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Paper ID #40700

Using a Summer Bridge Program to Develop a Situational Judgment Inventory: From Year 1 to Year 2

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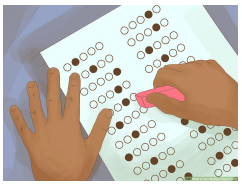
Dr. Walter Lee is an associate professor in the Department of Engineering Education and the director for research at the Center for the Enhancement of Engineering Diversity (CEED), both at Virginia Tech.

Using a Summer Bridge Program to Develop a Situational Judgment Inventory: From Year 1 to Year 2

Malini Josiam, Walter Lee



Hello everyone! Today we will present the work we've been doing related to developing an assessment tool called a Situational Judgement Inventory and present our preliminary findings from piloting our tool.

Outline of Presentation

- Research Team
- Project Context
- Problem Context
- Developing the Situational Judgement Inventory (SJI)
- SJI Pilot Results
- Moving Forward

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In order to fully contextualize our SJI instrument, we will first provide background information related to our research team, project context, and education plan. Then we will explain our process for developing the SJI and talk through some of our preliminary findings.

Our research team includes a range of contributors at different academic levels. Walt is the PI on the project and has several years of experience working in and understanding student support at the undergraduate and graduate level. Janice is a postdoc at FIU who contributed to the conceptual framing of this project. Malini has been leading data collection and data analysis for this project. Crystal contributed to early conceptualizations of the project. Taylor has contributed to data collection in the project. Finally, Artre was an undergraduate during his involvement in this project, and he analyzed the student data to develop the initial versions of the SJI instrument we will be discussing today.

Award Abstract # 1943811
CAREER: Responsive Support Structures for Marginalized Students: A Critical Interrogation of Navigational Strategies

Research Team


Dr. Walter Lee
Associate Professor


Malini Josiam
PhD Student


Artre Turner
PhD Student


Crystal Pee
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Taylor Johnson
PhD Student

Dr. Janice Hall
Postdoc

This material is based upon work supported by the National Science Foundation under Grant No. 1943811. "Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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Malini is a 3rd year PhD candidate in Engineering Education at Virginia Tech. Her engineering background is in Mechanical and Civil Engineering. She has been the Graduate Research Assistant on this project during her entire time at VT.

CAREER Project Context

Award Abstract # 1943811
CAREER: Responsive Support Structures for Marginalized Students: A Critical Interrogation of Navigational Strategies

NSF Org:	EEC Div Of Engineering Education and Centers
Awardee:	VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
Initial Amendment Date:	January 29, 2020
Latest Amendment Date:	June 30, 2021
Award Number:	1943811
Award Instrument:	Continuing Grant
Program Manager:	Amelia Greer agreer@nsf.gov (703)292-2552 EEC Div Of Engineering Education and Centers ENG Directorate For Engineering
Start Date:	May 1, 2020
End Date:	April 30, 2025 (Estimated)

Responsive Support Structures for **Marginalized Students**: A Critical Interrogation of **Navigational Strategies**

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The instrument we will be discussing today is situated within a CAREER project that started in spring 2020. This project focused on developing responsive support structures for marginalized students by understanding how these students navigate engineering. The SJI we will talk about is an assessment tool to hone in on the navigational part of this project.

CAREER Project Context

Award Abstract # 1943811
CAREER: [illegible] Interrogation of Navigational Strategies

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CAREER GRANT

- 5 year grant
- One PI + Team of Researchers
- Education Plan

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In general, a CAREER grant is a five year grant that has one PI and a team of researchers. It also has an education plan which is supposed to be designed to improve the research to practice connection of the project.

CAREER Project Context

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CAREER: Interrogation of Navigational Strategies

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The SJI we developed is a key component of the education plan so we will explain this education plan in more detail now.

Education Plan - Problem Context

Practitioners & Administrators

Students

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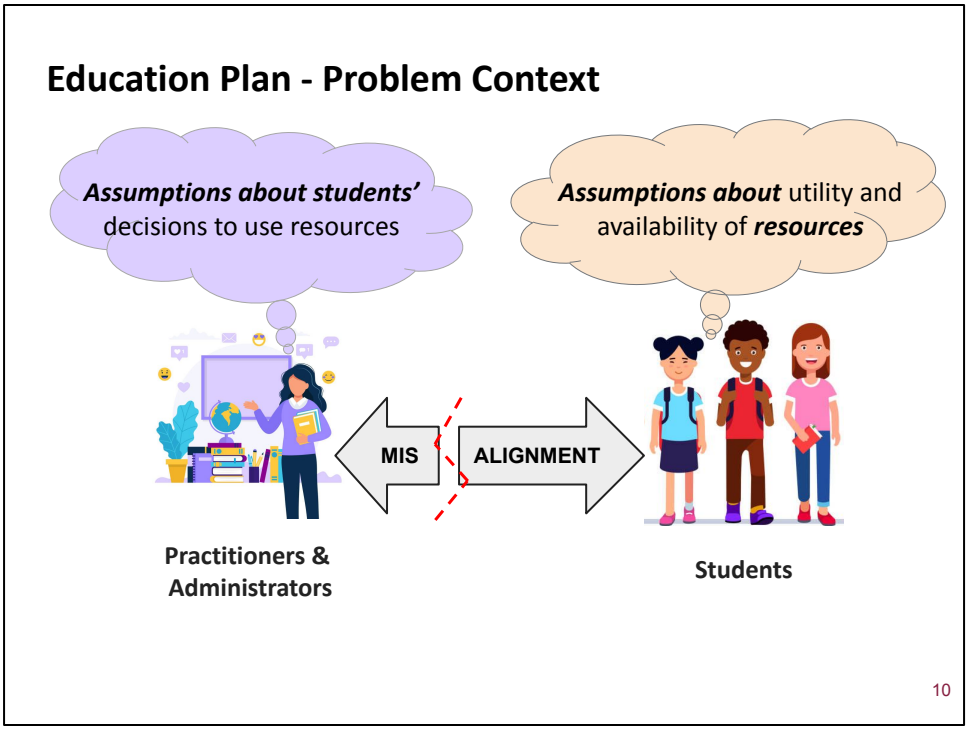
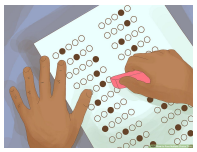
Within undergraduate engineering, there are several key stakeholders. In terms of our project concerned with undergraduate student navigation, the most relevant stakeholders are students and practitioners/administrators. Practitioners are advisors, student support staff like MEP/WMEP staff, instructors in first year courses, and mentors in mentoring programs to name a few. Administrators include program directors like MEP directors and undergraduate program coordinators. Students are undergraduate engineering students at all levels.

Between these two groups, there are a lot of assumptions about navigation and resources.



Knowing what resources they make available, practitioners and administrators assume the resources that students will and should use to address their needs an undergraduate engineering students. On the flip side, students also make assumptions, often about how useful resources will be and their availability. Students assumptions guide which resources they find out about and use, while practitioners assumptions guide what resources they tell students about and advocate for. In this model of assumptions, there is little room for tailored student support that anchors on the specific needs of particular students.

Education Plan - Problem Context



Situational Judgement Inventory (SJI)

ALIGNMENT

Practitioners & Administrators

Students

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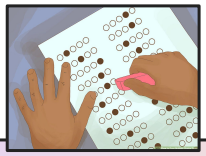
We believe that one way to improve alignment between practitioners and students is to develop an SJI that will illuminate the realities of navigation for specific students, eliminating the need to rely solely on assumptions to support students. Reducing assumptions required will lead to more responsive support - support that responds to students' actual behavioral patterns, rather than assumed navigational patterns.

What is an SJI?



A Situational Judgement Inventory (SJI) is an assessment tool that has **hypothetical scenarios** a person is likely to encounter in a specific setting (e.g., university).

For each scenario, there are **multiple ways to respond** to the scenario and the person taking the SJI is asked to **judge the response options** through forced choice or likert scale rating.

SJIs are typically **used to assess a person's judgement** and/or problem solving skills.

Weekley, J. A., & Ployhart, R. E. (2013). Situational Judgment Tests: Theory, Measurement, and Application. Psychology Press.

