

BENDING TECHNOLOGY FOR RELEVANT & ROOTED CLASSROOM PRACTICES

RESEARCH FINDINGS FROM A CHRISTIAN
SCHOOL WITH 1:1 TECHNOLOGY

Marj Terpstra, Kara Sevensma, David Smith, Yoolim Song - Calvin College
Steve McMullen - Hope College

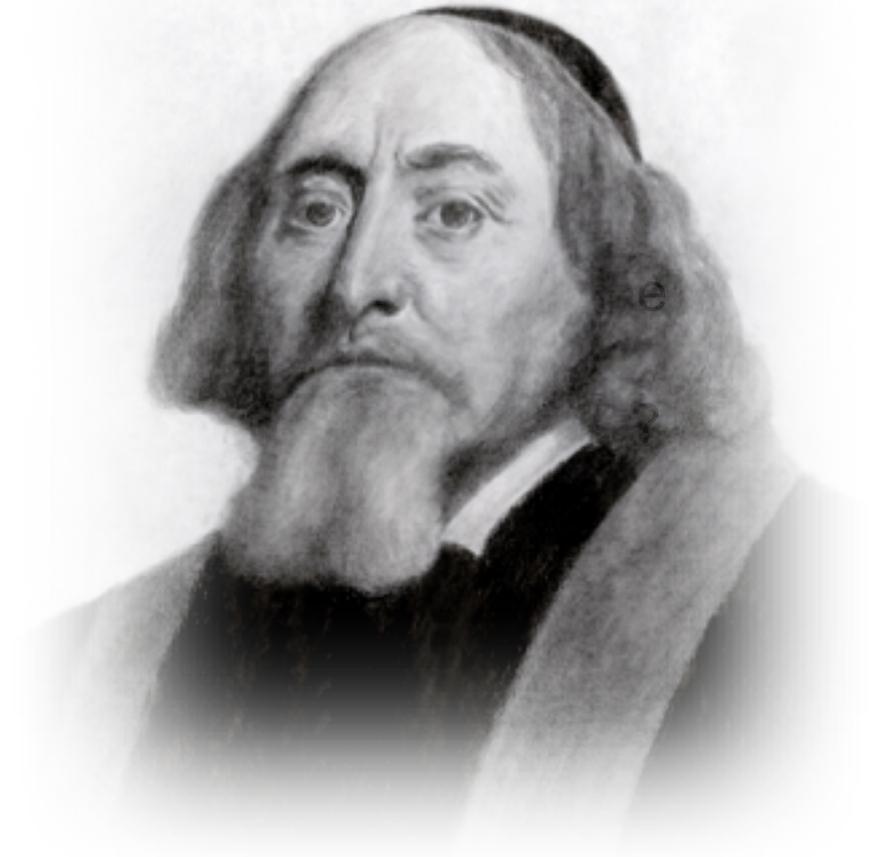
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Contact: kuyers@calvin.edu

New Technology and Learning

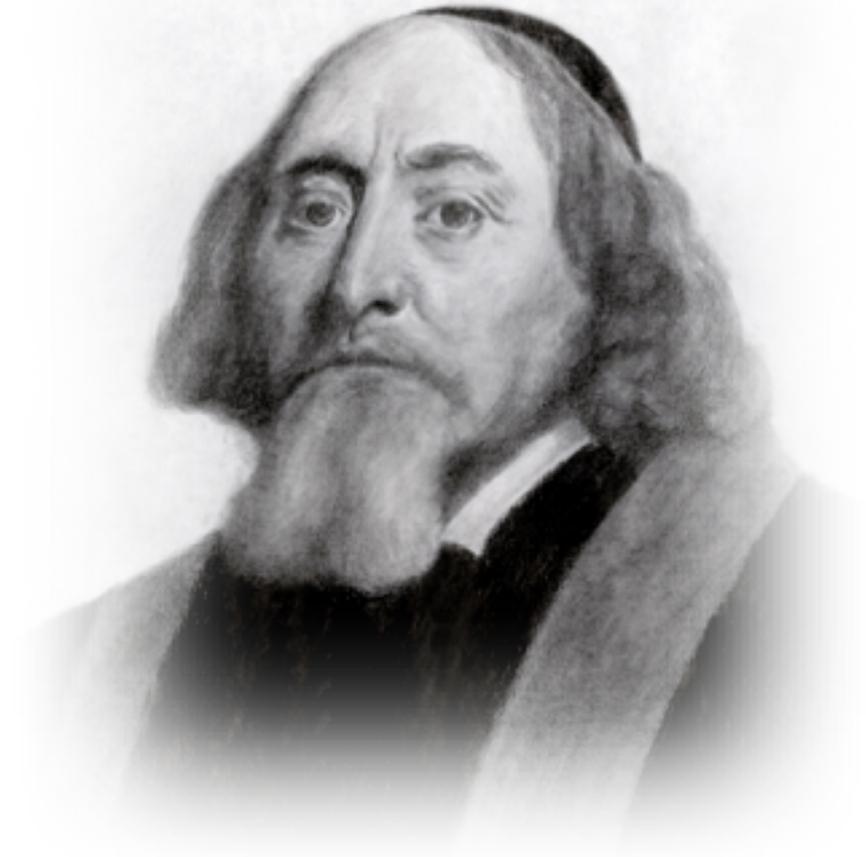
John Amos Comenius, 1592-1670

- Once, wisdom was something we stored within ourselves, now we have outsourced it to information storage mechanisms.
- As a result, wisdom no longer shapes our words and actions.
- There is now so much information that no one can take in even a fraction of it, and there are so many competing perspectives that even the best of us end up confused.
- We tend to use information as a way of making ourselves look clever and win arguments, adding to the confusion.
- We have begun to disseminate information instead of educating people.



