Multi-User GeoGebra For Virtual Math Teams

supporting collaborative online math

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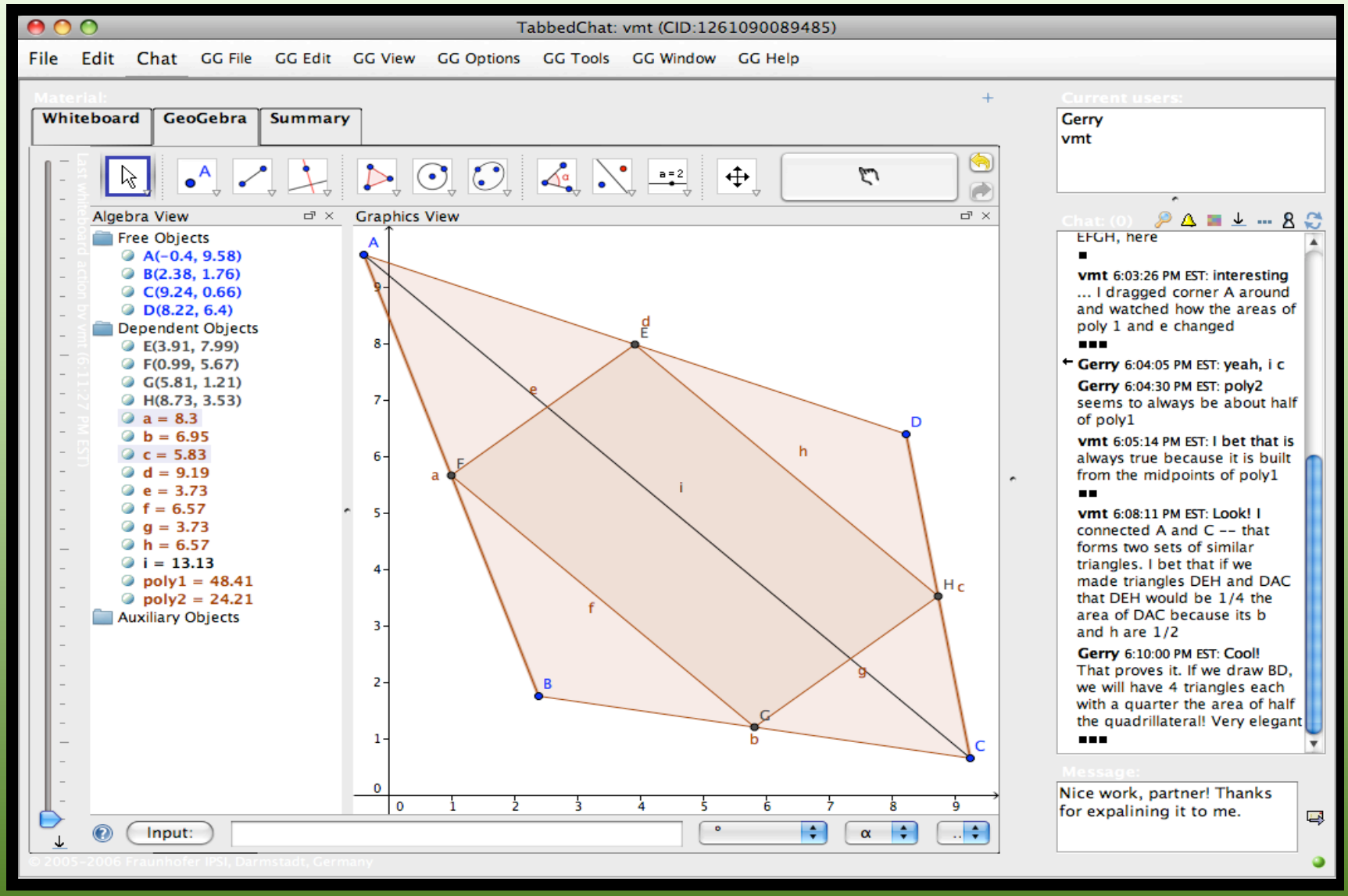
Multi-User GeoGebra