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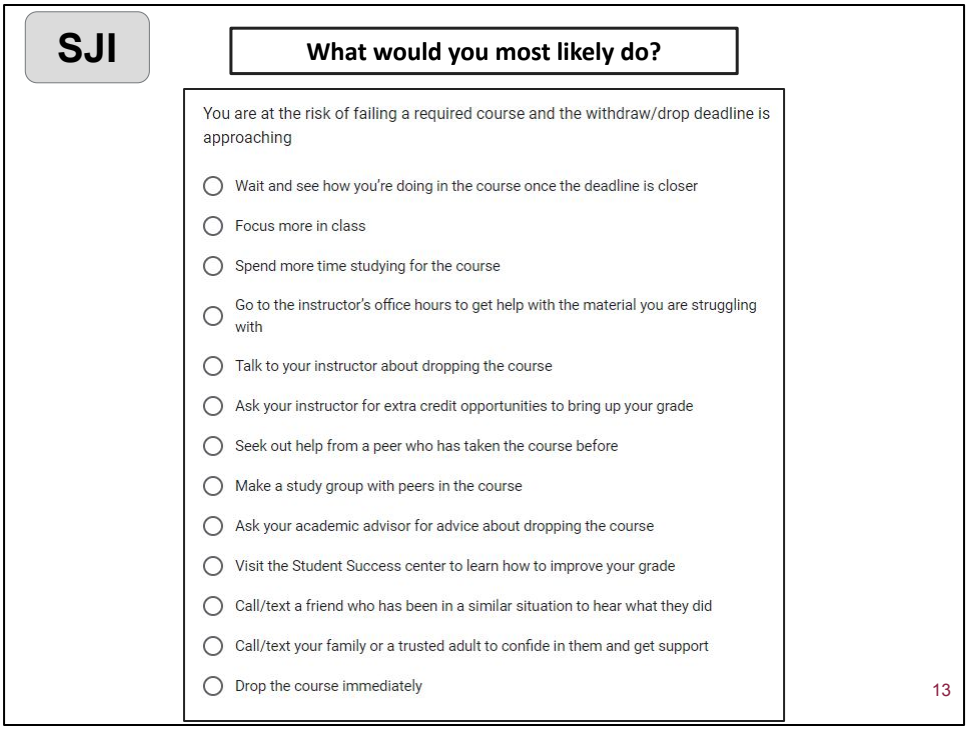
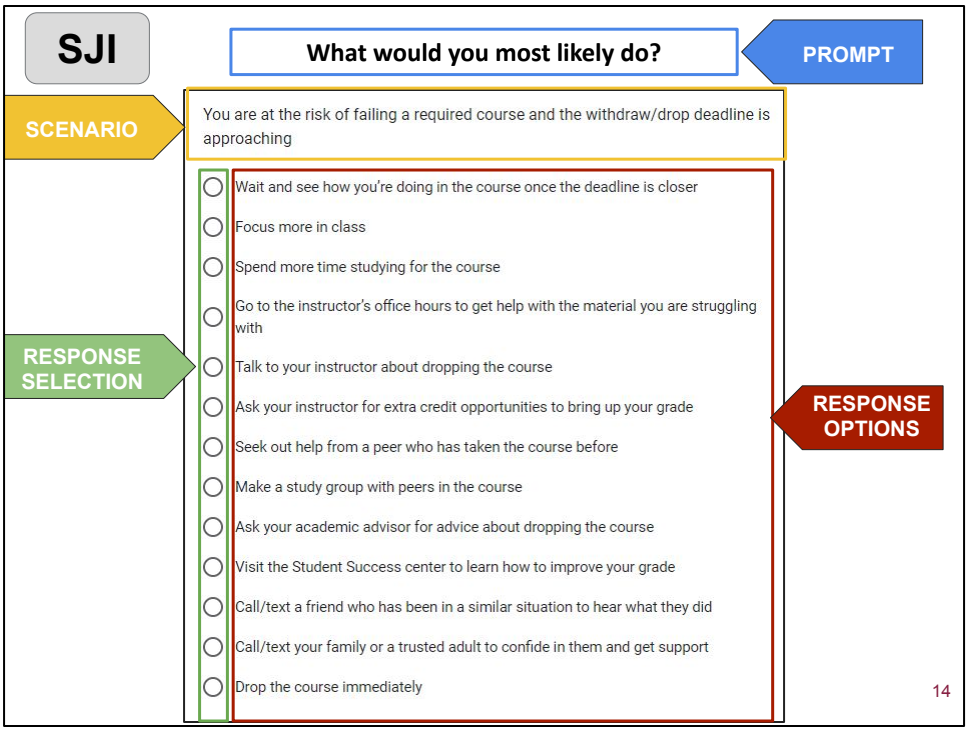
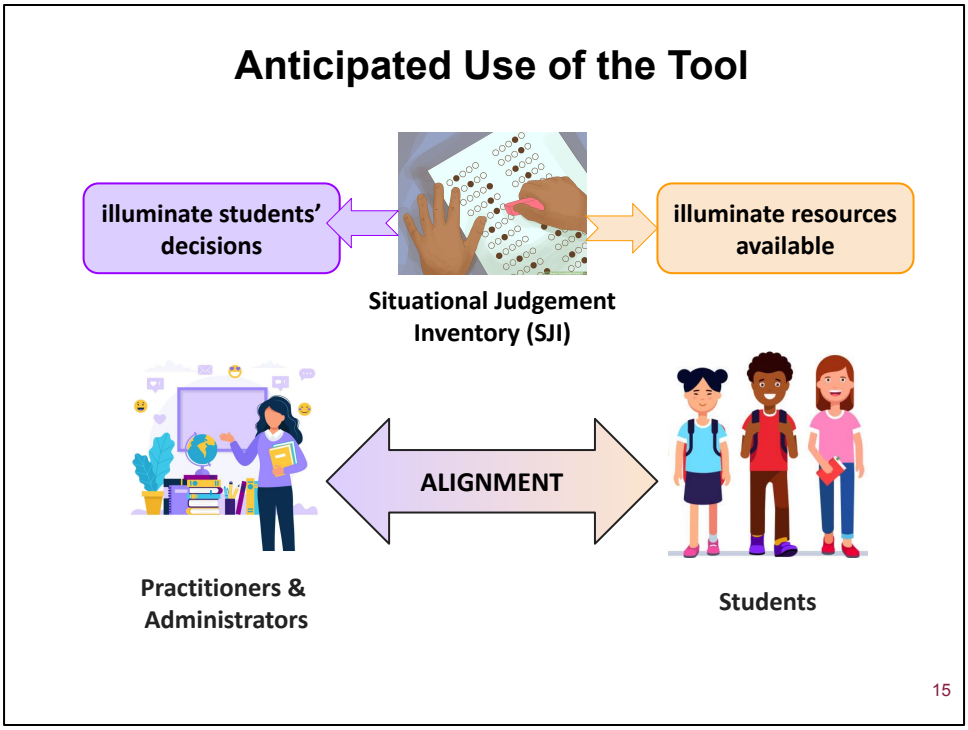
To better illuminate how we plan to use an SJI to improve alignment between practitioners and students, I will explain more about what an SJI actually is. A Situational Judgement Inventory (SJI) is an assessment tool that has hypothetical scenarios a person is likely to encounter in a specific setting. In the case of our SJI, our setting is the undergraduate engineering learning environment within a university. For each scenario provided, there are multiple ways to respond to the scenario and the person taking the SJI is asked to judge the response options through forced choice or likert scale rating. SJIs are typically used to assess a person's judgement and/or problem solving skills.



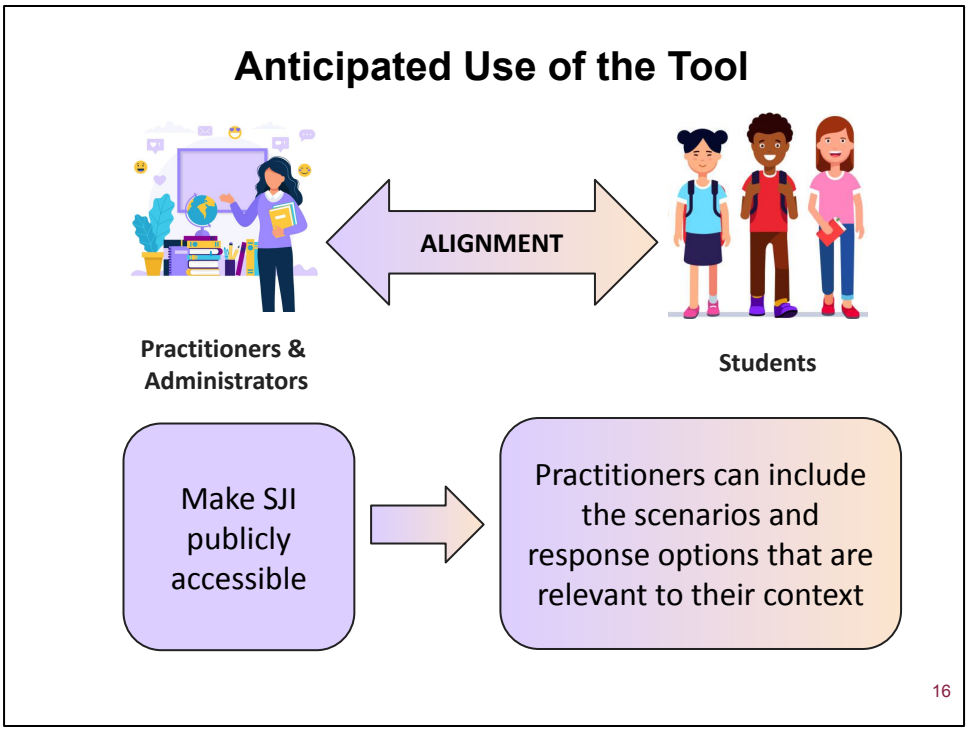
To get a better understanding of what an SJI can look like, I will walk through the major components.



First, a prompt is given for students to understand how they should think about the scenario and select responses. In this example, the prompt asks students to select one response based on what they are most likely to do in response to the scenario provided. So the response selection allows students to only select one response option. In our SJI, scenarios are just one sentence and response options are equally brief.

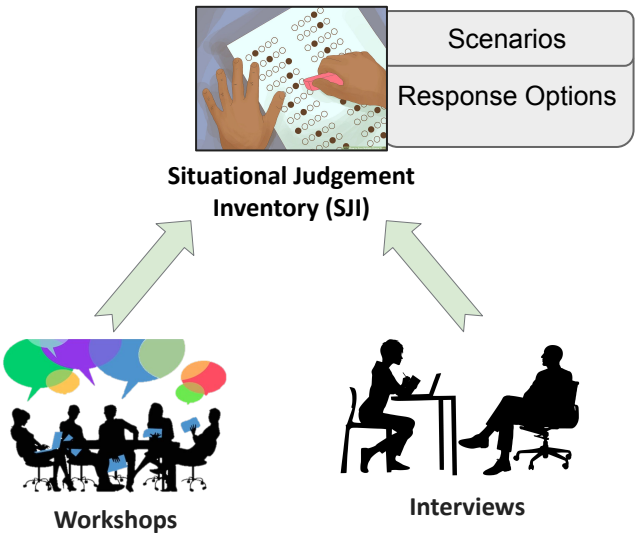


With students selecting responses to scenarios, there is shared language for practitioners to start a conversation with students about responding to typical scenarios in undergraduate engineering. In that way, the SJI illuminates students' decision making for practitioners. Practitioners can use students' responses to scaffold conversations with students about their typical navigation strategies and expose them to new strategies. That way, students potentially learn about new resources and can discuss with their practitioner how they should access support based on their needs. The purpose of the SJI is to scaffold conversations between practitioners and students such that practitioners can provide more tailored support to students based on students' navigational tendencies.



