ISSN: 2833-7611



# Ten Quick and Easy Ways to Enhance Early Literacy Instruction: Tips from a School Occupational Therapist

## **Sharon Swift**

Department of Occupational Therapy, Augusta University, Augusta, GA

## Kim Barker

Department of Teaching and Leading, Augusta University, Augusta, GA

#### **ABSTRACT**

Occupational therapists (OTs) can be valuable team members because of their expertise in activity and environmental analysis and, in particular, their skills in facilitating access to curricular and extracurricular activities for students with unique learning needs (AOTA, 2017). School OTs can assist with creating multi-sensory activities and providing suggestions for environmental modifications to increase children's engagement in learning activities to support literacy learning. Research shows that when children use multiple senses to learn new skills, they are not only able to remember the new skills more quickly, but they are also able to attend to activities longer (Golden & McCraken, 2016). The more parts of the brain involved in tasks, the greater the likelihood of learning; thus, multisensory learning through participation in meaningful, fun literacy activities can increase learning!

#### **KEYWORDS**

early literacy instruction; occupational therapy; environmental modifications; multimodal literacy

o you know your school's occupational therapist (OT)? If you are not already on a first-name basis, you could be missing out on a new school bestie! Historically, OT's role in schools has been limited to a related service under the Individuals with Disabilities Education Act (IDEA). However, OTs can be valuable team members who can address the needs of all students because of their expertise in activity and environmental analysis (American Occupational Therapy Association, 2017).

The Individuals with Disabilities Education Act (IDEA) provides free and appropriate education for children with disabilities, including the provision of related services. To qualify for IDEA, students must have a disability that adversely affects their educational performance. Related services are defined as "developmental, corrective, and other supportive services as are required to assist a child with a disability to benefit from special education" (USDOE, 2017). OT is just one of twelve related services identified by the Georgia Department of Education (2023) that may be provided as part of the student's individualized educational program (IEP) when a student is unable to access or progress in their educational program without consistent support. OT is part of the educational/IEP team to support student participation, engagement, and success in the school environment.

OT may also be provided under the Every Student Succeeds Act (ESSA). According to the 2015 reauthorization of the Elementary and Secondary Education Act of 1965 (Pub. L. 89-313),

the Every Student Succeeds Act (ESSA; Pub. L. 114-95), related service personnel are identified as essential contributors that enhance the education of all students by supporting the instruction, curriculum, and environment. ESSA requires that states and local educational agencies (LEAs) must conduct "timely and meaningful consultation with" related service personnel (ESSA, 2015, § 1112[a][1][A]) who are identified as specialized instructional support personnel within ESSA (Laverdure et al., 2023). Hence, OT is a valuable collaborator on the educational teams for both regular and special education programs.

In the early literacy classroom, combining OT's knowledge of play, language, cognition, and emotional regulation with teachers' knowledge of literacy instruction and classroom management can lead to a powerful multisensory approach that has proven to have a positive impact on literacy outcomes for young children with and without identified disabilities (Jasmin et al., 2018; Strong et al., 2018). Emerging research has found that OTs can impact student literacy rates and academic participation, especially for students who are reading below grade level or have been unsuccessful in traditional reading programs (Grajo & Candler, 2016; Grajo et al., 2020).

OTs consider learning to read and write to be children's primary "occupation" in the early grades. OTs further recognize that early literacy learning is fundamental to the child's role as a student and to their adult selves as social beings who practice self-care and engage in meaningful occupations throughout their lives (Arnaud & Gutman, 2022).

Academic skills are developed in a hierarchical manner, and until foundational skills are mastered, new skills cannot be fully developed (Kramer et al., 2018). When children use multiple senses to learn new skills, they are not only able to remember the new skills more easily, but they are also able to attend to activities longer (Golden & McCraken, 2016). Essentially, the more parts of the brain that are involved in learning tasks, the greater the likelihood that learning will occur. Most educators are aware that OTs can support handwriting objectives. However, they may not be aware that OTs specialize in understanding a broad range of foundational developmental sequences and in embedding activities into learning environments that support the development of those skills.

