Active Learning in the Classroom: Common Understandings

This section provides examples of ways to structure classroom activities so that children are actively involved. By using these approaches, favorite lessons and topics can be transformed into opportunities for children to plan and direct their learning with a teacher's support and guidance. The view of learning in the primary program is based on these important principles.

- Learning requires the active participation of the learner.

- People learn in a variety of ways and at different rates.

- Learning is both an individual process and a social process.

- An active learning classroom is characterized by:

  - Children choosing from available activities, materials, and experiences for substantial portions of the day

  - Meaningful, learner-centered experiences

  - Opportunities to touch, manipulate, and experiment

  - Opportunities to ask questions, solve problems, and think independently

  - A range of expectations for all children

  - Extensive talking, reading, and writing

  - Opportunities to make decisions and to be creative

  - Respect and trust for the learner

  - Adults learning along with children

  - Opportunities to learn from mistakes

  - Integration of content areas

  - Assessment as part of the daily routine

Active Learning Through Play and Exploration

Play is the fundamental, natural, universal activity of children. Play is intrinsically motivated for personal satisfaction and is a way of learning. It is the expressive activity resulting from the child's desire to make sense of the world.

Children learn through the process of play because of an inner drive to explore, experiment, and discover. The integration of the child's intellect, emotions, and inner drive promotes the development of the whole child. This integration may be accomplished through the provision for high quality play and exploration experiences in the primary years. As children interact with objects and materials, with people, and with ideas and thoughts, the information gained through this experience is explored, tested, reflected upon and represented in a variety of ways.

The Development of Play
As children develop intellectually, the types of play in which they engage reflect this development. Play may be categorized as practice or functional, constructive, symbolic, or as games with rules (Bergen, 1988).

Pretending enables children to represent problems and practice solving them, to ask questions and learn about the world in terms they can understand. Play is self-motivated practice in meaning-making; its themes are repeated over and over until the child is satisfied that she's got this figured out. In the process she is acquiring learning strategies, knowledge, and skills.

Jones & Reynolds, 1992

Practice of Functional Play
Play of this type is characterized by (early to later primary):
- Increased motor skill
- The desire to master physical challenges
- Repetition to acquire and refine physical skills
- Repetition of gross and fine motor activities (ride bikes, bounce balls) often with numerous variations, over and over
- Practice play activities serving as rehearsals of specific skills to be used in games or sports
- Rough and tumble play
- Experimenting with new materials and combining known materials in new ways to solve problems

Constructive Play
Play of this type is characterized by (early to later primary):
- Use of materials to make a particular product representing objects, ideas, or processes (paintings, drawings, three-dimensional creations)
- Combining of constructive and symbolic play (creating a poem, dramatizing a production)

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- Combining a constructive and socio-dramatic play (creating environments to play out games, e.g., forts, boats, tents)
- Making collections, organizing, examining, discussing, trading and displaying collections (stamps, models, shells, rocks)

Symbolic Play

Play of this type is characterized by (early to later primary):
- Playing out what can be imagined
- The ability to give objects properties that suit the needs of play (a block becomes a car, telephone, hair dryer)
- The assignment of roles ("You be the sister.") becoming more elaborate and sophisticated
- Fantasy play becoming more internalized (drawing, daydreaming)
- Becoming more "miniaturized" (Barbie dolls, action figures, Playmobile people)
- Role experimentation based on experiences that are not concrete or direct (futuristic stories)
- Playing with language through jokes, parodies, riddles, and nonsense verse

Games with Rules

Play of this type is characterized by (early to later primary):
- Inability to adhere to rigid rules
- Rules viewed as fluid, flexible, and easily adapted to immediate needs
- Rules being decided upon spontaneously
- Playing at games rather than following actual rules
- Inability to understand the point of rules
- Increasing control of actions, behavior, and reactions within established limits
- Emergence of acceptance of prearranged rules
- Increasing involvement in computer games and simulations, board games, and card games
- Understanding of sports-related games (four-square, tether ball)
- Many games have characteristics more similar to social conventions rather than competitions (*Mother, Mother, May I?; Red Light, Green Light; and King of the Hill*)
- Games challenges being combined with role enactment of familiar stories
- Individual and team competition becoming more evident
- Cooperation with others becoming a necessity for competition