Once we have fully developed and thoroughly tested our SJI, we plan to make it publicly accessible/available for practitioners/administrators to use with their students. It would become customizable in that practitioners can select which scenarios they want to include based on the scenarios they deem most relevant and helpful to providing support in their context. For example, an undergraduate engineering advisor may include all the scenarios, but an engineering career counselor may only include scenarios that are directly relevant to academic and professional development.

How did we develop our SJI?



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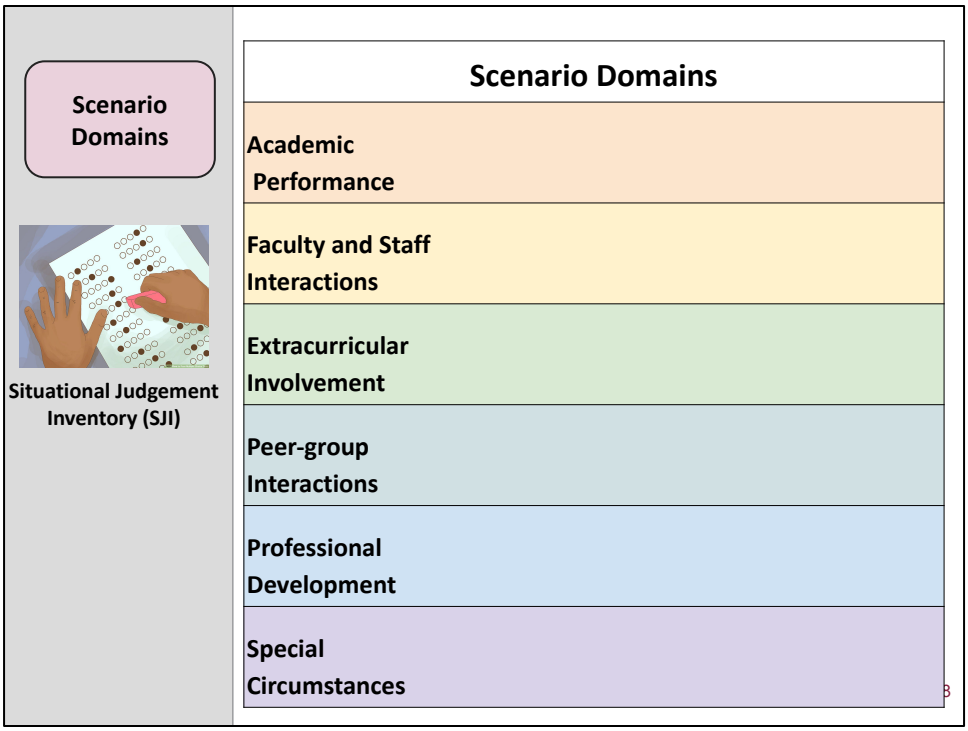
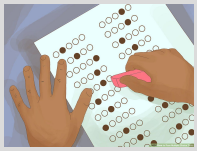
Now, I will discuss in more detail the development process of our SJI. In order to develop our SJI, we conducted workshops and interviews with incoming and current engineering students at our institution and asked them to respond to specific common scenarios through open ended responses. Through a process we will explain in the next several slides, we took these open ended responses and turned them into closed ended responses to develop our SJI instrument.



The scenarios fell into six different domains or types. The domains came from Lee, W. C., Hall, J. L., Godwin, A., Knight, D. B., & Verdín, D. (2022). Operationalizing and monitoring student support in undergraduate engineering education. *Journal of Engineering Education*, *111*(1), 82–110. https://doi.org/10.1002/jee.20431

Scenario Examples

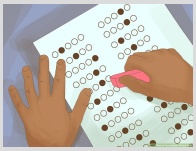


Situational Judgement Inventory (SJI)

Domain	Scenario
Academic Performance	You are at the risk of failing a required course and the withdraw/drop deadline is approaching
Faculty and Staff Interactions	You are performing poorly in a class due to poor teaching by instructor or GTA
Extracurricular Involvement	You are active in an organization and the time commitment proves greater than expected
Peer-group Interactions	You are finding yourself too busy to socialize and feel disconnected from people in general
Professional Development	You no longer think engineering is the major for you and want to explore other options
Special Circumstances	You have family or personal problems that are distracting you from school

We started by developing a list of 24 scenarios. We developed this list of scenarios by looking at prior research on common obstacles and challenges within an engineering and college learning environment. The students in the workshops and interviews responded to open ended scenarios that we pulled from this list.

Developing Response Items



Situational Judgement Inventory (SJI)

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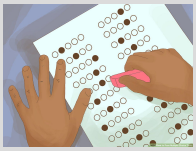
Once we had the list of scenarios finalized, we were able to show a selection of scenarios to students to respond to which is how we began to develop the response items on the SJI.

Developing Response Items



Situational Judgement Inventory (SJI)

You are at the risk of failing a required course and the withdraw/drop deadline is approaching

Ask the teacher for advice or ask students that have taken that course. Go to office hours, try harder, etc.

You are interested in studying abroad but unsure where to start or when

google VT studying abroad or ask a student who has studied abroad, etc.

Your peers seem to be performing better than you on every assignment and it's stressing you out

ask them for help, and if they dont help you, get new friends, etc

Written Student Responses

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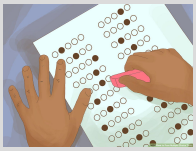
At the workshop, we collected written student responses. We asked each student to respond to 4 scenarios, from four different domains, individually and then discuss those responses with a group to come up with a group response.

Developing Response Items



Situational Judgement Inventory (SJI)

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Written Student Responses

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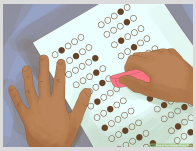
You are interested in studying abroad but unsure where to start or when	6	google VT studying abroad or ask a student who has studied abroad, etc
Your peers seem to be performing better than you on every assignment and it's stressing you out	6	ask them for help, and if they dont help you, get new friends, etc

Digitized Student Responses

22

We then digitized all of these responses - group responses and individual responses for every scenarios.

Developing Response Items



Situational Judgement Inventory (SJI)

You are at the risk of failing a required course and the withdraw/drop deadline is approaching

- Go to student services
- Approach the teacher
  - Advice
  - Extra credit
- Talk to academic advisor
- **Work very hard/work harder**
- Ask students that have taken the course
- Go to office hours
- **Figure out what is wrong**
- Focus more on class
- Ask counselor for advice
- Drop the course
- *Talk to parent*
- *Reach out to friends*
- *Make study groups*

Organized Student Responses

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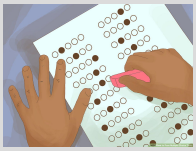
Then, for each scenario, we aggregated all student responses we received and listed them out.

Developing Response Items



Situational Judgement Inventory (SJI)

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- **Figure out what is wrong**
- Focus more on class
- Ask counselor for advice
- Drop the course
- *Talk to parent*
- *Reach out to friends*
- *Make study groups*

Organized Student Responses

- No support, no action
- Self-support
- Academic advising support
- Academic peer support
- Faculty support
- Campus resource
- Social support
- Mental support
- No support, action

Response Option Categories

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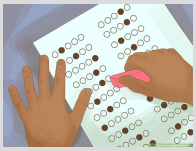
From there, we developed a higher level category structure that these options fell into using ChatGPT and prior research.

Developing Response Items



Situational Judgement Inventory (SJI)

Categorized Response Options

You are at the risk of failing a required course and the withdraw/drop deadline is approaching

A. Wait and see how you're doing in the course once the deadline is closer (no support, no action)
B. Focus more in class (self support)
C. Spend more time studying for the course (self support)
D. Go to the instructor's office hours to get help with the material you are struggling with (academic support)
E. Talk to your instructor about dropping the course (academic support)
F. Ask your instructor for extra credit opportunities to bring up your grade (academic support)
G. Seek out help from a peer who has taken the course before (academic peer support)
H. Make a study group with peers in the course (academic peer support)
I. Ask your academic advisor for advice about dropping the course (campus resource)
J. Visit the *Student Success center* to learn how to improve your grade (campus resource)
K. Call/text a friend who has been in a similar situation to hear what they did (social support)
L. Call/text your family or a trusted adult to confide in them and get support (mental support)
M. Drop the course immediately (no support action)

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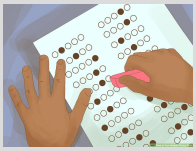
Finally, we sorted the organized responses into each response option category, making sure that each response option was only one action. Given the varying domains of scenarios and relevant responses, some of the scenarios have several response options within the same response option category and/or some response option categories are skipped altogether. We used our prior knowledge of student support to make these decisions.