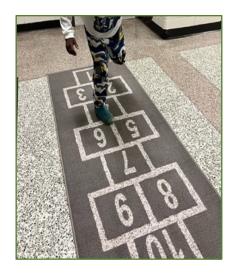
You can integrate OT into early literacy instruction even if you don't have an OT spending time in your classroom or school. Here are ten suggestions to get educators started!

# Ten Suggestions for Infusing OT into Early Literacy Learning

# 1. GET STRONG!

Let children develop core strength. Core strength supports the development of handwriting and increases engagement in learning activities. Children who have not yet developed core trunk control spend excessive physical energy maintaining posture and may become overly fatigued, impacting classroom attention, behavior, and overall performance (North Shore Pediatric Therapy, 2024). Incorporating motor skills into daily routines will positively impact the development of core strength, helping young children gain awareness and learn to control their growing bodies. When children are aware of where their bodies are relative to the world around them, they are more ready to learn and to be able to make precise movements like those required for legible handwriting, a skill that impacts reading skills into upper elementary grades (Lê et al., 2021). Pairing literacy concepts such as letter names and sounds, rhyming, and segmenting sounds with controlled motor activities such as yoga, twister, and hopscotch increases movement and builds core strength while practicing early literacy skills.

Figure 1: GET STRONG! Example Activities





## 2. GET SMART!

Let children learn to use helpful reminders. Helpful reminders or cues support independence and confidence during literacy activities. Learning laterality (left vs. right) and directionality (front vs back) are foundational skills for being able to differentiate between letters, numbers, and words and for learning physical relationships between objects in the world (Griswold, 2021). Becoming independent is vital as young learners who are supported and encouraged to be autonomous in their learning activities are more motivated to persevere with those activities (Erickson & Wharton-McDonald, 2019). Honing skills by using the tools in their academic toolbox helps young learners develop the ability to "self-correct" during reading and writing. Some of us still use our thumbs and index fingers to make an "L" or backward "L" to differentiate between left and right. We can teach the use of motor cues like these to assist children with alphabetic differentiation. Similar cues are also available for b and d and p and q.

Figure 2: GET SMART! Examples of Motor Cues





## 3. GET ON THE FLOOR!

Let children lie on the floor. Lying on the floor (tummy down) supports skills necessary for writing development and legibility. Lying tummy down while reading and writing increases muscle development of the hands, wrists, and arms due to weight bearing. "Tummy time" during infancy has proven to positively impact upper body strength and development. In contrast, children who spent more time lying on their backs during infancy later acquired motor skills (Carson et al., 2022). Weight-bearing activities in the classroom can enhance the continued development of muscles that impact handwriting and other school-related fine motor activities, including cutting, drawing, buttoning, snapping, and shoe tying (Flynn, 2020; Pearl & Duckart, 2023). Examples of weight-bearing activities for the classroom include independent reading on the floor, writing on whiteboards while lying on the floor, and child-friendly yoga.

Figure 3: GET ON THE FLOOR! Example Activities





## 4. GET MOVING!

Let children move. Movement helps increase attention (Mualem et al., 2018). Young children are often expected to sit still, but few children in early elementary have the ability to sit for long periods of time. Did you know that children can only attend to a task for a maximum of 3 minutes per year of age? (Brain Balance, n.d.). This means a 5-year-old should only be expected to attend for 15 minutes, and a 10-year-old for no longer than 30 minutes at a time. Therefore, taking short rest breaks (approx. 5 min) is important to break longer tasks into smaller chunks. This will allow young children to move, stretch, and refocus. Teachers can also allow children opportunities to change positions during learning activities by standing, lying on pillows, or sitting on beanbags. Literacy-focused movements can include reading and writing the room, classroom scavenger hunts, and schoolwide story walks.

