SeeMeTeach®

Using SMT to Generate Evidence-Based Responses for the National Board Certification of Teachers (NBCT) Submission

SeeMeTeach - Teacher Observation Reimagined

A WEB BASED TEACHER AND CLASSROOM OBSERVATION APP

Using SeeMeTeach ® To Generate Evidence-Based Responses for the National Board Certification of Teachers (NBCT) Submission

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[Note that questions posed below are from the **NBCT General Portfolio Instructions: Components 2, 3 & 4 - All certificate Areas -** © 2018 National Board for Professional Teaching Standards. Suggested evidence and indicators for responding to the posed questions originate from SeeMeTeach ® qualitative or quantitative data.

What is NBCT?

NBCT is a high-stakes assessment used to determine the higher-level teaching skills of practicing teachers. Consisting of five major propositions, the NBCT candidate prepares materials for an NBCT assessor to use the rubrics to evaluate the candidate's submission. The candidate must meet or exceed the passing score to continue to achieve the prestigious NBCT certification.

The Power of Using SeeMeTeach for NBCT and Evidence-Based Narratives

SMT is a teacher observation tool that contains the following:

- Qualitative mode for comments, analysis, and feedback
- Quantitative mode for data collection, analysis, and feedback
- Data displayed using tables, graphs, charts, heat maps
- Data and comments linked to video segments
- Seating chart heat maps showing student engagement and misbehaviors
- Teacher-student interaction data, patterns, and specific wait-times
- Feedback forms, standard or your own
- A collaboration of up to four team members for observation and feedback

Why Use SMT When Preparing an NBCT Submission?

- Registered SMT users have automatic access to the *SMT and NBCT* supporting documents.
- SMT is a powerful mechanism for observing video and collecting comments, data, evidence, and indicators that will significantly enrich the written reflection of the teacher candidate's teaching when responding to the NBCT rubrics that target analyzing how the lesson was taught and the resulting impact on student engagement.
- Knowing what evidence and indicators are needed when analyzing a lesson guides teacher candidates when planning and delivering lessons that contain the desired and critical indicators of teaching effectiveness that NBCT assessors look for in a teacher's NBCT submission.
- Note that data collection and using evidence-based indicators requires the development of some new skills and some knowledge of how to collect, analyze, and interpret data. The last section of this document provides an overview of the data collection and analysis possibilities that the NBCT candidate might use and infuse into their video analysis narrative and embed in their responses to the nineteen questions used by the candidate to guide the writing of the narrative.

The SMT and NBCT document provides the following:

- Guidance in planning for and teaching a lesson containing robust supporting evidence and indicators of teaching effectiveness.
- Guidance regarding specific supporting data and indicators when using SMT to analyze the lesson; evidence can be infused when writing the written reflection.
- Concrete examples of evidence and indicators that help meet the expectations of each rubric.

Ramping Up - Using SMT During Teaching to Prepare for the NBCT Submission

Before the NBCT submission - The NBCT supporting document and SMT should be introduced and used before the submission phase to develop observation, data collection, and analysis skills. Hence, the teacher-candidate has the opportunity and time to develop and refine lesson analysis skills long before teaching the lesson for the NBCT submission. The desired indicators of effective teaching should be well entrenched, with analysis, reflection, and feedback a normal part of future teachers' expectations. Therefore candidates become accustomed to using data to analyze their teaching and seeing data embedded in feedback. Learning to make teaching decisions based on data positively affects planning for teaching and classroom instruction and elevates their ability to analyze their teaching – the core of the NBCT challenge. Teaching and analyzing instruction work hand in hand, and knowing how to use SMT as a tool for observation and reflection becomes second nature to the teacher candidate when it comes time to complete, submit, and, therefore, pass and achieve robust scores on the NBCT.

During the NBCT planning, teaching, and analysis period – Suppose the teacher-candidate has not used SMT and the supporting documentation before the NBCT planning, teaching, and analysis sequence. Then these documents will help the teacher-candidate to plan carefully and purposefully embed these score-raising indicators into their lesson plan. In turn, they help seed their teaching with actions that reflect the indicators for each rubric used to score the submission. As a result, the video of their teaching captures critical indicators and evidence that help fulfill the intent of the rubric, which now allows for data and evidence collected by SMT to be embedded in their NBCT narrative. Using SMT and the supporting documents will foster a much more evidence-based and richer description, potentially a more robust score on the NBCT.

General Notes About Lesson Analysis For the NBCT - NBCT instructions suggest that following the teaching session, candidates make a note of the following:

- the learning goals (lesson objectives) for the lesson
- a description of any instructional materials used in the lesson
- your opinion regarding the overall success of the lesson (i.e., how were the learning goals achieved?) and the evidence you have as the basis for your opinion
- any particular instructional challenges offered by the students

Video Analysis Questions - NBCT's video analysis and reflection core component state that video-recorded teaching sessions offer strong evidence of a teacher's knowledge and ability. Their questions focus attention on aspects of teaching described in the National Board Standards, and the candidate should use these questions to hone their skills as an observer and as an analyst of their teaching:

1. **What is the extent of student involvement (e.g., are most students participating, or are the same few students doing all the talking?**

Tips for evidence or indicators to look for when writing your response after viewing the videotape of your teaching or for incorporating such into planning for the lesson used for the NBCT submission can come from:

Student Engagement Indicators

- Code Summary
  - S1 – S5 counts indicate how many times students contributed during the lesson, while S6 – S9 counts indicate how many times the whole group contributed to the lesson using dry-erase response boards, digital devices, etc.
  - The overall S codes (time) duration percentage indicates how much time students contributed to the lesson versus how much time the teacher talked. A teacher-to-student duration time % of 80 – 20 is a very different-looking lesson per student engagement than a 20 – 80 % ratio.
- Student Engagement and Heat map
  - If S1-S6 data were collected using student numbers, the heat map and color coding would show the level of student engagement. One can quickly see how many students were contributing and at what level. Also, when using student numbers, on the top left quadrant of the Student Engagement window on the bottom right corner of the SMT screen, there will be student numbers that the time noted as to when they contributed. All NC-0 times are due to S1-S5 codes without a specific student number. The top right quadrant shows the S6- S9 codes and the time associated with the whole class responding in some manner. Below is data regarding Total Student Time for S1-S5, S6-S9, and Total Teacher Time, followed by a % of how much coded time was for S1-S9 versus all teacher-coded time. It is difficult for students to contribute and therefore accumulate student engagement indicators if teacher talk dominates much of the class time. Below this data is a horizontal timeline of the class, with the various lesson segments color-coded and vertical black bars showing all S1-S5 code times and vertical red bars showing all S6-S9 times. A glance shows the distribution of student engagement during the class period. During the lesson's various segments, one can easily see if a particular lesson segment generated more student engagement than another lesson segment type – a class discussion versus a review.

Allowing Think Time and Time for Students to Respond

- Wait-time
  - In short, more students respond if given more think-time (known as wait-time) following the teacher posing questions; therefore, a quick check of wait-time 1 and 2 can indicate how wait-time improvement might contribute to more student engagement.

My response to #1 is:

2. Are the students engaged in the lesson? How can you tell?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- Answered above. Note that it is questionable to suggest a student is engaged in the lesson without having evidence for such. Note that just sitting at a desk is not evidence – many students are physically present but cognitively passive and not present, as evidenced by the most common response from students when teachers ask questions – students respond by saying, "I don't know." And honestly, many don't know because until the teacher called on them, they were not engaged and paying attention and most likely did not hear the question.

My response to #2 is:

3. What do students' facial expressions and body language tell you about your teaching?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- The videotape shows body language and facial expressions; sometimes, students' eyes can say something about who seems connected and interested in the lesson.

