

Printing in Kindergarten

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What Will be Covered in this Presentation

- General trends in Kindergarten printing instruction
- Types of OT services in Kindergarten related to printing
- Features of various printing programs
- OT/Teacher collaboration for printing
- Kindergarten classroom observations related to printing
- OT classroom interventions

Learning Objectives

- Name at least three important observations of student performance during printing time
- Select at least three ways an OT can collaborate with the Kindergarten teacher with respect to the handwriting program
- List at least three interventions for concerns related to printing

Introduction

- Methods for teaching printing in kindergarten vary among school districts, schools, and between classrooms in the same school – how does this relate to the implementation of Core Standards?
- The OT should be aware of the individual classroom teacher's philosophy for literacy instruction and the role of handwriting within the literacy program
- The OT must be aware of the practice act for their particular state and school district policies with respect to: medical prescription, parent permission, and release of information policies when providing direct and indirect OT services within the classroom

Types of OT Service in Kindergarten Programs

- OT's may be working in various classroom situations: Rtl with the whole class (Tier 1), Rtl with a small group (Tier 2), and individual intervention (Tier 3) some states/districts require a physician script/referral for this level of individual service
- Rtl refers to: Response to Intervention which is a regular education initiative in which the need for student interventions are addressed (reading, math, writing, etc.)
- A student with an IEP that includes OT has gone beyond the Rtl process and receives special education services

Types of OT Service in Kindergarten Programs

- In some school districts and classrooms, the OT participates in teaching printing with the classroom teacher – this would be considered a Tier 1 Rtl intervention because it addresses the general needs of the whole classroom and provides activities that are beneficial for all students
- At this level, the OT may assist the teacher and students with the basics of printing instruction: student posture, pencil grip, paper, pre-writing 'warm-up' activities, and sequence of instruction for letter formation

Types of OT Service in Kindergarten Programs

- Some school districts have kindergarten programs that address the needs of students who require a more intensive curriculum to prepare for first grade – these programs have various names like: Transitional Kindergarten and Intensive Kindergarten – these students have an IEP
- OT's may be assisting the teacher with whole class, small group, or individual instruction and interventions in these classrooms – some students may have OT

Types of OT Service in Kindergarten Programs

- Kindergarten students may be brought up at a problem solving team meeting to discuss RtI interventions
- OT may suggest RtI interventions from a fine motor kit or other resources
- The OT may be asked to observe students in Transitional or Intensive Kindergarten who are not on OT services
- The OT is frequently asked to observe a student in the kindergarten classroom with fine motor and/or handwriting concerns for intervention suggestions or to determine if an OT evaluation is warranted

Research Findings

- OT direct and indirect services within the Kindergarten classroom regarding handwriting are more effective when both the teacher and OT are invested in planning and carrying out the program (Vander Hart et al., 2009; Taras et al., 2011)

Research Findings

- (Bazyk et al., 2009) evaluated the effect of implementing OT direct and indirect services into the Kindergarten classroom curriculum that applied an emergent literacy framework for the whole class, as well as students with an IEP for OT. Results indicated a significant improvement in fine motor skills and emergent literacy outcomes for children with and without disabilities beyond what would have been expected with maturation. However, no control group was used, therefore cannot infer causality. This study provides a good model for OT's working in the classroom in a collaborative effort with the teachers and imbedding OT techniques into the existing curriculum

Research Findings

- (H. Taras et al., 2011) In a group of Kindergarten children, shoulder stretch, wrist extension, naming each finger, thumb-to-finger sequencing, directionality exercises from one's body to music, form American Sign Language sign for letter of the day, trace-copy-erase individual letter formation was used as part of a handwriting program. Students using the OT handwriting intervention program had a significant improvement in handwriting compared to a control group.

Research Findings

- (V. W. Berninger et al., 2006) for a group of first graders, found that the combination of using fine motor activities (hand strength, kinesthetic awareness of fingers, dexterity, eye-hand coordination, and motor planning) PLUS activities to remember and match strings of letters and words - improved letter accuracy, or formation of letters (but did not improve speed of writing or automaticity as did direct handwriting instruction)
- Although not directly tested, it was suggested that Kindergarten children may also benefit from verbal mediation when first learning to form letters.