Figure 4: GET MOVING! Example Activities





# 5. GET MESSY!

Let children explore a variety of materials, even if they get a little messy. "Messy play" allows children to utilize multiple senses to develop creativity, curiosity, and sensory motor skills. Increased engagement results from messy play because it is just plain fun (Casey & Prendiville, 2020). Increased engagement through multi-sensory activities leads to greater concept formation and retention (Broadbent et al., 2018). It is easy to infuse literacy activities with a bit of messy play. Messy play activities also provide students with a repertoire of experiences to talk and write about! Literacy activities can easily be infused into messy play activities. Young children can explore letters and words by writing on sandpaper, in shaving cream, or using finger paints; by searching for letters in sand using tweezers; and by finding hidden objects in water beads.

Figure 5: GET MESSY! Example Activities







## 6. GET REACHING!

Let children reach across their bodies. Reaching across the midline of the body is crucial for the two sides of the brain to learn to communicate with each other- resulting in smooth coordinated muscle movements (Therapies for Kids, n.d.). When both sides of the brain communicate effectively with each other, hand and eye movement is highly coordinated, leading to fluent hand and eye muscle movements. This is important to reading and writing since eyes and hands need to move across a page from left to right in the process of reading and writing (Robertson & Riek, 2022). Many children lack spontaneous opportunities to reach across their body's midline during routine play due to the overuse of smartphones, computers, and gaming consoles in lieu of play. Crossing midline activities can easily be incorporated into movement breaks, recess, and any time children are lining up. Literacy activities to promote crossing midline include having children write large letters on the whiteboard, standing in one spot and touching letters or words spread out on the wall, or even walking along a literacy-focused sensory path.

Figure 6: GET REACHING! Example Activities





## 7. GET FLEXIBLE!

Let children choose from a variety of flexible seating options. Flexible seating has become more common in various learning and work settings, including schools and classrooms. Flexible seating accommodates and facilitates all bodies which not only come in a variety of shapes and sizes but with different sensory preferences. Individual preferences can change based on mood, time of day, and activity. Having various seating options in the classroom will allow children to select the "right" chair for their needs so their bodies and minds will be ready to learn (Castellucci et al., 2016). By using flexible seating, teachers can reduce disruptive behavior and increase attention to tasks, which in turn impacts academic teaching time and performance (Hardin, 2017). Examples of flexible seating options for the classroom include bean bag chairs, standing tables, wobble stools, foam wedges, and ball chairs.

Figure 7: GET FLEXIBLE! Example Activities







## 8. GET RID OF THE PAPER AND PENCIL!

Let children use a variety of hands-on materials for learning. Hands-on materials activate multiple senses during learning activities. This results in more brain areas being stimulated, increasing learning and retention (Okray et al., 2023). There are many ways to work on literacy activities other than using paper and pencil. Incorporate the use of magnetic letters, blocks, and string alphabet beads for letter identification, sequencing, and spelling. Turn classroom tables into chalkboards or whiteboards. Many children lack the fine motor skills necessary to successfully engage in classroom tasks such as writing (Seo, 2018). Getting rid of paper and pencil allows children to engage with classroom materials that promote fine motor skill development. Classroom activities that promote fine motor skills include using tongs to pick up and sort items, shape punchers to create artwork, and building blocks. Even clean-up tasks like putting caps back on markers and glue sticks build fine motor skills.

Figure 8: GET RID OF THE PAPER AND PENCIL! Example Activities







## 9. GET A SENSORY-FRIENDLY ENVIRONMENT!

Let children learn in a sensory-friendly environment. Sensory-friendly classrooms protect young children from becoming over-stimulated and help them maintain focus on learning activities (Barrett et al., 2013). Think of the impact the bright lights, sounds from the hallways, and people talking to you all day have on YOUR sensory system. Children experience the same impact from their environment, and many are not able to tell us when they are overstimulated.

They tend to simply shut down (i.e., zone out) or act out. One of the quickest and easiest solutions to sensory overload is to adapt the lighting in your room. Research has shown that fluorescent lights negatively impact alertness, attitude, and energy level (Morrow & Kanakri, 2018). Adding fluorescent light covers can change the entire mood of your classroom and your students! Other ideas for making learning environments sensory-friendly include using white tree lights for an added soothing glow, indirect and soft lighting, sound-absorbing rugs, or tennis balls to reduce chair noise. Also, soothing music and white noise can have a calming effect.