My response to #3 is:

4. What did you notice about students' opportunities to respond to you or other students?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- Again, using ample wait-time two will likely generate more student-to-student exchanges, and the S2 and S4 codes represent student-to-student exchanges. Some of the S5s that follow S2 codes will be more student-to-student exchanges.
- When working with the whole group, do all or most learners have a chance to respond? For example, the S8 codes represent the think-pair-share strategy, which facilitates the student to student exchanges and gets all students engaged.
- How many questions were posed, and what type of questions? Factual vs. a question that required speculation or explanation.
- For every question asked, how many students responded? Did you get one response and then move on to the next question? Or did you use something other than the typical and low student engagement pattern of the teacher asking a question, getting a student response, judging or clarifying the response, and then moving on to the next question?
- When did you see opportunities to follow up with a student's response by asking them to clarify (T11) or ask other class students to compare or contrast ideas (T12)?

My response to #4 is:

5. What kinds of questions do you ask? Can all your questions be answered with a single word?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- SMT provides a good summary of question types posed during a lesson. The breakdown of four question types, from yes/no, to short answer, to something requiring more thinking and explanation of student thinking, covers each type of question quantity and duration. The data can indicate whether the question asked was designed to initiate some thinking or a question intended to get students to clarify their responses or get other students to react to a student's response.
- Look at T3a, T3b, T4a, and T4b for the questions posed.
- Look at T11 and T12 to dig deeper into student thinking and get responses from other students beyond the initial student response.

My response to #5 is:

6. How long do you wait for responses?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- Again, the wait-time data will provide an answer to this question. Note that average wait times are calculated for each wait time, but also provided are wait times per T and S codes; one can determine whether more wait time is used for questions that typically require more wait time.
- The length of WT2 and WT3 depends on the teacher's actions for how long the wait time lasts.
- The length of WT1 and WT4 end with a student response, sometimes vocalized way too fast to give other students a chance to think, so it is up to the teacher to condition the students to take the think time desired before raising their hand or offering a response.

My response to #6 is:

7. Do you ask students to explain and/or defend a particular answer or approach?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- Check the data for T11 codes (asking the student to clarify or explain their answer) that follow some of the S codes, particularly S5 or student responses from S6-S8. The Interaction Patterns analysis will show how prevalent it is for the teacher to follow student responses with a T11.
- Code Summary data will show how many T11s were noted in the lesson.

My response to #7 is:

8. Do you ask students to compare or evaluate alternative interpretations or strategies?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- T12 codes represent when the teacher asks another student or the class to react to some student's idea or suggestion – this is evidence of promoting comparison or evaluation of ideas that might be similar to or different than their idea. There are also particular lesson strategies, such as *Cooperative Conflict* or *Issues Analysis,* specifically designed to have students compare ideas or positions and debate or evaluate the merits of different ideas or solutions.

My response to #8 is:

9. Are there any opportunities for students to ask questions?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- The Code Summary will show S1 (the student asks the teacher a question) and S2 (the student asks the student a question) counts for each.
- Does the teacher ask, "What questions might you have about …?" instead of asking, "Do you have any questions?" which we know most often results in zero questions?

My response to #9 is:

10. How would you characterize students' questions (e.g., do they indicate confusion and a need for clarification, understanding, and extension)?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- An observer would pick up this by watching the lesson, and it might be noted while using the qualitative mode of SMT or pointed out in the quantitative mode's *Summative Comments* section.

My response to #10 is:

11. What roles (e.g., expert, facilitator, co-learner) do you play in the lesson on the video recording? How is each role appropriate for the situation or the lesson's goals?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- The role of the teacher might change depending on the lesson type exhibited or utilized by the teacher. An interactive lecture with the goal of getting students engaged might be similar to or different from an inquiry science activity. But the teacher's role should be purposefully congruent with the lesson's goals versus weakening the lesson's intended nature. For example, a teacher who is very directive of student exploration during an inquiry lab, and asks mostly yes/no questions, has a manner of teacher-student interaction that probably weakens the goal of inquiry. An interaction pattern that shows the teacher judging student responses weakens the intent of determining what students know and think and are learning from the activity.

My response to #11 is:

12. What kinds of tasks do you ask students to do?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- The *Lesson Summary* provides a breakdown by lesson type and how much time was used for each lesson type.
- Look to the data for codes S6-S9 as they indicate how the whole group of students is involved in the lesson using digital devices, choral responses, think-pair-share, or dry-erase boards.

My response to #12 is:

13. How do you capitalize on their previous knowledge and experiences?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- How does the teacher explore the student's thinking and existing ideas about the topic before, during, and after the lesson? Once again, a close look at how the teacher asks questions, uses wait time, or responds to a student's answer provides a profile of teacher-student interaction that indicates how successful they will be in digging into and uncovering student ideas.

My response to #13 is:

14. What instructional opportunities do you take advantage of and why? What instructional opportunities do you not take advantage of and why?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- This guiding question might be interpreted as whether the teacher follows up with student thinking and dig deeper into student ideas or sticks to a very narrow instruction thread.

My response to #14 is:

15. What evidence do you see of the students taking intellectual risks? How does the climate of the instructional setting provide a safe environment for getting something wrong?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- Teachers create a safer, less risky learning environment when using non-judgmental responses and getting students to clarify their answers; indicators mentioned above but as a reminder are also found within the pattern sequences under Interaction Patterns.

My response to #15 is:

16. What evidence is there that students talk to each other and you?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- S2 and S4 codes indicate students are talking to each other, and seeing T12s indicates that the teacher is attempting to get students to respond to students. Also, under *Interaction Patterns*, there is data for how many times T-T, T-S-T, and S-S codes were in sequence. If T codes mostly follow S codes, and the S-S count is low or zero, then there are few indicators of students talking to each other.

My response to #16 is:

17. How do you encourage students to take risks, speculate, and/or offer conjectures about possible approaches, strategies, and interpretations?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- First, the question type posed can be purposefully framed to suggest speculation is appropriate and desired. For example, starting a question in this manner, "What might be some ways … "or "If you had to make a guess … "immediately cue the student that speculation is ok, versus asking, "What is the answer to …" or "Tell me what is going to happen ...". So the Code Summary should indicate question types ofT4a and T4b if you want students to engage in higher-level thinking. Following a student's response, the teacher should attempt to acknowledge (T6) without judging (T5 or T7) because judging an answer tends to shut down that student's thinking and the thinking of other students. Instead, more student responses might be followed by T11 and T12 – data found within the Interaction Patterns analysis section.

My response to #17 is:

18. How were the learning goals for the lesson achieved? How do you adjust the lesson so every student can achieve your goals? What is the evidence for your answers in the video recording and other sources?

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

- The response to this is more of a qualitative analysis and reaction after watching the video. But once again, how teachers interact with students during the lesson can indicate how well the instruction matches the intended learning goals.

My response to #19 is:

19. Explain how your design and execution of this lesson affect the achievement of your instructional goals. (Your response might include—but is not limited to—such things as anticipation and handling of student misconceptions, unexpected questions from students, unanticipated opportunities for learning that you captured, or your planned strategy and its outcomes in the lesson.

