

*These interview protocols were used to conduct interviews by phone in the Fall of 2017.*

***Interview Protocol for Materials Developers and Mentored Participants***

<b>How question relates to goals of study and anticipated findings</b>	<b>Purposes</b>	<b>Protocol</b>
<ul style="list-style-type: none"> <li>Identifies what types of disciplines/programs were potentially impacted (out of field impacts)</li> <li>Baseline for pedagogical approaches prior to ITG – will help us to know whether they were already committed to ITG pedagogy/5 guiding principles prior to their involvement</li> </ul>	<p><b>Background (5-7 mins.)</b></p> <p>Understand context of individual</p> <p>Pedagogical and practices prior to InTeGrate work.</p>	<ol style="list-style-type: none"> <li>What subjects (geoscience, general ed, teacher prep, environmental science, social science, engineering, or other) and types (lower or upper division, major or elective, discipline specific or interdisciplinary) of courses do you teach? What program or department do you belong to?</li> <li>Can you describe your average class day (choose class described above) prior to your work with InTeGrate/IP site and how it exemplified your approach to teaching?</li> </ol> <p>Prompt: What are you trying to accomplish with students with this approach? What are your philosophical drivers to teaching?</p> <p>Prompt: Listen for teaching methods (Lecture, active learning). Assessment methods.</p>
<ul style="list-style-type: none"> <li>Which type of anticipated faculty impact rises to the top in the respondents' mind and how do they characterize that impact</li> </ul>	<p><b>Teaching impact (5 mins.)</b></p> <p>What they took from the experience</p>	<ol style="list-style-type: none"> <li>If one of your colleagues asked what aspect of your work with InTeGrate impacted you the most, what would you say?</li> </ol>

How question relates to goals of study and anticipated findings	Purposes	Protocol
<ul style="list-style-type: none"> <li>• Changes in pedagogy and content</li> <li>• Whether any of the 5 guiding principles come through in their unprompted response</li> </ul>	<p><b>Teaching impact (5-10 mins.)</b></p> <p>Change to pedagogy and practice due to participation</p> <p>Change in influencing science and society</p>	<p>4. If I were to sit in on a class of yours today, what changes would I notice, from a class before InTeGrate/IP site (question #2)?</p> <p>Prompts:</p> <ul style="list-style-type: none"> <li>• Have your teaching methods changed?</li> <li>• Have you focused on ‘grand challenges’ or the intersection of societal issues and environmental issues?</li> <li>• Has <b>the material</b> you used changed? INTEGRATE MATERIAL <ul style="list-style-type: none"> <li>○ Do they use full modules?</li> <li>○ Pieced together units from various modules?</li> <li>○ Create own activities/ curriculum?</li> </ul> </li> <li>• Has your student assessment changed?</li> </ul> <p>Prompts: Do you feel these changes will continue?</p> <p>Prompts: Have the changes occurred in all of your classes or just some? If just some, why? What prevents use in all?</p>

How question relates to goals of study and anticipated findings	Purposes	Protocol
<ul style="list-style-type: none"> <li>Baseline for student learning outcomes</li> <li>How they describe the influence of the 5 guiding principles on their practices when prompted</li> </ul>	<b>TEACHING IMPACT (5-10 mins.)</b> Impact of 5 principles	<p>5. Prior to working with InTeGrate what were some of the important skills you were trying to teach students in all of your courses?</p> <p>6. As you might recall, InTeGrate materials needed to meet five guiding principles, (address one or more grand challenges involving Earth and society, develop student ability to address interdisciplinary problems, improve student understanding of the nature and methods of geoscience and developing geoscientific habits of mind, make use of authentic and credible data to learn central concepts in the context of scientific methods of inquiry, and incorporate systems thinking), how have these principles influenced your teaching?</p> <p>Prompt: can you give an example/story of how one or all of these principles influences your work now?</p>

Thinking back over the entire process (development, rubric review, teaching, revisions), what parts of the InTeGrate process worked well for you?

How question relates to goals of study and anticipated findings	Purposes	Protocol
<ul style="list-style-type: none"> <li>Characterize how they might use a community of practice related to teaching</li> <li>Attribute ITG involvement to any collaborations</li> <li>Influence of ITG at programmatic or institutional scale</li> </ul>	<p><b>IMPACT-COMMUNITY &amp; OTHER (10-15 mins.)</b></p> <p>Change in community</p> <p>Impact of spheres of influence</p> <p>Barriers to spread</p>	<p>7. How, if at all, did your work with InTeGrate/IP site lead to new collaborations or conversations about teaching?</p> <p>Prompts: Have these collaborations continued overtime?</p> <ul style="list-style-type: none"> <li>How has your definition of your ‘teaching community’ changed overtime?</li> <li>How has your participation influenced it?</li> </ul> <p>8. Can you describe any changes in your program or institution that you could contribute to InTeGrate/IP site work?</p> <p>Prompt: What lead to these changes? If no changes, what barriers exist (ex. time, colleagues, institutional focus)?</p>
	<b>WRAP UP (5 mins.)</b>	<p>9. Will you continue to be involved in a community that focuses on earth education (or the intersection of science and society)?</p> <p>Why or why not? If so, what kind?</p> <p>10. Is there anything I haven’t asked about that you would like to share?</p>

