

**Appendix B**  
**Participant Time Ordered Matrix for Vincent – Concerns & Obstacles**

<b>Pre-Interview</b>	<b>Lesson 1/13</b>	<b>Meeting 1</b>	<b>Lesson 2/12</b>	<b>Meeting 3</b>	<b>Meeting 4</b>	<b>Lesson 4/30</b>	<b>Postinterview</b>
Students can complete calculations but sometimes need help seeing the big picture. They need guidance and help using the correct terms. They have a lot of misconceptions.	Excited about using iPads to collect more accurate data, but working out the kinks.	“Change their way of thinking without giving them the answer.” "I’m trying to get away from you show them the equation and then you show them the model that describes the equation. But it was done the other way around here."	Wanted to use the iPads to get “good” data but couldn’t get them.	Students have a lot of misconceptions about how sound travels.	“Do we need to ask more targeted questions" instead of "describe what happened"? Do the students really understand why they add water to the can and what would happen if you didn't? How do we get at that?	At this point in the semester, I have to let them figure out how to set up the equipment on their own or they won’t do well on the AP test. They need to know how to set up the problem and draw the diagram without help.	Should have used a class with more misconceptions. “I want to be, less “cookie-cutter. I need to let them "squirm" a bit more so I can see where the misconceptions are, where they are stuck and why, I’m not quite there yet where I ask them question where it will make them think. I’m having difficulty with that.”