Interactive Technology to Support Student-Centered Learning

Lindsay Hawkins, Shayna Pond, Bradly Cusack, Mariah Warren, Shelby Blackwood, Dewey Hulsey
Published by *K20 Center*

Time Frame 120 - 180 minutes

Essential Question(s)

How can we use technology to create student-centered learning experiences?

Summary

This session engages participants in a model learning activity that showcases how specific technologies that are typically teacher-centered can be authentically used to develop student-centered learning environments. Participants will explore interactive technologies such as Chromebooks and touchscreen devices/panels.

Learning Goals

- Identify components of student-centered learning.
- Analyze how the modeled activities and technologies support the identified components.
- Explore educational activities and supporting technology that promote student-centered learning.
- Apply activities and technologies to specific content areas.

Attachments

- Agenda—Interactive Technology to Support Student-Centered Learning.docx
- Agenda—Interactive Technology to Support Student-Centered Learning.pdf
- Authenticity Framework Reading—Interactive Technology to Support Student-Centered Learning.pdf
- Card Sort—Interactive Technology to Support Student-Centered Learning.docx
- Card Sort—Interactive Technology to Support Student-Centered Learning.pdf
- Ideas for Ideals—Interactive Technology to Support Student-Centered Learning.pdf
- Lesson Reflection Tool—Interactive Technology to Support Student-Centered Learning.pdf
- Presentation Slides—Interactive Technology to Support Student Centered Learning.pptx
- Student-Centered Activities and Tech Note Sheet—Interactive Technology to Support Student-Centered Learning.docx
- Student-Centered Activities and Tech Note Sheet—Interactive Technology to Support Student-Centered Learning.pdf
- Student-Centered Learning Research Long Version—Interactive Technology to Support Student-Centered Learning.pdf
- Triangle-Square-Circle—Interactive Technology to Support Student-Centered Learning.docx
- Triangle-Square-Circle—Interactive Technology to Support Student-Centered Learning.pdf

Materials

- Presentation Slides (attached)
- A digital concept mapping tool (Student-Centered Learning Card Sort Google Slide) *or* Student-Centered Learning Card Sort Cards (attached)
- Authenticity Framework Reading handout and Lesson Reflection Tool handout *or* Student-Centered Learning Research Long Version handout (attached; 1 per participant)
- Student-Centered Learning Activities and Tech Note Sheet handout (attached; 1 per participant)
- Ideas for Ideals Authentic Technology Integration handout (attached)
- Agenda (attached; 1 per participant)
- Triangle-Square-Circle handout (attached; 1 per participant)
- An Interactive Board
- Highlighters (1 per participant)

15 minutes

Engage

Group participants into 4 or 5 per table. Display the **Presentation Slides** attached to this PD and introduce yourself to the participants. Let them know that they will be learning about student-centered learning and its importance in teaching with technology.

Transition to **slide 3**. Briefly review the essential question and allow participants to discuss with their table group how they have used tech to create student-centered learning experiences.

"How can we use technology to create student-centered learning experiences?"

Ask for a spokesperson from each group to summarize and share out what was discussed among their table group. Have participants share their experiences... and tease out from the responses, "What made these experiences meaningful?"

Reveal and briefly highlight the session's objectives on **slide 4.** This will provide a roadmap of where you will go together during the session and will let participants know what to expect from this professional development.

30 minutes

Explore

Move on to **slide 5** and introduce the Card Sort instructional strategy and the next activity, a **Student-Centered Learning Card Sort using a forced copy of a Google Slide**. We will use this to think more deeply about what makes a learning experience student-centered. Give participants a few moments to access the Google slide and make sure everyone can access it before moving on.

Facilitator's Note

This activity can be done without computers by using the This activity can be done without computers by using the Student-Centered Learning Card Sort Cards attached to this lesson. Be sure to print and cut enough cards for your participants. You many not need a full sheet per person, but enough to allow everyone to be able to select 4 or 5 cards from a pool of options that answer the question, “What makes a learning experience meaningful?”