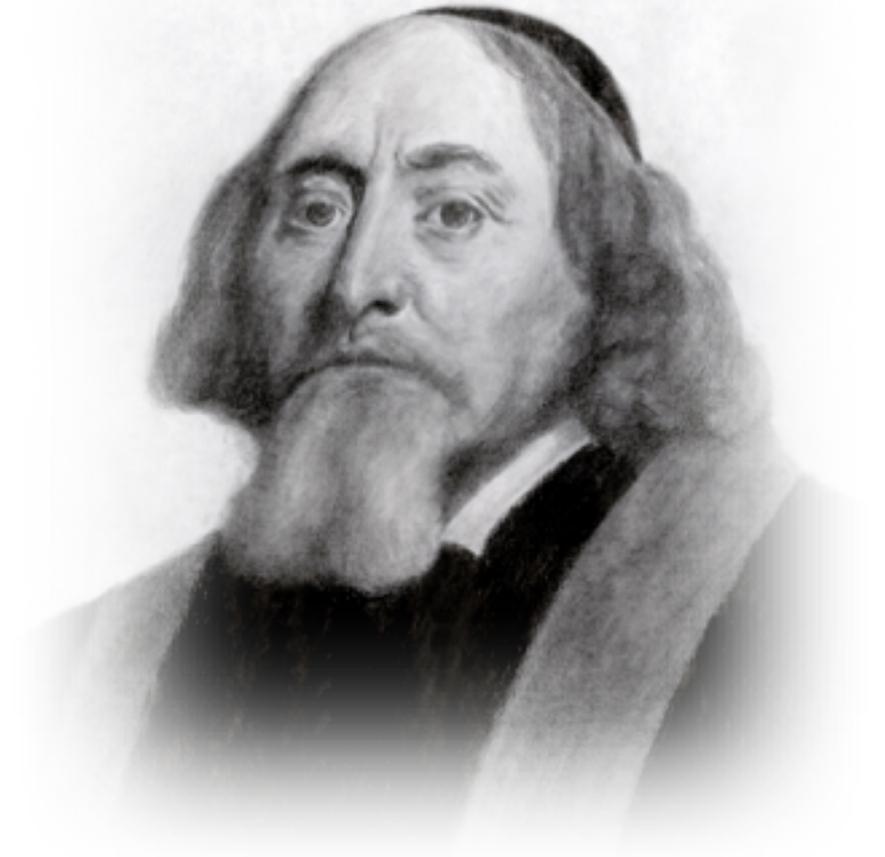
“Finally, by what means do we transmit learning to our fellow human beings? There was a time when wisdom was carried in people’s hearts, but today it has begun to be put into print, and hence it is confined to books and libraries and is rarely found in the thoughts, words, and actions of men. So many books are now available that no student could read one thousandth part of them in his lifetime, and they are so diverse as to put the steadiest of heads into a spin. Bookshelves are therefore more decorative than useful, becoming objects of vanity or sources of confusion if the reader persists in poring over all the contents. This accounts for the increase in badly-taught scholars or clever men who talk nonsense. The fact is that books are taught instead of people, or at least if people are taught, they are confused.”

John Amos Comenius, 1592-1670



John Amos Comenius, 1592-1670

- Old technologies tend to become invisible, part of the ways things are. We tend to invest our fears and hopes disproportionately in new ones.
- New technologies have always changed who we are, not just what we can do.
- New technologies have always come with gains and losses.
- New technologies call for intentional practices.



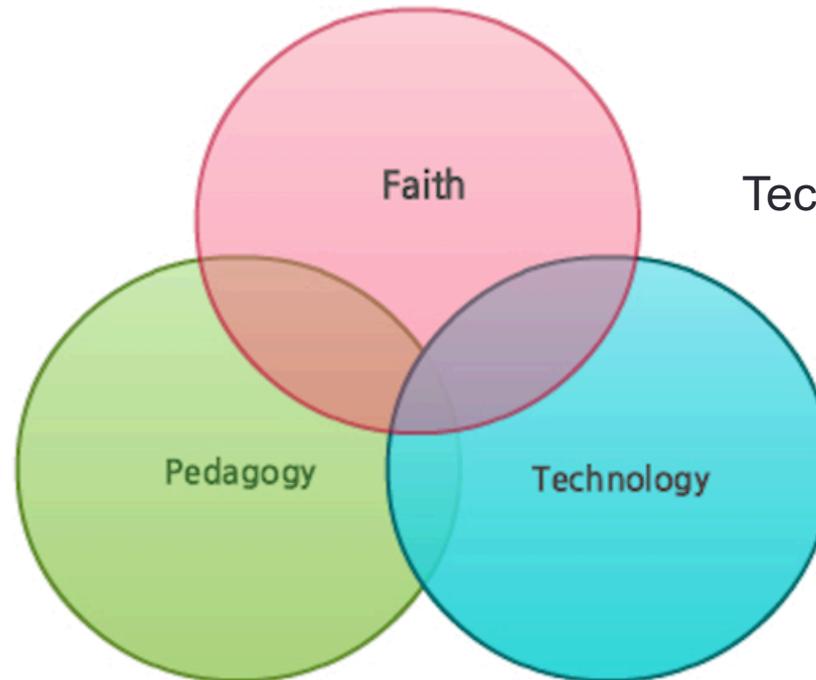
Where can Christian educators turn?