Tips for evidence or indicators to look for in writing your response after viewing the videotape of your teaching or for incorporating into planning for the lesson used for the NBCT submission come from:

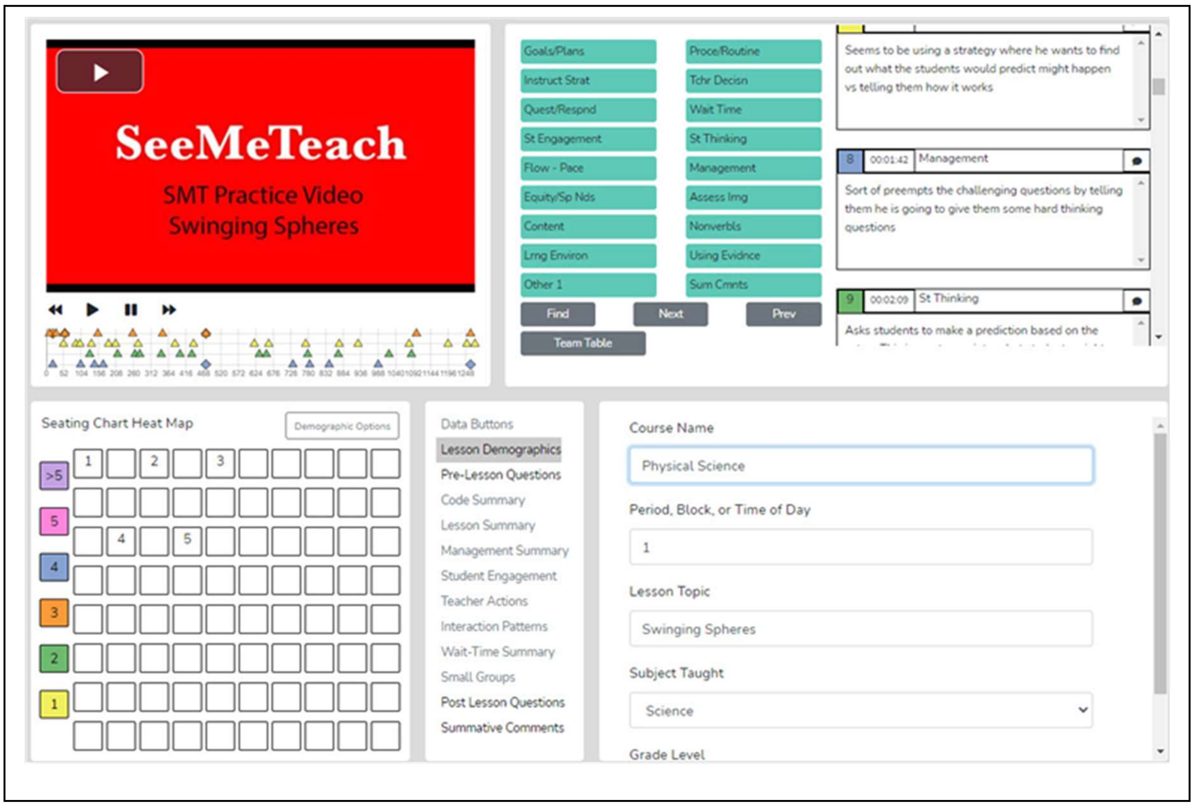
- The response to this is more of a qualitative analysis and reaction after watching the video. Again, during the lesson's execution, the nature of the student activity, their interaction with each other, and the teacher-student interactions are powerful indicators of performance.

My response to #19 is:

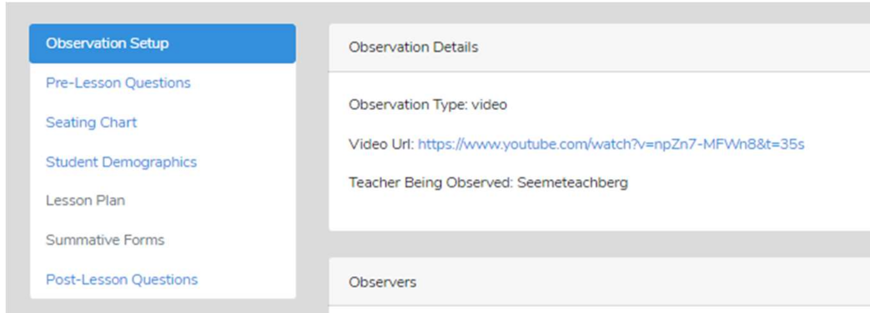
The Qualitative Mode

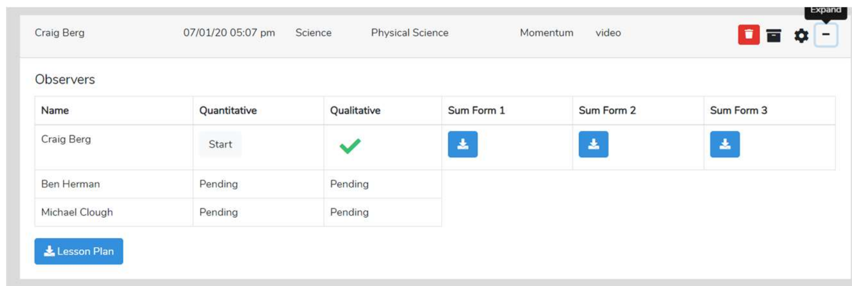
Qualitative Mode - Highlights and Important Features

- Observations can be completed live in the classroom or by using a pre-recorded video or audio.
- The user generates a time-stamped set of observation notes that can include comments and suggestions, color-coded to the team member making a comment, labeled, and organized by category.
- The user(s) can search and find comments by category.
- Comments are also noted via symbols on the timeline below the video so the user can see who left comments and how many comments are attached to the lesson, then click to read the comment and play the video segment.
- The user can create and tag comments to a student seating chart, noting events and actions by individuals or groups of students.
- When using video, comments are linked to video segments, so the teacher or observer can provide feedback with video examples of the teacher or student's actions.
- Summative commentary forms can be filled out, attached, and viewable by any team member. SMT provides some standard forms; users can also upload and use their personalized forms.
- Provides a platform for the observation team (of up to four people) to collaborate and communicate, and a team member can react to and respond to another team member's comments.

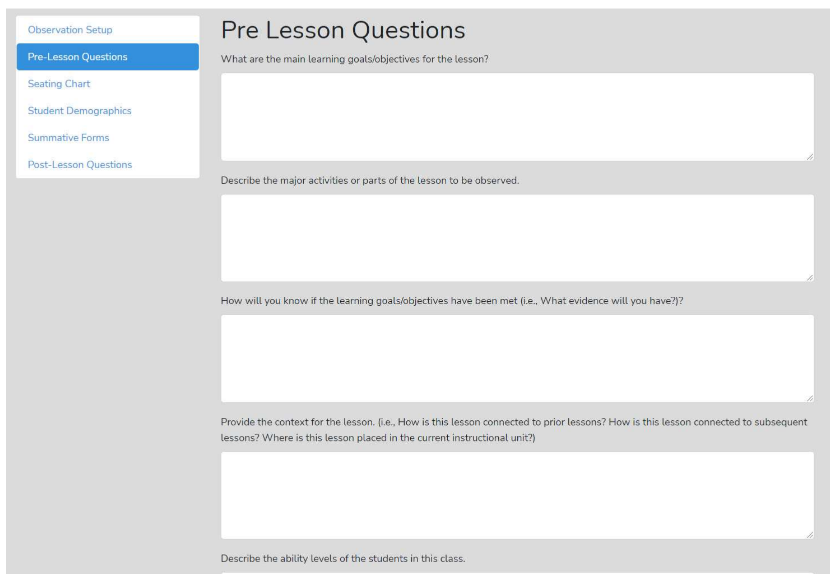


Lesson Plans - Before, during, or after the observation, the observer can quickly access the teacher's Lesson Plans via the Dashboard or the *Team Table*.

