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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Developing and Piloting an Inclusive K-12 Computing Pathway

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Powerful Learning with Computational Thinking
a Digital Promise White Paper

- PreK-8 Integration
- Inclusive Participation of Students Historically Marginalized From Computing
- Commitment From District Leadership
- Participatory and Iterative Design

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

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…. ”

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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).”
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

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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:


For access to the complete protocol, visit: http://bit.ly/EmpathyCTPath.

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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.

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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
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.

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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.

Contact us

Pati Ruiz - pruiz@digitalpromise.org
Kelly Mills - kmills@digitalpromise.org
Quinn Burke - qburke@digitalpromise.org
Merijke Coenraad - mcoenraad@digitalpromise.org

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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