Professional Learning Networks

Journal articles

Webinars

Technology Conferences



Blogs

Books

Where can Christian educators turn?

What percentage of the 10,000 articles were determined to be **pedagogical** articles?

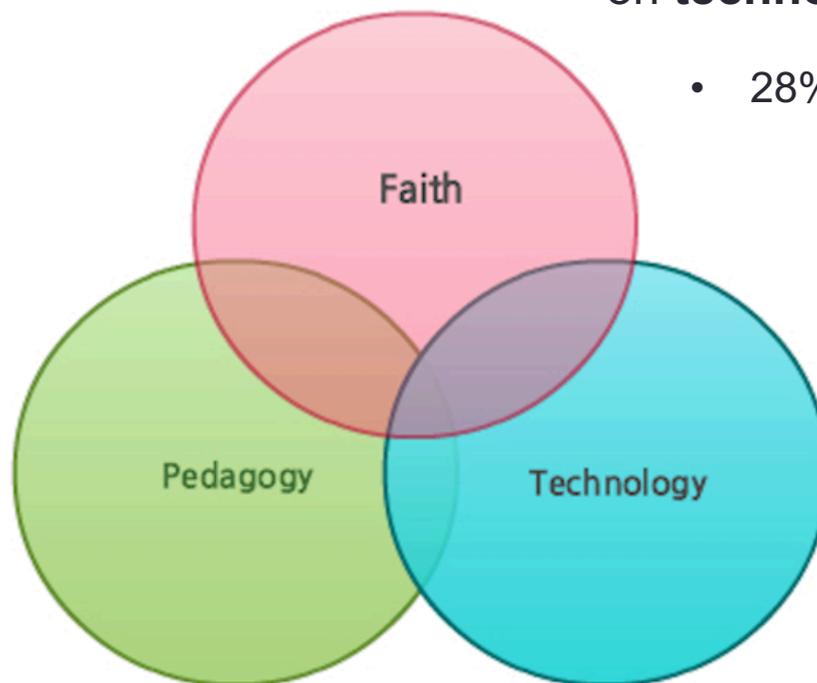
- 10%

What percentage of the 1,000 articles were determined to focus on **technology** and **pedagogy**?

- 28% (284 articles)

What percentage of the 284 articles were determined to focus on **faith, technology, and pedagogy**?

- 7%



What percentage of the 22 articles focused on **K-12 education**?

- 9%
- Or.. 2 articles

RESEARCH IS NEEDED!

Technology and Educational Flourishing: New Technologies in a Christian School

- 3 year research project
- K-12 Christian school system
- 1 to 1 technology program

Our goal today is to share emerging findings:

What do Christian ways of teaching and learning
with technology look like in practice?

How are technologies shaping teachers, learners,
and the school?





Online Surveys

Teachers & Students (7th-12th)



Focus Groups

Selected Teachers,
Students, & Administrators



Case Studies

6 Unit-Long Case Study Observations

Classroom Observations

Randomly Selected Classrooms (K-12th)

FINDINGS

Preliminary Results

COMMUNITY

Community

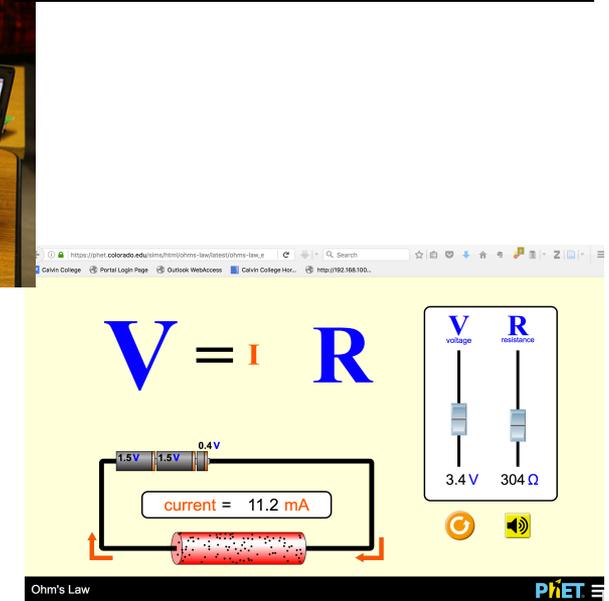
How are relationships and patterns of communication changed by new technologies?

How do new technologies change who's included and excluded from learning?

How is collaboration supported or hindered by new technologies?

How are communication practices changed by new technologies?

