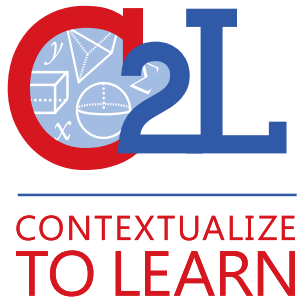


Contextualize to Learn:
**Preparing Faculty Toward Math
Contextualization for Student Success in
Advanced Technological Education**

Cross-Institutional Meeting
March 23, 2018

NSF Award No. DUE-1700625

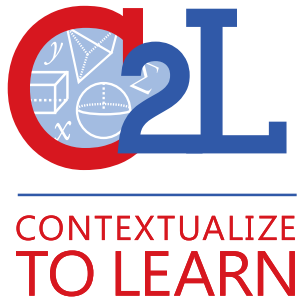




Agenda

10:00-10:15am	Arrival and welcome
10:15-10:45am	Research highlights – UW-Madison
10:45-11:15am	Current state and future plans – Milwaukee Area Technical College
11:15-11:45am	Diving into data from a contextualized electronics course – Madison College
11:45am-12:30pm	Lunch and C2L website features
12:30-1:50pm	Breakout sessions
1:50-2:30pm	Regroup and discuss
2:30-3:00pm	Wrap-up and plans for Summer/Fall 2018

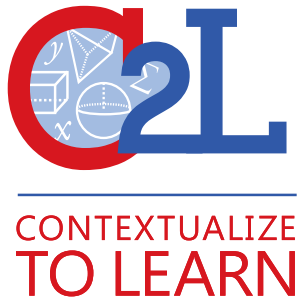




Research Highlights: Faculty Interviews

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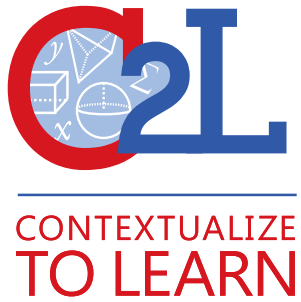




Faculty Interview Participants

Demographic Characteristics	Count	%
Gender		
Female	13	40.6
Male	19	59.4
Employment Status		
Full-Time	27	84.4
Part-Time	5	15.6
Disciplinary Area		
Math	16	50.0
Pre-College	4	12.5
Technical	12	37.5

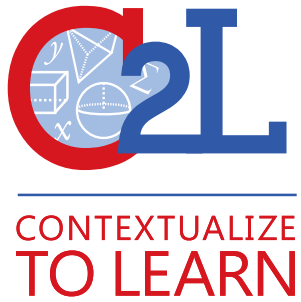




Novice and Expert: Coming Together to Learn About Contextualization

- What do I know and what do they know: Math teaching and knowledge of contextualization
- Faculty comfort with contextualization
- Growing pains around teaching math





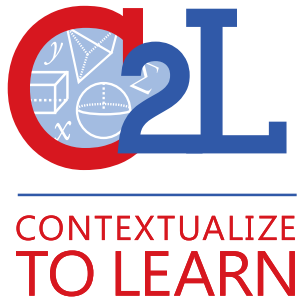
“Do we know what we’re really doing? ...So I was kind of lost a little bit. Not that I’m this big math teacher, or anything like that. But I was a little bit lost.”

“I don't know what contextualization is. So, yeah. I have a problem with it. I don't know that I know what contextualization is.”

“I thought that the math faculty were really smart. I was impressed with the quality of math instructors that we have here. ...Some of my co-workers from this program were at the table...I was impressed with their ability to be creative.”

“And so they [faculty] were kind of getting that awkwardness of like, I’m justified in my opinion. Like, I belong here. And so you could feel that they felt a little out of place and maybe needed to show that they knew their stuff too. I don’t know if there’s just this comfort level that everybody feels like they have something to bring to the table that’s worthwhile.”





“There's a fear, there's a comfort level, and there's time. ...Once a person knows that if they expose themselves a little bit, and they're not gonna be judged, that gets them to open the door a little bit more. But that takes time to build that relationship. The comfort level of where they're at, and why they would need to change, and then also the time that it takes to do such.”

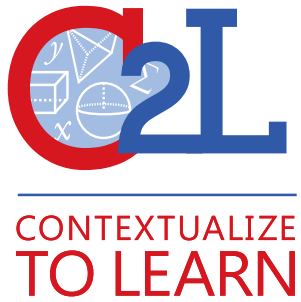
“So I definitely still feel like there's more I need to know about it to do it effectively.”

