Supplementary Material

# Quality Improvement Interview Protocol

**Reasons for Pursuing Education Doctorate** [~10 min]

1. Can you tell me about what made you decide to pursue an education doctorate?
2. What attracted you to apply to UMass Lowell in particular?
3. What is your current work role (e.g., teacher, coach, principal, district administrator)

 **Problem Solving Approach** [~15 min]

1. Can you tell me the current problem of practice that you are focused on for the Ed.D. program?
	1. How did you become aware of this problem?
	2. Why did you decide to focus on this problem in particular?
2. In what ways have your ideas about your problem of practice changed since you started the Ed.D. program?
	1. If there has been a change -- Are there any particular steps you have taken to better understand this problem?
	2. if there has not been a change -- Can you tell me why you think there hasn’t been much change?
3. [if there has been a change] What do you think led to that change?
	1. Can you think of any particular assignment, text, or interaction in your Ed.D. courses that stands out as having been particularly impactful? What happened? What made it impactful?
4. What do you think you should do in future steps in order to address your problem of practice?
	1. To what extent are these kinds of steps similar to or different from what you would ordinarily do? How so?

 **Equity Perspective** [~15 min]

1. We are interested in understanding your views on equity. Can you share what you think equity means?
2. In what ways have your thoughts on equity or social justice issues changed since you started the Ed.D. program?
	1. If there has been a change -- What do you think led to that change?
	2. Can you think of any particular assignment, text, or interaction in your Ed.D. courses that stands out as having been particularly impactful? What happened? What made it impactful?
3. How would you describe your identity?
	1. Would you add anything to that in terms of your social identity? i.e., your race, gender, etc.
4. How do you think your social identity impacts your work as an educational leader?
5. What role does cultural awareness play, if at all, in your understanding of equity issues?

**Learning Shifts**

13. Recently I read your response(s) to the assignment(s), and I noticed what I think seem like some shifts in your learning. I noticed that in assignment #1, you wrote X, and in assignment #2, you explained it a little differently, and you wrote X.

* 1. Would you be open to talking about this with me?
	2. If yes, to what extent do you agree that this was a shift in your learning? [if no, move on to the next option]
	3. Can you tell me more about why your ideas changed this way?

[Repeat above for 2-3 other shifts, time permitting]

**Improving the Ed.D. program** [~5 min]

1. Is there anything else you would like us to know about your understanding of your problem of practice or equity? Or anything you would like us to know that would help improve the Ed.D. program?
	1. We are interested in improving our Ed.D. program. In what areas, if any, have you experienced frustrating challenges with the learning in the Ed.D. program? Is there something that we could change to improve this?
2. Is there anything else you would like to add about anything we have discussed today?
3. Do you have any questions for me?

Thank you for your time today!