Figure 9: GET A SENSORY-FRIENDLY ENVIRONMENT! Examples







## 10. GET PLAYFUL!

Let children have fun. Fun instructional activities are effective for your students and for you! Play is considered the work of a child. Research shows that active play has a positive effect on academic performance as it impacts behavior and children's ability to self-regulate (Becker et al., 2014). We often view what children are doing as "mere play" when, in reality, they are learning about the world, how objects interact, and how to use their bodies. Children are not always ready to join the serious adult world, so let us join them in making learning fun! Playful activities that can support literacy learning include coloring and drawing, Play-Doh creations, and card and board games. All of these can easily be adapted for literacy learning.

Figure 10: GET PLAYFUL! Example Activities







#### Conclusion

The tips included in this article should be appropriate for most students in early education classrooms as part of regular classroom activities. If teachers have questions about additional ways to incorporate multisensory activities into their classrooms, they should reach out to their school's OT. OTs may provide classroom and curriculum-level suggestions to maximize student engagement and success (AOTA, 2017).

#### References

- American Occupational Therapy Association. (2017). What is the role of the school-based occupational therapy practitioner? Questions and answers for school administrators. <a href="https://www.aota.org/~/media/Corporate/Files/Practice/Children/School-Administrator-Brochure.pdf">https://www.aota.org/~/media/Corporate/Files/Practice/Children/School-Administrator-Brochure.pdf</a>
- Arnaud, L. M., & Gutman, S. (2022). Effectiveness of an occupational therapy reading program for underserved children in an urban elementary school: A pilot randomized controlled study. *American Journal of Occupational Therapy*, 76(13), 302–319. <a href="https://doi.org/10.1080/19411243.2020.1732260">https://doi.org/10.1080/19411243.2020.1732260</a>
- Barrett, P., Zhang, Y., Moffat, J., & Kobbacy, K. (2013). A holistic, multi-level analysis identifying the impact of classroom design on pupils' learning. *Building and Environment*, 59, 678-689. <a href="https://doi.org/10.1016/j.buildenv.2012.09.016">https://doi.org/10.1016/j.buildenv.2012.09.016</a>
- Becker, D., McClelland, M., Loprinzi, P., & Trost, S. (2014). Physical activity, self-regulation, and early academic achievement in preschool children. *Early Education and Development*, 25(1), 56–70. https://doi.org/10.1080/10409289.2013.780505
- Brain Balance. (n.d). *Normal attention span expectations by age*. <a href="https://www.brainbalancecenters.com/blog/normal-attention-span-expectations-by-age">https://www.brainbalancecenters.com/blog/normal-attention-span-expectations-by-age</a>
- Broadbent, H. J., Osborne, T., Mareschal, D., & Kirkham, N. Z. (2018). Withstanding the test of time: Multisensory cues improve the delayed retention of incidental learning. *Developmental Science*, 22(1), Article e12726. https://doi.org/10.1111/desc.12726
- Carson, V., Zhang, Z., Predy, M., Pritchard, L., & Hesketh, K. D. (2022). Longitudinal associations between infant movement behaviours and development. *International Journal of Behavioral Nutrition and Physical Activity*, *19*(1), 1–15. <a href="https://doi.org/10.1186/s12966-022-01248-6">https://doi.org/10.1186/s12966-022-01248-6</a>
- Casey, L., & Prendiville, S. (2020). Let's get messy! Enhancing and enriching children's learning and development through messy play. In S. Jennings & C. Holmwood (Eds.), *Routledge international handbook of play, therapeutic play and play therapy* (pp. 152–166). Routledge. <a href="https://doi.org/10.4324/9780429327230-17">https://doi.org/10.4324/9780429327230-17</a>
- Castellucci, H. I., Arezes, P. M., Molenbroek, J. F. M., de Bruin, R. & Viviani, C. (2016). The influence of school furniture on students' performance and physical responses: Results of a systematic review. *Ergonomics*, 60(1), 93–101. <a href="https://doi.org/10.1080/00140139.2016.1170889">https://doi.org/10.1080/00140139.2016.1170889</a>
- Erickson, J. D., & Wharton-McDonald, R. (2019). Fostering autonomous motivation and early literacy skills. *The Reading Teacher*, 72(4), 475–483. <a href="https://doi.org/10.1002/trtr.1750">https://doi.org/10.1002/trtr.1750</a>