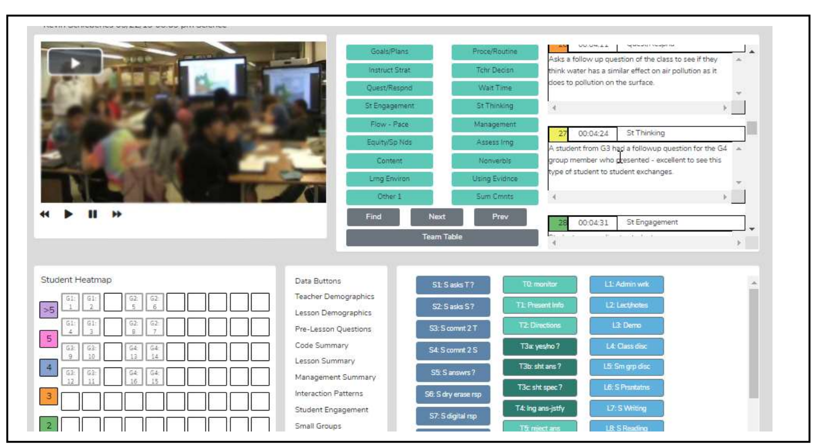




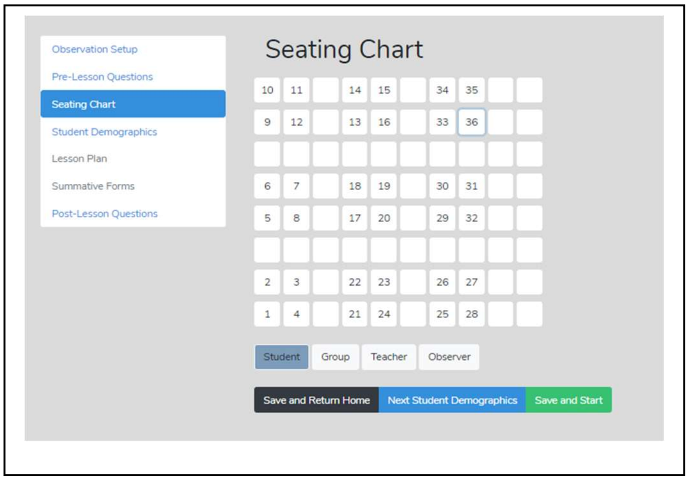
Pre-lesson Questions - To provide the observer with some context and information about the upcoming observation, the teacher can respond to the *Pre-lesson Questions,* which the observer can see via the *Dashboard* or the observation pages.

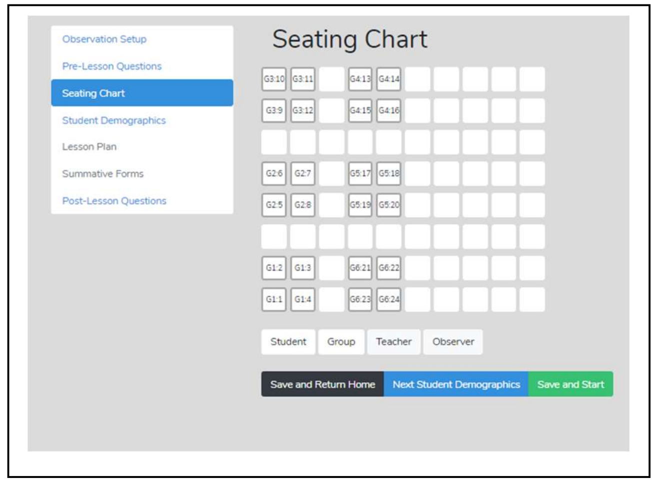


Qualitative Observation Categories and Comments - The observer, or multiple team members, provides comments labeled by categories. There are many comment categories to choose from.

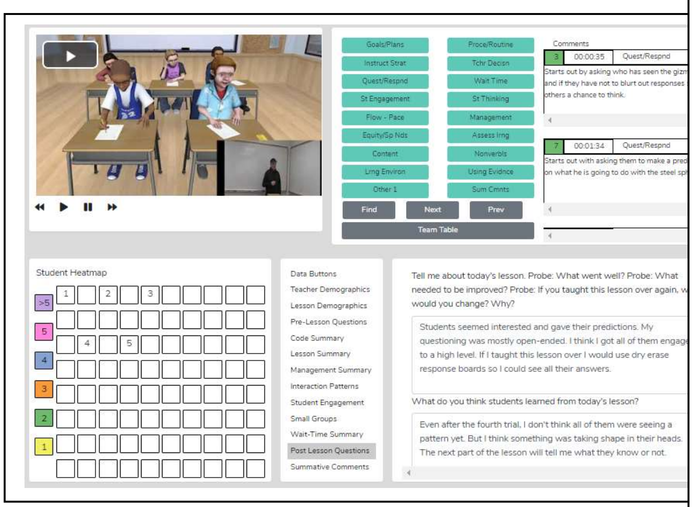


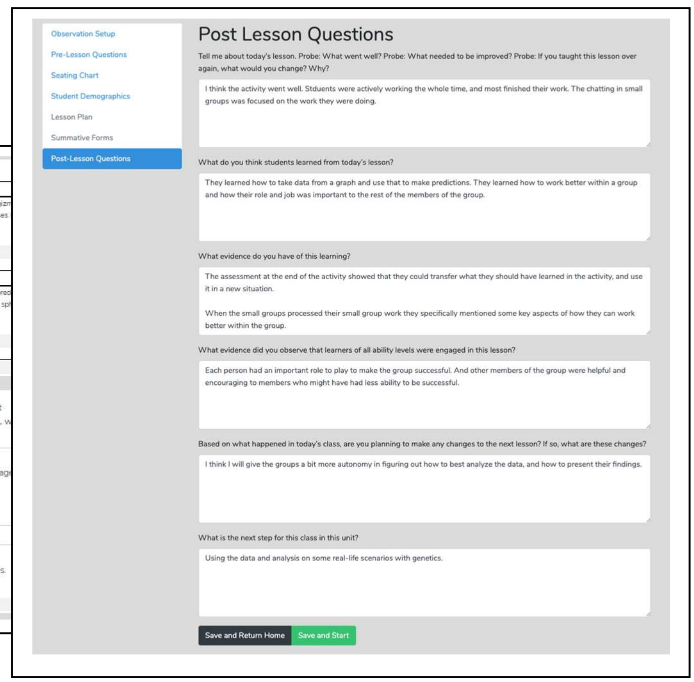
Seating Chart - The teacher or observer can create a *Seating Chart* and refer to this when making comments - showing each student and showing small group designations if desired.



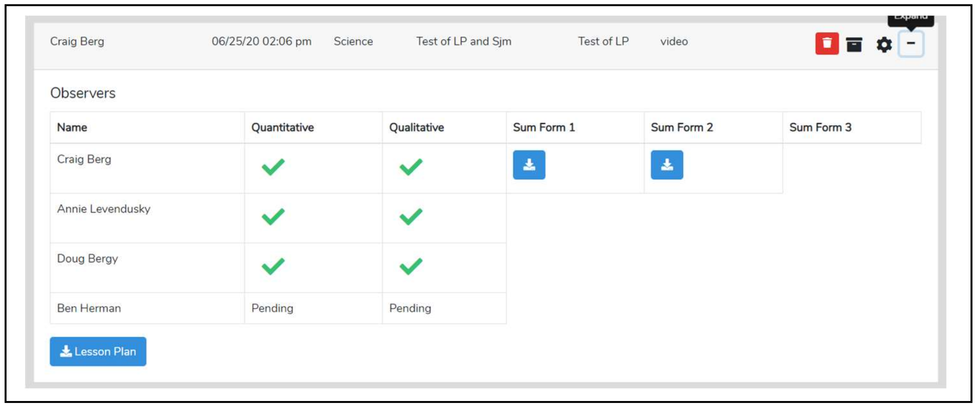


Post-Lesson Questions - To stimulate reflection, post-lesson questions can be filled out or accessed via the settings or the observation/analysis page.