Cooperative games, in which children do not have to use strategies that require outwitting or beating one another, are more developmentally appropriate for these ages as well as more congruent with the social goals of more early childhood classrooms.
Kamii & DeVries, 1980

Teachers create environments wherein children are actively invited to seek knowledge through exploration and play. Children have an active voice in initiating learning needs. Teachers respond to these needs by planning learning experiences that are enjoyable, challenging, intellectually interesting, and which allow the learner freedom to make choices, self-direct learning, and collaborate with the teacher in the active construction of knowledge.

> *Playful approaches to higher order cognitive skills such as critical thinking…are especially important during the elementary years as children begin to be able to 'play with ideas,' testing their thinking and comparing it with that of their peers. Opportunities for creating playful challenges that have comfortable level of risk are crucial during this age period and should be available at school.*
>
> Bergen & Oden, 1988

Social Interaction

The rich environment and quality of interaction provided by the teacher can enhance experiences designed to foster intellectual development.

The teacher can enhance children's thinking and language development by encouraging the rich possibilities contained in the dialogue accompanying the child's active involvement in meaningful, developmentally appropriate learning experiences of all kinds.

Because learning is accommodative, the teacher frequently plays a direct teaching role, structuring specific situations within which a child may learn. The teacher's questions and comments to each child play a critical role in extended thinking.

> *The younger the children, the more the content of interaction should relate to their own first-hand experiences and real environment. With increasing age and experiences, children can and should be encouraged to develop their understanding of indirect experiences.*
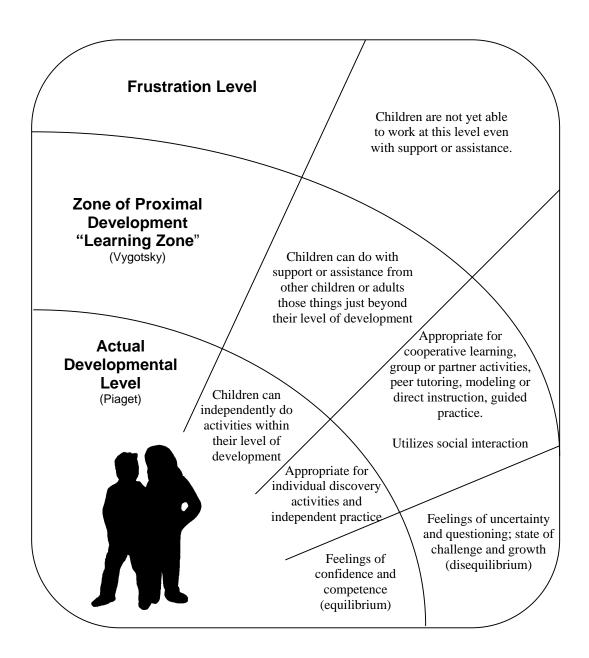>
> Katz & Chard, 2000

When a child is expected to learn or practice independently, activities selected are usually within her/his developmental level.

This does not mean, however, that teachers wait for the child to develop and mature. Teachers must stimulate the cognitive functions that are in the process of developing. With support or assistance, in collaborative and supportive situations, a child is capable of much more than working alone. Thus, to facilitate learning, teachers work with children or set up situations in which children work together. Vygotsky's explanation of the zone of proximal development, the "learning zone," illustrates how people are able to stretch beyond their individual capabilities toward more mature cognitive functioning when they learn together. The zone of proximal development is:

> *"…distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaborations with more capable peers."*
>
> Vygotsky, 1980

Support to Independence

Frustration Level

Children are not yet able to work at this level even with support or assistance.