“Because I think we feel as though we have to come up with better ways to hit it with our students with that math.”

“I like some of the ideas but I like flexibility and I like to suit the way that I want to do it, based on my own experience.”

“...it's contextualization that gave them the opportunity to even hold conversations to try something new inside their classroom”

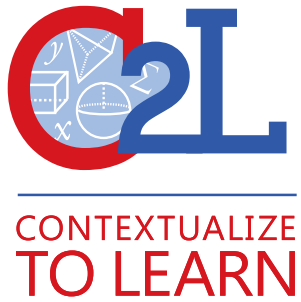




To Contextualize or Not to Contextualize

- Finding ways to improve math learning
- Figuring out where contextualization fits within existing curricular and program structures
- Contextualization already in use
- Speed bumps: Time and effort





"I'm always interested in learning how to do my job better. ...I'd just like to find better ways to present [math concepts] maybe."

"I'm always trying to learn something new. ...I like this approach. I'm trying find different ways to make it work. Maybe trying to find ways to put into context. Not just welding but things that they really enjoy right now at the moment."

"Here's how to take an algebra lesson and make it contextualized.' Or be truthful and say, 'You know what, you can't contextualize it.' 'Cause, I mean, I'm trying to contextualize everything. And just be truthful and say, 'You know what? I don't think you can contextualize this.' And don't feel guilty that you're trying to contextualize everything."

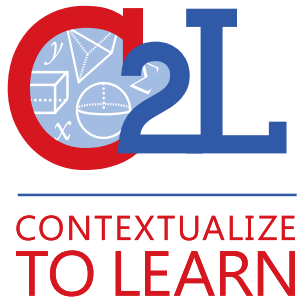
"It's like, well this is all the stuff we're doing already. It was real-life examples and how to make it how you can use it. ...It's basically what we do, but we didn't know we were doing it."

"It [workshop] was stressing it a lot, to have a compelling narrative—which is difficult. It's not easy. That's where the work is."

"I feel it's pretty time-consuming. So that's why I felt like I'm really not in a place right now to give that time. If my schedule was different I probably would."

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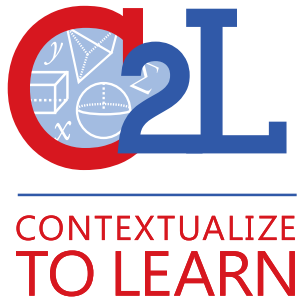




Creating and Sustaining Community

- Desire for community but uncertainty around sustaining it: Finding common times and continued support
- Informal opportunities to discuss, observe, and continue to learn about math teaching in general and contextualization
- Incentivizing community





“I think we’ve gotta take a look at what instructors’ schedules are based on the types of classes they teach. And try and put together a schedule where we can do something like that where it’s open to more possible candidates to experience.”

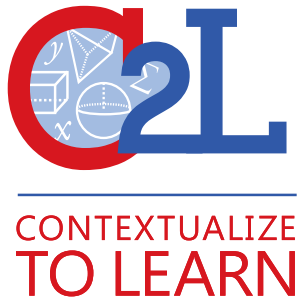
“And a lot of it is ‘cause of workload. I don’t have time to go talk to these other guys. And they don’t have time to talk to me if I do make the time. So, how do we encourage that, you know? How do we allow it, actually? It’s not encouragement—it’s a, you know, allow it to happen? I think a lot of it could happen, if there was opportunity. And I think we don’t have a lot of opportunity.”

“I think having instructors from the trades area, having instructors from the math area, cross-pollinate and see what each other’s doing actually in their classes. ...the math teacher could offer a suggestion from the applications perspective of doing the math while the tradesperson could possibly offer suggestions from the actual practical application within a given field. ...And then maybe do have, like, an observation if you wanna say, of a couple math teachers visit a couple different types of trades classes and see how it works. And vice versa. And then have a discussion afterwards. And say, ‘Okay, this is what I picked up. This is what you picked up.’”

“...planned events, a lunch, an optional lunch, or a coffee break, or that kind of thing.”

“...it helps to have the [FQAS] hours as kind of the ‘carrot.’”