Handwriting Programs Used in Kindergarten

- The use of handwriting programs varies among school districts, among schools, and between different Kindergarten classrooms
- Many programs are available (see Resource list*) and some have been developed by occupational therapists
- Some handwriting programs go along with the reading programs
- It is possible to have several different handwriting programs in use at one school if the classroom teacher and staff for special programs prefer different programs

Handwriting Programs Used in Kindergarten

- For example, in one school, the following programs were used: D'Nealian* in half-day Kindergarten, Handwriting Without Tears* in Intensive Kindergarten, Sunform* in the learning resource room, and another reading/writing curriculum in the ESL room
- The language of instruction, paper used, and visual supports are an important consideration in any handwriting program
- The first difference in printing script is the use of a slanted (D'Nealian) or vertical (Zaner-Bloser and Handwriting Without Tears) style of letter formation

Handwriting Programs in Kindergarten

- Some teachers make their own materials or incorporate ideas from workshops
- Some teachers use other programs in conjunction with a handwriting program (Brain Gym*)
- The classroom teacher may want to use a particular type of handwriting along with a phonics program
- Some classrooms may not have a structured handwriting program with time specifically devoted to handwriting – learning letters may be more incidental

Handwriting Programs Used in Kindergarten

- Sunform* – an instructional program that integrates reading, writing, and spelling (slanted script)
- First-Strokes Multi-Sensory Print Program* vertical manuscript
- Sensible Pencil* uses eleven basic strokes to produce letters and numbers
- Big Strokes for Little Folks* OT designed program for teaching handwriting and for remediation of handwriting problems – has worksheets also for left handed writers

Handwriting Programs in Kindergarten

- It is beneficial for the OT to be familiar with various types of programs to collaborate with teachers in different classrooms
- Each program may have unique instruction features that can be applied across different curriculums
- Some of the handwriting programs also feature Apps so the students can practice letter formation on the Smart Board or iPad
- Research has not proved the consistent effectiveness of one handwriting curriculum vs. another

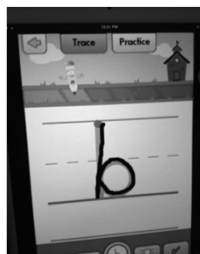
Examples of Handwriting Programs

- D'Nealian*: Slanted manuscript with more continuous stroke sequence



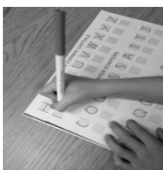
Examples of Handwriting Programs

- Zaner-Bloser*: Vertical manuscript



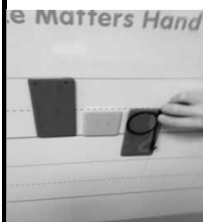
Examples of Handwriting Programs

- Handwriting Without Tears* – Vertical manuscript - starts off with shaded block paper for capital letter and number printing – goes to 2-line paper



Examples of Handwriting Programs

- Size Matters* - Program developed Dr. Beverly Muskowitz to address issues of size of letters and spaces between letters and words



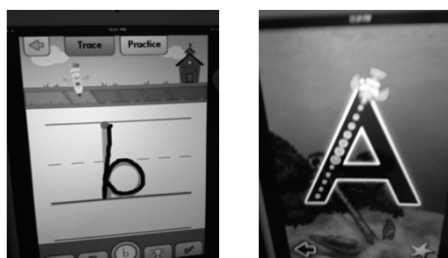
Letter overlays designed by Eileen Bushell, OTR/L



Apps and Handwriting Programs

- Many Apps are available for practicing letter formation – each has different features and feedback to assist letter formation (iWriteWords, Little Tracer)
- Some of the Apps are visually confusing and busy – but may appeal to certain students
- Other Apps are available for fine motor skills (Dexteria)

Apps* for the Smart board and iPad



OT/Teacher Collaboration General Guidelines

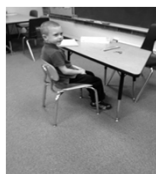
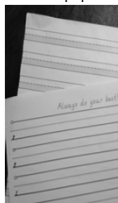
- Set aside enough time for planning activities, learning about the literacy curriculum, supporting printing instruction language and techniques
- Learn routines and student expectations, what is important to the teacher for each classroom and for individual students
- How can OT suggestions assist the teacher and student with respect to: preparing the environment, preparing the student for writing, and preparing the writing task?
- Respond to the immediate concerns that are most important to the teacher

OT/Teacher Collaboration

Pencil grip



Various papers



Offer seating suggestions

OT/Teacher Collaboration for Handwriting

- Review goals and expectations for literacy program and printing expectations
- Discuss how printing will be taught so that the language and method of instruction will be uniform – do different curriculums for reading or ESL use a different language of instruction?
- Plan for modifications/intervention for individual students or small groups of students (pencil grips, different types of paper, multi-sensory instruction, etc.)