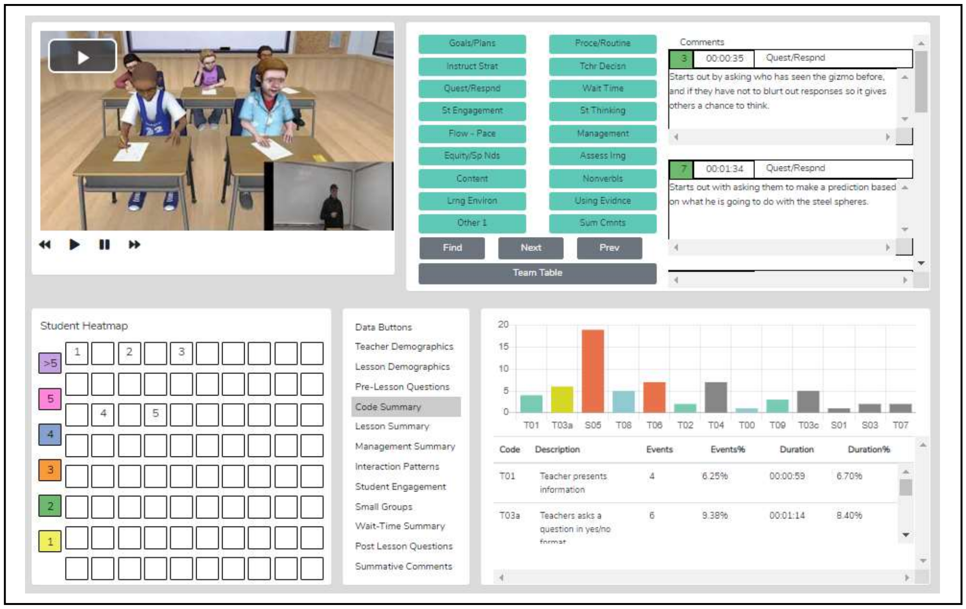




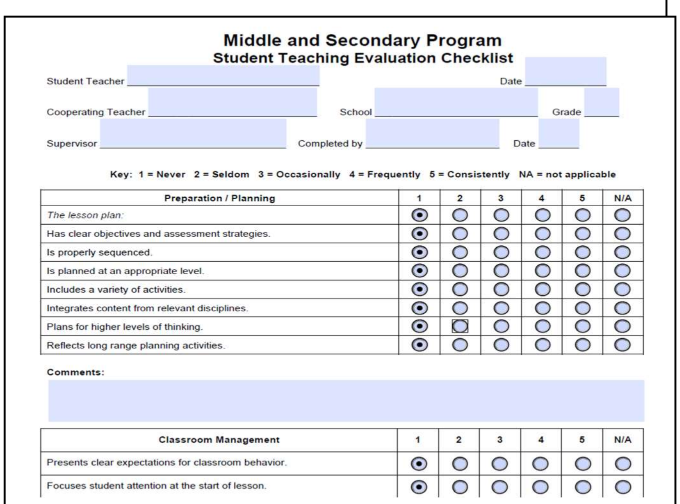
Team Table - A user can choose whose comments (or data/analysis) to view using this feature.



Using Data and Evidence - The observer can use data from the quantitative analysis to bolster comments made during the qualitative comments mode, thereby providing evidence-based feedback, recommendations, and evidence-based coaching.



Summative Comments and Summative Forms - When the observation is over, the observer can add *Summative Comments* and/or fill in up to three *Summative Forms* to share with the observation team.



Middle and Secondary Program
Student Teaching Evaluation Checklist

Student Teacher ______ Date ______

Cooperating Teacher ______ School ______ Grade ______

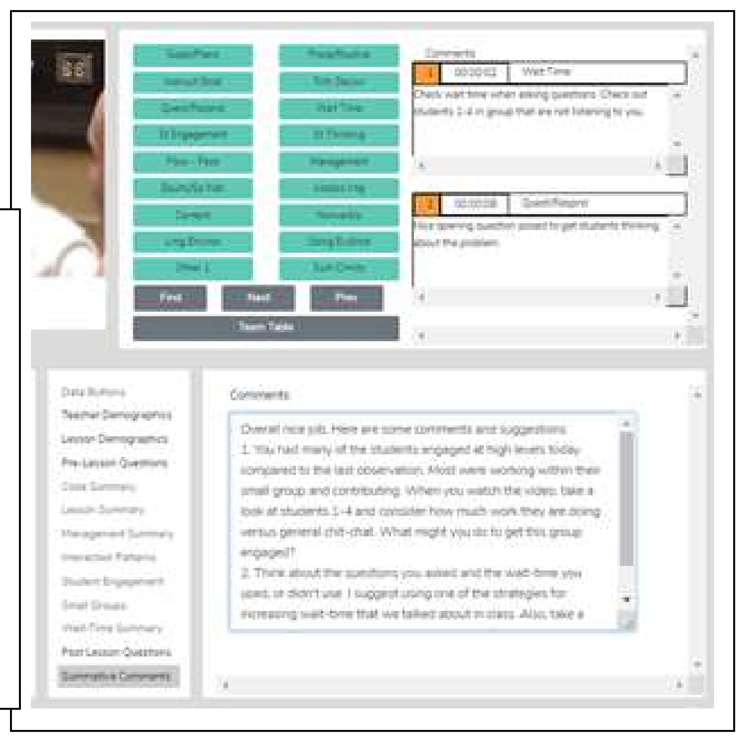
Supervisor ______ Completed by ______ Date ______

Key: 1 = Never 2 = Seldom 3 = Occasionally 4 = Frequently 5 = Consistently NA = not applicable

Preparation / Planning	1	2	3	4	5	N/A
The lesson plan:						
Has clear objectives and assessment strategies.						
Is properly sequenced.						
Is planned at an appropriate level.						
Includes a variety of activities.						
Integrates content from relevant disciplines.						
Plans for higher levels of thinking.						
Reflects long range planning activities.						

Comments:

Classroom Management	1	2	3	4	5	N/A
Presents clear expectations for classroom behavior.						
Focuses student attention at the start of lesson.						



Suggested Uses - The team member's qualitative analysis might be useful regarding:

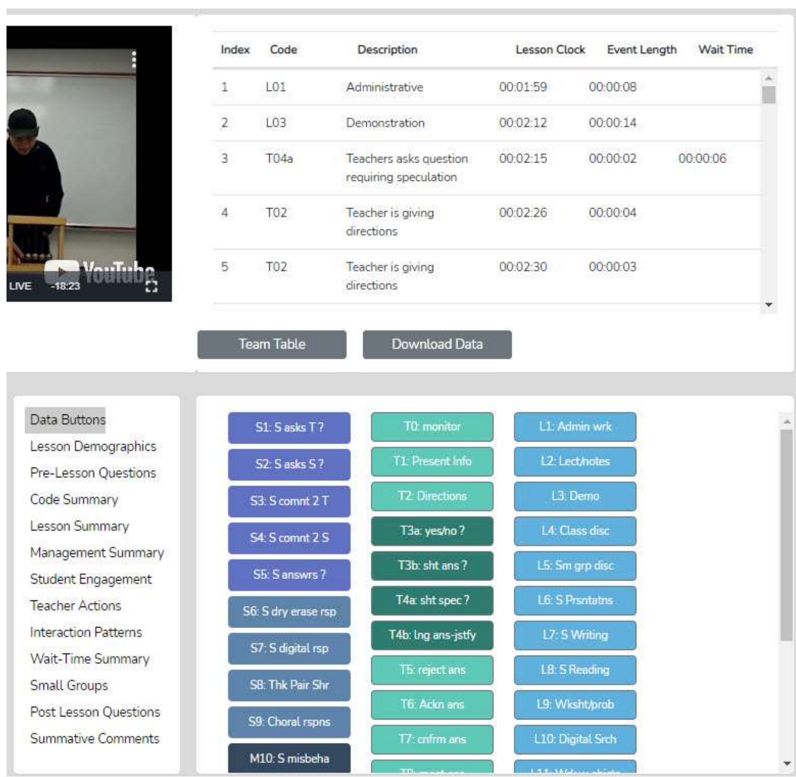
- The teaching observation of a fieldwork student or student-teacher by the teacher preparation program supervisor - After the observation, the qualitative analysis page is available to the student-teacher, who can view comments, respond to post-questions, post their reactions and commentary, and fill out the self-reflective *Summative Form*(s).
- When using video for observation, team interaction and communication can be enhanced. Any team member can qualitatively analyze that lesson and view any other team member's running commentary and summative comments.
- When using video, all comments are linked to specific video segments so the viewer can see any particular action as it occurred in the classroom.
- Methods of teaching instructors can view the video of pre-service teachers implementing suggested strategies, view pre-service teachers' analyses and reflections, and add their comments or suggestions.
- For a classroom teacher's yearly observation, a teacher can capture a video of their teaching and complete a self-analysis while an administrator completes their own, merging their commentary with the teacher's. A conversation then follows this whole process. When using video, comments are linked to the video, making it easy to locate any part of the observation and showcase events being discussed, enhancing feedback and coaching sessions.
- Research team members can share data and analysis screens by printing the data and analysis screens or by exporting the raw data to a .xls spreadsheet for more refined and custom analysis.