Inclusion: Case Study



$V = IR$

current = 11.2 mA

V voltage 3.4 V
R resistance 304 Ω

Ohm's Law PhET

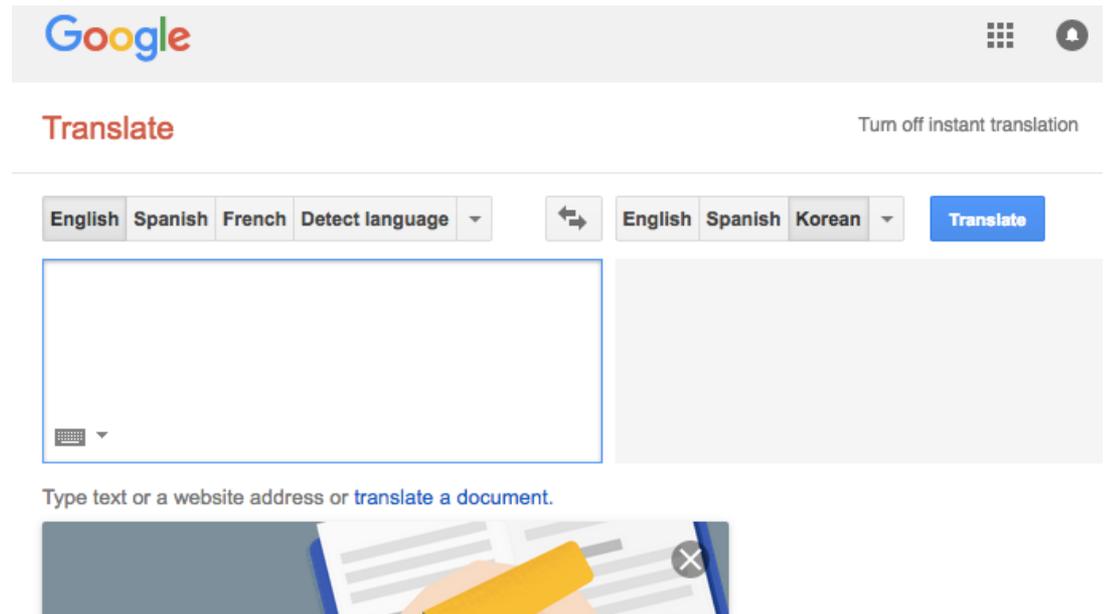
How do new technologies change who's included and excluded from learning?

Inclusion: Case Study

- I have- people have skills at all different levels, so you need the mentoring, and one-on-one works really well for that, but of course, it's just me and lots of them. [But other students] use videos and worksheets with answers....
- My goal is to give every kid, surround them with resources and then it's their job to use those resources in the way that achieves the most success for them.

How do new technologies change who's included and excluded from learning?

Inclusion: Focus Groups & Case Studies



How do new technologies change who's included and excluded from learning?

Inclusion: Focus Groups & Case Studies



5.

Small table: 5 seats, 2 pizzas - $5/2 = 2.5$ seats/pizza or $2/5 = .4$ pizza/seats

Medium table: 7 seats, 3 pizzas - $7/3 = 2.333\dots$ seats/pizza or $3/7 = .4285714286$ pizza/seats

Large table: 12 seats, 5 pizzas - $12/5 = 2.4$ seats/pizza or $5/12 = .4166666667$ pizza/seats

The people at the medium table will get the most pizza.

Student Participant

- We use it so often that we take it for granted or if a new student comes into the school and they've never had experience with a laptop, it's really hard for them...

How do new technologies change who's included and excluded from learning?

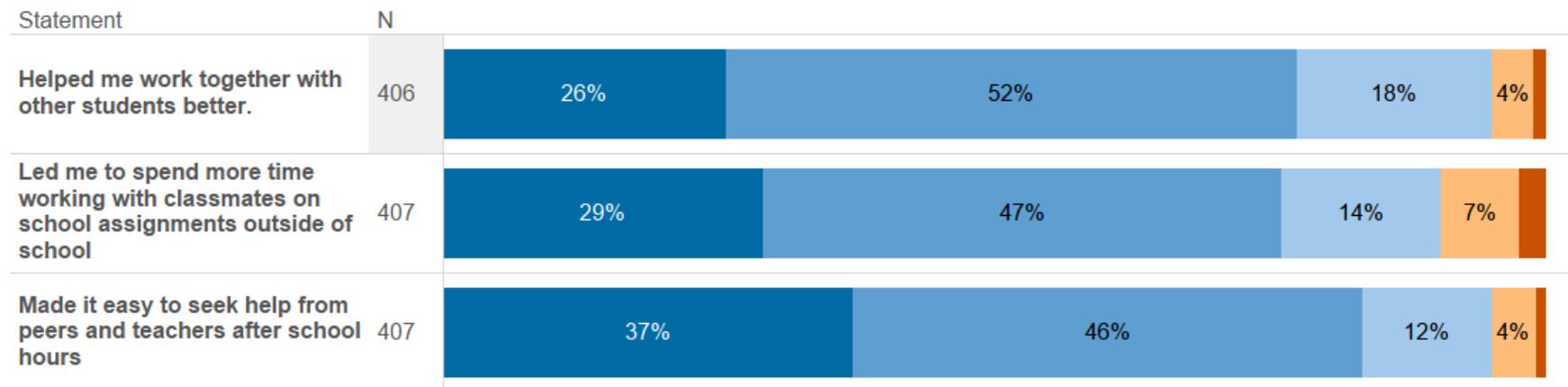
Collaboration: Surveys

Answer Description

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

Student Survey 2015-2016

How much do you agree that the way technology used in school has done the following?

