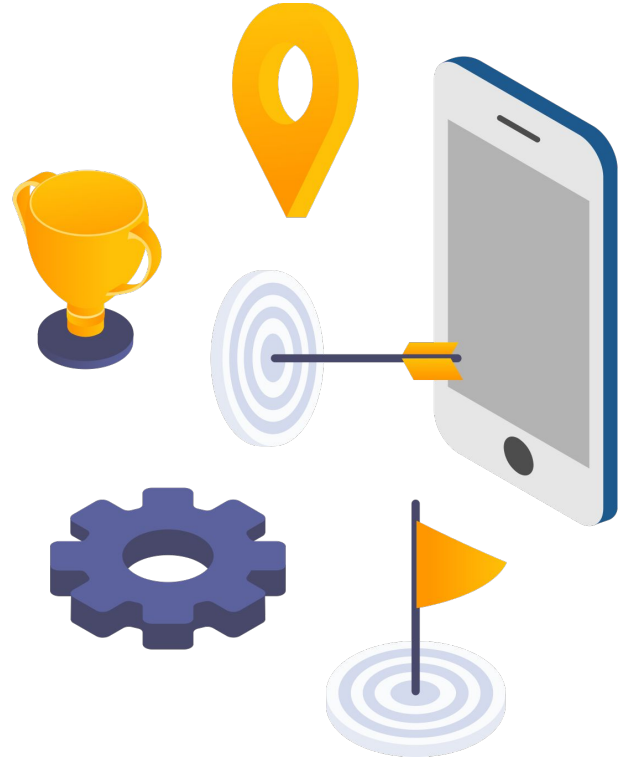


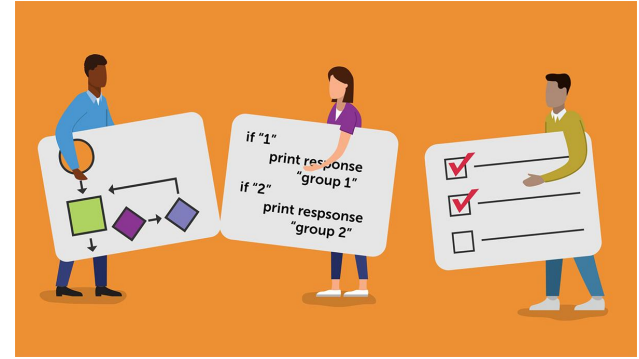
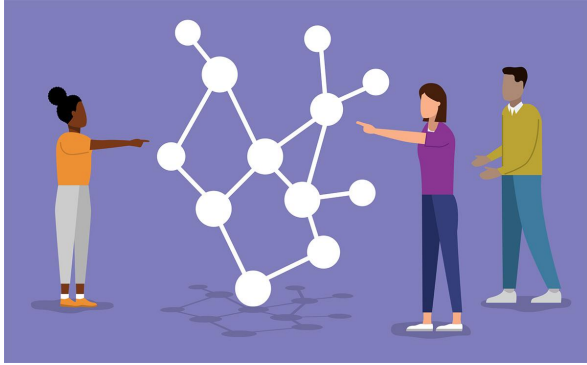
Student Empathy Interviews: An Instrument For Considering More Inclusive K-12 Computing Pathways

Pati Ruiz, Kelly Mills, Quinn Burke, and
Merijke Coenraad

Wed. May 26, 2021



Developing and Piloting an Inclusive K-12 Computing Pathway



This material is based upon work supported by the National Science Foundation under Grant No. [1837386](#). 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.

Powerful Learning with Computational Thinking a Digital Promise White Paper



PreK-8 Integration



Commitment From District Leadership



Inclusive Participation of Students Historically Marginalized From Computing



Participatory and Iterative Design

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Participatory and Iterative Design

Computing Pathways Research Practice Partnership

District	Student Enrollment	Urbanity	% Low Income	% Latinx	% Black	Equity Focus Group
 Iowa City Community School District (IA)	14,000	Becoming Urban	37	12	19	Greater inclusion of growing number of Black, Latinx and ELL students
 Indian Prairie School District (IL)	28,000	Suburban	17	12	9	Title I schools with large achievement gaps compared to higher income schools
 Talladega County Schools (AL)	7,500	Rural	71	2	33	Engaging students from low socio-economic households and female students

Computing Pathways Research Practice Partnership

District	Student Enrollment	Urbanity	% Low Income	% Latinx	% Black	Equity Focus Group
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Computing pathway document focus:

- algorithms
- data
- systems and computational models

Iowa City's Equity Goal

Computing Pathways Research Practice Partnership

From the District's initial commitment:

“It is our desire to reach the specific population of **Black and Latinx students** in an effort to broaden their participation in computing....”