*Interview Protocol for Webinars and Professional Development Participants*

Purposes	Protocol
<b>Background (5-7 mins.)</b> <ul style="list-style-type: none"> <li>Identifies what types of disciplines/programs were potentially impacted (out of field impacts)</li> <li>Baseline for pedagogical approaches prior to ITG – will help us to know whether they were already committed to ITG pedagogy/5 guiding principles prior to their involvement</li> <li>Which type of anticipated faculty impact rises to the top in the respondents mind and how do they characterize that impact</li> </ul>	<ol style="list-style-type: none"> <li>What subjects (geoscience, general ed, teacher prep, environmental science, social science, engineering, or other) and types (lower or upper division, major or elective, discipline specific or interdisciplinary) of courses do you teach? What program or department do you belong to?</li> <li>What InTeGrate PD or webinars have you participated in? Can you describe them?  Prompt: What did you take away from those experiences? What motivated you to participate?</li> <li>Can you describe your average class day (choose class described above) prior to your Webinar/PD and how it exemplified your approach to teaching?  Prompt: What are you trying to accomplish with students with this approach? What are your philosophical drivers to teaching?  Prompt: Listen for teaching methods (Lecture, active learning). Assessment methods</li> </ol>
<b>Teaching impact (5-10 mins.)</b> <ul style="list-style-type: none"> <li>Changes in pedagogy and content</li> <li>Whether any of the 5 guiding principles come through in their unprompted response</li> </ul>	<ol style="list-style-type: none"> <li>If I were to sit in on a class of yours today, what changes would I notice, from a class before Webinar/PD (question #3)?  Prompts: <ul style="list-style-type: none"> <li>Have your teaching methods changed?</li> <li>Have you focused on ‘grand challenges’ or the intersection of societal issues and environmental issues?</li> <li>Has <b>the material</b> you used changed?</li> <li>Has your student assessment changed?</li> </ul> Prompts: Do you feel these changes will continue?  Prompts: Have the changes occurred in all of your classes or just some? If just some, why? What prevents use in all? </li> </ol>

Purposes	Protocol
<p><b>TEACHING IMPACT (5-10 mins.)</b></p> <ul style="list-style-type: none"> <li>• Baseline for student learning outcomes</li> <li>• How they describe the influence of the 5 guiding principles on their practices when prompted</li> </ul>	<p>5. Prior to working with InTeGrate what were some of the important skills you were trying to teach students in all of your courses?</p> <p>6. The InTeGrate materials needed to meet five guiding principles, (address one or more grand challenges involving Earth and society, develop student ability to address interdisciplinary problems, improve student understanding of the nature and methods of geoscience and developing geoscientific habits of mind, make use of authentic and credible data to learn central concepts in the context of scientific methods of inquiry, and incorporate systems thinking), how, if at all, have these principles influenced your teaching?</p> <p>Prompt: Based on your InTeGrate professional development was there one of the guiding principles that stood out for you? Can you elaborate?</p> <p>Prompt: can you give an example/story of how one or all of these principles influences your work now?</p>
<p><b>IMPACT-COMMUNITY &amp; OTHER (10-15 mins.)</b></p> <ul style="list-style-type: none"> <li>• Characterize how they might use a community of practice related to teaching</li> <li>• Attribute ITG involvement to any collaborations</li> <li>• Influence of ITG at programmatic or institutional scale</li> </ul>	<p>7. How, if at all, did the Webinar/PD lead to new collaborations or conversations about teaching?</p> <p>Prompt: Have these collaborations continued overtime?</p> <p>How has your definition of your ‘teaching community’ changed overtime? How has your participation influenced it?</p> <p>8. Can you describe any changes in your program or institution that you could contribute to your webinar/PD work?</p> <p>Prompt: What lead to these changes? If no changes, what barriers exist (ex. time, colleagues, institutional focus)?</p>

Purposes	Protocol
<b>WRAP UP (5 mins.)</b> <ul style="list-style-type: none"> <li>Continued influence</li> </ul>	<p>9. Will you continue to seek out PDs/webinars on earth education (or intersection of science and society)? Why or why not? If so, what kind?</p> <p>10. Is there anything I haven't asked about your experience that you would like to share?</p>