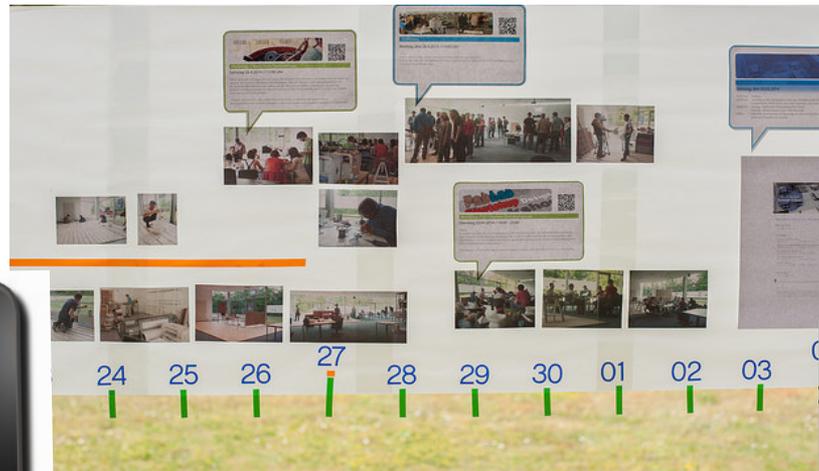


How is collaboration supported or hindered by new technologies?

Collaboration: Case Study & Focus Groups

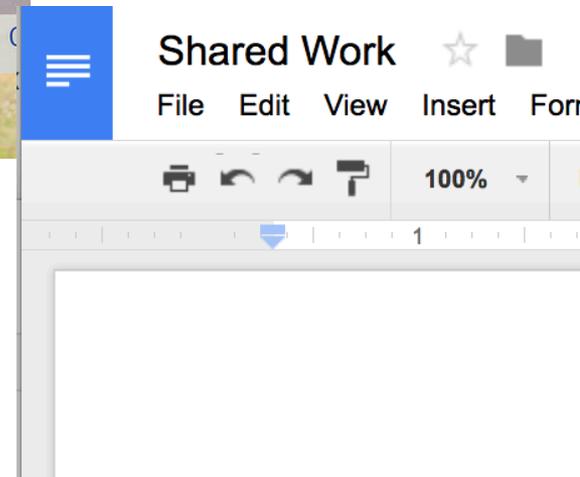


Students share sites with teachers



Students take iPad photos at museum and build timeline together

Students create google docs for assignments



How is collaboration supported or hindered by new technologies?

Collaboration: Focus Groups

Teacher Participant

- ...it always was a little hard to watch students doing a collaboration project when they never looked at each other and they never really talked at all. They only typed to each other and I think there are good things about it. You can accomplish much, but you [don't] use that personal communication and that's kind of sad.

Teacher Participant

- That's not collaboration...that's divide and conquer

How is collaboration supported or hindered by new technologies?

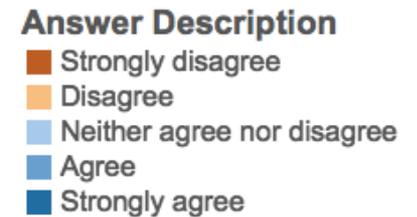
Collaboration: Focus Groups

Teacher Participants

- ...I feel like technology is useful for removing the restrictions of time and space for collaboration so if you're in different parts of the building, if you are doing this over the course of a week, if you're doing this at home, at school, or...on a Snow Day...when you can't physically be together...When my kids are together...that's when I don't use a lot of technology for collaboration because I feel like it puts a barrier between them instead of building a bridge.
- ...I think it's more how you've taught collaboration...the process of collaboration...Because I do feel that the way we focus on collaboration makes all of the difference and with my students it doesn't matter if they have their laptop out or their iPad...

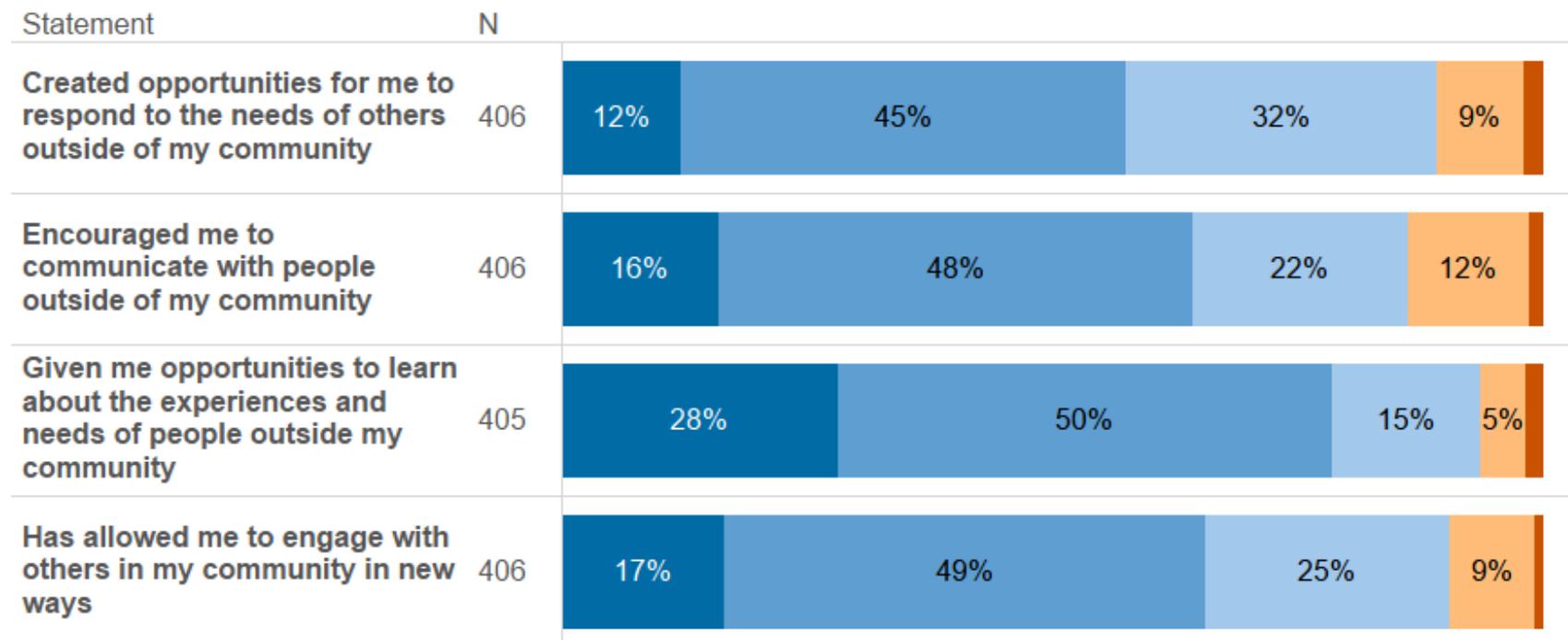
How is collaboration supported or hindered by new technologies?