Tech Note

Use the Student-Centered Learning Card Sort Google Slide or build a similar structure with another digital tool that works well with your tech setup and students (Popplet, Lucidchart, Google Draw, etc.)

Display the **Student-Centered Learning Card Sort Google Slide** and point out that there are several statements about student learning on the left side of the board. On the right side is the question "What makes a learning experience meaningful?" Review the instructions on the slide:

1. Have each group open one copy of the provided Student-Centered Learning Card Sort Google Slide and read through the statements about student learning.
2. Ask participants to select 4 to 5 of the statements about student-centered learning on the left and drag them under the question on the right.
3. After sorting, have each group share their sorted slide with the whole group. This can be done as a Gallery Walk or with casting technology such as CastIt. (Instructions for how to use CastIt for this part are on **slide 6**.)

Tech Note

Consider the technology you are using for the day and how groups can best share their work with the tools you have. If you are using interactive boards, try a split screen so that everyone can see everyone else’s statements at the same time, noting differences and similarities.

Just Cast IT Software Cast & Multi-Cast to your TouchIT LED - from TouchIT Technologies

Casting and Multi-Casting is the ability to send a screen from your PC, MAC, Chromebook or Linux machine wirelessly to the Interactive LED.

With Just Cast IT, there is nothing to install on your computers. Simply open the app on the LED, then head over to www.justcastit.com. There is no limit to the number of computers you can cast at the same time.

45 minutes

Explain

As a facilitator, guide the group to pull out some common themes from the statements that each group chose. Then transition to the next section by explaining that we will be looking at deeper research on student-centered learning.

Proceed to **slide 7** and distribute the reading assignment. As participants read their sections of the research provided, have them highlight and note where they see the themes in the selected statements from their Card Sort Google Slides coming up in the research.

Depending on the time available and the depth of learning desired, provide participants with either the **Authenticity Framework** and **Lesson Reflection Tool** or with the **Student-Centered Learning Research Long Version**. Allow a few minutes for each person in the group to read and highlight the handout.

Facilitator's Note

If you are using the Authenticity Framework and Reflection Tool, all participants should read the introduction and then skip down to read the section titled "Student-Centered Learning."

If you are using the Student-Centered Learning Long Version, consider using the Jigsaw strategy and having each group take a section of the text to read.

When everyone is finished, have groups take a few minutes to discuss the reading, including which information they highlighted as important and why.

