Close the Global Gap

A value relevance affirmation and a social-belonging intervention raise persistence in less developed countries (LDCs)

Kizilcec et al., Science 355 (2017)
Interventions Close the Global Gap

A value relevance affirmation and a social-belonging intervention raise persistence in less developed countries (LDCs)

First experiment

N = 2,286 (16% in LDCs)
Interventions Close the Global Gap

A value relevance affirmation and a social-belonging intervention raise persistence and completion in less developed countries (LDCs)

N = 1,165 (7.4% in LDCs)

Kizilcec et al., Science 355 (2017)
Interventions Close the Global Gap

A value relevance affirmation and a social-belonging intervention raise persistence and completion in less developed countries (LDCs).

N = 1,165 (7.4% in LDCs)

Kizilcec et al., Science 355 (2017)
Sustaining Interest, One Year Later

Kizilcec et al., Science 355 (2017)
Implications

• MOOCs appear to perpetuate existing achievement and participation gaps

• Social identity threat appears to be present in online spaces, even those with minimal interaction

• *Brief* social psychological interventions can be delivered at scale in online contexts, reduce SIT, and improve performance of marginalized students
Belongingness & Social Presence
Part I  Chapter 1 & 2

Introduction
Philosophy of Class
Defining Human Development
Theories of Human Development
Developmental Stu...
Constructive Controversy
(Deutsch 1949; Lewin, 1948; Johnson & Johnson, 1998; 2009)

5-step Procedure:

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 4</th>
<th>Step 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn &amp; Prepare</td>
<td>Opening Argument</td>
<td>Open Discussion</td>
<td>Reverse Positions</td>
<td>Integrative Agreement</td>
</tr>
</tbody>
</table>
40+ Years of Research
(Johnson & Johnson, 2009)

In face-to-face settings

<table>
<thead>
<tr>
<th>(ES = Mean Effect Sizes)</th>
<th>Constructive Controversy v. Debate</th>
<th>Constructive Controversy v. Individualistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>.62 ES</td>
<td>.76 ES</td>
</tr>
<tr>
<td>Perspective Taking</td>
<td>.97 ES</td>
<td>.59 ES</td>
</tr>
<tr>
<td>Motivation</td>
<td>.73 ES</td>
<td>.65 ES</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.56 ES</td>
<td>.85 ES</td>
</tr>
</tbody>
</table>
Controversy Topic: Should Schools Decrease Class Size to Improve Student Outcomes?

In this debate, you will be arguing the YES position. Download YES position PDF.

Day 1 (6/5) - Steps 1 & 2 Research, Learn, Prepare, & Present

Summary: Read the assigned material and present your positions. -- (click to expand full instructions)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No response posted yet.</td>
</tr>
</tbody>
</table>

Save and notify partner

Day 2 (6/6) - Step 3 Open Debate #1

Summary: Open debate: present your first rebuttal statement. -- (click to expand full instructions)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No response posted yet.</td>
</tr>
</tbody>
</table>

Save and notify partner
Mere Belonging & Social Presence

• Social Belongingness: A sense of having positive relationships with others...is a fundamental need, supports self-regulation and intrinsic motivation (Baumeister & Leary, 1995; Deci & Ryan, 2000)

• Mere Belonging: Minimal social connections and subtle cues of working together can bolster motivation (Carr & Walton, 2014; Walton, Cohen, Cwir, Spencer, 2012)
Psychological Reason(s) – Belongingness
(Baumeister & Leary, 1995; Deci & Ryan, 2000; Roseth, Johnson, & Johnson, 2008)

Innate Needs

- Competence
- Autonomy
- Belongingness

Self-regulation
Intrinsic Motivation
Partner Selection
Thank you for completing the personality questionnaire. The results of your partners will be evaluated and ranked on a scale ranging from 1 to 5. Their goal is to find a partner that will fit them best and provide the most effective feedback. You will also be presented with results from other students' questionnaires and will be asked if you would like to work with them.

Student #1

Extraversion: 70%
Neuroticism: 35%
Psychoticism: 22%

Extraversion (sociability): results were medium to high which suggest socializing
Neuroticism (emotional): results were moderate to low which suggest emotional and anxious
Psychoticism (rebelliousness): results were low which suggest they

Please rate how well you feel you would work with student #1:
- an almost perfect fit
- a moderate fit
- a medium fit

The system is working to match you with a partner based on your responses in the Personal Profile partner's preferences.

Please don't leave this page.

You will automatically be redirected when the countdown timer completes.

40
Belongingness Study

Results

Belongingness met

- Intrinsic motivation
- Cooperative perceptions
- Completion rates
- Perceptions of technology
- Time on task

Buffers but does not fully offset deficits in asynchronous condition
Implications

• Brief intro activities that bolster *perceived* connection to peers can increase motivation, persistence

• Especially true in courses that require subsequent group interaction, collaboration, and projects

• Monitor belongingness and intervene
Takeaways

Psychological barriers (e.g., SIT) exist in online spaces (even those with minimal social interaction)

Access is necessary but not sufficient

Small, theory-based interventions can make big differences (i.e., theory still matters)

Psychologically inclusive design (visual and verbal cues) improve enrollment of stigmatized learners
Why?

http://vr.kizilcece.com

How does coming to ELI and this session reinforce your most important values?
Iterative Design

Theory & Research

Design & Run

Triangulate & Reason Together
Thank you!

Andy Saltarelli
@ajsalts
saltarel@stanford.edu
andysaltarelli.com
vptl.stanford.edu

René Kizilcec
@whynotyet
kizilcec@cornell.edu
rene.kizilcec.com
References


Session Evaluations

There are two ways to access the session and presenter evaluations:

1. In the online agenda, click on the “Evaluate Session” link

2. From the mobile app, click on the session you want from the schedule > then click the associated resources > and the evaluation will pop up in the list
End

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