- GeoGebra for small groups of students
- Engage in dynamic geometry together
- Drag and explore together
- Chat about actions and noticings
- Construct and investigate collaboratively
- Share and test each other's hypotheses
- Explain and prove to each other
- Build on each other's custom tools and constructions

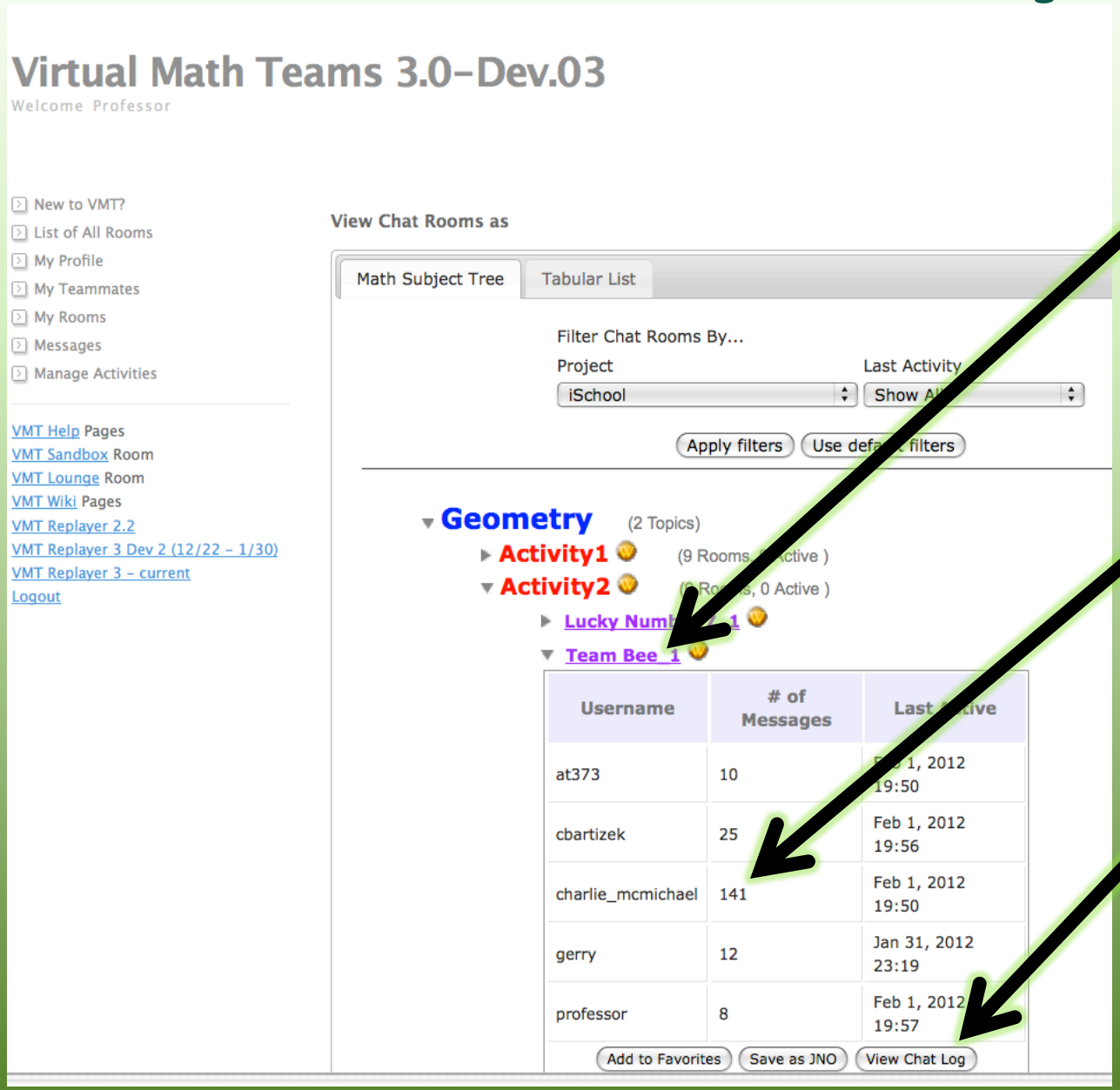
Exploration & Discourse: VMT-with-GeoGebra Construction & Chat



