

Ecological Belonging Intervention Materials

Binning et al., 2020, *Psychological Science*.

Below are the activity scripts used for delivering the in-class intervention as reported in both Study 1 (Biology courses) and Study 2 (Physics courses). These materials were derived from prior social belonging interventions developed by Greg Walton, Geoff Cohen, David Yeager, and colleagues, but they were delivered in students' discussion classrooms as they worked in groups of 3-5 peers. For additional reading on social belonging interventions see Walton and Brady (2019).

Belonging Course Intervention Delivered on Week 1 of the Semester (STUDY 1)

ACTIVITY SCRIPT DELIVERED BY COURSE INSTRUCTOR

I. Introduction 5 minutes

With students sitting in small groups, the facilitator introduces activity:

“We all know that Pitt is a special place. Still, the transition to college, even to a special place like Pitt, can be tough. For many of us

- This is the first time living on our own, away from our families and high school friends.
- We are constantly meeting new people and wondering if they will become our new friends.
- Life isn't as structured as it was in high school: how do we manage our free time?
- There are tons of opportunities and groups; we have to figure out where we fit in.

- We have to figure out how to navigate college classes, such as Biology, how get to know professors, and sometimes how to handle disappointing grades.

It can be easy to feel overwhelmed or to sometimes wonder to yourself, “Do I really belong here?”

“These kinds of experiences are normal in the transition to college. Everyone goes through them, and they get better with time as you adjust to college. Today, we’d like each of you to reflect on some of the experiences you have had so far in coming to college. So, please take about ten minutes to write in your notebook about the experiences and challenges you have experienced. What has been difficult or challenging for you? You can think about your experiences meeting other students, making friends, taking classes, adjusting to dorm life: look, coming to college is a big transition. Please write about some of the difficulties you have experienced in the transition to college and, as well, how some of these difficulties and challenges have begun to improve with time as you have spent more time in college.

“Really try to express your story ---- what it’s been like for you, the challenges you’ve experienced so far and how you’ve begun to address these. Be as specific as you can tell about the particular events or experiences you’ve had that have been surprising or difficult for you and how these have changed over time.

Please don’t include your name or other identifying information in what you write.

When the ten minutes are up, we will collect what you’ve written. Please write on your own, individually. We’ll talk about this later.

II. Writing 10 minutes

Sitting in small groups; writing individually

Prompt placed on overhead screen:

“What has coming to Pitt been like for you? Many students experience difficulties and worries coming to college, from living in a new place, to trying to make new friends, to finding their way in a new academic environment. Take a few minutes to write about the challenges you have experienced in the transition to college, and how these experiences have begun to change over time.

Please, don't include your name or other identifying information”

Notes for facilitator:

**What if...

...A student isn't writing?

Try first asking (or nonverbally signing) to see if they are okay and understand the directions. If they are okay, do understand, and aren't being disruptive, let them work at their own pace.

...A student or group of students is being disruptive?

First, try nonverbally signing to get them back on track. If that doesn't work, “Hey, we want everyone to be able to think and write, so it'd be helpful if you were [describe appropriate behavior]?”

At the end of 10 minutes, students writing samples are collected and shuffled randomly.

III. Reading 5-7 minutes

After skimming several student examples of writing, the facilitator stands at the podium in front of the class:

“As I’m looking few some examples of what you all have written, I see a lot of very common examples of difficulties and setbacks that students are experiencing as freshman. (after briefly skimming a handful of essays). For example, one student wrote...(insert quote from paper). Another student wrote...(insert another quote). In preparation for today’s exercise, a team of us interviewed a number of upperclassmen who described their transition as freshman. I’d like to take a few minutes to provide some examples that these students have provided.”

Facilitator then places the following quotes on overhead and reads them aloud (Note: Quotes were adapted from Yeager et al., 2014; 2016).