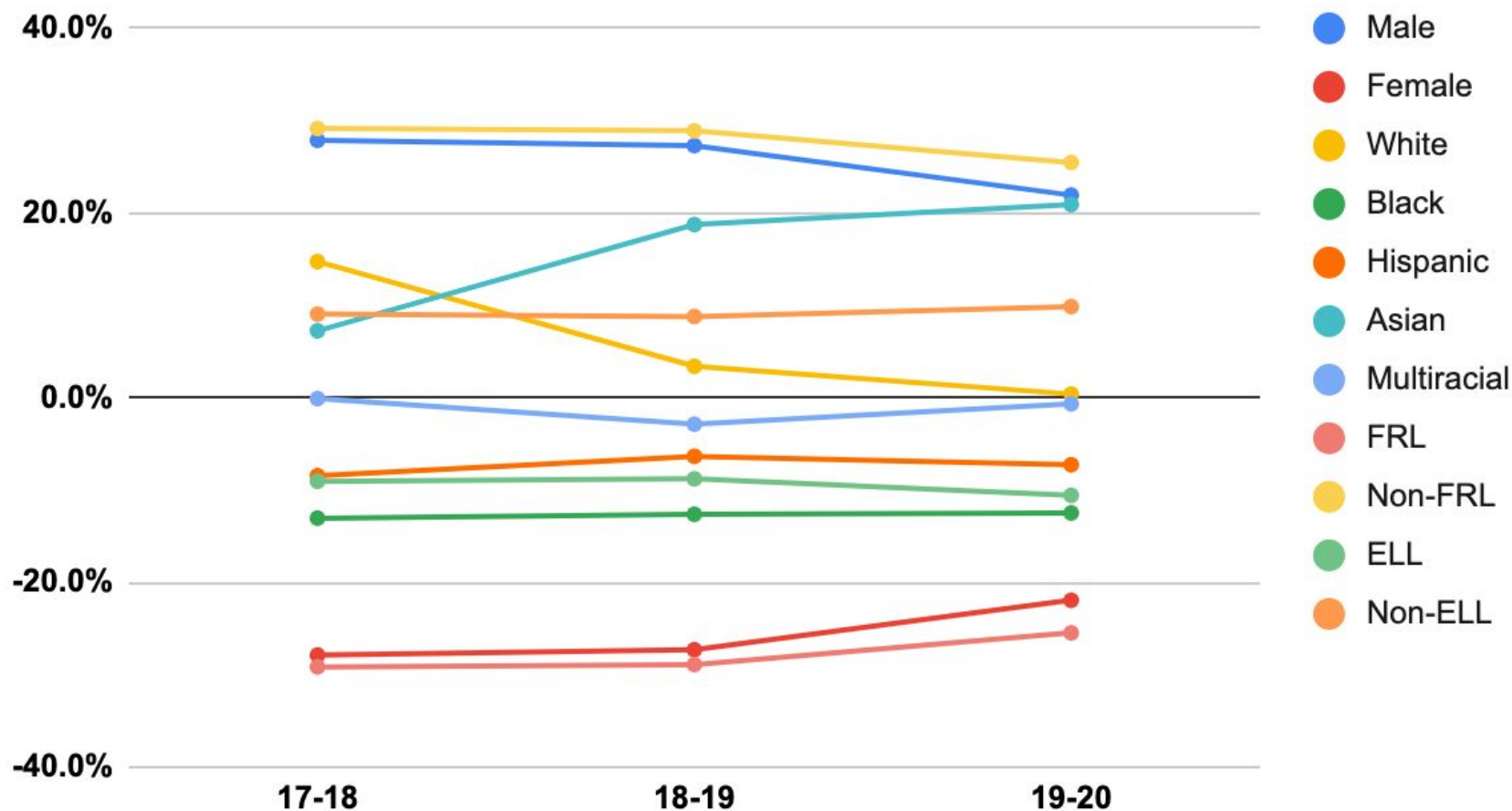
Iowa City's Equity Goal

Computing Pathways Research Practice Partnership

Equity Challenge from the District's participation in [Equity in the Driver's Seat](#):

“Iowa City School District is **observing inequitable course enrollment** in high school computational thinking, computer science, and advanced STEM electives (by race/ethnicity, income, gender, and ELL status). ”

Comp Sci Students compared with All Students over Time



Empathy Interview Protocol



“Designers tend to unconsciously default to imagined users whose experiences are similar to their own...design ends up focused on this small...subset of humanities. Unfortunately, this produces a spiral of exclusion.”