The Quantitative Mode

SMT Quantitative Analyses of Teaching

SMT helps the user collect and then analyze data related to teacher and student actions during a lesson. This data is coupled with the specific lesson type in play to show when and where student and teacher actions occur in lessons. Collecting and analyzing data provides a record of teacher and student actions during the lesson. The raw data is displayed and time-coded, and linked to the events as they took place in the video. The resulting raw data and data analysis offer substantive insights into the activity and events of the lesson. The analysis and feedback options described below will highlight how beneficial using quantitative data during the feedback process is.

Power of Video-linked Data - When using video, much of the data collected is linked to the specific video segments representative of that data and the type of action or event by both teacher and students. When looking at the analysis screens, the observer, teacher, or team member can go directly to the video linked to specific data points and see examples in action.

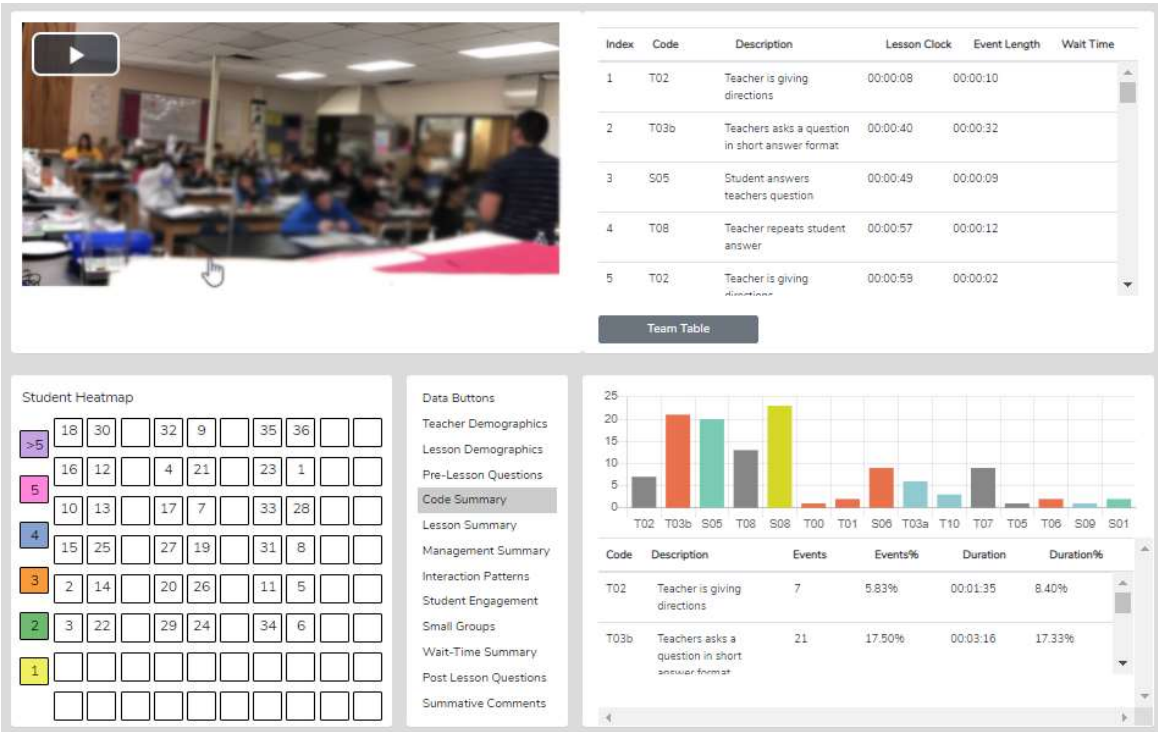


Running Record - The *Running Record* lists all the events in sequence from start to finish. The user can scroll through the events and click on any event to see the related video. While *SeeMeTeach* ® has significant data analysis built-in for instant viewing, note that the data can be exported to a .csv file and used with powerful statistical packages.

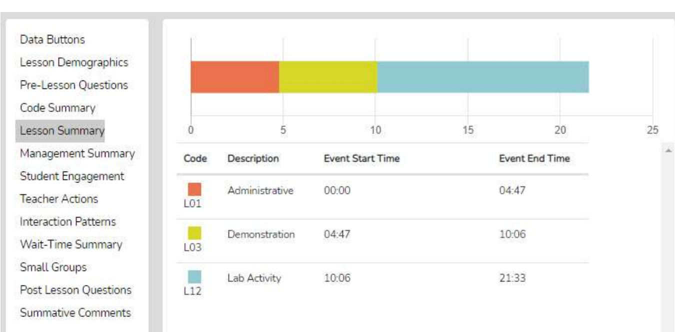
Data Buttons - The *Data Buttons* feature serves as a *Search and Find* function, allowing the user to quickly locate linked video examples of specific T, S, M, or U events. Clicking on a button finds the first of that specific code/event in the *Running Record* window, and the linked video begins to play. And at the bottom of the *Running Record* window, there is a note indicating how many events of that type were located. This feature is particularly helpful for identifying the habits and tendencies of the teacher. For example, perhaps the observer noticed the teacher has a habit of asking yes/no questions, followed by clarifying the answer for the student. In this case, we know that having the teacher change how they interact and react would be beneficial for finding out more about the student's thinking. For example, the teacher could have asked the student to clarify their answer. As such, the observer might choose to use that data or video, all or some, to make a point of how a teacher's choice affects student engagement and their ability to uncover student thinking.

Lesson Demographics – This contains information about the lesson that was entered during *New Observation* lesson setup or can be edited (course name, period, lesson topic, subject, and grade level).

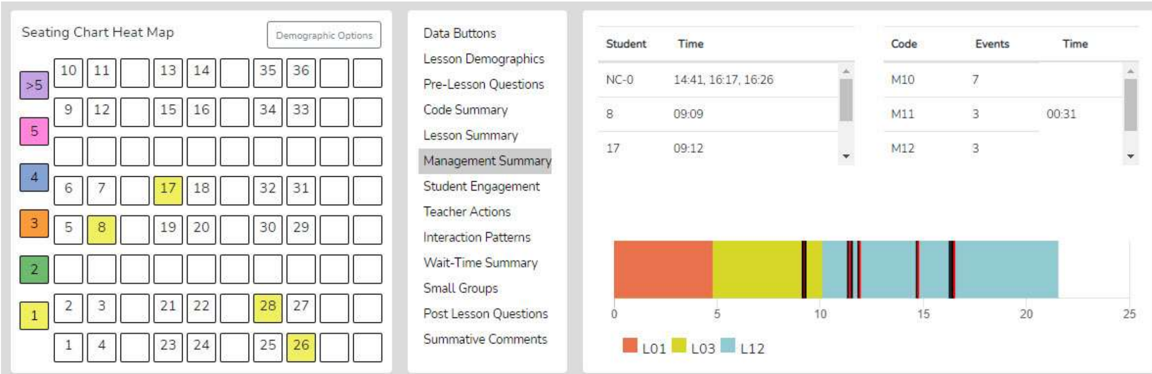
Code Summary – This feature provides a graph of the number of events of each code used during data collection and shows the relative and specific use of T, S, M, and U codes. Underneath the graph is a data table that displays data for each of the specific codes by frequency of an event, frequency of an event compared to the total number of events, amount of time coded by the specific event, and time accrued for that event compared to the total time of all the events. The T code data is tallied underneath this data table, as are the S, M, and U codes. This data is also recorded as a percentage of total events and percent of total time.