Connection: Survey



Student Survey 2015-2016

How much do you agree that the way technology used in school has done the following?

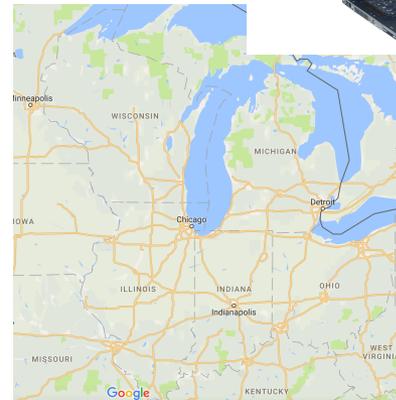


How do new technologies change the way we interact with our world?

Connection: Focus Groups



Students research community problems
Volunteer with local organizations

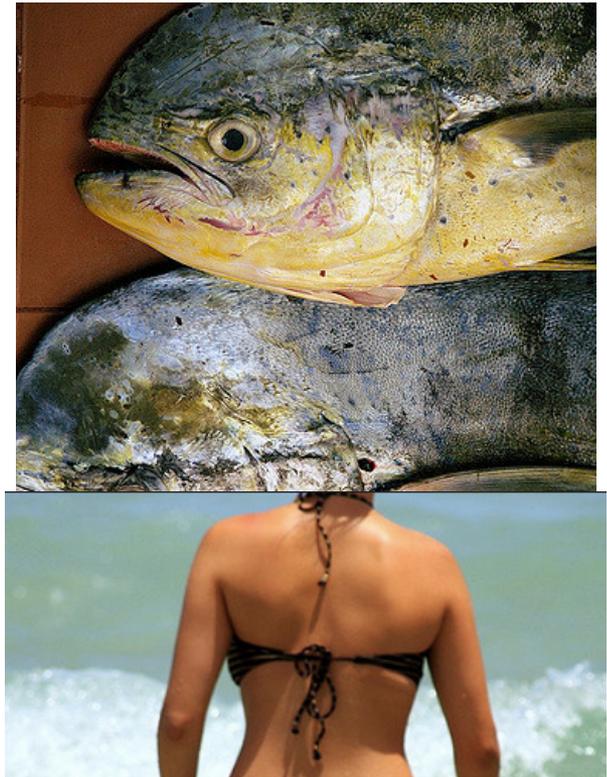


Connecting globally
Stereotypes (and Spanish)

How do new technologies change the way we interact with our world?

Connection: Focus Groups

- Like today my students were writing informational chapter books. And [one boy] wanted to do his topic on mahi mahi...we are going to Google search and we are going to find a picture and what does it eat?....“Well let me look first!” and I got it on the spot that didn’t have the bikini girl holding the fish you know, because you’re just searching images you know? That’s dangerous. So I got it on the spot where it was a safe-ish place for him to look. And then he went to scroll up and there was bikini girl and I’m like, “shoot!” So I just scrolled back down. So it’s not perfect even with an adult...



How do new technologies change the way we interact with our world?

Communication: Focus Groups

- Participant:
- [My student] was sitting in front of his laptop just staring at it. His mom comes in and says, “Well what are you doing?” He says, “Well, I emailed Mr. B and I’m waiting for the answer.” He’s just sitting there. In the meantime, I’m coaching ..., I’m nowhere near the computer.



How are communication practices changed by new technologies?

Communication: Focus Groups

- Parent Participants

- “I think [technology] makes it really easy for teachers to... communicate with their students and their parents... I think the challenge is that we’re bombarded with so much access to information, that in a. Of course, I prioritize my child, and their education, but there’s just so much out there.”
- I think it gives a point of connection... where [my child] might not remember to share about an opportunity, and if I read something that I think he might be interested in, I can say oh, I saw that this is coming up, have you thought about that?
- Yeah, my 2nd grader sent me a video the other day...and maybe this is my critical being, but I kinda got it and thought, I would’ve rather just seen that drawn out on a piece of paper. If she would’ve gotten home and handed it to me, we would’ve talked about it.

How are communication practices changed by new technologies?

DISCERNMENT

Discernment

How might new technologies shape our behaviors in healthy and unhealthy ways?

What types of ideas are our students going to be exposed to?

How much technology are our students using?

How do we prepare students to be discerning about new technologies?