Virtual Math Teams Environment

- An integrated online environment for small teams of students to do math together
- Combines text chat with drawing spaces and spaces for storing ideas and findings
- Teachers can configure chat rooms for different topics and tools
- Lobby, wiki, multiple tabs for constructions, activity topic, help pages

The VMT Lobby

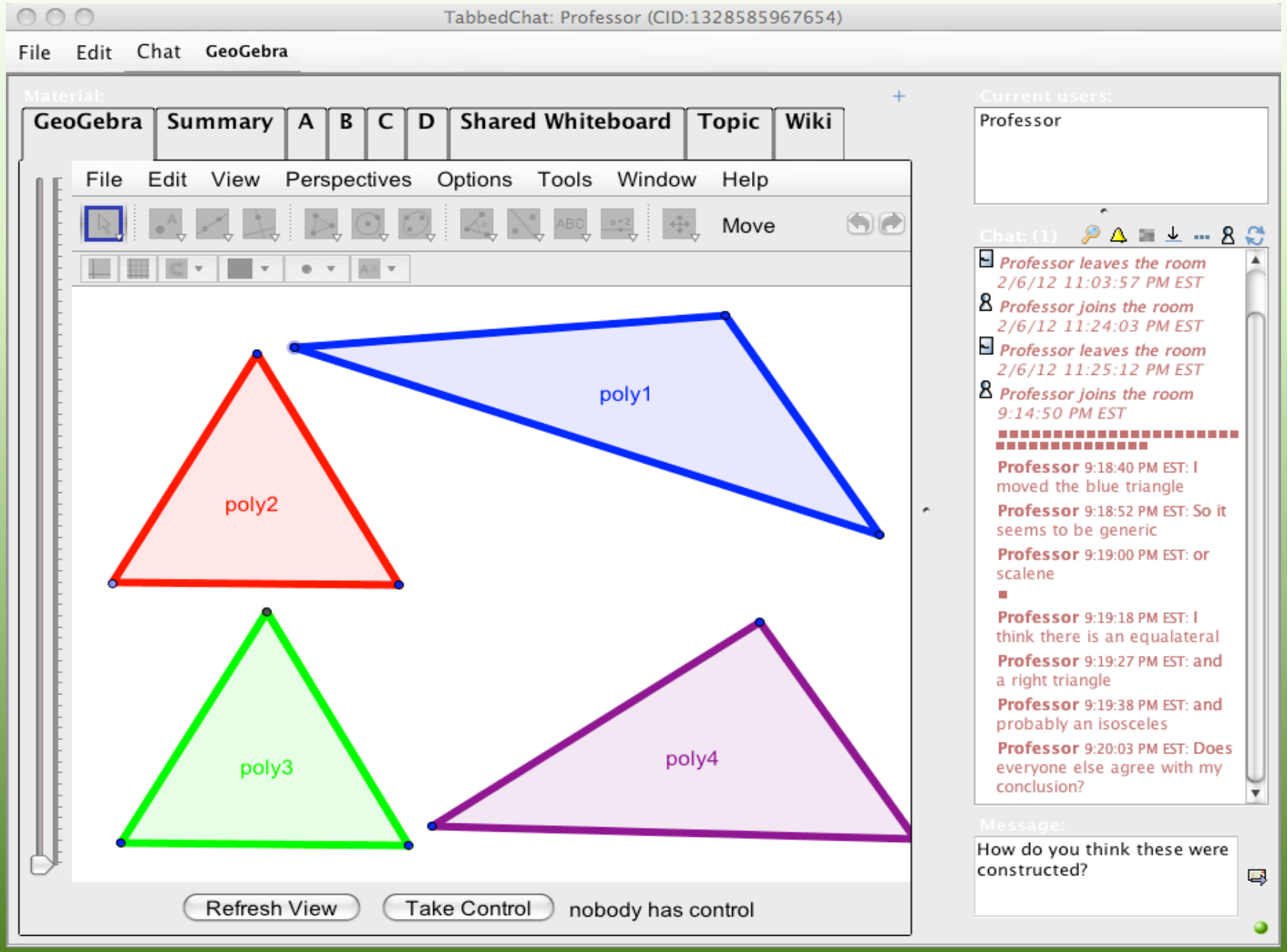


Students find chat rooms with activities

