

Reimagining Vygotsky

Examining the Relationship between sociocultural theory, technology, and social development

Outcomes:

- Summarize how Vygotsky's sociocultural learning theory can be used to make sound educational decisions when implementing technology into an early childhood classroom
- Explore the roles of teachers, parents, administration, and school culture in establishing developmentally appropriate practices concerning the use of technology in programs that serve young children
- Reflect on personal beliefs and practices concerning the implementation of technology into an early childhood classroom

Why Does this matter?

- Today's children are growing up in an environment in which everyday technologies are evolving at a rapid pace. Computers, mobile phones, and other advanced technologies are available in almost every home. To embrace the use of all the technologies that children encounter in everyday life, it is essential that they have a basic understanding of technology. It is now the responsibility of early childhood teachers to expose children to technology.
- As I was considering the appropriate uses of technology in my classroom, I was left with questions. Is it possible to use touch-screen technology as part of the early childhood curriculum in a developmentally appropriate way? What are the implications for social development if a teacher uses touch-screen technology in the classroom?

Vygotsky's Sociocultural theory

- The major theme of Vygotsky's theoretical framework is that social interaction plays a fundamental role in the development of learning. Vygotsky suggested that everything is learned on two levels—first through interaction with others, and then integrated into the individual's mental structure.
- Vygotsky also suggested that the potential for learning is limited to the zone of proximal development, or ZPD. The zone is defined as the area of exploration in which the child is cognitively ready, yet still requires help and social interaction to further develop cognition in this particular area. ZPD is different than a child's developmentally level at a particular moment in time; it is what happens next.
- A more knowledgeable other (MKO) is able to offer scaffolding to support the child's evolving cognition.

- Vygotsky focused on the child-in-context. He defined “context” as a child’s culture and how they express their culture. Further, the child is continually acting in social interactions with other people. Vygotsky argued that looking at child development without cultural context distorts our view of development, and often causes us to look at causes of behavior as residing within the child, rather than in their culture. As we further examine the role of technology in early childhood classrooms and young children’s lives, we must consider the cultural contexts of learning in a digital age.
- Social reality is the source of development. In terms of teaching in a developmentally appropriate approach, teaching is seen as a process of helping children learn, done in collaboration between the teacher, students, and peers.

Using Vygotsky's Theory in the Classroom

- Kim (2013) suggest technology is more of a “buffer” between the child and learning and can be used support interpersonal interactions, not replace them (Kim, 2013). Kim also suggests that the use of technology help motivates young children to participate in activities and to engage with other learners, including parents and teachers (2013). It is important that technology does not replace the intimate social relationships occurring between children, parents, peers, and teachers. All are essential for learning.
- Cicconi (2013) examined the role of the more knowledgeable other (MKO), suggesting that the use of the Internet itself can be considered a MKO in early childhood classrooms. The Internet offers children the opportunity to be “immersed” in experiences such as interactive maps, live communication with other children around the world, and the use of videos.

Technology in the Classroom

- Clements and Sarama (2002) examined the uses of technology in early childhood curriculum and found several key factors in the success of adding technology into a classroom. First, the most critical feature is a knowledgeable and responsive adult. This is not only critical to the use of technology, but to all classroom activities. The physical arrangement of the classroom, the computer environment, and the software are all important features to the successful integration of technology. Similarly, teachers need professional development about technology, specifically the use of early childhood educational technology, and technological support for the teachers in order to implement technology successfully (Clements & Sarama, 2002).
- Kirova and Jamison (2018) examined preschool children's use of iPads through Vygotsky's lens of sociocultural theory. In this particular study, preschool children's learning was examined as it occurred through interactions with others, with digital devices (iPads), and other classroom activities. The children were given iPads, shown how to take pictures and record videos, and then create digital literacy texts. Scaffolding was provided by a MKO, specifically a teacher or peer. The results of the study indicate the importance of scaffolding and having a child work within their individual ZPD (Kirova & Jamison, 2018).

Roles of Teachers

- When used in the classroom, it is important that technology serves to aid, not become the desired curriculum. Fridberg, Thulin, and Redfors (2018) found that technology can serve as a scaffold, helping young children further develop knowledge. However, the use of technology must be done in context and not in place of everyday experiences.
- Arnott encourages the use of technology in early childhood classrooms as it helps children understand their own agency with the use of technology (2016).
- The physical arrangement of the classroom is an important detail when promoting opportunities for the social use of technology. Seating opportunities should invite more than one child to participate—offering two seats instead of one. Keeping the technology devices in close proximity to one another or allowing the technology to be moved to various parts of the classroom also promotes social interaction. Teachers should also introduce technology the way they would any other addition to the classroom. Through this introduction, the teacher can encourage socialization when using the technology. It is also critical that the teacher be mindful of the types of apps or other activities that will be encouraged while using the technology. Teachers should seek to find experiences that allow for open-ended use, exploration, and collaboration. This is supported by Couse and Chen (2010) who argue what matters most in the integration of technology is the way the teacher chooses to use the technology in the classroom.

