



communication



collaboration



community
building



content
creation



creativity



choice of
conduct

PTD

Positive Technological Development



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PTD

Positive Technological Development



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The Positive Technological Development (PTD) framework was developed by Prof. Marina Umaschi Bers, head of the Devtech Research Group in the Child Study & Human Development department at Tufts University. The PTD framework involves 6 positive behaviors (also known as 6 C's) that can be promoted through the use of technology in a learning environment: Communication, Collaboration, Community Building, Content Creation, Creativity, and Choice of Conduct.

For more information about this framework, we suggest reading her books, *Designing Digital Experiences for Positive Youth Development: From Playpen to Playground* (Bers, 2012), and *Coding as a Playground: Programming and Computational Thinking in the Early Childhood Classroom* (Bers, 2018).

More on Professor Bers's work:
<http://sites.tufts.edu/mbers01/>



More on the DevTech Research Group
<http://ase.tufts.edu/devtech/index.html>



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What's in the PTD deck?

6 PTD cards for technologies



6 PTD cards for learning environments



In this deck you will find 2 sets of cards which are designed to promote conversation. The first deck is useful in thinking about the design and evaluation of technologies that promote the 6 C's. The second deck can be used to evaluate the learning environments that promote the 6 C's. You will also find three different ways to use the cards in a playful way.



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LEARNING ENVIRONMENTS



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Design Prompts:

- What technology design features allow children to exchange ideas with others?
- How are children able to express themselves through the technology?
- How are children able to create and share interactive projects using the technology?
- How are children's projects capable of interacting with one another?

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Design Prompts:

- How does the learning environment provide support for children to exchange ideas with others?
- How does the arrangement of the space allow for children to see one another's work?
- How do children engage in each other's work?

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Design Prompts:

- How can the technology be used by multiple children at the same time?
- How can children use the technology to work toward a common goal?
- How can children “specialize” and take on different roles in using the technology?
- In what ways can more than one child touch and use multiple parts or components of the technology?

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Design Prompts:

- How does the arrangement of the space promote sharing of tools and materials?
- How does the space allow for multiple children to work on one project?
- How does the activity allow for children to work together toward a common goal?
- How can children help each other to access or understand how to use materials?

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Design Prompts:

- How can the technology be used in projects that relate to the children's local home, school, or town environment?
- How can children use the technology to represent meaningful people, experiences, or customs in their lives?
- How can children create projects with the technology to help others?
- How can children create open-ended projects that others can build upon or change?

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Design Prompts:

- How much time and space is available so that children can share work and provide feedback to others?
- What is the role of the facilitator in establishing positive relationships within the environment?
- How are projects shared with parents, families, community members, school administrators, etc.?
- How does the learning environment provide opportunities for celebrating the learning process?

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Design Prompts:

- How does the technology support a *playground* (child-directed and open ended) as opposed to a *playpen* (adult-directed and closed-ended) type of experience?
- How does the technology engage children in learning how to code?
- How does the technology engage children in learning how to build?
- How does the technology engage children in expressing themselves by creating projects they care about?

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Design Prompts:

- How are tools and materials made visible and accessible to children?
- How are locations in the space designed to present or document children's work and the process of creation?
- How much time and space is available for children to focus on the process (rather than the product) of their work?
- In what ways are children given time to test out and iterate their projects?

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Design Prompts:

- How can the technology be used in unique and unexpected ways?
- What technology features support a diversity of approaches and learning styles?
- How can the technology be used in an integrated way with other materials in the classroom?

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Design Prompts:

- How are children able to create unique projects that reflect their own perspectives?
- How can the materials presented be used in more than one way?
- How do facilitators encourage a diversity of approaches in children's work?
- How are children given time to brainstorm and iterate their projects?

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Design Prompts:

- How can children make their own decisions regarding how they use the technology?
- How can children take risks when using the technology?
- In what ways does the technology require that children handle it with care?