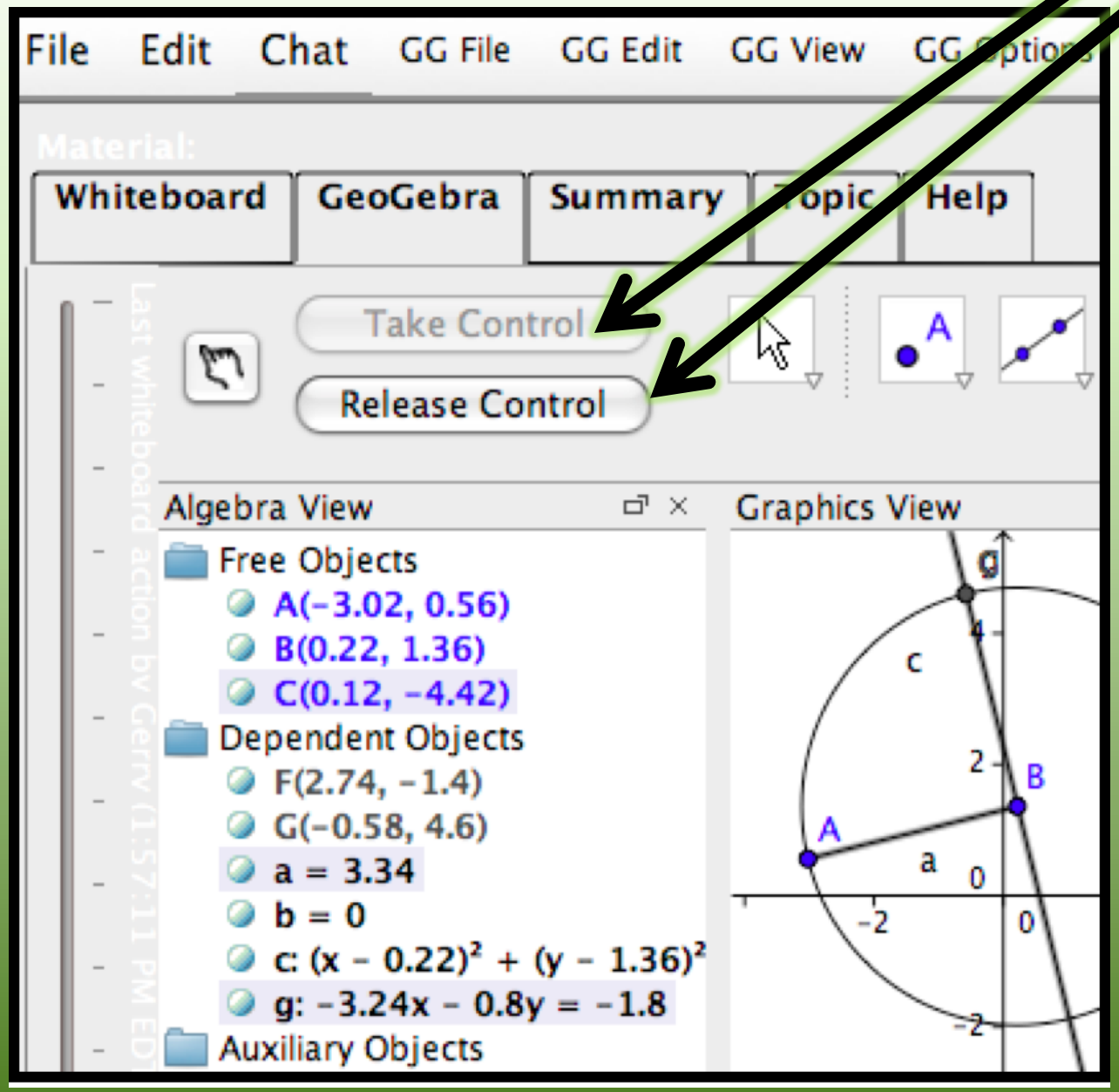
Teachers overview student work

Researchers, teachers, students access chat logs

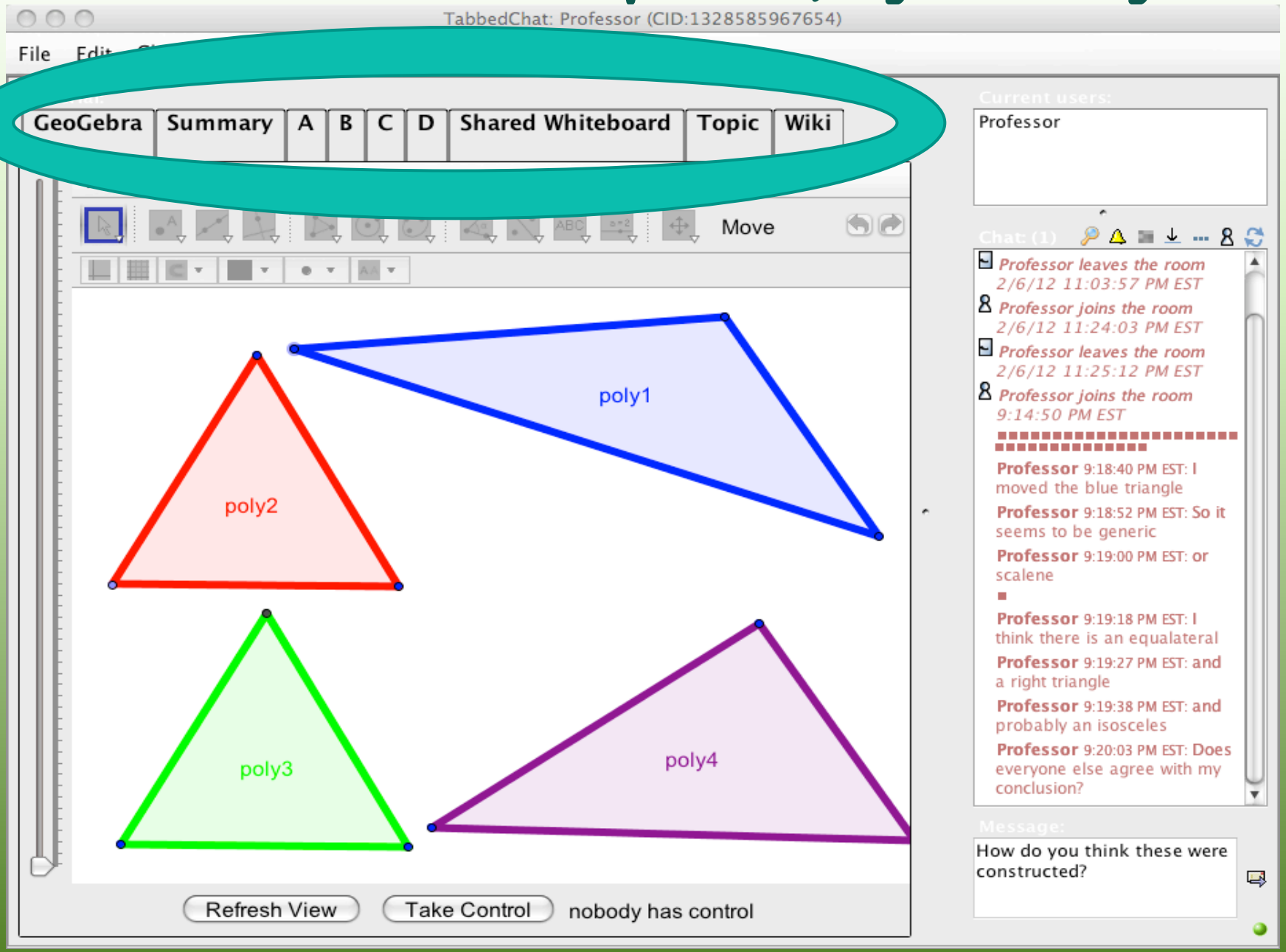
The VMT Chat Room



Turn Taking for Multi-User Control



Shared & Personal Spaces; Synch/Asynch



The VMT Wiki

navigation
- VMT Lobby
- Wiki Main Page
- Recent changes
- Help

search
Go Search

toolbox
- What links here
- Related changes
- Upload file
- Special pages
- Printable version
- Permanent link

Probability

Here are a set of challenges related to probability problems. **You can contribute** by adding your ideas about applying a strategy to a problem (adding content to a P#S# page), proposing a new strategy (adding a new column) or adding a new challenge (row).

Probability Strategies & Problems	S1. Drawing balls from a jar	S2.Solve Complementary Problem	S3. Enumerate & Organize your cases	S4. Use a Tree Diagram	S5. New Strategy
P1. The sock drawer	P1S1	P1S2	P1S3	P1S4	P1S5
P2. Box with three cards	P2S1	P2S2	P2S3	P2S4	P2S5
P3. Seating arrangements	P3S1	P3S2	P3S3	P3S4	P3S5
P4. Baseball_World_Series	(P4-S1 Example)	(P4-S2 Example)	(P4-S3 Example)	(P4-S4 Example)	P4S5
P5. Duck hunters	P5S1	P5S2	P5S3	P5S4	P5S5
P6. Clock hands	P6S1	P6S2	P6S3	P6S4	P6S5
P7. Length of Random Chords	P7S1	P7S2	P7S3	P7S4	P7S5
P8. New Problem	P8S1	P8S2	P8S3	P8S4	P8S5