OT/Teacher Collaboration

- OT can teach printing with the teacher to the whole class
- OT can work with a small group on multi-sensory letter and number instruction
- OT can suggest fine motor/visual motor activities to reinforce alphabet skills
- OT can suggest activities that fit into the literary theme curriculum that address underlying component skills for printing

OT/Teacher Collaboration

- Develop pre-writing or 'warm-up' activities that would work for the whole group, a small group, or an individual prior to writing time



OT/Teacher Collaboration

- Motor games to emphasize shoulder, arm, and hand movements, crossing midline, right/left discrimination, sequencing that are related to early printing skills



OT/Teacher Collaboration

- Incorporate motor activities from Brain Gym* (some Kindergarten programs use brain gym exercises and incorporate directional concepts with handwriting)
- Include motor exercises from children's Yoga programs as a transition to writing time
- Learning letters in name in American Sign Language

Classroom Observations Related to Handwriting


- OT observes the student during a handwriting instructional session or literacy activity involving handwriting
- OT compares the student's performance with peers with respect to attention to task, following directions, performance of task, and quality of completed written product
- OT considers factors of the student, environment, and task


Classroom Observations: Student


- Posture at desk/table: Excessive fidgeting? Slouching – leaning head on desk? Sliding or falling out of chair?
- Inefficient pencil grip?
- Positions head too close to paper?
- Does not adequately stabilize paper with the assist hand?
- Changes hand for writing – lack of established dominance or fatigue?
- Avoids crossing midline?

Classroom Observations: Student

- Attends to and follows simple verbal directions for a sequence of motor actions (start at the top line – go down to the bottom line to make the letter 'l')?
- Able to isolate thumb and finger movements for: picking up small objects, coloring small circle circles, cutting with a scissors, sequence thumb to finger opposition?
- Separates radial (precision) and ulnar (stability) sides of the hand for tool use?

	<h3>Classroom Observations: Student</h3> <ul style="list-style-type: none"> • Difficulty with spatial and/or directional concepts (top, bottom, middle, right, left)? • Needs more visual supports for letter formation? • Needs more verbal direction for letter formation? • Needs more tactile/kinesthetic support for letter formation (tracing with finger in paint, china marker on heavy plastic folder)? • Motivated by letter formation practice using Smart Board or Apps?
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	<h3>Classroom Observations: Student</h3> <ul style="list-style-type: none"> • Able to attend to and follow visual media (smart board instruction, able to “find the...” or “look at the...” as directed by the teacher – turns to follow teacher)? • Has age appropriate drawings? • Has age appropriate shape copying? abilities • Able to sit and follow through task commensurate with peers? • Too heavy or too light pencil pressure?
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	<h3>Classroom Observations: Environment</h3> <ul style="list-style-type: none"> • Appropriate desks, chairs and tables are present in the classroom to provide the student with a stable base of support and a comfortable arm position for writing – materials are available to make individual postural adjustments (cushions, foot rest, etc.) • Consider placement of chair and desk for left handed students • Have adequate desk surface space for writing free of clutter • Have enough space between students so arms aren't bumping • Student can see Smart Board and easily locate visual support materials on the wall – visual clutter in room is minimized • Consider features of the room like lighting and noise
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Classroom Observations: Task

- Options are available for task modification
- Changing font size of letters/numbers to be copied
- Reduce amount of visual information on a page using sticky notes
- Use sticky note arrows to direct attention to key features on the workbook page
- Have a variety of writing tools available (different size markers, pencils, and crayons, squiggle writers, ink stamps)
- Have a variety of papers to try
- Have different pencil grips available for student

Examples of Classroom Seating Options

- Sitting posture: feet on stable surface – appropriate seat depth – table top surface 2 inches above flexed elbow (using foot support because feet did not touch ground) also has wedge seat cushion to help posture



Pencil Grip*

- Many studies (see Resource list*) indicate that the type of pencil grip does not necessarily affect legibility of handwriting
- Kindergarten students may be at various stages in grip development (primitive, inefficient, transitional, or mature/efficient) – teachers may need information on how to reinforce the use of an efficient, mature grip and when to consult the OT for changing a pencil grip pattern
- Attention to pencil grip patterns at this time can help students achieve a more efficient grip before an inefficient pattern gets locked in

*See Resource List – Schneck and Henderson, 1990

General Classroom Suggestions for Pencil Grip

- OT can demonstrate preferred tripod grip to the whole class – the dynamic tripod is an efficient grip for handwriting (although variations are seen such as the quadrupod, lateral, and adapted grip)
- Pictures of tripod grip can be placed at writing tables or at desks
- Some handwriting programs have information on promoting an efficient pencil grip with exercises to assist students (Handwriting Without Tears*)
- Have pencil grips available for all students and teach students how to use them if they want to
- Have a variety of writing tools available from small pencils to larger size to various sized makers

