Active Learning Materials
Developed by Kate Hurst
Texas School for the Blind & Visually Impaired
Outreach Programs

This powerpoint covers the following topics:
Participants will be able to:
1. Share basic information about Active Learning with someone else
2. Identify the role of play in learning

It will take approximately 45-60 minutes to present.
Want to **learn how to select the best materials** to use in Active Learning environments?

Would you like to **be able to match materials to the learner’s skills and preferences** and **get ideas** for creating your own learning environments?

Are you looking for **places to purchase** various hard-to-find materials or **find inexpensive materials** to use?

The content included in this session can be found along with other information on the Active Learning Space website at [www.activelearningspace.org](http://www.activelearningspace.org).
What You Will Learn

1. Understand basic considerations for selecting materials for use in Active Learning environments and activities.
2. Get ideas about materials that engage the learner based on his preferences and skills.
3. Find examples of how material selection influences the activity of the learner.

1. Understand basic considerations for selecting materials for use in Active Learning environments and activities.
2. Get ideas about materials that engage the learner based on his preferences and skills.
3. Find examples of how material selection influences the activity of the learner.
Section 1

Basic Considerations When Selecting Materials
Educators and parents need to understand the effect that disabilities have on an individual's ability to learn. Their challenges impact the motor and sensory pathways in a unique way. The materials used to provide an Active Learning environment must address these challenges, reflect the modalities for learning (sight, touch, hearing, taste, smell, movement), and accommodate any individual’s limitations.
Typically developing learners are constantly moving, touching, mouthing, smelling, looking, and listening.

A child spends a great amount of time in their early years (sensorimotor and early pre-operational learners) playing, experiencing and exploring with toys and objects.

It is the method by which all humans develop foundational concepts and skills.
Basic Considerations

Through play a child develops critical motor skills. She gains cognitive skills such as spatial relations, object concept or permanence, and develops problem-solving skills. A child will learn about the function of an object, compare qualities, understand quantity, and begin to develop language skills.
Basic Considerations

Through play, a child learns about size, shape, temperature, texture, flexibility, and density.
The individual with special needs must also have opportunities to master these same skills as much as possible.
An Active Learning environment will provide this opportunity.
However, you must be selective about the materials you use.

The individual with special needs must also have opportunities to master these same skills as much as possible.
An Active Learning environment will provide this opportunity.
However, you must be selective about the materials you use.
Let's take a look at a young toddler who is learning through play. This is a video made originally by SKI-HI Institute and is used with their permission.

This video is approximately 5 minutes in length. https://library.tsbvi.edu/Player/14776

After viewing this video, ask your participants what they noticed about the way the child played. Did his play seem appropriate to his age? What did they see him doing with the materials? Which body parts did he use to explore the items? What schemes (bang, scratching, etc.) did he use in his exploration? Do you think the materials matched his skills and interests? Was he actively engaged and learning?
It is imperative that any Active Learning program utilize a wide variety of objects in multiple quantities.

Some of these objects may include common, everyday items, that one might encounter in the home or at school (cups, spoons, brushes, magnets, blocks, toothbrushes, massagers, beads, etc.)

Some materials reflect experiences the child has when taking a walk outside, playing at the beach, or taking a bath.
Many materials can be gathered from places such as garage sales, hardware stores, fabric shops, musical instrument stores, and the home department of local stores.

Other items can be obtained on-line or even from the recycle bin.

Creativity is key.

Quantity is the priority. You need hundreds of little things so the child has an experience with the millions of things that exist in the world.
Think about an object called a "ball." **How many kinds of balls can you think of?**

The learner can grasp the characteristics and uses of a ball only by interacting with all kinds of balls.

Exposure to the wide variety of balls helps the learner establish a richer concept of “ball”, its uses, and various properties (round, hard, squishy, bouncy).
When selecting materials you must consider:

1. Learner preferences
2. Learner skill level
3. Object properties
4. Number of objects
5. What the object can do
Section 2

Learner Preference
Initially you want to offer the learner a wide variety of objects to gain a sense of her preferences and interests.