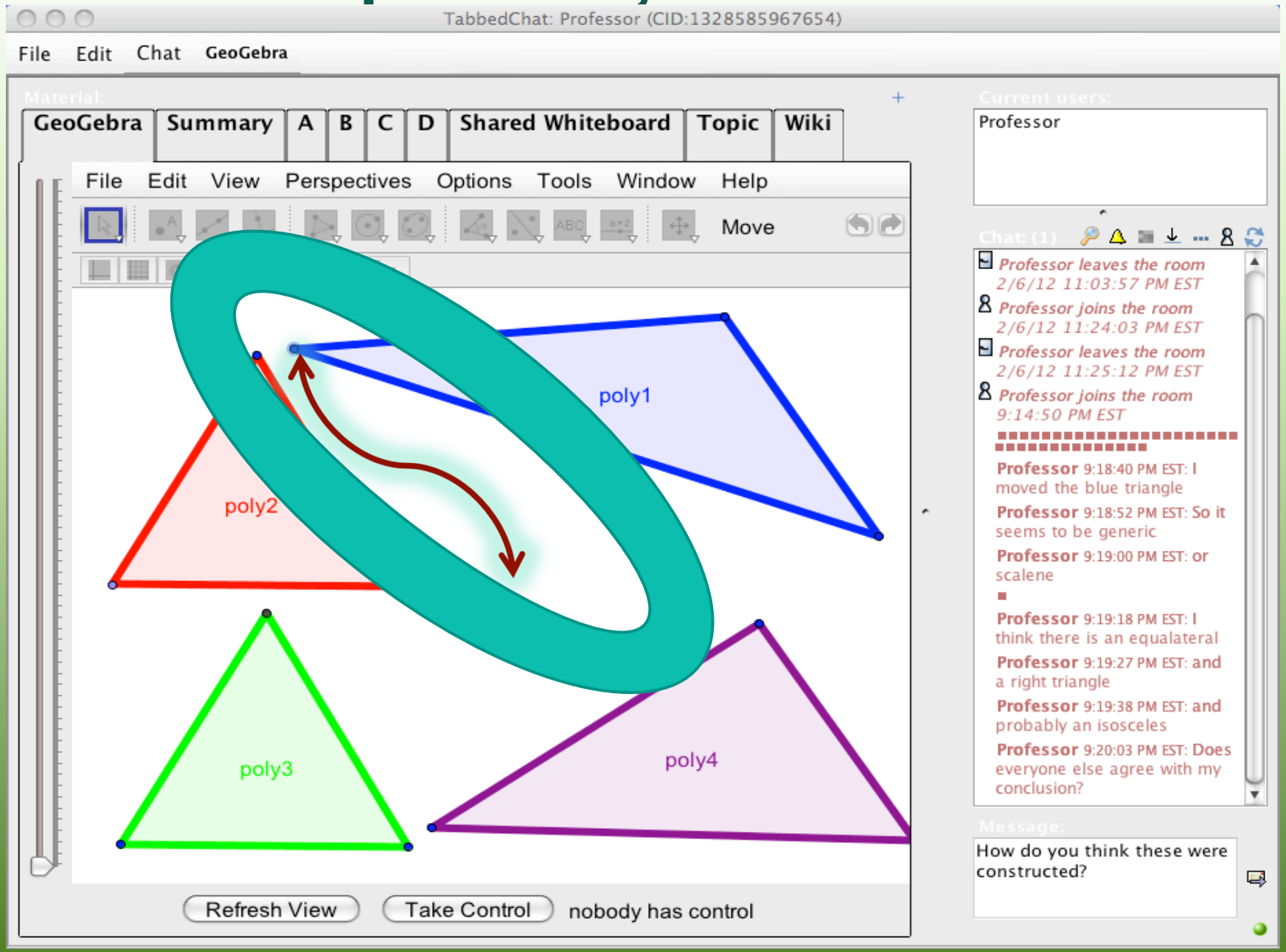
If you need them, here are some resources for probability

Categories: ProblemSolving | VMT

Curricular Activities

- Based on US Common Core Standards
- Stress noticings and conjectures
- Promote math discourse
- Encourage collaboration
- Include individual reflection and group discussion
- Structured, guided collaborative learning, leading to open-ended creative exploration