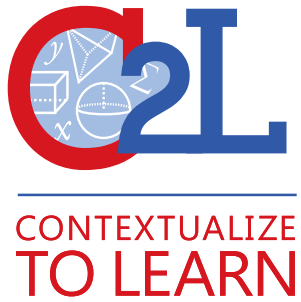




Milwaukee Area Technical College: Current State

- PD workshop August 2-3, 2017 (28)
- PD workshop October 27, 2017 (15)
- Community of Practice
 - Larry and Amber work with faculty interested in developing lesson plans using contextualization

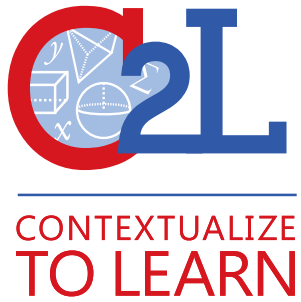




Current State (cont.)

- Community of Practice
 - Two faculty from LAS and three faculty from TAS developed lesson plans, but no one delivered in the classroom yet
 - Experiences and challenges
 - Faculty lead perspective
 - Faculty representative perspective
- Online Platform





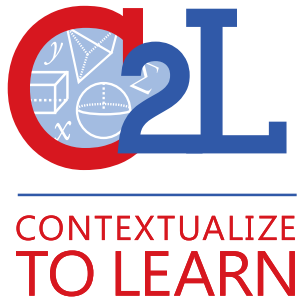
Online Platform: Google Shared Drive

The screenshot shows a Google Drive interface in a web browser. The address bar displays the URL: <https://drive.google.com/drive/u/0/folders/0B7MC7fgnime9dmhncDirQmw5aDQ>. The page title is 'MATC Contextualization Math for ATE Grant Workshop'. The interface includes a search bar, a 'NEW' button, and a sidebar with navigation options like 'My Drive', 'Team Drives', 'Shared with me', 'Recent', 'Google Photos', 'Starred', and 'Trash'. The main content area shows a list of folders and files with columns for Name, Owner, Last modified, and File size.

Name	Owner	Last modified	File size
External Contextualized Resources	Michele Schimke	Mar 2, 2018 Michele Schimke	—
FQAS Forms and Instruction	me	Oct 26, 2017 Lawrence Gross	—
MATC Created Lessons	Michele Schimke	Mar 2, 2018 Michele Schimke	—
MathWorkshop Materials	Yevgeniy Milman	Oct 27, 2017 Michele Schimke	—
MathWorkshopLessons created by the participants	Yevgeniy Milman	Aug 28, 2017 Maria Vasquez	—
Professional Development Activities and Hours	me	Sep 13, 2017 me	—
Resource	me	Sep 13, 2017 me	—
Cross Institutional Meeting_March Agenda_draft.docx	Michele Schimke	Feb 15, 2018 Michele Schimke	801 KB

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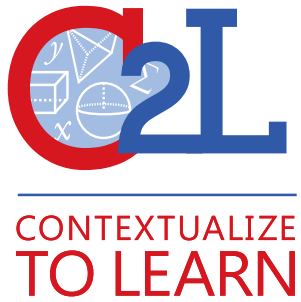




Future Plans

- Secure funds to pay faculty to develop lesson plans during Summer 2018 using contextualization for a critical math course, such as MATGEN-110
 - MATGEN-110 is a developmental math course
 - Low course completion rates
 - Needed by technical and applied science students who need to take technical math but are placed into developmental math

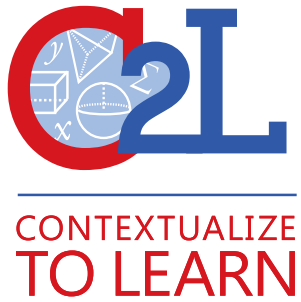




Future Plans (cont.)