SCENARIO

You are at the risk of failing a required course and the withdraw/drop deadline is approaching

Preliminary Instrument (12 scenarios)



Situational Judgement Inventory (SJI)

RESPONSE OPTIONS

- ○ Wait and see how you're doing in the course once the deadline is closer
- ○ Focus more in class
- ○ Spend more time studying for the course
- ○ Go to the instructor's office hours to get help with the material you are struggling with
- ○ Talk to your instructor about dropping the course
- ○ Ask your instructor for extra credit opportunities to bring up your grade
- ○ Seek out help from a peer who has taken the course before
- ○ Make a study group with peers in the course
- ○ Ask your academic advisor for advice about dropping the course
- ○ Visit the Student Success center to learn how to improve your grade
- ○ Call/text a friend who has been in a similar situation to hear what they did
- ○ Call/text your family or a trusted adult to confide in them and get support
- ○ Drop the course immediately

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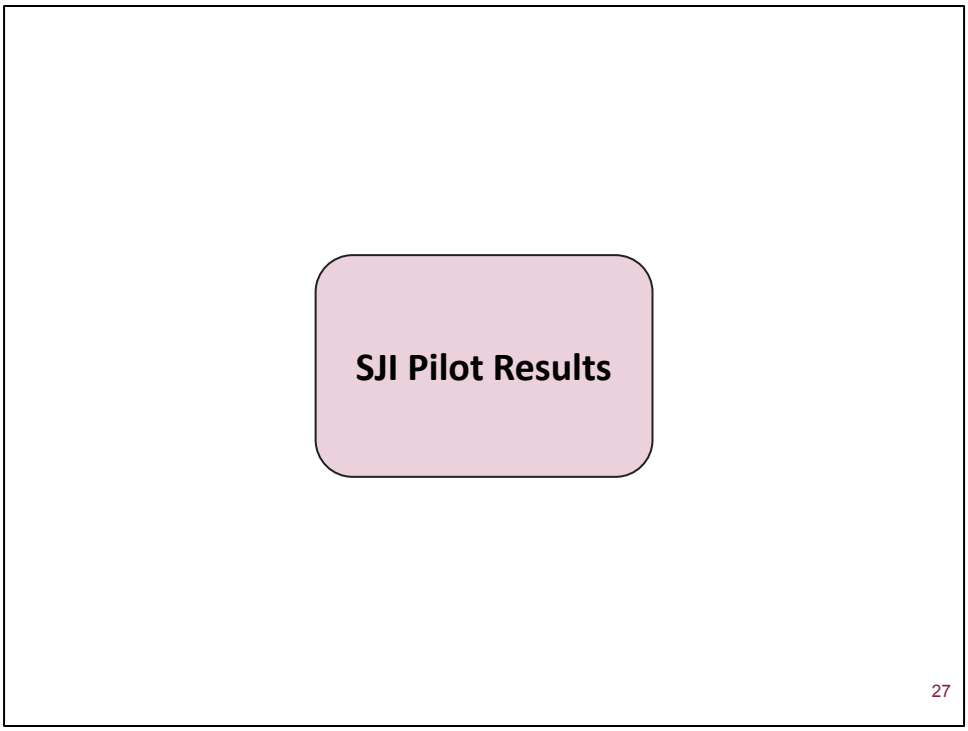
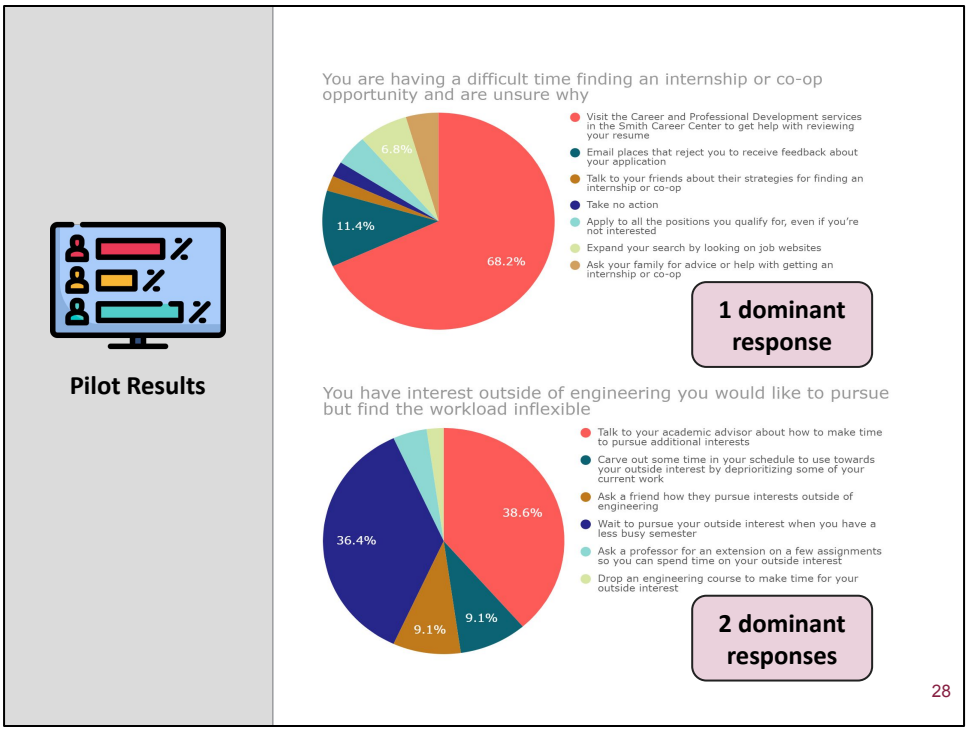
We used this multi-step process for each scenario and developed a succinct list of closed ended response options for each scenario. These scenarios and response options were uploaded into a google form.



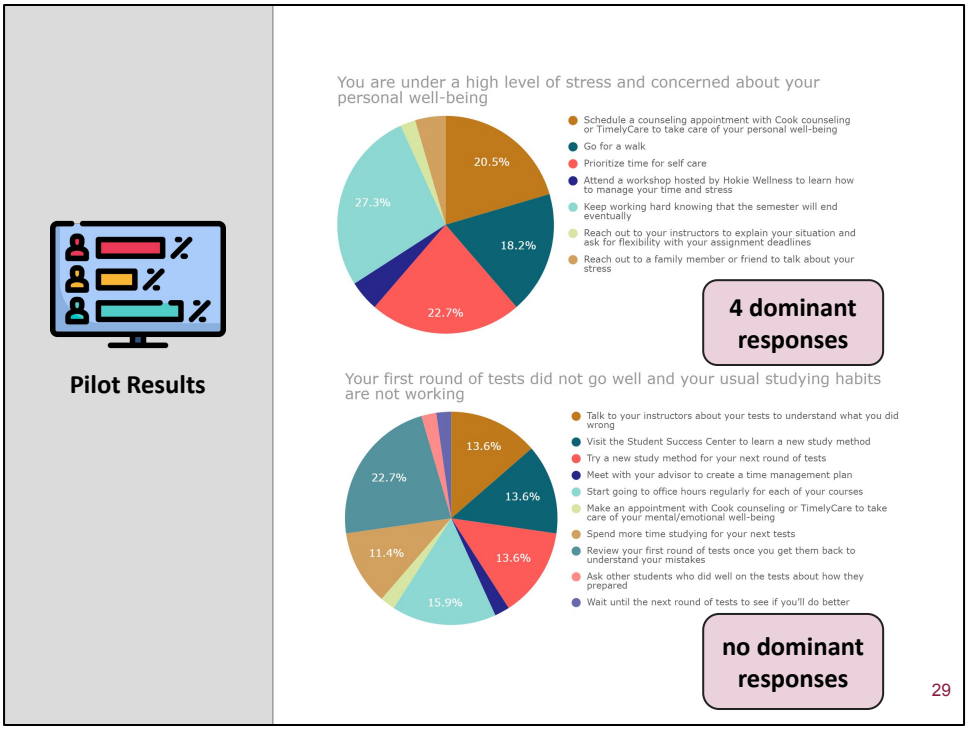
We piloted our instrument with 44 incoming engineering students in August 2023 using 12 scenarios.

Now we will present some of our findings. We are interested in hearing your reactions to what you see on the next several slides.

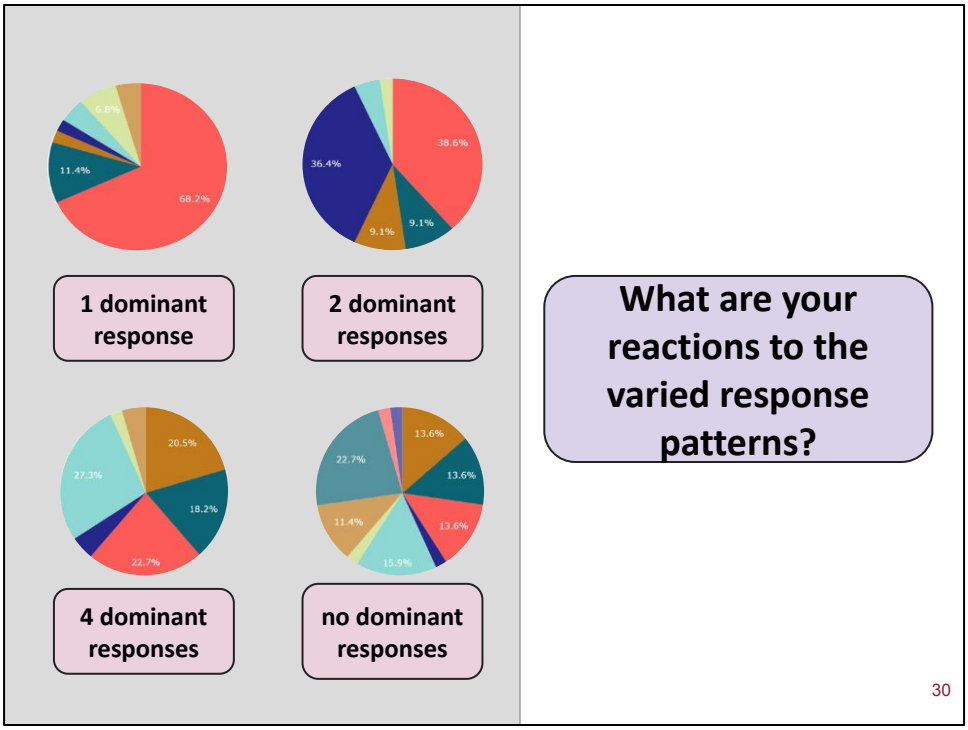
A note on the quantitative analysis - since our instrument is still under development and the data is pilot data, we did not conduct statistical analysis on the collected data. We were more interested in using the pilot data to refine our instrument in terms of quality and quantity of response options and scenario wording.