Zone of Proximal Development "Learning Zone"
(Vygotsky)

Children can do with support or assistance from other children or adults those things just beyond their level of development

Appropriate for cooperative learning, group or partner activities, peer tutoring, modeling or direct instruction, guided practice.

Utilizes social interaction

Actual Developmental Level
(Piaget)

Children can independently do activities within their level of development

Appropriate for individual discovery activities and independent practice

Feelings of uncertainty and questioning; state of challenge and growth (disequilibrium)

Feelings of confidence and competence (equilibrium)

"The zone of proximal development defines those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state."
Vygotsky, 1980

Developing Thinking through Meaningful Learning Experiences

In order for children to become thoughtful learners, they must be invited to actively engage in worthwhile activities that capture their interest and imagination. Thinking is an integral part of all aspects of the curriculum, not something to be taught in isolation as an "add on."

All children require opportunities to learn as much about how thought processes work and about their own thinking as possible so as to expand their repertoire of thinking strategies. Teachers can encourage learners to greater sophistication in the use of strategies for thinking, but for learners to internalize each strategy, they must reflect upon its use and limitations personally.

Fostering children's thinking abilities requires a supportive classroom environment in which mutual respect and cooperation, risk-taking, error, and individual differences are valued. Teachers plan experiences and guide the learners in making connections, but it is only when learners are provided with time and encouragement to talk about, represent, and reflect upon their experiences that they truly gain understanding.
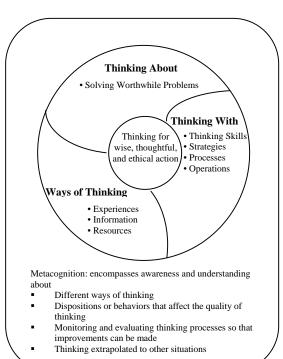
A Framework for Thinking

To make effective program decisions which enable children to inquire, represent, and reflect upon their thinking, the teacher considers thinking in its broadest sense. The following model may provide a useful framework for examining thinking.

Thinking with Information and Experience

Growth of thinking is a function of prior knowledge, information, and experience. It is the richness and variety of these experiences which shape children's thinking. Information and misinformation, concepts and misconceptions, have equal influences in developing thought.

Expanding a child's variety of learning experiences expands his or her opportunities for trying new ways of thinking.

Thinking About
• Solving Worthwhile Problems

Thinking With
• Thinking Skills
• Strategies
• Processes
• Operations

Thinking for wise, thoughtful, and ethical action

Ways of Thinking
• Experiences
• Information
• Resources

Metacognition: encompasses awareness and understanding about
- Different ways of thinking
- Dispositions or behaviors that affect the quality of thinking
- Monitoring and evaluating thinking processes so that improvements can be made
- Thinking extrapolated to other situations

Thinking Processes

Examples of specific thinking processes familiar to all teachers are:

- Comparing
- Sequencing
- Imagining
- Hypothesizing
- Evaluating
- Judging
- Justifying
- Clarifying

- Goal setting
- Estimating
- Synthesizing
- Predicting
- Inferring
- Analyzing
- Critiquing
- Defining

- Classifying
- Decision-making
- Observing
- Linking
- Creating
- Inquiring
- Focusing

Thinking processes can be taught. Analyzing and breaking thinking into discrete units may be helpful for instructional and diagnostic purposes. However, whatever the dominant thought process, many skills and strategies are inevitably involved in any one operation. Therefore, the teacher does not rely on any one approach or program to teach children about thinking. The teacher's instruction is guided by broad, interactive conceptions of thinking processes. Such conceptions acknowledge the complexity of thinking as well as the varied applications of thinking.

Thinking About Meaningful Problems

Thinking does not occur unless there is something worthwhile and of interest to think about. Because thinking strategies learned in a specific situation may not transfer automatically to a new situation, instruction is designed to help the learner build connections.