- Larry and Amber will continue to reach out to faculty to encourage them to develop lesson plans
- Offer another workshop by Larry and Amber May 22, 2018
 - Provide refresher to current participants as well as introducing to faculty who did not participate in 2017 workshops
- New opportunity: MATC joined AACC Guided Pathways 2.0 in Spring 2017

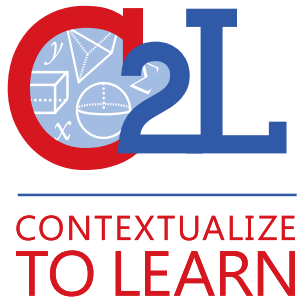




AACC Guided Pathways

- The Pathways Model is an integrated institution-wide approach to student success based on creating and delivering a highly structured experience to all students from their point of entry through the attainment of postsecondary credentials and/or careers
- Feb. 13, 2018: Dr. Davis Jenkins from Community College Research Center (CCRC) at Columbia University visited MATC
- March 7-8, 2018: Dr. Joyce Walsh-Portillo, Guided Pathways coach visited MATC

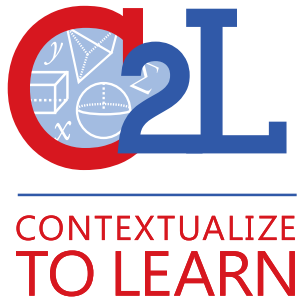




AACC Guided Pathways (cont.)

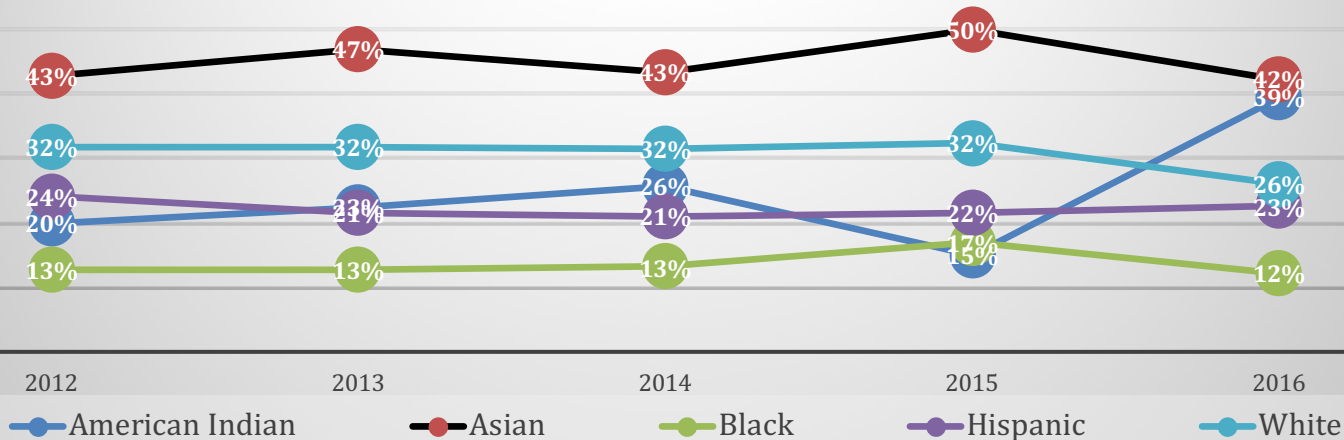
- Both Jenkins and Walsh-Portillo talked about contextualization as a way to improve student success
- March 14, 2018: Tim Renick, Sr. VP of Student Success and professor at Georgia State visited MATC to talk about Guided Pathways
- This grant put us ahead of the game and we will fit this effort into this larger framework to gain more momentum





Madison College: Math Preparedness

Incoming Program Student Math Preparedness by Ethnicity - % Prepared



	2012	2013	2014	2015	2016
College - % Prepared	30%	29%	29%	31%	26%
Total Number of Students	7,432	7,385	6,927	6,506	5,156