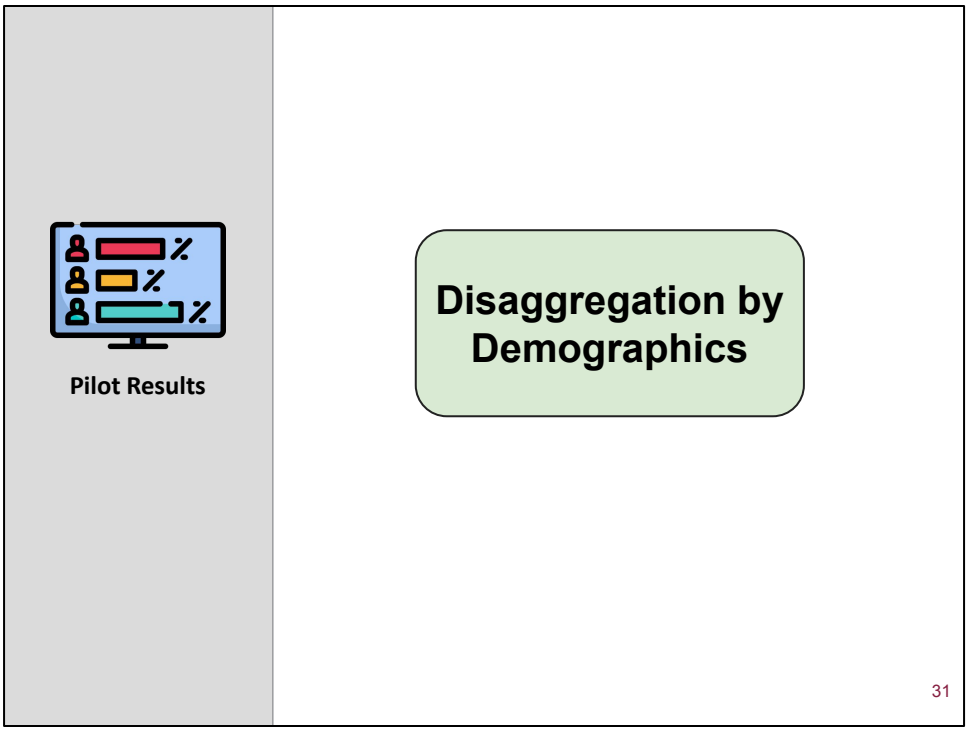
The first pattern we will highlight is that different scenarios elicited different response patterns from the group of students we sampled. For example, in the scenario “You are having a difficult time finding an internship or co-op opportunity and are unsure why” we see that students overwhelmingly selected one answer choice which entails visiting the campus career center. However, this unitary response pattern was not reflected through all of the scenarios. For example, the bottom scenario related to having interests outside of engineering with limited time elicited two dominant responses from students - waiting (aka doing nothing) or talking to their academic advisor.



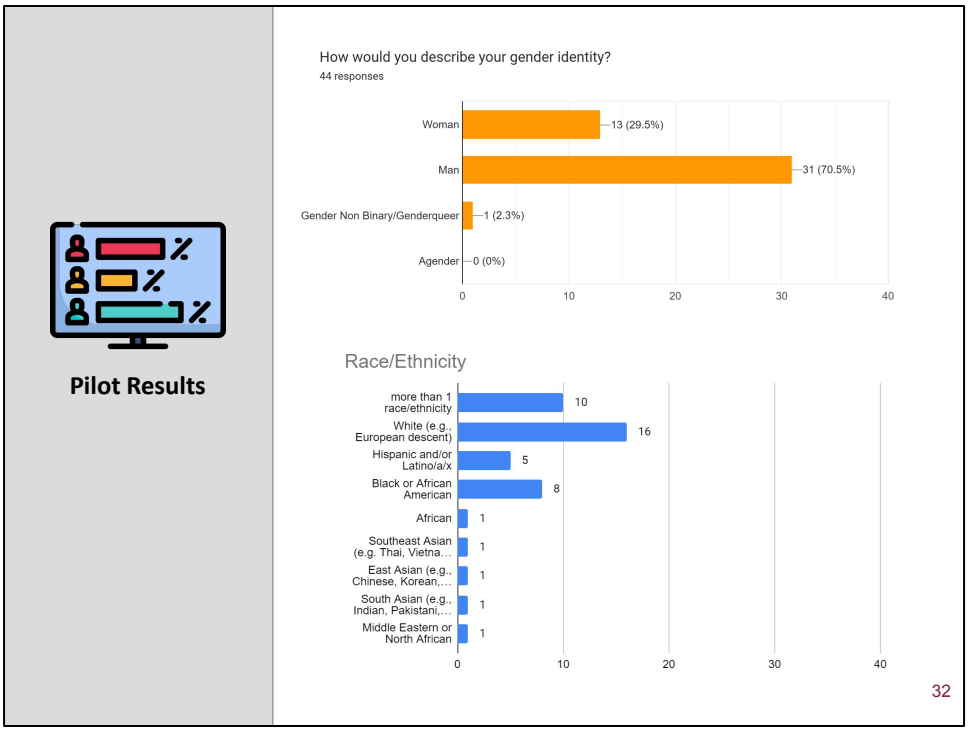
We also found other response patterns. The top scenario related to being under a high level of stress had four responses that were selected relatively equally across participants which included scheduling a counseling appointment, going for a walk, prioritizing time for self-care, and continuing to work hard until the end of the semester. The bottom scenario was even more contested with 6 options selected by a few students. Even though this is an academic scenario, there was limited consensus on navigating this situation.



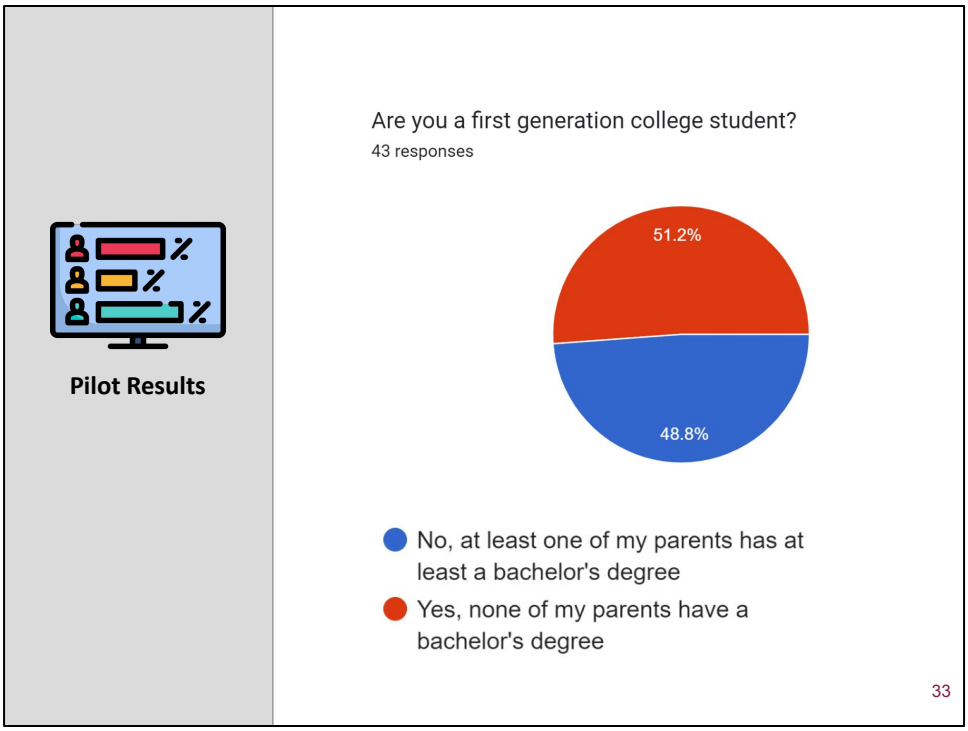
Based on what we've shared so far, what thoughts or reactions do you have? e.g., Are you surprised or not surprised by the variation in the response patterns?