Some examples of important bridges that must be built through learning experiences are those between:
- Past experiences and present challenges
- Reason and imagination
- Criticism and creativity
- Teaching and learning
- Decision-making and moral judgment
- School life and real life

In designing instructional opportunities, the teacher links the thinking processes required in school with the thinking processes needed in "real" life. The teacher invites students to think about problems relevant to their own lives, to the lives of others, and to society in general. This presents children with rich opportunities for using a wide range and variety of thinking processes.

The Application of Thinking
How thinking is applied is of critical importance. Contemporary society is faced with problems of tremendous complexity. Thoughtful actions based on good judgments as well as a concern for long-range effects are desired. Ultimately, we seek a combination of development of responsibility and wise action.

Metacognition
The teacher teaches children about thinking as well as ways to apply thinking strategies. Metacognition is the term used for this process. It encompasses awareness and understanding about different ways of thinking; dispositions or behaviors that affect the quality of thinking; monitoring and evaluating thinking processes so that improvements can be made; and thinking extrapolated to other situations.

The goal of teaching thinking strategies is to develop thoughtful learners—children who have learned different ways of thinking, can apply them to real life problems, and can call upon the kind of self-criticism that guides wise action. How we apply thinking is of critical importance. Ultimately, the quality of learning and the wisdom of actions are determined by how the thought processes are put to use.

Fostering the Development of Thinking Strategies
The teacher fosters the development of thinking by engaging children in meaningful learning experiences which encourage:
- Inquiry
- Representation
- Reflection

Inquiry
Children who are provided with opportunities to ask questions of themselves, classmates, teachers, and other adults will develop skills that promote lifelong learning. The role of the questioner, formerly that of the teacher, needs to be jointly assumed by the learner so questions can be asked, solutions sought, and learning enhanced. As children are encouraged to ask questions for the sake of learning, their interest in and responsibility for their own learning increases. The environment in which mistakes are accepted as a natural part of learning allows each child to take risks and develop the confidence to become an "inquiring voice" (Watson, Burke, & Harste, 1989). In considering the development of a thoughtful, questioning learner, the inquiring teacher might ask:

- Does the child generate questions?
- Is the child committed to his or her questions?
- Does the child ask different kinds of questions?
- Does the child like finding out?
- Does the child shift thinking as a result of new knowledge gained through asking questions?
- Does the child show joy in learning?

Being human entitles you to an inquiring voice, and it's from asking new questions and old questions for which current answers seem unsatisfactory that real learning emanates.

Watson, Burke, & Harste, 1993

Representation

Children acquire knowledge as they think about and try to
make sense of their world. They represent this knowledge as they give form to personal thoughts and ideas and communicate their thinking. Children need repeated opportunities to represent their experiences and thoughts in a variety of ways.

Levels of Representation

Representation may occur at three levels: concrete, transformational, and symbolic/abstract. Children represent their thinking in a variety of ways at each level (e.g., talking, which is abstract, begins before the age of two).

- *Concrete Representation*—direct representation using overt physical action and/or three-dimensions
- *Transformational Representation*—indirect representation, resembles the concrete, uses two-dimensions
- *Symbolic/Abstract Representation*—symbols bear no direct resemblance to the concept represented

As children explore a variety of forms of representation, the teacher provides them with opportunities to select how they might wish to represent their learning. In this way, children develop an appreciation of representation not as a "decoration," but as a way to reflect upon and communicate their thinking. In this way, too, the teacher assists each child to make connections and transfer ideas from one context to another, matching appropriate representational strategies to specific situations (e.g., "I want to know what you understand about light." Appropriate strategies: experiment, model, art, photography, written report, collection, etc.).