- Therapies for Kids. (n.d.). *The importance of crossing the midline*. <a href="https://therapiesforkids.com.au/blog/importance-of-crossing-the-midline/">https://therapiesforkids.com.au/blog/importance-of-crossing-the-midline/</a>
- Flynn, A. (2020, May 27). *Handwriting involves more than just the hand!* San Diego Occupational Therapy. <a href="https://sandiegooccupationaltherapy.com/occupational-therapy/handwriting-involves-more-than-just-the-hand/">https://sandiegooccupationaltherapy.com/occupational-therapy/handwriting-involves-more-than-just-the-hand/</a>
- Georgia Department of Education. (2023). *Occupational and physical therapy*. <a href="https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Special-Education-Services/Pages/Occupational-and-Physical-Therapy-.aspx">https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Special-Education-Services/Pages/Occupational-and-Physical-Therapy-.aspx</a>
- Georgia Department of Education. (2020). Characteristics of educationally relevant therapy and medical/clinical therapy. <a href="https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Special-Education-Services/Documents/Eligibility%20Areas/OT-PT/Characteristics%20of%20Educationally%20Relevant%20Therapy%20and%20the%20Medical%20Model%2off12020.pdf">https://www.gadoe.org/Curriculum-Instruction-and-Assessment/Special-Education-Services/Documents/Eligibility%20Areas/OT-PT/Characteristics%20off%20Educationally%20Relevant%20Therapy%20and%20the%20Medical%20Model%2off12020.pdf</a>
- Golden, K., & McCracken, H. (2016). The effect of multisensory activities to facilitate the learning of spelling words in first-grade students. *American Journal of Occupational Therapy*, 70(4), Article 7011505172p1. <a href="https://doi.org/10.5014/ajot.2016.70S1-PO7024">https://doi.org/10.5014/ajot.2016.70S1-PO7024</a>
- Grajo, L. C., & Candler, C. (2016). An occupation and participation approach to reading intervention (OPARI), part I: Defining reading as an occupation. *Journal of Occupational Therapy, Schools, & Early Intervention*, 9(1), 74–85. <a href="https://doi.org/10.1080/19411243.2016.1141082">https://doi.org/10.1080/19411243.2016.1141082</a>
- Grajo, L. C., Candler, C., & Sarafian, A. (2020). Interventions within the scope of occupational therapy to improve children's academic participation: A systematic review. *The American Journal of Occupational Therapy*, 74(2), 1–32 https://doi.org/10.5014/ajot.2020.039016
- Griswold, M. (2021, April 19). *The importance of learning left and right*. LLA Therapy. <a href="https://llatherapy.org/the-importance-of-learning-left-and-right/">https://llatherapy.org/the-importance-of-learning-left-and-right/</a>
- Hardin, C. (2017). Flexible seating in the early childhood classroom [Master's thesis, Northwestern College Orange City]. NWCommons. <a href="https://nwcommons.nwciowa.edu/cgi/viewcontent.cgi?article=1050&context=education">https://nwcommons.nwciowa.edu/cgi/viewcontent.cgi?article=1050&context=education</a> masters
- Jasmin, E., Gauthier, A., Julien, M., & Hui, C. (2018). Occupational therapy in preschools: A synthesis of current knowledge. *Early Childhood Education Journal*, 46(1), 73–82. <a href="https://doi.org/10.1007/s10643-017-0840-3">https://doi.org/10.1007/s10643-017-0840-3</a>
- Kramer, P., Hinojosa, J., & Howe, T. (2018). Frames of reference for pediatric occupational therapy (4th ed.). Wolters Kluer.
- Laverdure, P., VanCamp, A. B., & LeCompte, B. (2023). Empowering ESSA's value in schools. *OT Practice*, 28(4), 15–19. <a href="https://www.aota.org/publications/ot-practice/ot-practice-issues/2023/empowering-essas-value-in-schools">https://www.aota.org/publications/ot-practice/ot-practice-issues/2023/empowering-essas-value-in-schools</a>
- Lê, M., Quémart, P., Potocki, A., Gimenes, M., Chesnet, D., & Lambert, E. (2021). Modeling the influence of motor skills on literacy in third grade: Contributions of executive functions and handwriting. *PLoS ONE*, *16*(11), Article e0259016. <a href="https://doi.org/10.1371/journal.pone.0259016">https://doi.org/10.1371/journal.pone.0259016</a>