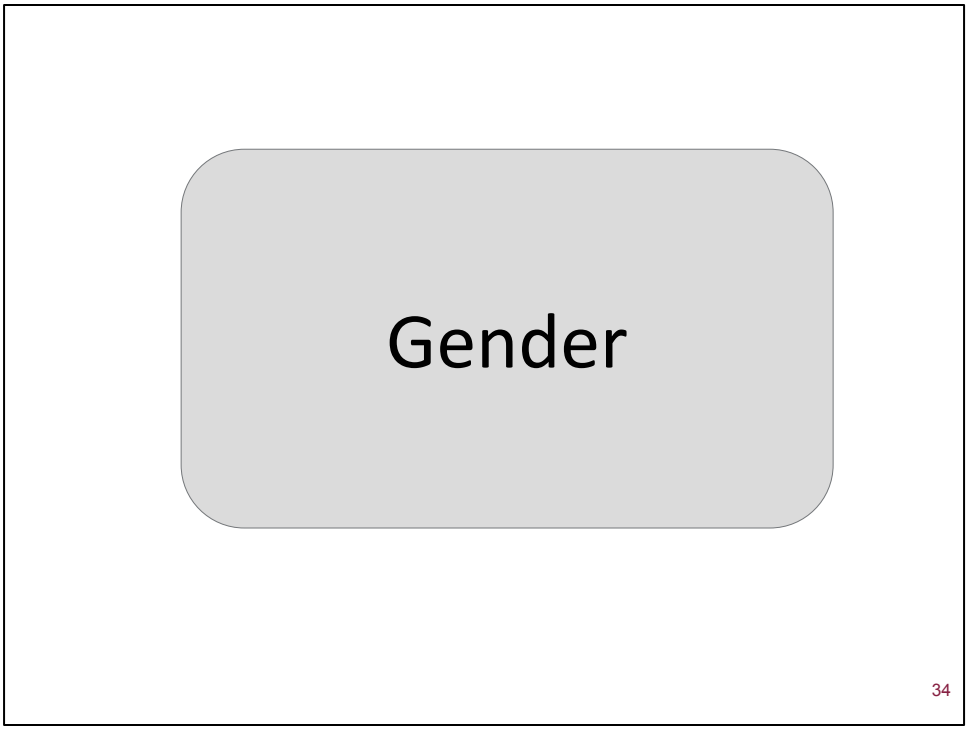
When we piloted this instrument, we also collected demographic information but we suspected that responses might differ across demographic groups. Now we will share some of those findings.



But first, for context, our sample included 13 women, 31 men, and 1 person who identified as gender NB/genderqueer. In terms of race and ethnicity, our sample had 10 students who selected multiple racial/ethnic categories, 16 White students, 5 latine students, 8 Black or African American students, 1 African student, and then 1 student in each of the following categories: SE Asian, E Asian, S Asian, and Middle Eastern or North African student.



Furthermore, the sample was a little over half first generation college students (51%).



First we will walk through some of the scenario results by gender.

Your first round of tests did not go well and your usual studying habits are not working

Your first round of tests did not go well and your usual studying habits are not working	Man	Woman	Grand Total
Ask other students who did well on the tests about how they prepared		7.69%	2.27%
Make an appointment with Cook counseling or TimelyCare to take care of your mental/emo	3.23%		2.27%
Meet with your advisor to create a time management plan	3.23%		2.27%
Review your first round of tests once you get them back to understand your mistakes	25.81%	15.38%	22.73%
Spend more time studying for your next tests	6.45%	23.08%	11.36%
Start going to office hours regularly for each of your courses	19.35%	7.69%	15.91%
Talk to your instructors about your tests to understand what you did wrong	12.90%	15.38%	13.64%
Try a new study method for your next round of tests	9.68%	23.08%	13.64%
Visit the Student Success Center to learn a new study method	16.13%	7.69%	13.64%
Wait until the next round of tests to see if you'll do better	3.23%		2.27%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Women's top two choices:

1. Spend more time studying for your next tests
2. Try a new study method for your next round of tests

Men's top two choices:

1. Review your first round of tests once you get them back
2. Start going to office hours regularly

35

I will show response patterns across a few scenarios for the sake of highlighting one way to look at the results. I chose to highlight the top two responses for each group. Other ways to look at the results could be to look at the most selected and least select choices or look at patterns at the individual scale of the response categories a student may gravitate towards.

For all of the examples, each demographic category is shown as percentages out of 100% because there were a different number of people in each category.

So in this example, we can see that while almost ½ of women said that would respond to a situation of having weak performance on their first round of test by spending more time studying or trying a new study method (utilizing self support), while less than 20% of men choose this option. Instead, ¼ of men said they would review their tests once they got them back or start going to office hours. In this example, men chose a response that involves external support rather than self support.

You feel isolated socially and are having trouble finding engineering students with whom you relate

You feel isolated socially and are having trouble finding engineering students with whom y	Man	Woman	Grand Total
Attend the student organization social events	22.58%	23.08%	22.73%
Join a FEELS support circle hosted by HokieWellness to talk about your feelings of isolatic	6.45%		4.55%
Join a student organization outside of engineering	32.26%	38.46%	34.09%
Learn a new hobby that you can enjoy by yourself	12.90%	7.69%	11.36%
Make an appointment with Cook counseling or TimelyCare to manage your feelings of isol	3.23%	7.69%	4.55%
Take no action	22.58%	15.38%	20.45%
Talk to family and friends from home		7.69%	2.27%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Women's top two choices:

1. Join a student organization outside of engineering
2. Attend the student organization social events

Men's top two choices:

1. Join a student organization outside of engineering
2. Attend the student organization social events

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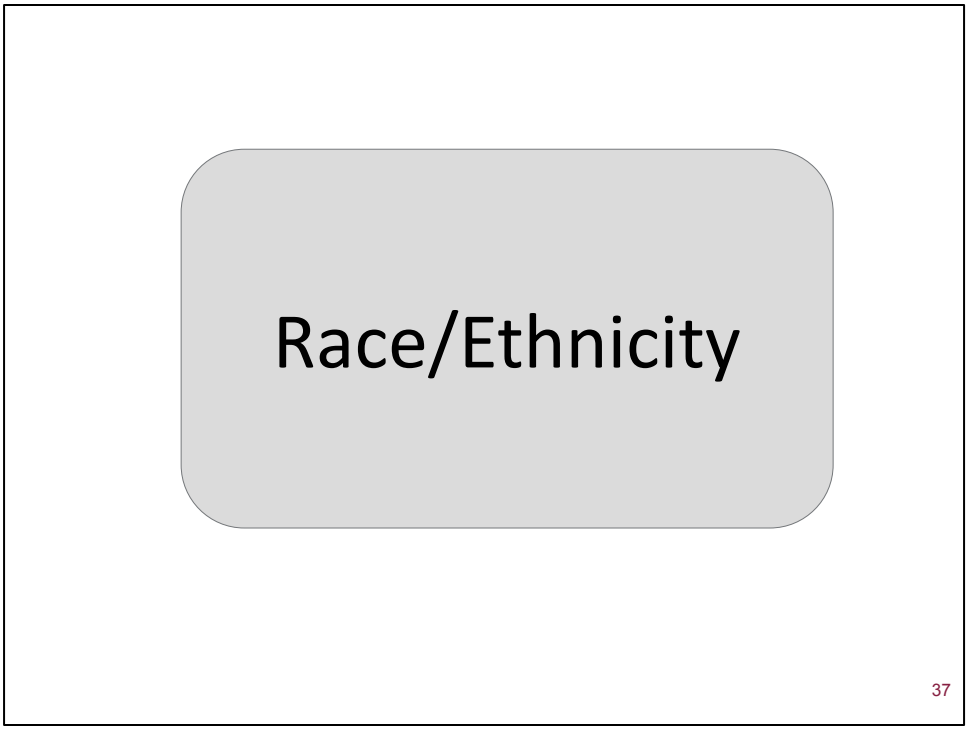
For this scenario, we see that men and women answered relatively similarly, with their top choice if they are feeling socially isolated being to join a student organization outside of engineering.



Next, we disaggregated the data by race, specifically identifying groups that are typically targeted by support programs and research.

You need additional assistance in a class and the instructor is being non-responsive

You need additional assistance in a class and the instructor is being non-responsive	Black	Other	Grand Total
Find instructional videos to watch online to support your learning outside of class	25.00%	28.57%	27.27%
Get tutoring for the course from the Student Success Center (campus support)	18.75%	17.86%	18.18%
Leave the instructor a poor review at the end of the semester		7.14%	4.55%
Make a study group with friends who are in the same class	12.50%	14.29%	13.64%
Reach out to another instructor of the same course to get help on the course material	12.50%	10.71%	11.36%
Reach out to the teaching assistant of the course to get help on the course material	31.25%	17.86%	22.73%
Report the instructor to the department head		3.57%	2.27%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Black students' top two choices:

1. Reach out to the TA of the course to get help
2. Find instructional videos online

Other students' top two choices:

1. Find instructional videos online
2. Reach out to TA of the course to get help OR get tutoring from student success center

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First, we looked at how Black students responded compared with all other students. Response patterns were mostly similar except the top choices by both groups were different. Black students' top choice was to reach out to the TA while other students' top choice was to find instructional videos to watch online

Your peers seem to be performing better than you on every assignment and it's stressing you out

Your peers seem to be performing better than you on every assignment and it's stressing y	Black	Other	Grand Total
Get tutoring for the course from the Student Success Center	18.75%	3.57%	9.09%
Go to office hours regularly to get help on assignments from your instructors	6.25%	35.71%	25.00%
Make an appointment with Cook counseling or TimelyCare to manage your stress	6.25%		2.27%
Observe how your peers work and copy their habits	6.25%		2.27%
Spend more time on your assignments		10.71%	6.82%
Start working with your friends on assignments		10.71%	6.82%
Take no action	6.25%	3.57%	4.55%
Talk with your friends about their study habits and methods for success	25.00%	21.43%	22.73%
Try not to compare yourself to your peers	31.25%	14.29%	20.45%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Black students' top two choices:

1. Try not to compare yourself to your peers
2. Talk with your friends about their study habits and methods for success

Other students' top two choices:

1. Go to office hours regularly to get help on assignments
2. Talk with your friends about their study habits and methods for success

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For this scenario, response patterns varied more between the Black students and the other students. While the Black students top choice was to try to not compare themselves to their peers, other students' top choice was to go to office hours to get help, a choice that was in the bottom 4 for the Black students. This is a situation where Black students recognizing they may face additional obstacles in engineering so they shouldn't compare themselves with their peers may hold them back from seeking out help. Information like this could be useful for practitioners to identify and address beliefs related to academic performance and support.