Think about the Pathways to Learning and what might get her attention and rouse her curiosity.

Capture this information on the Active Learning Materials and Activities Planning Sheet.

Initially you want to offer the learner a wide variety of objects to gain a sense of her preferences and interests.

Think about the learner’s Pathways to Learning and what might get her attention and rouse her curiosity.

At this point you need to provide the participants with a copy of the Active Learning Materials and Activities Planning Sheet.
Ask your participants to work together in pairs to complete this activity. If you are using a flipped learning approach you may ask them to complete this activity in advance of the meeting. It should take about 2 minutes. Spend some time discussing with the participants. Especially emphasize that “Likes and Dislikes” can be people, places, things and/or situations (noisy room, others crying). It could also include things like favorite colors, smells, tastes, etc. AND things the child reacts negatively to like physical therapy, allergies, riding the school bus, fire alarms.

Think of a student you work with or know.
Complete the Likes and Dislikes section of the Active Learning Materials and Activities Planning Sheet.
When planning a learning activity or environment for a child using an Active Learning approach be sure you are thinking of these things.

Are there certain qualities that attract the learner?
For example, does the learner like:
• shiny things or things that can be bent?
• the sound of bells or the clunk of walnuts hitting wood?
• hot, warm, or cold objects?
• soft, fuzzy things or rough, scratchy things?

Whatever is preferred should be included in as many activities or environments as possible. They will most like get the child’s attention (Stage 1 Dynamic Learning Circle) and he will be more likely to engage with these things (Stage 2 Dynamic Learning Circle).
Use objects that have interesting properties to the learner and limit objects that are uninteresting or aversive.

Be careful to avoid the influence of your own biases.

Dr. Nielsen's books provide many recommendations and ideas for objects. *Space and Self* in particular has good ideas for objects.
Learner Preference

Avoid objects that lack interesting textures - like many plastic toys.

Close your eyes and explore the object tactually to get a better idea of how the child might respond to it.

Check out Attractive Objects from Active Learning Space.

Avoid objects that lack interesting textures - like many plastic toys.

Close your eyes and explore the object tactually to get a better idea of how the child might respond to it.

You may also want to review Attractive Objects from Active Learning Space.

Take time to show your participants this page on the Active Learning Space website at http://www.activelearningspace.org/materials/attractive-objects
Section 3

Learner Skill Level
Another key consideration is the skill level of the learner. What ways can they interact with objects?

We encourage the use of the Functional Scheme to gather this information.

Evaluations by other professionals (OT, PT, TVI, COMS) also help to identify learner skills.
If you know what the learner can do with her body you can select materials that match the learner's developmental skill level.

Consider which skill area you are focusing on in any environment (fine and gross motor, cognitive, tactile, visual skills, auditory and so forth.)
For example - a child with spastic cerebral palsy may hold his hands in a fisted position.

Objects selected for positioning by the hands must respond when "pushed" by the fisted hand.

Hanging a plastic plate near beads would meet this requirement.

Pushing the plate or beads will cause the items to bang against one another creating an auditory response.
Objects must also be "graspable."

Stringing buttons or beads on elastic, alternating groups of large and small buttons, allows for parts of the fingers to get caught on the string - thus encouraging accidental "grasping."

Placing wax paper or Mylar inside an embroidery hoop, letting the material hang over the rim, provides a surface that will "crinkle" when rubbed against.
For a child with cerebral palsy who moves his feet more than the hands, objects should be placed under the feet to encourage exploration.

For example, a small plate on top of a large plate placed under the feet - when the feet move, the plates rub or bang against one another.

A spinning facial brush held near the feet might spin at different rates as his feet push against the bristles.

For a child with cerebral palsy who moves his feet more than the hands, objects should be placed under the feet to encourage exploration.