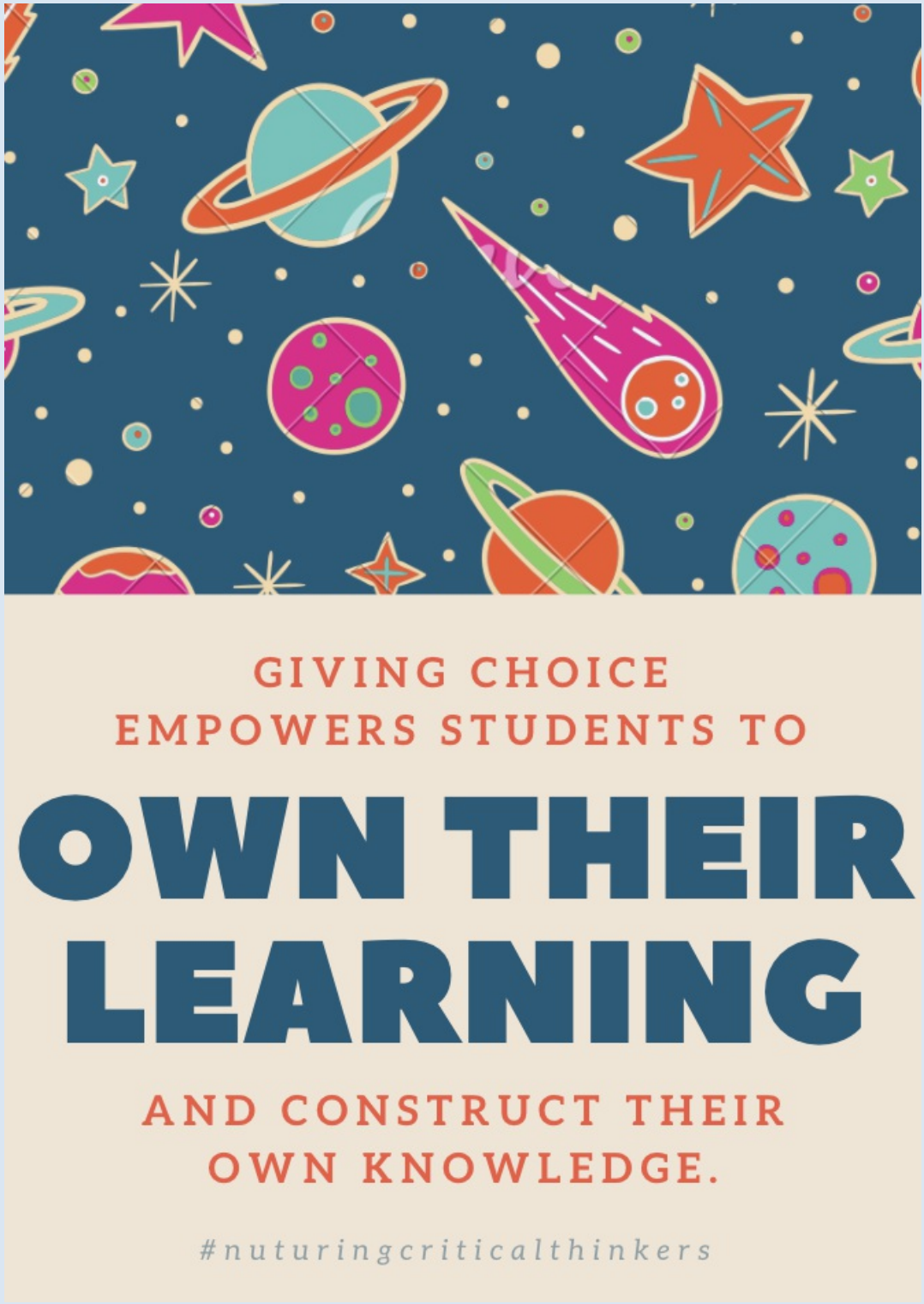
Then move to **slide 8** and ask groups to pull up their Card Sort Google Slides again. Have them take a few moments to consider if they would like to add or remove any statements from the top 4 to 5 they originally chose to best represent student-centered learning.

Next, move to **slide 9**. Participants should work within their groups to construct a Gist, including a visual representation and a hashtag summarizing their group's understanding of student-centered learning based on the reading. Their summary should be no more than one sentence. After finishing their gists in Canva, allow each group to share out.

Tech Note

Canva is a free digital resource that can be used as a tool for creating the Gist summary. In Canva, there are many visual "announcement" templates that participants can select for their summary.

Example Summary Gist created in Canva



30 minutes

Extend

Display **slide 10**. Using the provided **Student-Centered Learning Activities and Tech Note Sheet** as a guide, ask participants to take some time to reflect on the card sort activity and the Canva Gist activity. They should specifically note how these activities facilitated student-centered learning and ideas for how they could use these activities in their own classrooms.

Ask volunteers to share their responses to the whole group.

Possible Responses

"The Student-Centered Learning Card Sort Google Slide supported student-centered learning because I had many choices and had to negotiate with my peers on which ones to use and why. I could use this in my social studies class with a lesson on the revolutionary war and have students choose the top 4 causes of revolution prior to the lesson and then decide if they want to change their answer after learning more about the actual causes of the war."

Next, move to **slide 11.** Have each participant read the **Ideas For Ideals Authentic Technology Integration** handout themselves and come up with an activity using interactive technology that is student-centered. They should record their reasoning for how it is student-centered on their note sheet. Then have the members of the group share with each other what they each added to their note sheet.

Then, move on to **slide 12** and refer participants to the **Agenda** for some online libraries and technology resources (feel free to customize the options here based on the technology tools that are most relevant and available to participants). Provide time for groups to explore these resources and develop additional activities and tech tools they can use to support student-centered learning in their classroom.