“When I first got here, I worried that I was different from other students. Everyone else seemed so certain that they were meant to be here. I wasn’t sure I fit in. Sometime after my first year, I came to realize that many people come here uncertain whether they fit in or not. Now it seems ironic – everybody feels they are different freshman year from everybody else, when really in at least some ways we are all pretty similar. Since I realized that, my experiences here have been almost one-hundred percent positive.”

-- Senior, African American female

“I didn’t go to a very good high school, and I worried that my high school courses had not prepared me well for college. Honestly, when I got here, I thought professors were scary. I thought they were critical and hard in their grading, and I worried a lot about how they and other students would evaluate me. I was nervous about speaking in class and I didn’t like other people to read my papers. Around my sophomore year I felt more

comfortable – I began to enjoy my classes more and I found some close friends who I trusted. I also became more comfortable speaking in class, and sometimes I asked my friends to edit my papers for me. And I saw that even when professors are critical, or their grading harsh, it didn't mean they looked down on me or that I didn't belong. It was just their way of motivating high achieving students.”

---Junior, White male

“The most difficult transition from high school to college was coming from a situation in which I knew every student for the past seven years into a new situation in which I did not know one student before I arrived. Freshman year even though I met large numbers of people, I didn't have a small group of close friends. I had to work to find lab partners and people to be in study groups with. I was pretty homesick, and I had to remind myself that making close friends takes time. Since then in classes, clubs, and social activities, I have met people some of whom are now just as close as my friends in high school were.”

---Pitt junior, Asian American male

IV. Small group discussion 10 Minutes

“For the next few minutes, please discuss with your group what you wrote about what you and these other students have just read. Please answer the following questions as a group:

- What experiences, feelings, or themes are common across several of the papers we read?
- Why do you think that sometimes students don't realize that other people are struggling with their adjustment to college?

- Looking forward to the future, how do you expect it will be different to be an upperclassman than it is to be a freshman?

**What if...

...A student says something that is off--topic or inappropriate?

Blink and continue. Don't contradict, but breeze past it. Consider reframing or drawing on personal experience.

...People aren't talking or we are starting to run out of things to say.

Approach group and ask students "why" and "how":

- Why do you think people wonder at first if they belong?
- Why do you think people often think they're the only one who worries about whether they fit in in college?
- Why and how does people's experience change over time? What do people do that helps them improve their experience with time?

Ask students to share additional experiences that resonate with what the group has been discussing.

Share your own experience that resonates with what the group has been discussing.

V. Closing 5-7 minutes

"All right, let's come back together. I've been overhearing some great discussions and I'd love to hear what other groups were talking about. Our hope for this house meeting was that we would

share our experiences and perhaps understand them in a new or deeper way. Who wants to share one takeaway or interesting part of the discussion from their group?"

Physics Course Intervention Delivered in Week 2 of the Course (STUDY 2)

ACTIVITY SCRIPT DELIVERED BY WOMEN GRADUATE STUDENTS IN PHYSICS

I. Introduction 3 minutes

"Hi, my name is _____. I am a graduate student (post-doc) working in the Physics Department. Today we are going to take a break from the regular classroom activities to talk about going to college at _____. We are always trying to make things better for our students, and so today the Physics Department is asking for your help to tell us a little about your experiences since you have come to _____. For many of you, this is the first time you are leaving home, you are meeting a lot of new people, taking on a lot of new courses, and trying to find your place here at _____. It can be easy to feel overwhelmed and to ask yourself, "Do I really belong here?" and "Am I smart enough to make it?"

These kinds of experiences are normal in the transition to college. Everyone goes through them, and they get better with time as you adjust to college."

II. Writing 7-10 minutes

"Today, we'd like each of you to reflect on some of the experiences you have had so far in coming to college. So, please take about ten minutes to write on the sheet of paper I passed out to you about the experiences and challenges you have had since coming to _____. What has been difficult or challenging for you? You can think about your experiences meeting other students, making friends, taking classes, adjusting to dorm life: look, coming to college is a big transition. Please write about some of the difficulties you have experienced in the transition to college and

how some of these difficulties and challenges have begun to improve with time as you have spent more time in college.