Place a small plate on top of a large plate under the feet - so that when the feet move, the plates rub or bang against one another.

Hold a spinning facial brush near the feet - so that movement of the feet will cause the brush to spin at a different rate when pushed against.
For a learner just gaining skills in reaching and grasping, select objects that have slim profiles or features where fingers can easily become entangled.
A large, slippery object would not be a good choice for a learner at this level.
In this activity you will ask participants to work in small groups or pairs. If you are using flipped learning you may want to make this an homework assignment. Give them this scenario and ask them to think of 1 object to use in working on each of the skills: mouthing, grasping, kicking, standing.

Think of these skills: mouthing, grasping, kicking, standing.
You have a learner who likes:
• Sweet flavors
• Sound like a bicycle horn or funny sounds on a iPhone
• Rocking (alone and with others)
• Red
• Vibration
• Bumpy textures
He dislikes:
• Polka music
• Cold objects
• Touching sticky things with his hands

Here are some possible answers.
Mouthing: Licking or mouthing a string of red LifeSaver type candies or red lollipops
Grasping: Red vibrating toothbrush or bicycle horn
Kicking: Seed pod rattle or wind chimes
Standing: Bin of beans or sheet of bubble wrap
Section 4
Number of Objects
Think about the number of objects that a typically developing toddler might interact with during the course of a day.

It is important that all learners have the opportunity to repeat, compare, experiment and explore.

All learners have the right to interact with materials they choose.

Offer many, many objects to a learner to find features that draw his interest.
Remember that different objects provide different reinforcement to activity.

An Active Learning environment must have large quantities and various types of items.

You can't have too many.

Use Phase 1 Offering treatment and start with 70 or more varied objects to get a sense of what the child notices and does with objects.
Number of Objects

A learner may focus on only one or two objects at a time. She may only interact with an item for a few seconds before switching to another object or play with one or two objects for extended periods of time.

Duplicates of items allows you to play alongside the child using Phase 2 imitation and Phase 3 interaction techniques.

A learner may focus on only one or two objects at a time, and due to a short attention span, may only interact with an item for a few seconds before switching to another object.

Other learners may play with one or two objects for extended periods of time.

Having duplicates of items allows you to play alongside the child using Phase 2 imitation and Phase 3 interaction techniques.
Show participants this video at https://library.tsbvi.edu/Player/17713. Afterwards ask for comments or feedback. What did they notice the student doing with the objects? Do you think he was comparing the objects? What might he be doing when he puts the objects on his foot? What do they thing might have happened if a teacher came in and started to show him what to do with the objects?

Let’s take time to watch this video of a student exploring items that might be found in the kitchen.

Notice the number of objects available to him and those he explores.
Section 5

Object Properties
The world is made up of wood, metal, cloth, plastic, rubber and other interesting materials, yet most toys are made of plastic.

In order for any learner to understand the characteristics of our world, he must interact with objects of various materials.

Look for things made from wood, metal, paper, rubber, leather, string, etc.

Avoid using only plastic or rubber toys.
You may want to do this activity in pairs or small groups or as a large group using a flip chart. If you are using a flipped learning approach you may ask people to do this as a homework activity.

Try this exercise – make a list of at least 20 small objects made from paper or wood.
Here is our list of wooden and paper objects:
1. Clothes pin
2. Wooden model glider plane
3. Wooden folding fan
4. Pencils
5. Dowel rods
6. Wooden ruler
7. Container of wooden toothpicks
8. Wooden napkin rings
9. Small wooden jewelry box
10. Stick
11. Envelopes
12. Folded paper fan
13. Cardboard tubes
14. Playing cards
15. Rolls of toilet paper or paper towels
16. Book
17. Paper party horns or whistles
18. Wrapping paper
19. Oatmeal container
20. Cardboard box
Object Properties

Now think of 20 objects that can change shape.

Continue the activity with your participants.