Lesson Summary – When coding a lesson, the observer notes the type of lesson in play by clicking an L button at the very start of the observation and a different L code each time the lesson type changes within the observation. As such, types of lesson segments are noted and displayed in the quantitative analysis mode in the *Lesson Summary* data window as a timeline showing the order and length of each lesson segment. This lesson segment display is used as a time-context reference when looking at other data, such as *Student Engagement or Management Summary,* so the user can see where misbehaviors or students' responses were present in the lesson.

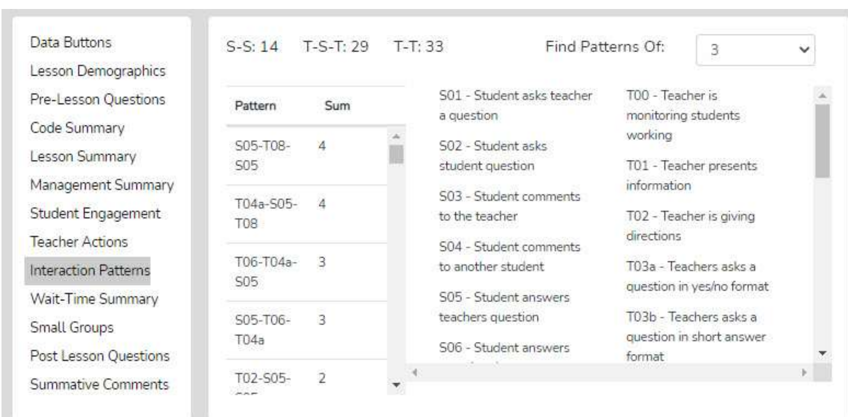


Management Summary – Displays the misbehavior events (M codes), noted specifically by student seating number, or generically if seating chart numbers were not used, and when the events occurred. Also displayed is when and how long the teacher reacted to and addressed misbehaviors. The specific time of occurrence of student and teacher data is displayed on the lesson-type timeline with black bars for student events and red bars for teacher reactions. Clicking on a bar causes the video linked to that event to begin playing. In addition, the seating chart heat map shows by color code how many events are linked to specific students.

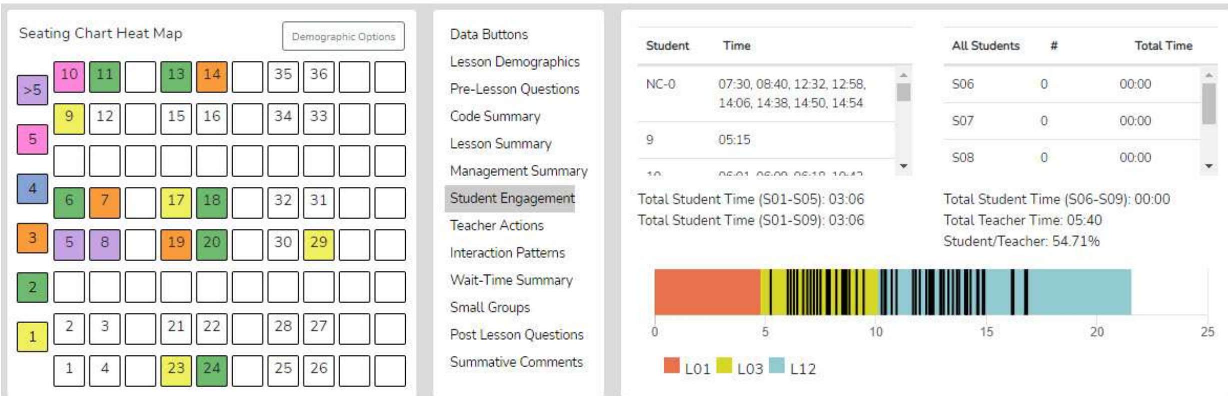


Demographic Highlighting in the Seating Chart Heat Map - In addition, if data is collected for specific students by using the student seat number before entering the M code, then the data can be displayed and toggled on or off by clicking on the Gender, ELL, SPED, or Minority buttons. If the observer should wonder how the students with special needs are disengaged during the lesson, toggle this information to find out. If the observer or teacher is concerned about equity of participation regarding gender, minority, ELL, or students with special needs, then this data is available.

Interaction Patterns – Using all the teacher actions (T codes) and student engagement actions (S codes), the user can view the predominant patterns of interaction between the teacher and students. In addition, numbers are provided that show how often students interact with each other (S-S) versus how often the traditional teacher-student-teacher pattern (T-S-T) is used or how often another teacher action follows a teacher action (T-T).

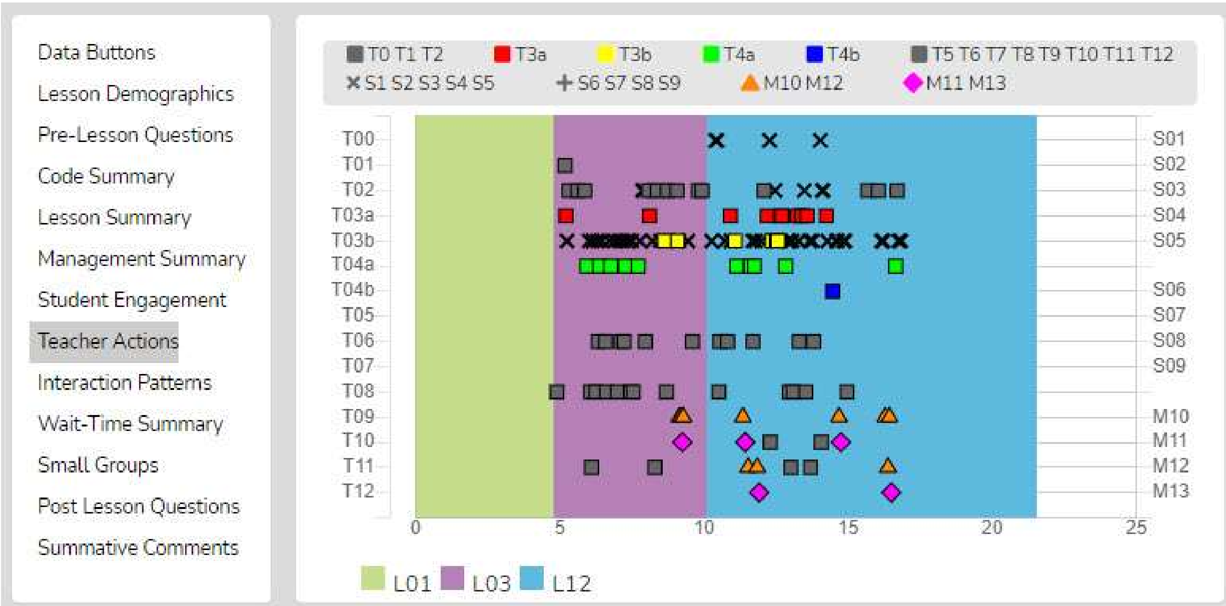


Student Engagement – Displays the student engagement events (S codes), noted specifically by student seating number, or generically if seating chart numbers were not used, and when the events occurred. Also displayed is when and how long the teacher reacted to and addressed the misbehaviors. The specific time of occurrence of student and teacher data is displayed on the lesson-type timeline with black bars for student events and red bars for teacher reactions. Clicking on a bar causes the video linked to that event to begin playing. In addition, the seating chart heat map shows by color code how many events are linked to specific students.