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Design Prompts:

- How does the learning environment support children in making their own learning choices?
- How do children show respect to the space, tools, materials, and each other?
- What are the consequences when children fail to choose positive behaviors in the environment?
- How do children show respect to each other?
- In what ways do facilitators engage children in respectful conversations about choices?

LEARNING ENVIRONMENTS



TECH TARGETS

ACTIVITY



CHALLENGES TO STRENGTHS

ACTIVITY



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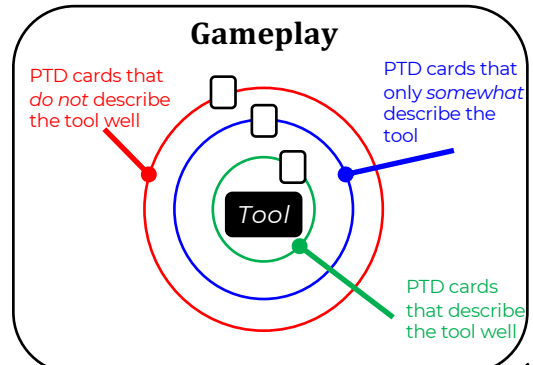


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Instructions

- Place the tool in the center of your space
- Choose one PTD technologies card at a time and discuss how this tool exemplifies the behaviors on the card
- Round 1: Assess
 - Place the PTD cards around the tool as they relate to the tool's current state
 - The closer a card is to the tool, the more the tool satisfies the card's criteria (see figure)
- Round 2: Improve
 - Brainstorm ways to improve the tool in order to address the criteria of the cards on the outer rings
 - If an appropriate improvement is found, place the card closer to the tool

Use only TECHNOLOGIES cards



*Bonus: teams of evaluators can race to see who gets all their cards to touch the technology first



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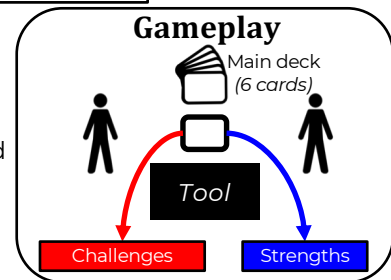


choice of conduct

Use only LEARNING ENVIRONMENTS cards

Instructions

- Shuffle the 6 Learning Environment cards
- Take the top card and place it in front of the tool
- Players should then brainstorm potential challenges that would interfere with the tool achieving the goals of that card
 - Example: "What if students do not speak the same language?" Would be a potential challenge for the Communication card
- Players then discuss solutions to address the challenges
- If players agree on a solution, move the card to the Strengths pile (see figure). If more consideration is needed, move the card to the Challenges pile and choose a new card from the main deck
- Once the main deck is depleted, return to the cards in the Challenges pile
- The game ends when all cards are in the Strengths pile, or the team agrees upon the limitations of the tool





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JUDGMENT CALL

ACTIVITY



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Notes



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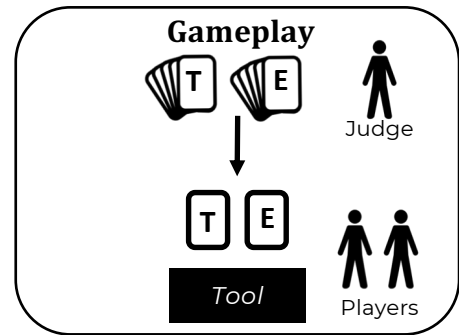


choice of conduct

Instructions

Use all 12 cards

- Assign one person to be the “Judge” and the remaining people as “Players”. Players can work individually or in teams
- The judge shuffles each 6-card deck (Technologies and Learning Environments) and places the top cards from each deck in front of the chosen tool (see figure)
- Players have 5 minutes to come up with an activity with the tool that would exemplify the elements of both cards
- The judge chooses the best activity for the chosen tool and the PTD cards
- The judge then chooses a new pair of cards. Play until all cards are gone



**Bonus: Teams can compete with one another and keep score after each round*



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Use this space to record notes

Strengths

- _____
- _____
- _____
- _____

Challenges

- _____
- _____
- _____
- _____

Potential Improvements

- _____
- _____
- _____
- _____