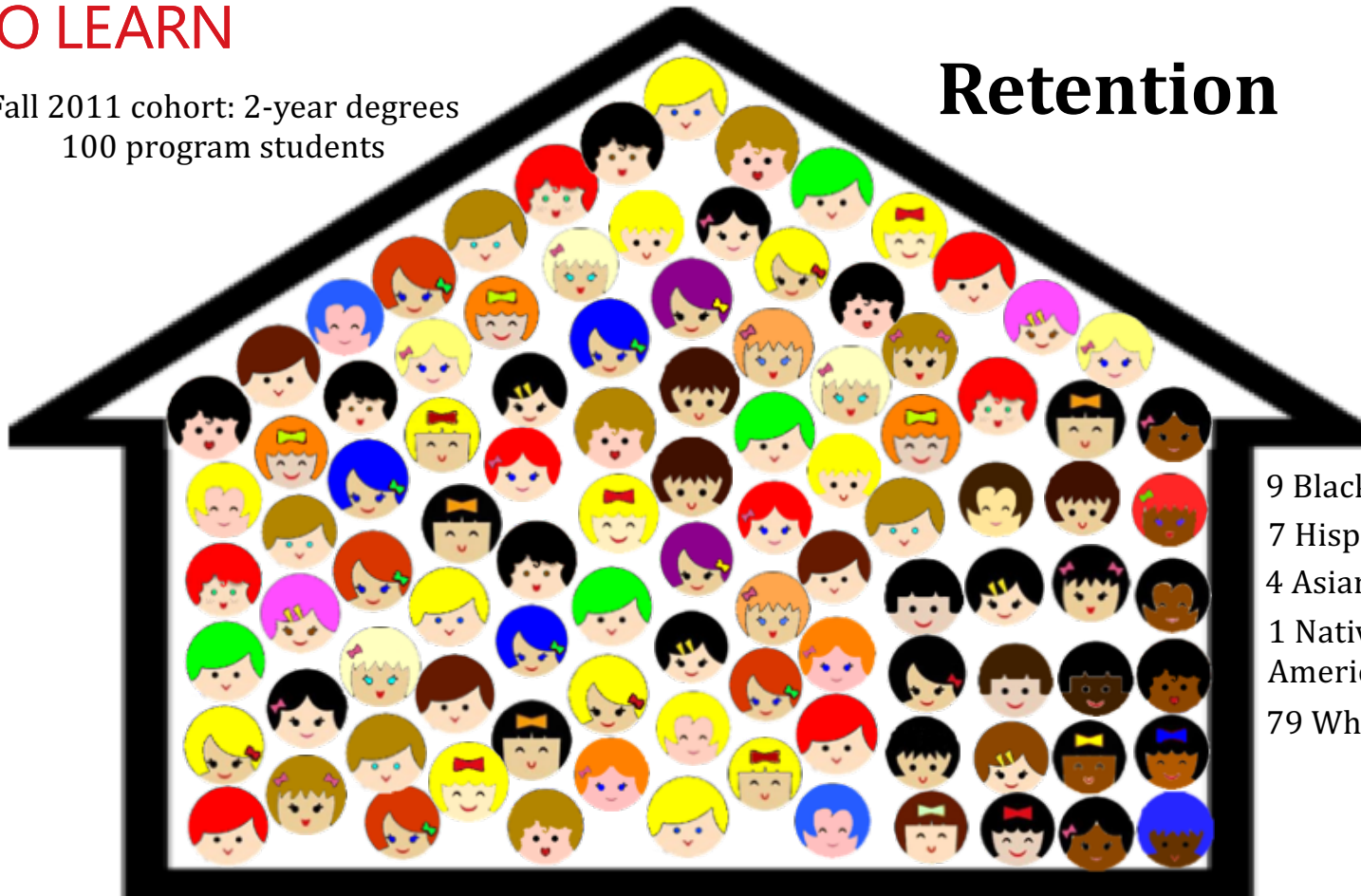
CONTEXTUALIZE
TO LEARN



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

Fall 2011 cohort: 2-year degrees
100 program students

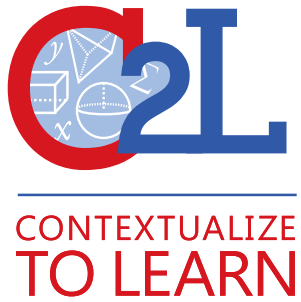
Retention



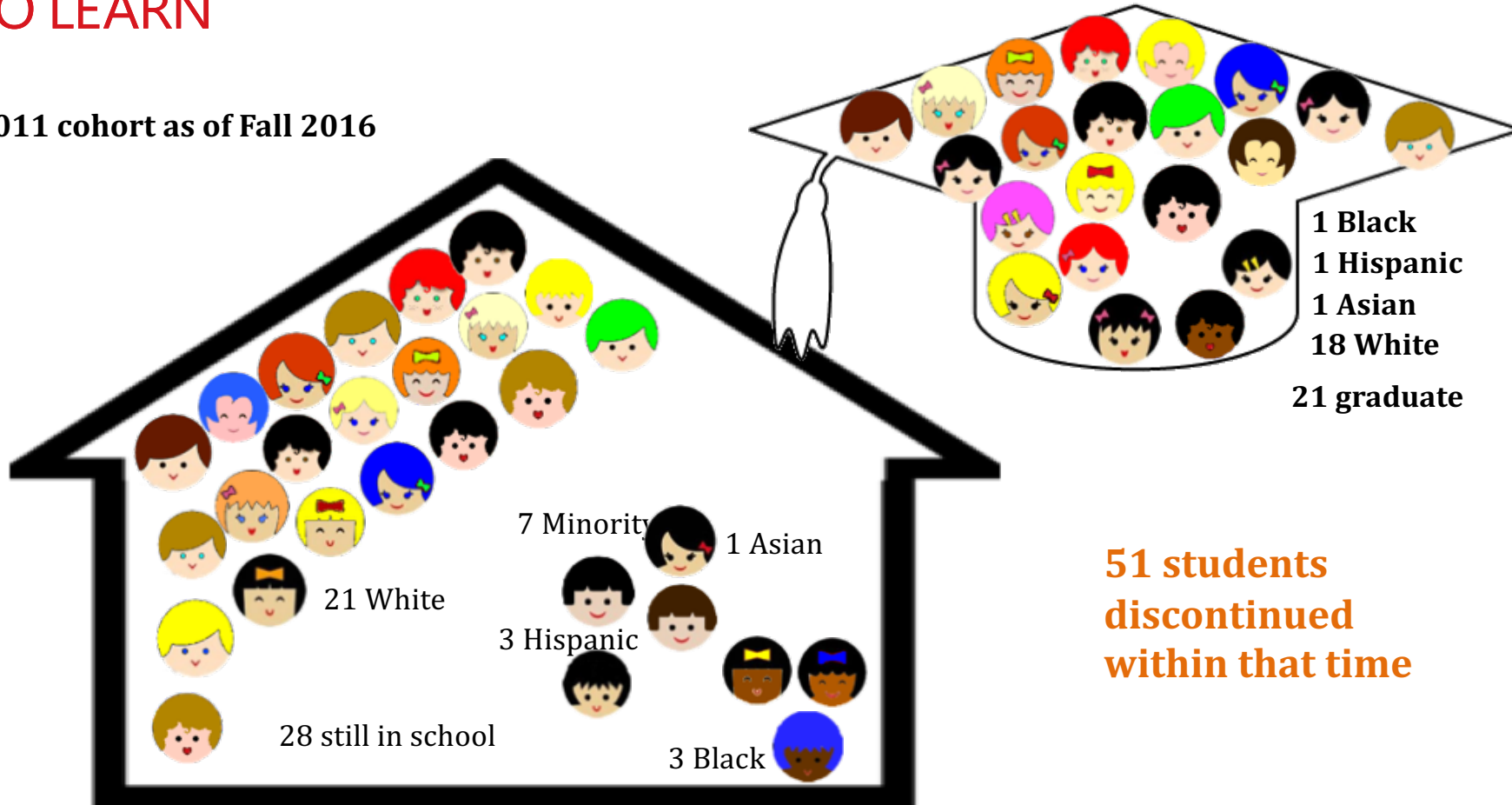
9 Black
7 Hispanic
4 Asian/PI
1 Native
American
79 White

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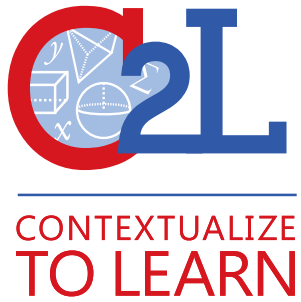


Fall 2011 cohort as of Fall 2016



**51 students
discontinued
within that time**

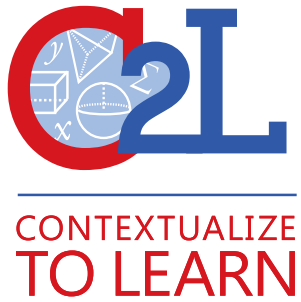




Analysis of Implementation

- Outcomes from Ann Thompson's fully contextualized Applied Electronic Math 1
 - This course is the first of a two-part applied electronics mathematics sequence. This course focuses on mathematic concepts most needed by technicians and is closely tied to the other first-semester electronics courses.
 - 8 weeks
 - 3 hours the 1st day, 2 hours the 2nd day each week
 - 22 students
- AEM 2 recently completed with grades available soon