Please don't include your name or other identifying information in what you write.

When the ten minutes are up, we will collect what you've written. Please write on your own, individually. We'll talk about this later."

At the end of 7-10 minutes, students writing samples are collected.

III. Reading 5-7 minutes

After skimming several student examples of writing, the facilitator stands at the podium in front of the class:

"As I'm looking few some examples of what you all have written, I see a lot of very common concerns that you have. I am also not surprised that I had some of the same concerns when I took freshmen physics. In preparation for today's exercise, a team interviewed a number of upperclassmen who described their transition to college and some of their experiences in the Physics 174 course. I'd like to take a few minutes to provide some examples that these students have provided."

Facilitator then hands out the quotes (included see below). Facilitator reads each quote in full.

IV. Small group discussion 7-10 Minutes

"For the next ten minutes, I ask that you please discuss with the students sitting near you (3-4 students in each group) what you wrote about and the quotes you have just read. Please answer the following questions as a group: (*Facilitator writes these questions on the board, may need to help students get into small groups*).

- What are some common themes across several of the quotes we read?

- Why do you think that sometimes students don't realize that other people are also struggling with the course?
- How do you think your lives will be different when you are a Junior or Senior?

V. Closing 3-5 minutes

“All right, let's come back together. I've been overhearing some great discussions and I'd love to hear your thoughts. I think your feedback is going to be very helpful for the Physics Department. Would anyone like to share what your group discussed with the class?”

Facilitator calls on groups if no one raises their hand. Include references to own experience as appropriate, emphasizing that struggles during the transition are normal and temporary.

Below are the quotes that were provided to students as a handout as part of the intervention protocol.

Quotes from former Physics 174 students

“I remember taking my first Physics class as a freshman. Before coming to college, I didn't worry much about grades, so I felt unprepared for the increased workload and differences in

grading. I remember being surprised after getting burned grade-wise several times, and feeling stressed as a result. But then I got some help from the instructor and the TA, found a study group, and was able to turn things around. Looking back now, I think my struggles were pretty normal. Even though people don't like to admit it, basically everyone has trouble with certain concepts. Although it was a somewhat rocky start, it felt good to learn from my mistakes, and I am proud of the success I have had."

-Nathan, Pitt Bioengineering Senior

I was one of just a handful of women in one of my intro physics study groups, and sometimes I felt a little embarrassed to ask questions. However, I quickly learned that other students usually had the same question I did, and we all benefitted from working with each other and learning from each other. Sometimes I had difficulty with an idea that my classmates understood. Other times, they struggled with concepts that I understood. I remember there wasn't always an "aha!" moment, where everything clicked. It was usually much more gradual, with some concepts only becoming clear after lots of practice and discussion with my study group. I realized that everyone struggles some times, and the important thing is to not give up and help each other out."

-Allison, Pitt Electrical Engineering Senior

"When I first got here, I was worried because I was really struggling with some of the physics concepts. It felt like everyone else was doing just fine, but I just wasn't sure if I was cut out for a physics course. At some point during the first semester, I came to realize that, actually, a lot of other students were struggling, too. And I started to look at struggling as a positive thing. After I struggled with a hard problem and then I talked to other classmates and my TA about the solution—I realized that all that effort was worth it because it helped me learn and remember much more."

-Aniyah, Pitt Chemical Engineering Graduate

"I didn't go to a very good high school, and was I worried that my high school courses had not prepared me well for college. Honestly, when I got here, I thought professors were scary. I thought they were critical and hard in their grading, and sometimes it felt like they put things on the quizzes or exams that we hadn't discussed in class. But then I realized that the professor wanted me to be able to apply the physics concepts in many different situations. So I started to study in a way that would help me do that, and I did my best to learn from my mistakes on quizzes and exams. And I saw that even when the professors' grading seemed tough, it didn't mean they looked down on me or that I didn't belong. It was just their way of motivating high achieving students."

- Anil, Pitt Civil Engineering Senior

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