Your first round of tests did not go well and your usual studying habits are not working

Your first round of tests did not go well and your usual studying habits are not working	Black or Latinx	Other	Grand Total
Ask other students who did well on the tests about how they prepared		4.76%	2.27%
Make an appointment with Cook counseling or TimelyCare to take care of your mental/emo	4.35%		2.27%
Meet with your advisor to create a time management plan	4.35%		2.27%
Review your first round of tests once you get them back to understand your mistakes	34.78%	9.52%	22.73%
Spend more time studying for your next tests	17.39%	4.76%	11.36%
Start going to office hours regularly for each of your courses	8.70%	23.81%	15.91%
Talk to your instructors about your tests to understand what you did wrong	17.39%	9.52%	13.64%
Try a new study method for your next round of tests	8.70%	19.05%	13.64%
Visit the Student Success Center to learn a new study method	4.35%	23.81%	13.64%
Wait until the next round of tests to see if you'll do better		4.76%	2.27%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Black and Latinx students' top two choices:

1. Review your first round of tests once you get them back
2. Spend more time studying for your next tests OR Talk to your instructors about your tests

Other students' top two choices:

1. Start going to office hours regularly
2. Visit the student success center to learn a new study method

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Then we looked at some scenarios disaggregated by Black or Latinx students (included multiracial students) and other students. Here we found that the top choices by both groups were different with no overlap between groups in the to choices.

You are under a high level of stress and concerned about your personal well-being

You are under a high level of stress and concerned about your personal well-being	Black or Latinx	Other	Grand Total
Attend a workshop hosted by Hokie Wellness to learn how to manage your time and stress		9.52%	4.55%
Go for a walk	13.04%	23.81%	18.18%
Keep working hard knowing that the semester will end eventually	26.09%	28.57%	27.27%
Prioritize time for self care	34.78%	9.52%	22.73%
Reach out to a family member or friend to talk about your stress		9.52%	4.55%
Reach out to your instructors to explain your situation and ask for flexibility with your assignment deadlines		4.76%	2.27%
Schedule a counseling appointment with Cook counseling or TimelyCare to take care of yc	26.09%	14.29%	20.45%
Grand Total	**100.00%**	**100.00%**	**100.00%**

Black and Latinx students' top two choices:

1. Prioritize time for self care
2. Schedule counseling appointment OR Keep working hard

Other students' top two choices:

1. Keep working hard
2. Go for a walk

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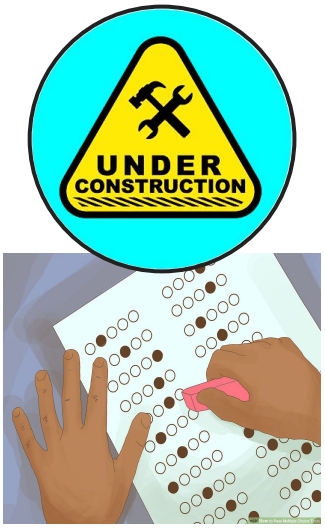
For this scenario, there were more response similarity between groups. Both groups mostly selected self support options in the top two choices; however, for Black and Latinx students, scheduling a counseling appointment also made it into the top 2.

How we interpret the pilot results



Situational Judgement Inventory (SJI)

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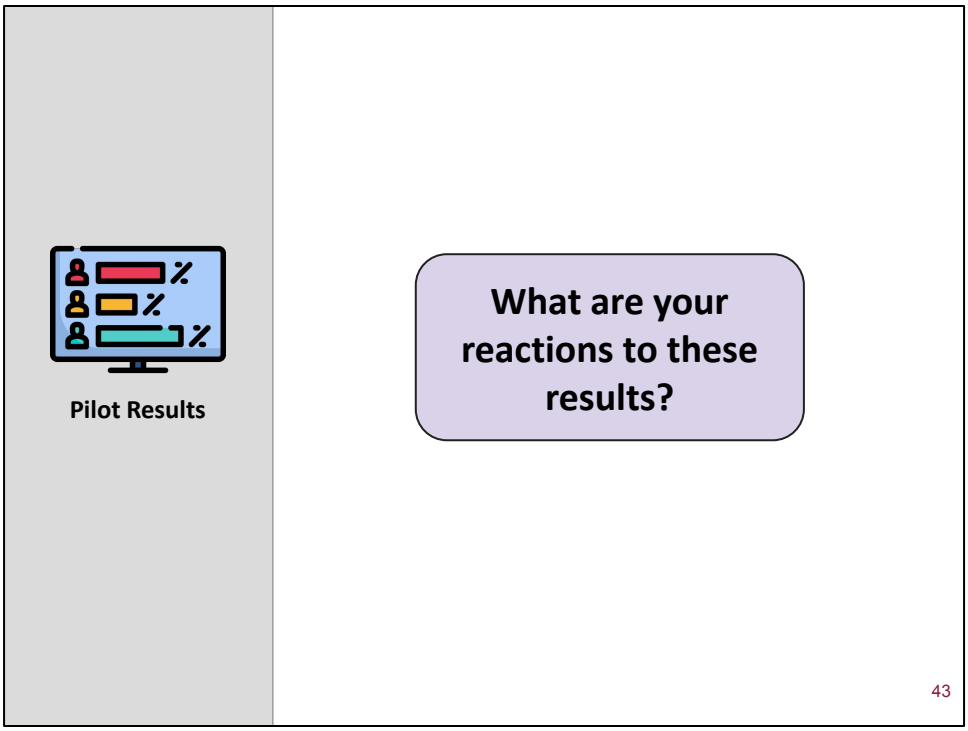
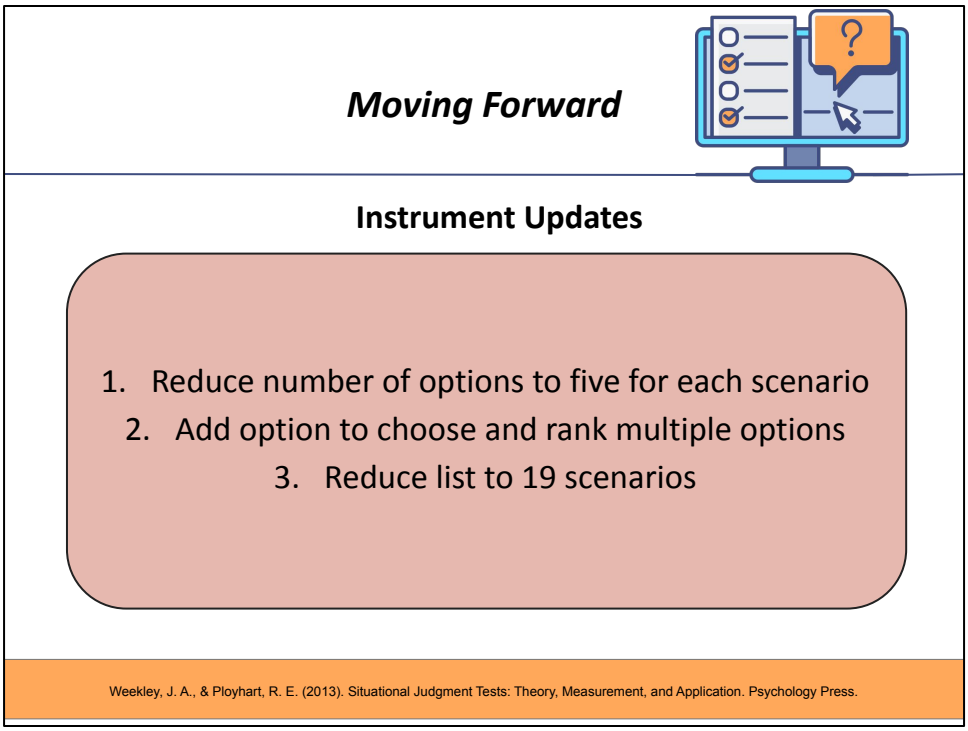
Since our instrument is still under development and the data is pilot data, we did not conduct statistical analysis on the collected data. We were more interested in using the pilot data to refine our instrument in terms of quality and quantity of response options and scenario wording. Since our data is relatively small and concentrated to an incoming engineering student population, we can't assume that the preliminary patterns we found in the data represent broader trends. However, based on these initial results, we can begin to see that different students do have different navigation patterns, illuminating the need for more tailored/responsive support to different groups.

We anticipate our pilot results could prime you to think about ways you could use this type of data in your context and how you may choose to look at trends across students.

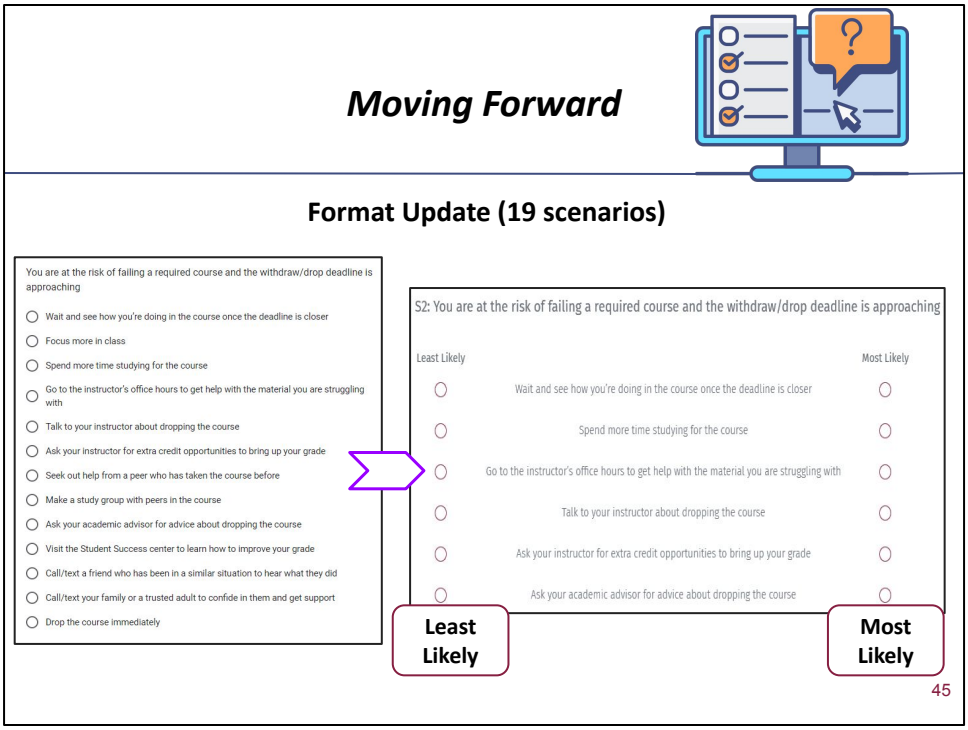


Based on your own experiences and expertise, what are your immediate reactions to these results? Are they surprising or not surprising? What are you curious to know more about?