Representation of Knowledge

<table>
<tr><td colspan="2"></td><th colspan="2">Forms of Representation</th></tr>
<tr>
<td rowspan="3">L E V E L S

O F

R E P R E S E N T A T I O N</td>
<td>**Concrete**</td>
<td>

Imitation
Dramatic and socio-dramatic play
Clay, sand, block construction
Dance, creative and rhythmic movement
Three-dimensional models including concrete graphs and maps

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<td>

Creative dramatics
Puppetry
Music
Responsive movement
Counting with objects

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<tr>
<td>**Trans-formational**</td>
<td>

Drawing
Painting
Collage
Pictures
Pictorial signs

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<td>

Pictographic writing
Gestures
Tally marks
Pictorial graphs

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<tr>
<td>**Symbolic/ Abstract**</td>
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Talk or related expressive forms
Conventional writing (alphabetic or related expressive forms)
Symbolic paintings
Mathematical symbols
Musical notation
Symbolic signs
Symbolic graphs and maps

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Children have opportunities to more closely examine their own thinking as they are encouraged to choose different forms of representation and explain these choices. Choice of representational forms also enables more learners to represent thinking in ways that match individual learning styles. As children have opportunities to select ways of representing their knowledge, teachers have opportunities to evaluate children's thinking and to examine each child's ability to communicate knowledge meaningfully.

Reflection

Children require time and encouragement to reflect upon their thinking. Through reflection, children may be helped to clarify thinking, to reconsider ideas, and make new connections. This allows children to monitor and assess their thinking. As well, the teacher places value and emphasis on the process used to arrive at the product of thinking rather than on the product (or answer) itself. In this way, the child and the teacher both develop greater understanding of the child's thinking. The teacher who values and models reflective thinking and who provides time and encouragement for children to be reflective greatly enhances children's abilities to solve problems and make thoughtful decisions.

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Using Language to Facilitate Thinking and Learning

It has been said language is not only the vehicle of thought but also its driver. We clarify and extend thinking as we communicate through language. Children need opportunities to develop ideas through language and to talk about their thinking. Through language, children discover, generate, and express ideas; explore and extend ideas; examine, reflect upon and refine ideas and thinking processes.

Language and Thought

Language and thought are interrelated and interdependent. Language is a means of structuring and representing knowledge and is, therefore, an integral part of intellectual development. For example, language enables us to deal with concepts of past and future, so increasing the range, flexibility, and fluency of thought.

Children learn not only the language system of those around them but also the values and attitudes that are inherent in the way language is used. If we don't talk to children except to give them orders, they will grow up to learn that language is used mainly to control. They may never learn that they can use language to explore and learn about their world. However, if children are accustomed to engaging in talk that allows them to express what they think, to ask questions, to reflect on their thinking, and to form new ideas, they will learn the value of language as a means of gaining knowledge and of understanding the world. Thus, language becomes a vehicle for learning, and children will seek ways to communicate with others in this way.

The relation of thought to word is not a thing but a process.

Vygotsky, 1986

Representation through Language

During the primary years, the child's language develops as part of a larger and more complex system of representation. Language is the most complex and abstract mode of representation. While other forms of representation (e.g., construction, modeling, drawing, moving) bear some resemblance to the objects or events they symbolize, language is expressed in symbols bearing no such resemblance. Language often accompanies other forms of representation and plays an important role in that representation.

Children develop the ability to represent things and to communicate ideas through oral language, for example, by:
- Using names for objects in the environment
- Using words to identify the properties and functions of objects
- Using words to denote location in space and time
- Using words that describe relationships (comparing, describing differences and similarities, enumerating, measuring, ordering)
- Using words to relate physical knowledge
- Using words to relate social knowledge
- Using words to describe events and tell stories
- Using words to convey personal feelings and thoughts

Through language, we communicate needs and desires, gain and pass on information, and direct the actions of ourselves and others. Representation through oral language is of significance in the primary years since it is critical for communication and enhances cognitive development. As children learn to read and write, they represent their ideas in written language and begin to read the printed form.

In considering the importance of language in the primary years, we are reminded that:
- The level of language children have acquired in early years, their understanding of oral language, and their experiences in hearing and seeing written language are decisive factors in developing the ability to read and write.
- To become literate, children need rich experiences with both spoken and written language.
- The teacher needs to make use of every opportunity possible to extend and enrich the child's understanding and use of language.

