

Appendix A
Instruments and Data Type Used to Respond to Research Questions

Research Question	Presemester Instruments		Midsemester Instruments				Postsemester Instruments		
	PST Presurvey	PST Preenacted Measure	PST TM Task Survey	TE TM Task Survey	PST ABS Task Survey	TE ABS Task Survey	PST Post Survey	PST Postenacted Measure	TE Postinterview
RQ1 PST Learning and Perception of Value	-	-	Open Response Likert Yes/No	Open Response Likert	Open Response Likert Yes/No	Open Response Likert	-	-	-
RQ2 PST Understanding of Argument-Focused Discussions	Open Response	-	-	-	-	-	Open Response Likert Yes/No	-	-
RQ3 PST Change in Beliefs: Content Instruction and Teaching Preparedness	Open Response Yes/No	Likert	Open Response Yes/No	-	Open Response Yes/No	-	Open Response Likert Yes/No	-	-
RQ4 PST Improvement Facilitating Argument-Focused Discussions	-	MBI/TBEST Items	-	-	Likert	Likert	Likert Open Response	MBI/TBEST Items	Open Response

Note. PST = preservice teacher; TE = teacher educator; TM = Teacher Moments; ABS = Avatar-Based Simulation; RQ = Research Question; MBI = Mathematics Beliefs Instrument; TBEST = Teacher Beliefs about Effective Science Teaching