15 minutes

Evaluate

Close this session on **slide 13** with the Triangle-Square-Circle strategy. Have participants use this strategy to reflect on how they have been using technology in their classrooms and what they will change about their practice. Briefly review the instructions for the Triangle-Square-Circle strategy:

- Write on the sides of the triangle: three components of student-centered learning.
- Write inside the square: how do the tech and activities we used and discussed today square with your curriculum?
- Write in the circle: what questions are still circling in your head about how the integration of tech supports student-centered learning?

Pass out the **Triangle-Square-Circle** handout to serve as a session feedback form. (Participants are free to retype anything they wrote on their reflection above in the final part of the form or tell us something else about their learning/goals).

Research Rationale

Authenticity can be implemented in all content areas and all grade levels. Authentic teaching has four components, construction of knowledge, disciplined inquiry, value beyond school, and student-centered learning. These four components are created and apparent through authentic tasks. Authentic tasks defined by Herrington, J., et al. (2014), are ill-defined, requiring students to define the tasks and subtasks needed to complete the activity. They are investigated by students over a sustained period of time. Tasks can be applied to different subject and content areas and lead with open-ended outcomes. These tasks are seamlessly integrated with assessment and create accomplished products valuable in the student's own right. They allow for competing solutions and a diversity of outcomes. Authentic lessons allow opportunities for collaboration, which leads to the exploration of multiple perspectives and various points of view to be heard during a lesson. By forming collaborative groups, students are able to construct knowledge. Through the use of essential, open-ended questions, teachers provide the opportunity for students to reflect, and to articulate thoughts and the processes of their learning. "Authentic learning environments need to provide collaborative learning where, for example, more able partners can assist with scaffolding and coaching, and where teachers provide appropriate learning support" (Herrington, J., 2014; e.g., Collins et al., 1989; Greenfield, 1984). Herrington, J. et al., describes the four components in an authentic lesson as 1) students should seek to solve a real-life problem to which they would attach emotional commitment as well as a cognitive interest, 2) the problem should be sufficiently open-ended so that there are a variety of strategies for its solution, 3) the problem-solving strategies and "solutions" developed should encourage students to change their actions, beliefs or attitudes, and 4) the problem should have a real audience beyond the classroom. Authentic tasks are more worthy of the investment of time and effort in higher education than de-contextualized exercises and tasks (Herrington & Herrington, 2006).

Resources

- Bulgren, J. A., & Ellis, J. D. (2012). Argumentation and evaluation intervention in science classes: Teaching and learning with Toulmin. In M. S. Khine (Ed.), *Perspectives on Scientific Argumentation: Theory, Practice and Research* (pp. 135–154). Springer Netherlands.
- Collins, A., Brown, J. S., & Newman. S. E. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning and instruction: essays in honour of Robert Glaser* (pp. 453–494). Hillsdale, NJ: LEA.
- Greenfield, P. M. (1984). A theory of the teacher in the learning activities of everyday life. In B. Rogoff & J. Lave (Eds.), *Everyday cognition: Its development in social context* (pp. 117–138). Cambridge, MA: Harvard University Press.
- Herrington, A., & Herrington, J. (2006). *Authentic learning environments in higher education*. Hershey, PA: Information Science Publishing.
- Herrington, J., Reeves, T. C., & Oliver, R. (2013). Authentic learning environments. In J. M. Spector, M. D. Merrill, J. Elen, M. J. Bishop (Eds.), *Handbook of research on educational communications and technology* (pp. 401–412). Springer New York.
- K20 Center. (n.d.). Card sort. Strategies. https://learn.k20center.ou.edu/strategy/147
- K20 Center. (n.d.). Gallery walk / carousel. Strategies. https://learn.k20center.ou.edu/strategy/118
- K20 Center. (n.d.). Gist. Strategies. https://learn.k20center.ou.edu/strategy/3289
- K20 Center. (n.d.). Jigsaw. Strategies. https://learn.k20center.ou.edu/strategy/179
- K20 Center. (n.d.). Triangle-square-circle. Strategies. https://learn.k20center.ou.edu/strategy/65