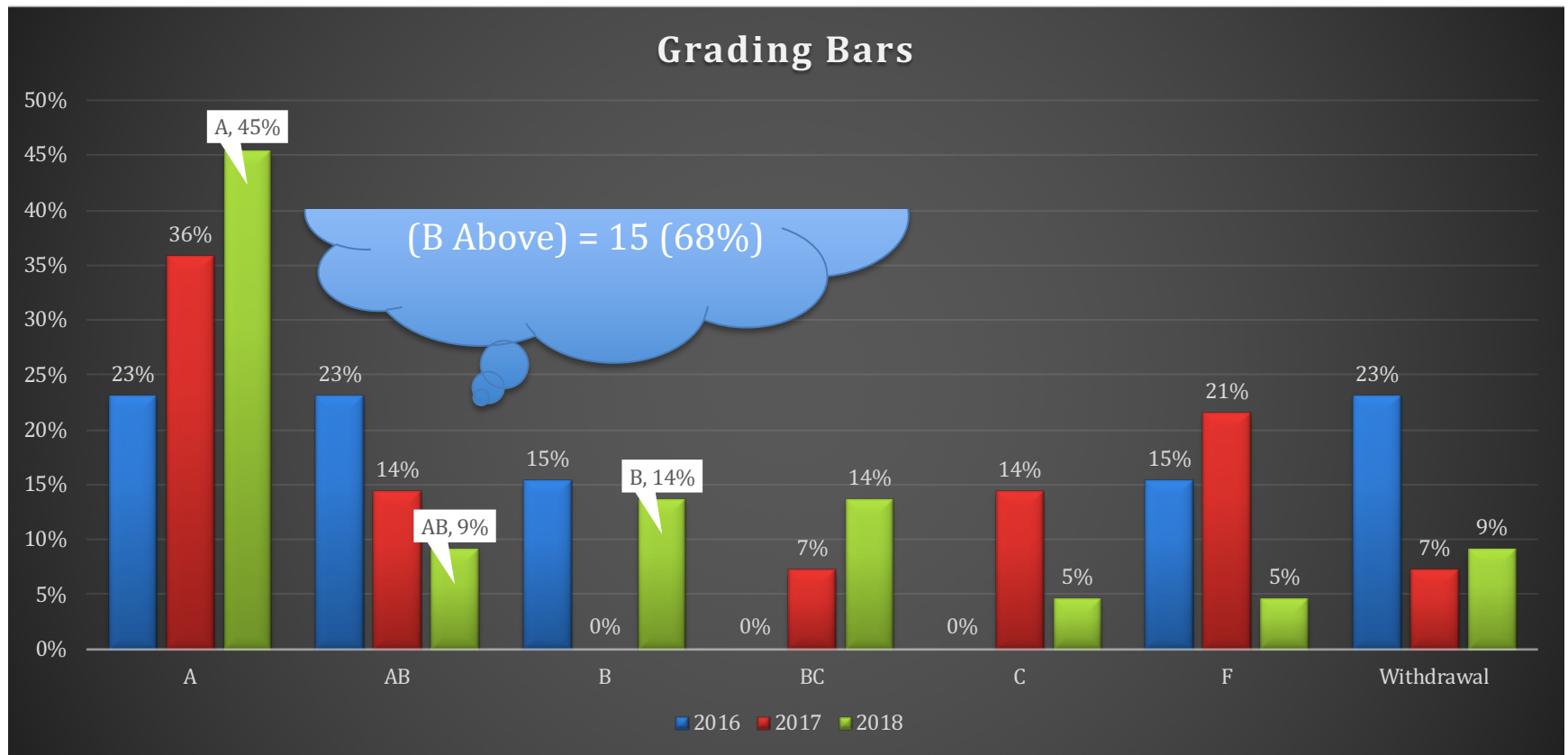
Data from Ann's class

86.4%,
+15%

10605171 - Applied Electronic Math 1			
All Students	15-16	16-17	17-18
C or Above	8 (61.5%)	10 (71.4%)	19 (86.4%)
D or Below	2 (15.4%)	3 (21.4%)	1 (4.5%)
Withdrawal	3 (23.1%)	1 (7.1%)	2 (9.1%)
Total Students	13	14	22
Non-Minority			
C or Above	6 (60.0%)	6 (75.0%)	15 (88.2%)
D or Below	2 (20.0%)	1 (12.5%)	0 (0.0%)
Withdrawal	2 (20.0%)	1 (12.5%)	2 (11.8%)
Minority			
C or Above	2 (66.7%)	4 (66.7%)	4 (80.0%)
D or Below	0 (0.0%)	2 (33.3%)	1 (20.0%)
Withdrawal	1 (33.3%)	0 (0.0%)	0 (0.0%)