The language of children varies widely according to their stages of development. The child's explorations during the sensorimotor stage prepare a foundation for the emergence of language. The pre-operational stage influences the child's construction of language. Upon entering the concrete operational stage, the child's thinking becomes operational or logical. This emergence of logical thought further influences the development of language and is accompanied by related changes in language usage.

Using strategies for appraising children's language assists the teacher in understanding the child's language, thinking, and representational abilities. The teacher needs to be alert to the child's language to recognize the kinds of knowledge being represented as the child communicates with others in the course of the school day.

For example, one child may have learned a word but may not understand the concept. Another may be familiar with a concept but not have the language. Yet another may understand a concept and have the language, but may be reluctant or unable to talk, although he or she may be confident about representing knowledge in other ways (constructing, modeling, drawing, and moving). Engaging young children in "hands on" and "minds on" activities gives the teacher many opportunities to foster and enhance language representation. The ways in which teachers dialogue

with children as they learn enable them to foster the child's language and thinking and to observe the development of the child's ability to represent and communicate through language.

Using Language for Communication

To communicate effectively in listening, speaking, reading, writing, viewing, and visual representation, children need opportunities to:
- Use language for a variety of purposes
- Use language in a variety of forms for a variety of audiences
- Understand and interpret ideas through listening, reading, and viewing in developmentally appropriate ways
- Express thoughts, knowledge, and feelings through speaking, writing, and visual representation in developmentally appropriate ways
- Develop an understanding of the nature and purposes of language
- Learn about other forms of communication such as signing

In order to develop effective communication, children also need opportunities to:
- Hear good language models
- Engage in dialogue with adults and other children
- Play with ideas and language
- Experiment with language in all its forms
- Experience and respond to literature and non-fiction

Factors Affecting Language Development
Children are born with an innate ability to learn language systems. But many factors affect their development of language processes and skills including:

The family's language: The language of the child's family is probably the greatest factor governing which language is used, how it is used, and the degree of complexity with which it is used.

Expression of needs and wants: The very strong motivation in young children to express their needs and desires leads them to master the language system of the family. If children get no response to their use of language, they may not pursue it and may become delayed in their acquisition of language.

Natural curiosity: Natural curiosity about the world requires children to use language to make meaning. Attaching language to real, first-hand experiences allows children to create different ways of thinking about, looking at, and understanding the world. This understanding leads to a greater sense of competence of being able to understand and influence what goes on around them.

Stage of development: The way children use language reflects their way of perceiving the world. Each child has a unique way of expressing himself or herself. Young children do not use an adult system of language because their thinking processes are not adult. Their use and understanding of

words as they represent concepts develops as children move from the concrete operational to the logical thinking stage.

Dialogue: Dialogue between child and adult and between child and child is essential for the continuing growth and development of a child's language. It is the quality of verbal interaction between child and adult that governs the quality of a child's thinking and use of language. The teacher of young children engages them in conversation dealing with their experiences and helps them relate this to their new learning in order for optimal development to take place.

Developing Communication Skills

Communication skills develop in a social environment that offers opportunities for children to communicate in natural, meaningful ways. The teacher promotes and develops communication by consciously planning for these and by modeling a caring, thoughtful, and sensitive tone in interactions with children. The teacher demonstrates his or her own commitment to language development by establishing a supportive environment that promotes effective communication.

Activities and experiences which have value and relevance in the classroom and to the world beyond school are fundamental for children to become self-directed, to think divergently, and to apply problem-solving strategies. This increased sense of self-direction and growth in autonomy enables children to approach new learning with enjoyment, confidence, and satisfaction allowing them to embrace all that life has to offer and to see the potential of each new experience.

We need to shift the focus from either content or process to human educational development. There may be many roads to this end, but some avenues have withstood the test of time. Students who learn how to communicate effectively, who can organize and direct their attention and efforts, who have a healthy curiosity and skepticism, who understand how to inquire and who can ask the right questions, and who recognize something about how we as a species have come to know and believe things and have expressed ourselves about the great themes of human life, these students seem to be best equipped to direct their own lives and act to change their circumstances and those of others for the better.

McClaren, 1989