Morrow, B. L., & Kanakri, S. M. (2018). The impact of fluorescent and LED lighting on students' attitudes and behavior in the classroom. *Advances in Pediatric Research*, *5*(15), 1–12. <a href="https://doi.org/10.24105/apr.2018.5.15">https://doi.org/10.24105/apr.2018.5.15</a>

- Mualem, R., Leisman, G., Zbedat, Y., Ganem, S., Mualem, O., Amaria, M., Kozle, A., Khayat-Moughrabi, S. & Ornai, A. (2018). The effect of movement on cognitive performance. Frontiers in Public Health, 6, Article 100. https://doi.org/10.3389/fpubh.2018.00100
- North Shore Pediatric Therapy. (2024, February 1). *How does decreased trunk control affect my child's schoolwork?* <a href="https://www.nspt4kids.com/parenting/how-does-decreased-trunk-control-affect-my-childs-schoolwork/">https://www.nspt4kids.com/parenting/how-does-decreased-trunk-control-affect-my-childs-schoolwork/</a>
- Okray, Z., Jacob, P. F., Stern, C., Desmond, K., Otto, N., Talbot, C.B., Vargas-Gutierrez, P., & Waddell, S. (2023). Multisensory learning binds neurons into a cross-modal memory engram. *Nature*, 617, 777–784. <a href="https://doi.org/10.1038/s41586-023-06013-8">https://doi.org/10.1038/s41586-023-06013-8</a>
- Pearl, M. M., & Duckart, J. A. (2023). Prone to success: The effects of prone on handwriting legibility. *The American Journal of Occupational Therapy*, 77(2), Article 7711510270p1. <a href="https://doi.org/10.5014/ajot.2023.77S2-PO270">https://doi.org/10.5014/ajot.2023.77S2-PO270</a>
- Robertson, A., & Riek, J. (2022). Multi-sensory play in the reading classroom. *Educating Young Children: Learning and Teaching in the Early Childhood Years*, 28(1), 24–31. <a href="https://search.informit.org/doi/10.3316/informit.518698986322089">https://search.informit.org/doi/10.3316/informit.518698986322089</a>
- Seo S. M. (2018). The effect of fine motor skills on handwriting legibility in preschool age children. *Journal of Physical Therapy Science*, 30(2), 324–327. <a href="https://doi.org/10.1589/jpts.30.324">https://doi.org/10.1589/jpts.30.324</a>
- Strong, K., Wolff, M., Meier, C., Bublitz, S., Geboy, S., Myers, S., & Szczech Moser, C. (2018). Occupational therapy and literacy. *Journal of Occupational Therapy, Schools, & Early Intervention*, 11(4), 485–511. https://doi.org/10.1080/19411243.2018.1558523
- U.S. Department of Education. (2017). Sec. 300.34 Related services. <a href="https://sites.ed.gov/idea/regs/b/a/300.34">https://sites.ed.gov/idea/regs/b/a/300.34</a>

Received: July 9, 2023 | Accepted: January 11, 2024 | Published: May 15, 2024