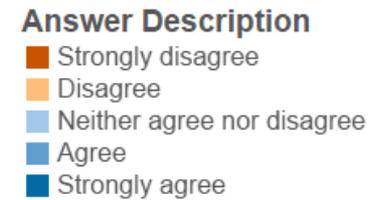
Discernment: Focus Group

- we'll ask [our teachers], "Can we just skim through for the answers" and they'll say, "No, I actually want you to read it". And....like one of my teachers did that and I diligently read it and took notes...because I just do that. And I know a lot of people did because he actually emphasized that it's important to read it, whereas most teachers I get, I kind of skim it and look for the answers.
- ... in other [classes] they just say, "Here's your reading assignment and then fill out the worksheet and it is easy to just do Apple F and find where the answers are to each of the questions and then instead of reading through the whole document carefully and understanding...
- Though most of the time what they will have on the worksheet are the key ideas so then that problem simplifies the whole process of learning the information because you know what you need to know.
- That also leaves it up to us to decide whether we're going to do the right thing or not.
- And I think using technology like Command F can make us more lazy.



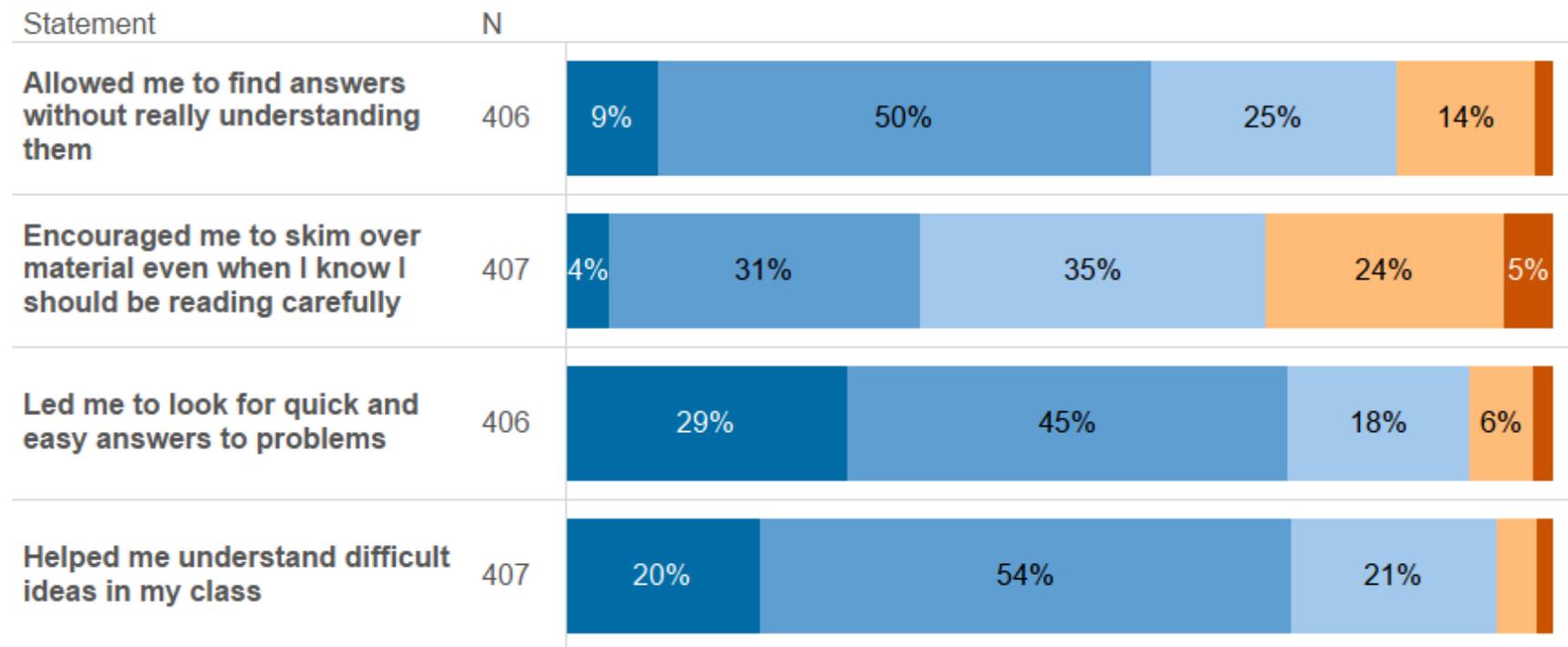
How might new technologies shape our behaviors? How do we prepare students?

Discernment: Surveys



Student Survey 2015-2016

How much do you agree that the way technology used in school has done the following?



How might new technologies shape our behaviors? How do we prepare students?



Culture in general, there are all kinds of conveniences that are allowing us to go faster, and one of those is technology, we can communicate to more people, and I personally noticed in my own life, sometimes I need to back off from that for health. Even the concept of a Sabbath is pushed to the fringes...

Technology does a lot of things, really great things, one of the things that's maybe a negative is that it allows us to go faster, and to do more. I've kind of noticed with my students, I want to back off on that avenue a little bit. I don't always want to go faster, I don't always want to get through more of the Bible, sometimes I want to slow down and engage one part of the Bible really well, and to be slow, and to relieve some of the pressure of school.

How might new technologies shape our behaviors? How do we prepare students?

Discernment: Observations

“the students were out of the classroom, spread through the hallway engaged in independent sustained reading of Matthew 5-7. They had a printed Bible and were asked to take notes with pencil and paper, but not the computer.”

“The day before you came we discussed possible reasons why God often speaks in the wilderness, noting too that we have fortified ourselves (culturally) against wilderness in many ways. So, we decided to attempt to create a little wilderness space in our busy day by seeking as much solitude and silence in the school as possible to allow the Word of God to come to us as well..”