Electronics Math 1 Grading





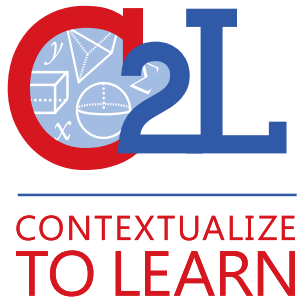
Previous Developmental Courses

Students	No Previous Dev Courses			Yes Previous Dev Courses		
	2016	2017	2018	2016	2017	2018
C or Above	8	9	15		1	4
D or Below	1	2		1	1	1
Withdrawal	2		2	1	1	
Grand Total	11	11	17	2	3	5

Percent	No Previous Dev Courses			Yes Previous Dev Courses		
	2016	2017	2018	2016	2017	2018
C or Above	73%	82%	88%	0%	33%	80%
D or Below	9%	18%	0%	50%	33%	20%
Withdrawal	18%	0%	12%	50%	33%	0%
Grand Total	100%	100%	100%	100%	100%	100%

80%
Pass Go
to Math 2

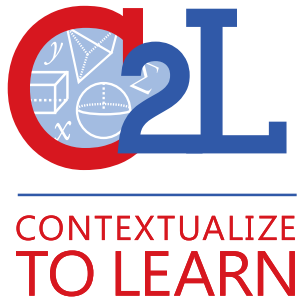




Lunch and C2L Website Features

<https://c2l.wceruw.org/>





Breakout Sessions

Faculty

Lesson development and delivery

Faculty and student experiences

Feedback and questions

Opportunities for collaboration

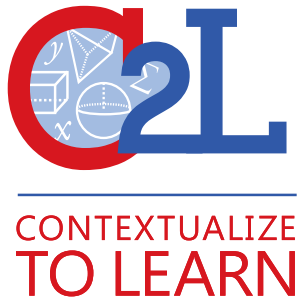
Institutional Researchers

Tracking faculty and students

Contextualization measures

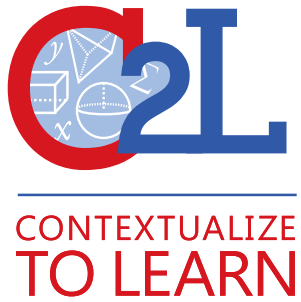
Incentivizing and sustaining participation





Regroup and Discuss: Takeaways and Directions Going Forward

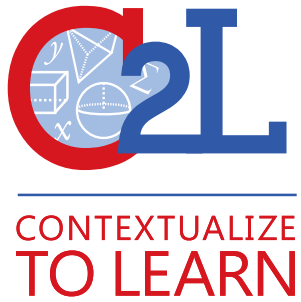




Conclusions and Thoughts from Breakout Sessions

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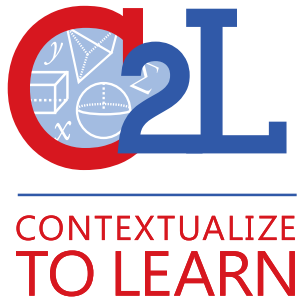




Supporting the Project and its Activities

- What are our roles and responsibilities and how can we leverage them to maximize project progress and success?
- What are the lessons learned so far? What should we keep doing and what can we do differently?
- How can we best support upcoming project activities?
- Bethany Sansing-Helton's announcement: Upcoming PD activities at Madison College

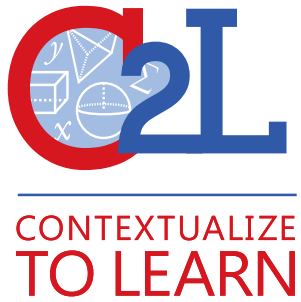




Taking Action: Practical Recommendations

- Leadership/administration deploying email invitations, reminders, and updates to show support, make the project visible, and encourage participation
- Review project budget across all years and if/where available, offer to faculty interested in contextualizing lessons/courses or toward additional PD
- Making community happen: Keep faculty informed and supported, schedule discussions/meetings, and get involved in institutional platforms and C2L website





Wrap-Up and Planning for Winter/Spring 2018

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