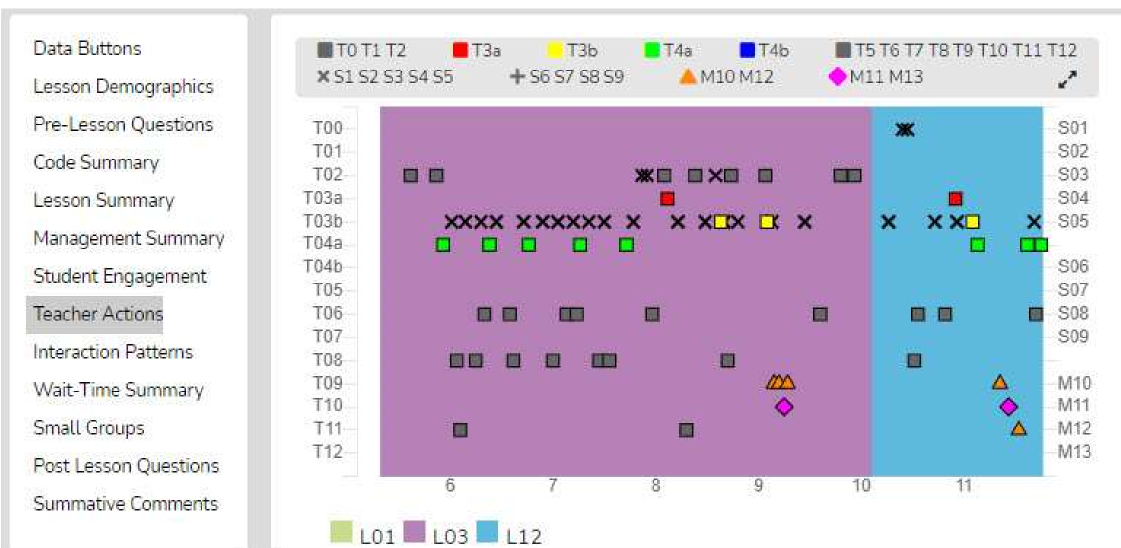


Demographic Highlighting in the Seating Chart Heat Map - In addition, if data is collected for specific students by using the student seat number before entering the S code, then the data can be displayed and toggled on or off by clicking on the Gender, ELL, SPED, or Minority buttons. If the observer should wonder how the students with special needs are engaged during the lesson, toggle this information to find out. If the observer or teacher is concerned about equity of participation regarding gender, minority, ELL, or students with special needs, then this data is available.

Teacher Actions Summary – *Teacher Actions Summary* is a timeline from the beginning to end of the lesson that displays on a backdrop of the lesson type (colors) in play and shows symbols for when the teacher exhibited various T codes actions, so the user can follow the sequence of teacher actions throughout the lesson. Also displayed on this timeline are M and S code data; in truth, almost all data collected are represented on the timeline, which is a robust set of data representing teacher and student actions. The user can easily see when any management issues occur in the context of the rest of the teacher and student actions in the lesson. Since this is a visual display of teacher actions, student actions, and misbehaviors, as well as the teacher's reaction to misbehaviors, it provides the user with a visual of the flow of action from the beginning to the end of the lesson and visually brings forth sequences, predominate or absence of a teacher or student actions. For example, if the teacher is curious about their use of questioning, it is easy to view when any of the four questioning codes were used and what codes occurred prior to or after. The user may find a complete absence of higher-level questions. The user may readily see what they tend to do following a student's response. The user can target viewing of any codes by toggling on or off the display of any of the T, S, or M codes. Aside from wait-time data, all the data is represented on this summary screen, which is often a large chunk of data and may clutter the screen.

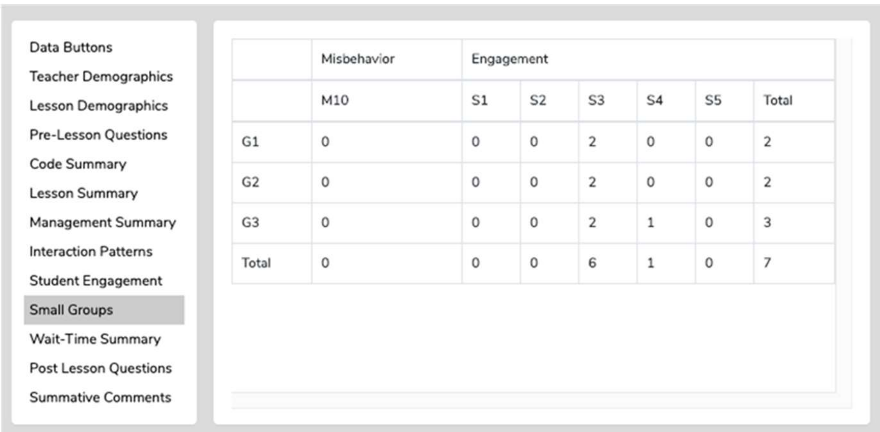


As shown below, the viewer can zoom in or out to enable data points to separate from each other.



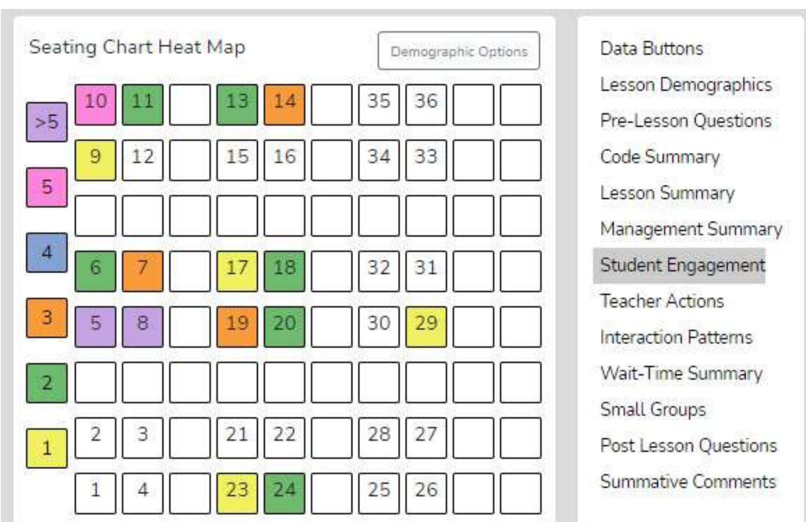
Finally, as with other data points in SMT, the user can click on any data point (symbol), and the linked video will play.

Small Groups – When completing a quantitative observation and student engagement or misbehavior data is collected and tagged by an individual or group number, the observer can then use the *Student Engagement, Management Summary*, *Seating Chart Heat Map,* and *Small Group* analysis displays to examine the results and determine various things about how the lesson impacted small groups.



	Misbehavior	Engagement					
	M10	S1	S2	S3	S4	S5	Total
G1	0	0	0	2	0	0	2
G2	0	0	0	2	0	0	2
G3	0	0	0	2	1	0	3
Total	0	0	0	6	1	0	7

The *Group Summary* data collected in conjunction with the student seating number allows for examining group dynamics and amount and levels of S code type of interactions that reveal the impact of a lesson on student-to-student interactions. The table shows S codes and M10 event responses coming from specific groups. This data would indicate if the teacher and observer wondered how the lesson stimulated student actions (S codes) within the small group. The *Seating Chart Heat Map* would show how much interaction occurred within that group, color-coding each member's number of contributions.



Wait-Time Summary – The wait-time data is only located within the *Wait-Time Summary.* Within the *Wait-time Summary* are general summaries of wait-time by wait-time type, events, total time, and averages for each wait-time. In addition, the lower half of the summary provides wait-time averages according to a specific teacher or student's actions. For example, the user can determine if more wait-time is allowed with higher-level questions requiring deeper thinking than lower-level questions.