Now think of 20 objects that can change shape.
Here is our list of things that can change shape:

1. Aluminum pie plate
2. Folding fan
3. Glasses case (box style)
4. Hand puppet
5. Slinky
6. Door hinge
7. Greeting card
8. Turkey baster
9. Folding veggie steamer
10. Hand-held lemon juicer
11. Balloons
12. Purses
13. Jewelry box with attached lid
14. Long ribbon curled
15. Powder compact
16. Music box
17. Kitchen tongs
18. Plastic egg
19. Retractable measuring tape
20. Play Doh or clay
Things that have more interesting tactile, auditory, gustatory or olfactory features are more attractive to a child with visual impairments.

Various materials have differing temperatures, density, weight, flexibility and other features that may attract the learner's interest.
Object Properties

Some individuals with multiple disabilities appear to be tactically defensive. For example, the flesh of the apple might be too much for the child to touch. This may be due to lack of exposure to a wide variety of interesting textures and materials. It might also be the result being forced to touch objects whether the learner wants to or not. Learners who are allowed to explore objects on their own may be more open to novel tactual experiences.

Some individuals with multiple disabilities appear to be tactically defensive. For example, the flesh of the apple might be too much for the child to touch. This may be due to lack of exposure to a wide variety of interesting textures and materials. It might also be the result being forced to touch objects whether the learner wants to or not. Learners who are allowed to explore objects on their own may be more open to novel tactual experiences.
Section 6
What the Object Can Do
Think about **what the object can do**.

An object may have an intended function, and yet it can be used in multiple ways.

Can the object be bent? Does it make an interesting noise when banged? Does it have a smell or taste?

Look for objects that have multiple features that might appeal to the learner.
Think about what the individual currently likes to do with objects.

If the learner enjoys poking his or her fingers into holes, find objects with holes.

If the learner wants to throw, find lots of objects that can be thrown (balls, small blocks, bags filled with a variety of materials like coffee beans, rice, sand, heavier ball, etc.)
A corrugated cardboard box can be used to store holiday cards, but a child can scratch fingers over the corrugated cardboard to make a sound while learning to open and close his hand.

A spoon is used to eat with, but a child can use it to bang on a pot or pan to make music.

A metal water bottle may be used to drink from, but a child may kick her feet or move her hands to knock over bottles to feel the vibration as the bottle hits a Resonance Board.
What the Object Can Do

Let’s watch these videos about how a teacher selected materials to use in creating a position board.

Position Board Case Study - Design
Position Board Case Study - Implementation

Let’s watch these videos about how a teacher selected materials to use in creating a position board.

Position Board Case Study Design– https://library.tsbvi.edu/Player/16406
Position Board Case Study Implementation – https://library.tsbvi.edu/Player/16407

After showing the videos ask for comments and questions. Did the objects chosen by Sara each relate to a specific skill and preference for her student? Did the student become engaged and active?

Side note: One concern about this student had been her inability to pay attention for any length of time. What do you think about this concern after seeing the video?
Credits

This content was developed by Texas School for the Blind & Visually Impaired Outreach Program and may not be used without their express permission. This content is based on the Active Learning Space website, collaboratively developed by Penrickton Center for Blind, Perkins School for the Blind and Texas School for the Blind and Visually Impaired. Special contributions of content and images of Active Learning instruction comes from Narbethong State Special School in Australia.

All content is based on the original work of Dr. Lilli Nielsen of Denmark. Our thanks to her family and the staff at Byhaveskolen, Svendborg, Denmark for making her work available to educators world-wide.

Our special thanks to the children, parents, and educators who contributed photos illustrating the Active Learning approach at school and at home.

Additional funding was provided by the Texas Low Incidence Disabilities Network and Statewide Leadership Services for the Blind and Visually Impaired.

*This project is supported by the U.S. Department of Education, Office of Special Education Programs (OSEP). Opinions expressed herein are those of the authors and do not necessarily represent the position of the U.S. Department of Education.*