Role of Administration

- Professional development opportunities are needed in order for early childhood teachers to effectively evaluate, create, and monitor technology experiences in the classroom. Many times, teachers are attempting to determine the developmental appropriateness of technology without truly understanding the technology itself. Parette et al. (2013) examined this particular disconnect. This particular study indicated that once a teacher was knowledgeable about a particular technology, he or she was more comfortable and confident using the technology. This included further work to ensure developmentally appropriate experiences in the classroom. Parette et al. (2013) argue that a teacher needs the following to effectively use technology in the classroom: a basic understanding of the technology and its potential contributions to education, proficiency at using the technology, including using the technology to create classroom supports, and to actually create and implement instructional activities and products using the technology.

Role of families

- Plowman, Stephen, and McPake (2010) compared preschool children's experiences with technology at home and school. They found that children are offered far more opportunities to interact with technology at home versus at school. Plowman et al. (2010) argue this reflects on teacher's uneasiness of using technology and call for more professional development for teachers. Similarly, the technology skills used at school have little to do with the skill competency children have developed at home. This disconnect must be addressed.

Role of School culture

- According to the longitudinal study examining the process of technological change by Burkhardt & Brass (1990), organizations have the most productive transitions to technological change when those who will be using the technology feel they have some sense of control over how and when the technology will be implemented. If teachers are included in the decision-making process about what technologies to use, they will likely feel confident in the chosen technologies. Barbuto, Swaminathan, Trawick-Smith, and Wright (2003) found that appropriate professional development experiences do impact how technology is used in the classroom. For example, teachers reorganized the school day and the classroom to find new ways to incorporate technology.

My Personal experiences

- In my personal classroom of 3 and 4-year old children, I have been a somewhat reluctant adopter to integrating technology. The main concern I had concerning the use of adding touch-screen technology into my classroom was that the technology would serve as a barrier to the children's social development. I envisioned students using the touch-screens in a one-to-one fashion with limited, if any, social interaction.
- I inherited two older generation iPads for use in my classroom. Initially, I installed a few "educational" apps on them and set them up as a center activity. Almost immediately, I realized this center was not developmentally appropriate and I discontinued using the iPads. Upon further reflection, I decided to re-introduce the iPads in a more open-ended fashion. I demonstrated how to take pictures on the iPad and a few of the different drawing apps. I also started allowing small groups of children to work together instead of requiring a one child to one iPad ratio.

- Some children had more proficiency using the iPads and started to show peers how to use them for different purposes (MKO). The communication and collaboration between the peers was beautiful. Several children started asking me to email photos and drawings to their parents. The learning was social and developmentally appropriate. The children were working within their individual ZPD and supported each other through scaffolding.
- This experience truly changed the way I felt about the integration of technology into my early childhood classroom. Allowing the children to explore, collaborate, and share their iPad experiences required a change in how I viewed the purpose of technology in my curriculum.







Strategies for teaching

- As discussed earlier, the key to all developmentally appropriate experiences in early childhood, particularly those concerning the use of technology is a knowledgeable and responsive adult.
- Technology changes quickly and often there is a lack of professional development opportunities and training made available to teachers. Many teachers experience a gap of knowledge between knowing what is developmentally appropriate and being able to implement developmentally appropriate experiences in the classroom.
- Professional development and technological training should also be specific to the needs of the individual teachers. Teachers should not be expected to utilize technology without the proper training and implementation tools. Some teachers will require basic working knowledge of how to use specific technological tools, while other teachers might require training on the use of Twitter, blogs, or even development of games and activities.

Updating Vygotsky

- Through examination of the research, four main themes of how to successfully integrate technology in a developmentally appropriate manner that aids in a child's social development have emerged. They include: (1) collaboration, (2) critical thinking and problem solving, (3) child-directed, (4) inclusive to all children.
- This requires the focus of the activity to be interactive and engaging, moving beyond simply pushing buttons. The experience should invite peer collaboration and group thinking, allowing the children to learn from one another (ZPD). As children become more comfortable with technology, they are able to offer assistance to each other, and encourage each other to attempt a different approach to using the technology.
- Working together offers opportunities for young children to practice flexibility in their thinking and learning.
- The activities must be child-directed and should involve minimal direction and intervention from the adults in the classroom
- Finally, the technology experiences introduced in the classroom must be inclusive for all children, regardless of their competency with the technology.

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