- Sasha Costanza-Chock, [Design Justice](#)

Empathy Interviews for Developing Inclusive Computing Pathways

Coenraad, Merijke; Hodge, Malliron; Ruiz, Pati; Mills, Kelly;
Burke, Quinn



Empathy Interview Protocol



The development and use of the empathy interview protocol is grounded in the empathizing techniques and protocols from:

- [equityXdesign](#)
- [d.school's Liberatory Design Frameworks](#)

In addition, the protocol draws on the work of:

- Paulo Freire (1970). Pedagogy of the Oppressed.
- Sasha Costanza-Chock (2020). [Design Justice](#).

For access to the complete protocol, visit:

<http://bit.ly/EmpathyCTPath>.



Empathy Interview Protocol



Step 0: Notice - Begin with yourself and your identity.

Step 1: Answer - Reflect on your own experiences before interviewing a student.

Step 2: Listen - to your students' stories by interviewing them and, if you have time, their caregiver, about their CS/CT experiences

Step 3: Observe - understand your students' context, uncover their needs, and hear their honest feedback

Step 4: Reflect - Give yourself time to sit with the stories your student shared and reflect on them. Consider what they mean for you and your experiences.

Inclusive CT Committee

7 Inclusive CT Pathways Committee Members

- **3 high school teachers** conducted:
 - 6 interviews; 67 surveys
- **1 middle school teacher** conducted:
 - 5 interviews
- **3 elementary school teachers** conducted:
 - 2 interviews; 15 surveys



Iowa City Community
School District (IA)

Findings



- Perceptions about what impacts minoritized students' participation in computing programs were not always in alignment with what the students, themselves, identified.
- Second, student voices provided important insights into factors that may impact participation of CS programs in Iowa City.
- Third listening to student voices within the district is an essential feature of inclusivity efforts--and a priority.

Student Empathy Interviews: An Instrument for Considering More Inclusive K-12 Computing Pathways



Pati Ruiz, Kelly Mills, Quinn Burke, and Merijke Coenraad

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Findings

First, teacher and administrator perceptions about what may impact minoritized students' participation in computing programs were not always in alignment with what the students, themselves, identified.

Second, student voices provided important insights into factors that may impact participation of CS programs in Iowa City.

Third, listening to student voices within the district is an essential feature of inclusivity efforts.

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Thank you for joining today!

For more information about this work, visit:

<https://bit.ly/36szXLy>

<http://bit.ly/EmpathyCTPath>



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Additional slides about the CT Pathways project

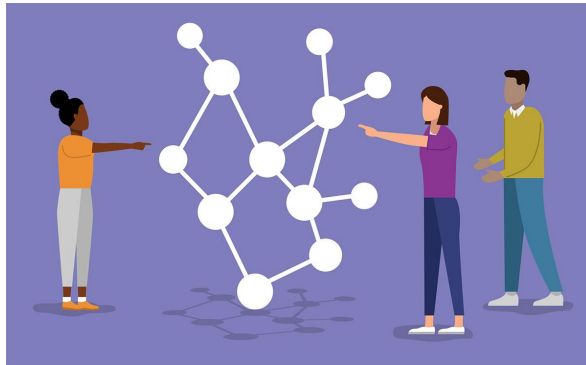
Computational Thinking Pathways Toolkit

The Empathy Interview protocol is part of the wider [CT Pathways Toolkit](#) which is a district-facing resource for school leaders to guide them in the design and articulation of their own system-wide K-12 learning pathway in computational thinking (CT) and computer science (CS). The purpose of a pathway is to involve all students in a district in learning critical CT and CS skills throughout their K-12 education.





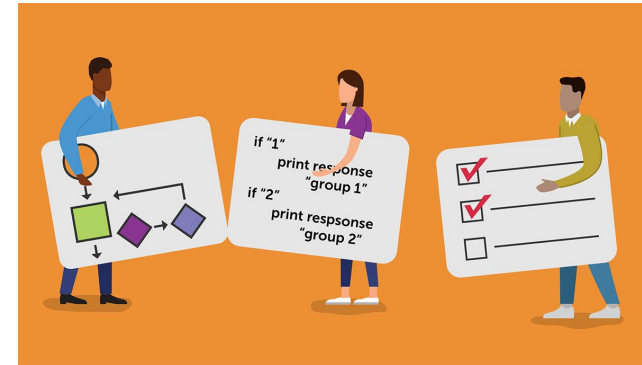
Step #1 Articulating the *Why*?



Step #2 Defining & Communicating the *What*?



Step #3 Establishing the *How*?



Our District Leaders



Brooke Morgan
Coordinator, Innovative Learning
Talladega County Schools



Adam Kurth
Director of Technology and Innovation
Iowa City Community School District



Brian Giovanini,
Director of Innovation
Indian Prairie School District