# Supplementary Tables

## Table B1. Carla’s Emergent Shifts and New Insights

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| Domain | Point A | Point B | New Insight |
| Problem identification | ***Jump to solutions***“Disconnected vocabulary often inhibits scholars from . . . displaying science content knowledge on high-stakes exams . . . How can teachers provide appropriate support?” (Week 1 Statement of PoP) | ***Explore problem***“Only three percent of [English Learner] students in [the] state show mastery . . . I ask myself what educators are doing to further these inequities.” (Week 10 White Paper) | ***Slowing down to understand the problem***“The more I learn, the more I see that this is a bigger problem of not just one test, but oftentimes our entire system . . . It was really eye opening .” (Interview)  |
| Evidence use | ***Rely on accountability data***“59% of Black students showed proficiency or mastery compared to 89% of White students . . . three percent of [English Learner] students show mastery.” (Week 5 Problem Statement) | ***Learn through empathy interviews***“Focus groups with Black and Latinx students . . . [and] empathy interviews will be a valuable tool to gain insight into how this problem affects students and teachers." (Week 10 Final White Paper) | ***Becoming evidence-informed and user-centered***“It's different to really dig into the data . . . and really understand what helps or motivates students.” (Interview) |
| Diagnosis | ***Locate problem in one level (students)***“Many students are . . . immigrants, speaking multiple languages . . . When [they] come in contact with new vocabulary, they are often at an unfair disadvantage” (Week 1 Statement of PoP) | ***Recognize multi-level factors***"Teachers can . . . have low perceptions of ‘othered’ students’ academic abilities . . . Science teachers often ignore their students’ culture . . . causing them to lose interest in the content." (Week 10 Final White Paper) | ***Challenging problem framing***“A lot of teachers have done . . . lecturing . . . People tend to teach to the test . . . I can't change the test, but I can change the way we approach our instruction.” (Interview) |
| Social Identity | ***Focus on neutral identities***“I am proud to identify as an educator . . . . I am a Christian but I am NOT a hypocrite.” (Week 1 Circles of Multicultural Self) | ***Focus on privileged identities***“[As] a white, monolinguistic, middle-class, cis-gendered, heterosexual woman . . . my intelligence and veracity were never questioned.” (Week 10 Final White Paper) | ***Growing critical self-awareness***“I’m highly privileged . . . I have a lot of opportunities that most people in the community that I serve do not.” (Interview) |
| Equity leadership practices | ***Be individual advocate***“It is my goal to empower my students to question the norms that the dominant groups have placed in our culture.” (Week 4 Memo 2) | ***Mobilize collective action***“Students, educators, families, administrators, and . . . stakeholders in the field will collaboratively decide on valuable solutions.” (Week 10 Final White Paper) | ***Engaging and empowering others***“My students, who don't necessarily see themselves reflected through me . . . They also need to see and hear from people who mirror their culture.” (Interview) |

## Table B2. Nia’s Emergent Shifts and New Insights

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| Domain | Point A | Point B | New Insight |
| Problem Identification | ***Name broad equity concern***“My equity-focused problem will examine the existence of ableism . . . with regard to students with disabilities.” (Week 1 Statement of PoP)  | ***Name narrower problematic outcome***“My problem of practice examines why Black students in my school who receive academic support do not make the same academic gains as their white peers.” (Week 7 Problem Background) | ***Slowing down to understand the problem***“[My professors] really pushed me to think . . . I found out that . . . it wasn't actually a problem . . . And that led me to really thinking about, why don't we have more Black students?” (Interview) |
| Evidence Use | ***Confirm through research evidence***“[A study] found . . . students not receiving the services they have a legal right to . . . I have seen this problem play out over and over again.” (Week 5 Problem Statement) | ***Learn through empathy interviews***“I will first need to review, analyze and synthesize student data . . . The next step will be to conduct empathy interviews . . . with each stakeholder group multiple times.” (Week 9 Recommendations)  | ***Becoming evidence-informed***“One of the things that gets difficult is to convince other stakeholders to shift practices . . . Without the backing of research, it can be hard . . . to help them . . . see the problem for what it is.” (Interview) |
| Problem Diagnosis | ***Locate problem in one level (macro)***“Systemic Racism and White Privilege is a driver in Black students being overrepresented yet underserved in schools.” (Week 5 Fishbone) | ***Recognize multi-level factors***“My fishbone diagram analyzes root causes at the macro level . . . It will be important for me to consider localized causes.” (Week 10 White Paper) | ***Challenge problem framing***“My problem of practice will investigate why my school . . . is not yielding higher numbers of Black applicants . . . looking at systemic . . . as well as localized barriers.” (Interview) |
| Social Identity | ***Focus on legitimated identities*** “My West Indian Identity has always been a central piece of my social identity . . . I have a condition that can be described as both a chronic illness and a disability.” (Week 1 Circles) | ***Focus on stigmatized identities***“I felt like I wasn’t a ‘good West Indian daughter’ . . . so I concealed the part of my identity that was easiest to hide. . . . my sexuality.” (Week 8 Memo 3) | ***Growing critical self-awareness***“I identify as a Black first-generation, also identify as Afro- Caribbean, definitely identify as a woman, identify as queer . . . as neurodiverse. . . . It definitely impacts the level of empathy that I have and the passion that I have for the work that I do.” (Interview)  |
| Equity Leadership Practices | ***Be individual advocate***“I do my best to advocate for [students] and help them to understand the ways in which their brains work so that they can control their learning.” (Week 4 Identity Memo 2) | ***Mobilize collective effort***“My equity vision is to create a micro school for Black, disabled [students] . . . To accomplish this, I would need a team . . . One person cannot do all that was mentioned.” (Week 6 Equity Vision) | ***Engage and mobilize others***“I have started some conversations . . . and partnering with my assistant head of school. . . I definitely need to begin conversations with Black families.” (Interview) |

