PTD
Positive Technological Development
The Positive Technological Development (PTD) framework was developed by Prof. Marina Umashchi 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

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.
**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?

**TECHNOLOGIES**

**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?

**LEARNING ENvironments**
**TECHNOLOGIES**

**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?

**LEARNING ENVIRONMENTS**

**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?
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?

TECHNOLOGIES

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?

LEARNING ENVIRONMENTS
**TECHNOLOGIES**

**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?

**LEARNING ENVIRONMENTS**

**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?
CREATIVITY
TECHNOLOGIES

CREATIVITY
LEARNING ENVIRONMENTS
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?

TECHNOLOGIES

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?

LEARNING ENVIRONMENTS
CHOICE OF CONDUCT
TECHNOLOGIES

CHOICE OF CONDUCT
LEARNING ENVIRONMENTS
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?

TECHNOLOGIES

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
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

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

Use only TECHNOLOGIES cards

Gameplay

PTD cards that do not describe the tool well

PTD cards that only somewhat describe the tool

PTD cards that describe the tool well

Main deck (6 cards)

Challenges

Strengths

Use only LEARNING ENVIRONMENTS cards

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
JUDGMENT CALL
ACTIVITY

Notes
Instructions

- 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.

Use all 12 cards

Gameplay

Judge

Tool

Players

Use this space to record notes

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<th>Strengths</th>
<th>Challenges</th>
<th>Potential Improvements</th>
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