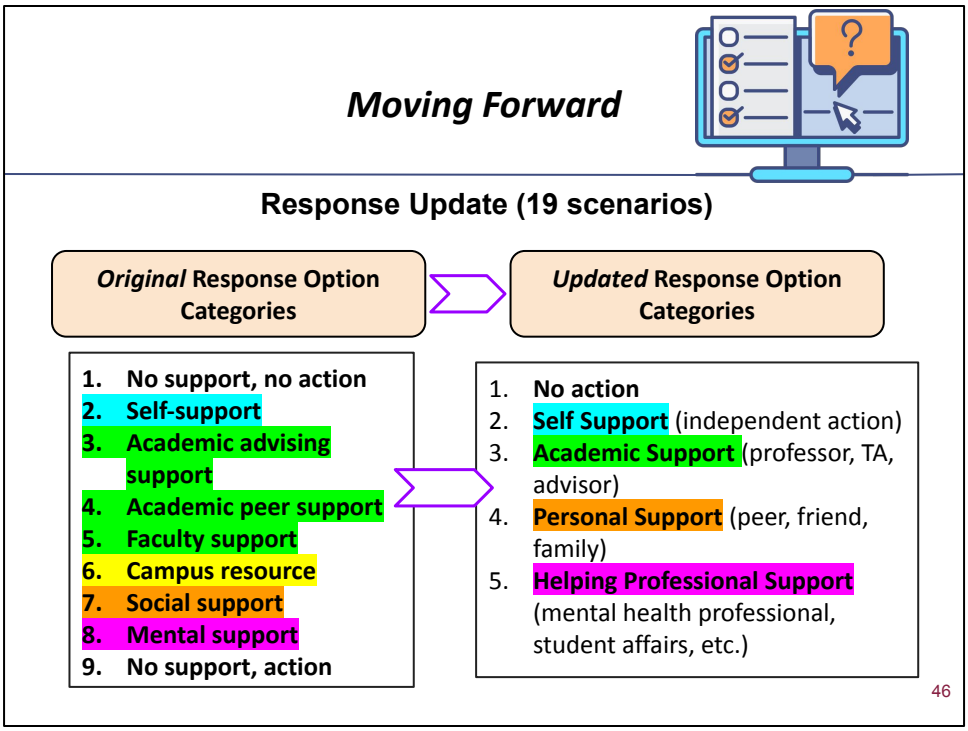


Through piloting our instrument, we gained a lot of insight about how to move forward with developing our SJI. We found that having more than seven response options was too overwhelming for students to choose from, so moving forward, we will standardize the scenarios to have just five response options. We also found that students wanted to select multiple options because they are likely to take multiple actions in response to a scenario, so we plan to update the instrument to allow for students to select multiple response options for one scenario. We will also reduce the scenario list 19 - 3 scenarios in the first 5 domains, and 4 special circumstance scenarios.

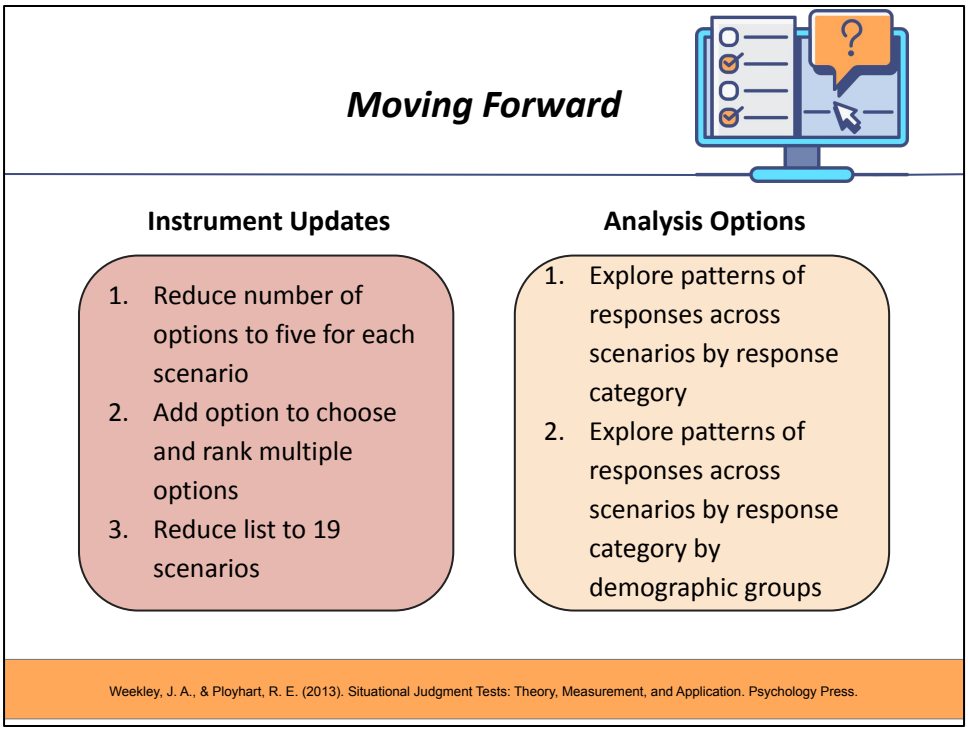
There are a lot of possibilities for analysis moving forward. The analysis we presented here is just a starting point. We believe we could uncover even more interesting insights by analysis the response selections by their response categories in order to compare response patterns across scenarios. This type of analysis could be further augmented by disaggregating these response patterns across scenarios by demographics. We believe we could use response category patterns as a way to develop profiles for students so they get immediate feedback from the instrument about their dominant responding tendencies, if they have one. For example, that could sound something like “in academic scenarios, you have a tendency to use self support.” Once we test out the updated instrument, we will conduct statistical analysis on the full data set to verify the utility of our instrument.



We have already made updates to our SJI. First, we changed the response format to allow students to select least likely and most likely response. Increase the response ability will provide more response variety and tell us more about the response options and their utility.



We also updated the response options to standardize the number of responses per scenario to five. In order to do this, we first revisited the response option categories and aggregated them to five. We believe these five categories capture the original nine categories. Now every scenario will have one of each response category where relevant or a repeat response category when all response categories are not relevant.



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Key References

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These are key references we used to develop an understanding of SJIs and develop our instrument.

Using a Summer Bridge Program to Develop a Situational Judgment Inventory: From Year 1 to Year 2

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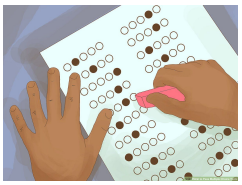

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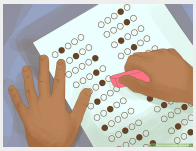
Thanks for listening to and engaging with our presentation. Let us know if you have any further questions or comments and feel free to reach us via email.

Scenario List



Situational Judgement Inventory (SJI)

Scenario domain	Scenario
Academic performance	You are having trouble keeping up with deadlines and the semester seems to be moving too fast
	You are taking a difficult course load and begin feeling overwhelmed
	You are at the risk of failing a required course and the withdraw/drop deadline is approaching
	Your first round of tests did not go well and your usual studying habits are not working
Faculty and staff interactions	You need additional assistance in a class and the instructor is being non-responsive
	You are performing poorly in a class due to poor teaching by instructor or GTA
	You are having trouble understanding a professor because of their accent
	You need a letter of recommendation but do not know any faculty well enough to ask them
Extracurricular involvement	You want to get involved on campus but are unsure which activities to select
	You are active in an organization and the time commitment proves greater than expected
	You are interested in studying abroad but unsure where to start or when
	You have interest outside of engineering you would like to pursue but find the workload inflexible
Peer-group interactions	You are finding yourself too busy to socialize and feel disconnected from people in general
	Your roommate is in a less-intensive major and is not respecting your academic commitments
	Your peers seem to be performing better than you on every assignment and it's stressing you out
	You feel isolated socially and are having trouble finding engineering students with whom you relate
Professional development	You no longer think engineering is the major for you and want to explore other options
	You are having a difficult time finding an internship or co-op opportunity and are unsure why
	You are interested in undergraduate research opportunities but unsure where to start
	You are interested in graduate school but unsure how you should be preparing as an undergraduate
Special circumstances	You are under a high level of stress and concerned about your personal well-being
	You are unsure how you are going to purchase books this semester and classes start fairly soon
	You have family or personal problems that are distracting you from school
	You believe you are receiving unfair treatment based on personal identity (e.g., race, gender, etc.)

The students in the workshops and interviews responded to open ended scenarios that we pulled from this list. We developed this list of scenarios by looking at prior research on common obstacles and challenges within an engineering and college learning environment. These scenarios fell into six different domains or types.