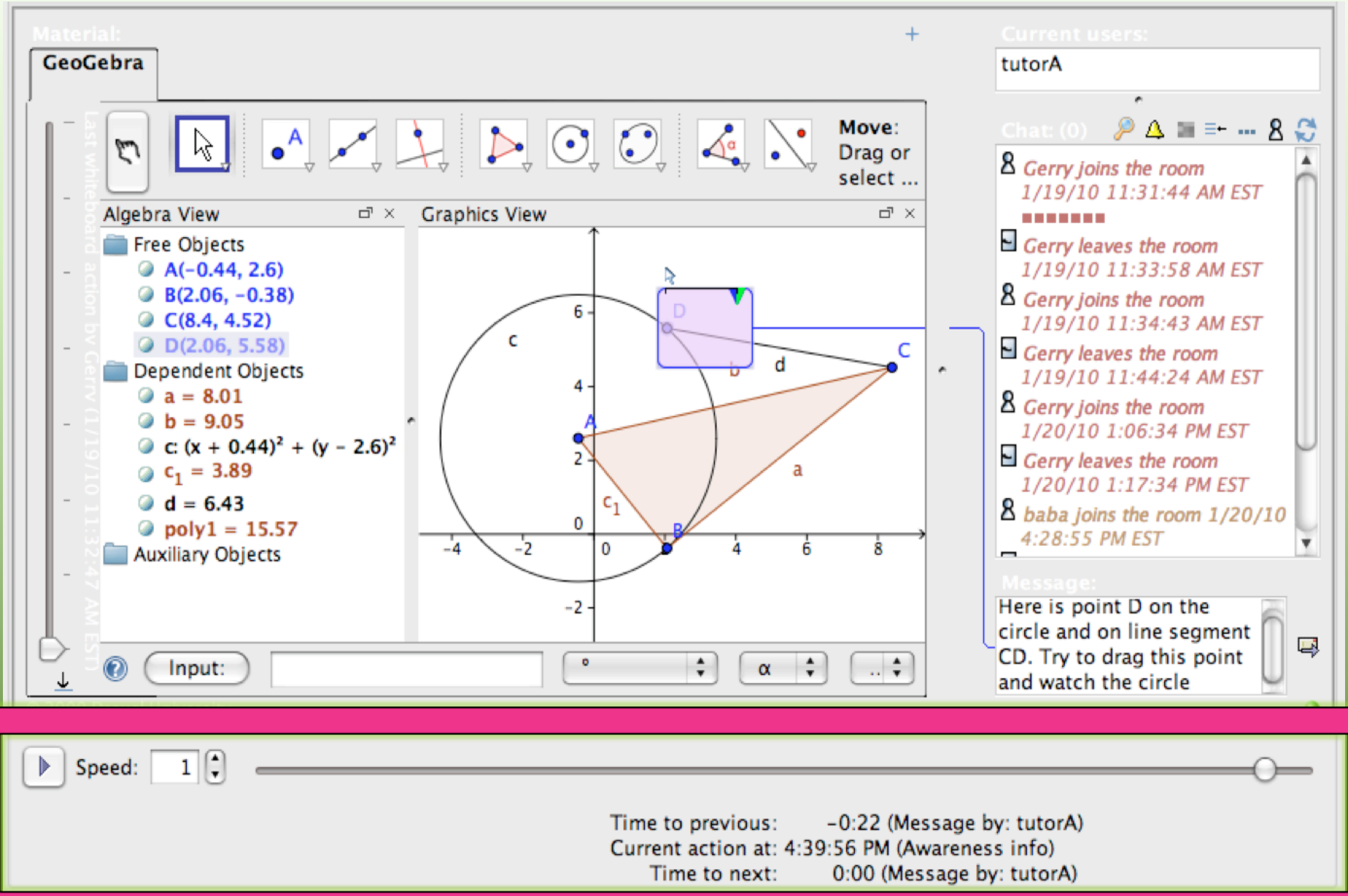
More Exploration, Less Instruction



Reflection on Math Discourse

- Access to VMT Chat logs in convenient formats
- VMT Wiki pages for sharing findings
- VMT Replayer to review action in detail: drawing and chat coordinated in playback mode

The VMT Re-Player



The VMT Chat Log

Time of Posting	andicat	Annie	jr6g	loretta
14:45:03			i don't know how to do a perpendicular	
14:45:16				should we do
14:45:20	i need my tool!			
14:45:24		So, Jen, what do you think would go into a		
14:45:37			a 90degree angle and	
14:45:40	i created a tool to make a perpendicular			
14:46:01				can we use the built in tool to do
14:46:13		I'm thinking that we can use the built-in perpendicular tool.		
14:46:39	oh - didn't know that			
14:46:42				its under the intersect point
14:46:47			the perpendicular tool is under the fourth	
14:46:48	i thought it was only something we created			

Professional Development

- Special courses for math teachers
- Full credit toward degree and certification
- Flexible online offering
- Includes synchronous contact with other teachers in small groups
- Prepares for use of technology and curriculum in classrooms
- Teachers try VMT-with-GeoGebra and plan for its use by their students

For further information

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- PowellAB@rutgers.edu
- http://vmt.mathforum.org/vmt/courses.html