Functional Pencil Grips

- Quadrupod grip:



- Lateral Grip:



Functional Pencil Grips

- Dynamic Tripod:

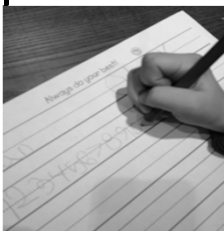


- Adapted Grip:



Inefficient Grip

- An inefficient grip includes a closed thumb space and lack of thumb and finger movements during letter formation



Other Grip Observations

- Hyperextension of the index finger may be noted in a weak grip or when applying too much pressure
- Excessive thumb adduction and hyperextension of the distal thumb joint may be seen to stabilize the pencil
- Excessive weak grip may result in various inefficient grips of the pencil
- Various forms of 'power' grips might be used in an effort to stabilize the pencil

Examples of Grips that Require OT Consultation for a Kindergarten Aged Child



Assisting with Development of an Efficient Pencil Grasp



Try various pencil grips – success with grip will depend upon student acceptance and availability for use in the classroom



For a very weak or inefficient grip, may want try an adapted grasp – sequence of switching to this grasp is presented by Benbow in Cermak and Larkin, 2002

OT Evaluation of Printing in Kindergarten

- A whole class screening tool is available through Handwriting Without Tears for Kindergarten (use student initials for privacy)* (Tier 1)
- The PrintTOOL is available as a criterion referenced evaluation of printing through Handwriting Without Tears* (OT referral for evaluation)
- The Wide Range Assessment of Visual Motor Abilities addresses three components of printing: visual-motor, visual-spatial, and fine motor* (OT referral for evaluation)
- Writing samples – compare student to peers and classroom expectations
- * see Resource List

OT Intervention Activities in the Classroom

- Projects that coincide with themes in literacy program (painting, cutting, gluing, assembling, tearing paper, crumpling paper)
- Precise use of thumb and index finger for picking up coins and chips for games and math manipulatives
- Fine motor manipulation activities that emphasize individual thumb and finger movements (making alphabet letters and numbers with Wikki Stix, play dough, paints, use dot markers to practice push-pull movements of tripod grasp)

OT Intervention Activities in the Classroom

- Arm/hand warm-ups prior to handwriting holding arms in front and pushing palms together, doing 'thumbs-up' and 'thumbs-up'; making 'bunny ears' with index and middle fingers (thumb touching 4th and 5th fingers) and make ears move; make 'crab claws' with thumb and first 2 fingers (hold 3rd and 4th in palm) and pretend to 'pick up food'
- Thumb-to-finger sequencing –touch thumb to each finger looking at hands - then hold hands near ears out of view

Example of Fine Motor Activities

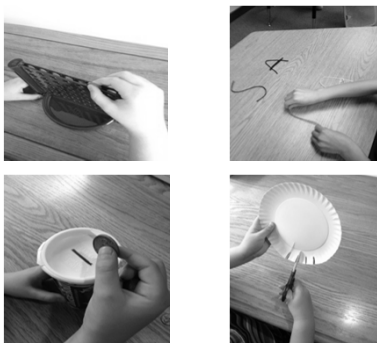


'push' 'pull' with dot markers



Thumb-to-finger sequence opposition

OT Activities in the Classroom



OT Activities in the Classroom

- Whole class or small group stations that reinforce pencil grip control and multi-sensory experiences for letter formation
- Visual-motor: mazes connecting the letter of the day with a picture – work on a vertical surface
- Visual-spatial: letter cutouts, fitting letters in shapes on the line; alphabet/number puzzles
- Visual-memory for letters and numbers – match game
- Letter/number matching to dictation: simple Bingo, letter search sheet – circle correct letter/number or place chips

Conclusion

- Occupational therapists can be an integral part of the handwriting programs in Kindergarten classrooms through direct and indirect services
- Collaborative efforts at the Kindergarten level may be beneficial to all students, but especially for students who struggle with learning how to print legibly (Marr and Cermak, 2002)

Resource List

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Resource List

- Big Strokes for Little Folks
www.concentric.net
- D'Nealian Handwriting
www.pearsonschool.com
- First Strokes Multi-Sensory Print
www.thehandwritingclinic.com
- Handwriting without Tears
www.hwtears.com/hwt
Sensible Pencil

[www.atclearning.com/sensiblepencil.a
sp](http://www.atclearning.com/sensiblepencil.asp)



Resource List

- The Size Matters Handwriting Program
<http://realotsolutions.com>
- Sunform Alphabet System
www.sunformalphabet.com
- Zaner-Bloser
www.zaner-bloser.com
 - iPad APPs
- Letter writer oceans
- iWriteWords
- Little Writer