## Table B3. Will’s Emergent Shifts and New Insights

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|  | Point A | Point B | New insights |
| Problem Identification | ***Jump to solutions***“I’m not seeing the same percentages based on gender within my [computer science] classes . . . I want to focus on designing a research-based intervention.” (Week 1 Statement of PoP) | ***Explore problem***“This study will attempt to understand the causes for lower female enrollment in CS . . . Through interviews with students . . . to understand what barriers of entry may exist.” (Week 5 Problem Statement) | ***Slowing down to clarify problem***“We have these programs that are supposed to work, so to speak . . . Why aren't we seeing bigger [results]? What are the barriers?” (Interview) |
| Evidence Use | ***Anecdotal data confirmed with literature***“In my conversations with female students . . . many of their peers do not think women are interested in computer science. This seems to align with what Master et al. (2021) have found.” (Week 1 Statement of PoP) | ***Learn from empathy interviews***“Through interviews with possible students who could have taken AP computer science but chose not to, the researcher hopes to understand what barriers of entry may exist for students.” (Week 5 Problem Statement) | ***Becoming user-centered***“Previously, I probably would have just popped on Google . . . Pick one thing and try it . . . get some feedback . . .Now it's much more like I want to make sure I triangulate.” (Interview) |
| Problem Diagnosis | ***Locate problem in one level (students)***“I want to focus on designing a research-based intervention to rectify these gender stereotypes young children are internalizing.”(Week 1 Statement of PoP) | ***Recognize multi-level factors***“I identified five potential causes . . . [including] what is actually taught . . . and unconscious bias of counselors . . . [Next steps are to] survey all computer science students.”(Week 10 Final White Paper) | ***Challenging problem framing***“It did feel a little bit like . . . why don't we make the girls figure out why . . . That's not how that's supposed to work . . . Should they be a partner in solving it? Yes, and it's not just their problem to solve.” (Interview) |
| Social Identity | ***Focus on neutral identities***I am an educator, athlete & coach, home cook, and culturally Jewish(Week 1 Circles of Multicultural Self) | ***Focus on privileged identities***“As a White, middle class, heterosexual, able-bodied, cis-male it is my responsibility to provide support to dismantling systems of oppression that I unfairly benefit from.”(Week 6 Equity Vision) | ***Growing critical self-awareness***“The reason I don't start necessarily with White heterosexual male is because those are all power groups, and so I don't need to.” (Interview) |
| Equity Leadership Practices | ***Develop deep awareness and understanding***“So far I have only focused on the use of materials with various races and genders . . . I still need to develop students’ and my own sociopolitical consciousness.”(Week 2 Memo 1) | ***Prepare for action***“As someone who is in the dominant, powerful group I must notice these interactions and work towards addressing them. Knowing what is needed versus actually doing it, however, are two different things entirely.”(Week 4 Memo 2) | ***Recognizing agency and responsibility*** “I applied [to the program] with the lens of I want to understand why there is a gap . . . What felt kind of like me being like, yeah, I'm gonna maybe look at this thing . . . has really turned into like, no, I am getting a plan together.” (Interview) |