How might new technologies shape our behaviors? How do we prepare students?

He said, “Raise your hand if you didn’t get to Ch. 7” T asks students to move according to which chapters they finished. He then noticed that nearly 60% of students did not finish CH. 7 based on their groupings. He said, “Wait, you didn’t get to 7?” He paused and looked at them for about 10 seconds. All the students nodded in response. The teacher then responded, “OK I’m proud of you because you are engaging with these chapters.” He says he hoped they would reach 7, but recognizes and affirms for students that “learning to slow down and engage the text is one of the skills I want you to be developing.”



How might new technologies shape our behaviors? How do we prepare students?

Discernment: Observations and Focus Groups



Media Fast



Cell Phone Box



Phones on the Desk

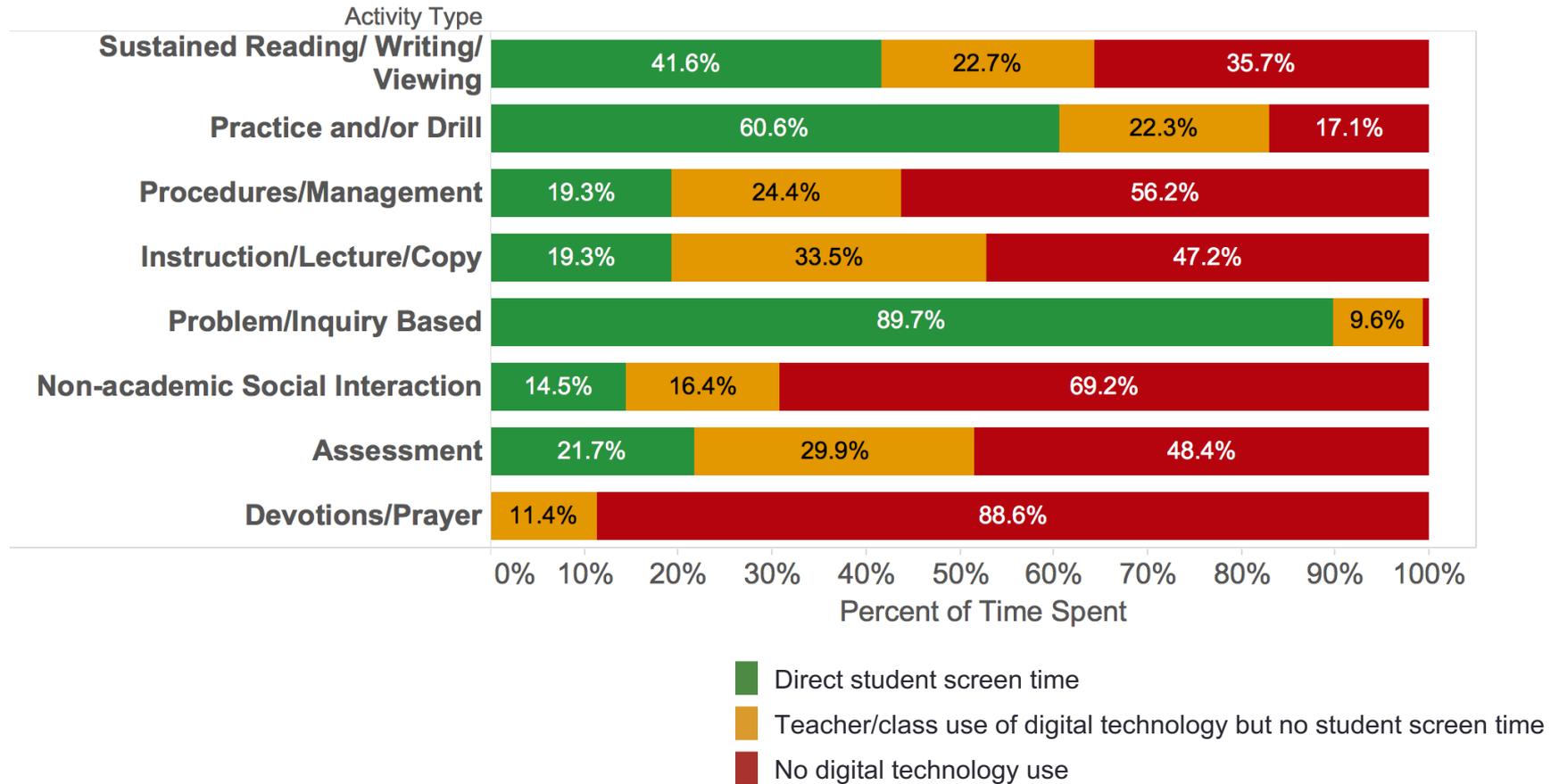


Laptops at 45

How do we prepare our students to be discerning about technology?

Discernment: Observations

Screen Time Percent by Time Spent



How much technology are our students using?

Bending Technology for Relevant and Rooted Classroom Practices

Do not conform to the pattern of this world, but be transformed by the renewing of your mind. Romans 12:2

Once you were alienated from God and were enemies in your minds because of your evil behavior. Colossians 1:21

Head down... Body up

Bending Technology for Relevant and Rooted Classroom Practices

- How do we create practices that intentionally push back against the problematic drift of technologies?
- Were your day-to-day practices with new technologies shaped by the technology or intentional communal reflection?
- What communal practices will enable discerning reflection on new technologies?
- How do we identify which questions to ask within our context?
- How do we maintain a reflective stance as technology continues to change?