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Nurturing Thinking Dispositions In Young Children: A Purview

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Abstract: One of the major goals of education is to nurture critical thinking in children. Learning is a consequence of thinking and good thinking is not only a matter of skills but also a matter of dispositions. Disposition is nothing but the inclination or attitude to use the skill sets in appropriate situations. Several strategies have been used to nurture these dispositions in children like the thinking routine strategy, thinking based learning, questioning, etc. Among all the strategies, the thinking routine strategy is well researched and in vogue. This paper presents a review of the literature related to nurturing of thinking dispositions in young children.

Key words: Young children, thinking dispositions, thinking routines.

Introduction: The vital goal of education is to promote critical thinking in children. Whatever the children learn should become a part of the silent depository of cognitive processes through social interactions. It is the responsibility of the educators to build that culture and make it a strong culture of thinking. Learning is a consequence of thinking and good thinking is not only a matter of skills but also a matter of dispositions. According to Perkins and Ritchhart, good thinking constitutes open-mindedness, attention to evidence, scepticism and imaginativeness. Generally, children and adults underutilize their thinking capabilities. Therefore, education needs to promote open-mindedness, curiosity, attention to evidence, scepticism and imaginativeness. Several studies support the dispositional view of thinking. It is not enough for a child/person to possess various skills, but also possess the inclination or attitude to use the skill sets in an appropriate situation. This inclination or attitude is called as Disposition. As young children are developing individuals, skills may not be concretely tangible/teachable whereas dispositions can be nurtured.

In order to nurture thinking dispositions or thinking skills, it is essential to make thinking visible. One of the well-researched projects in this direction is the Making

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Learning Visible (MLV) project under Project Zero at the Harvard Graduate School of Education. The goal of MLV project is to create and sustain powerful cultures of learning in classrooms focusing on using documentation as a central pillar of learning. The basic principle is very simple – making the invisible thinking and invisible opportunities for thinking visible to children. Effective thinkers make their thinking visible or expose their thoughts through speaking, writing, drawing, enacting or creating. Hence, in MLV, documentation is stressed as fostering thinking requires making thinking visible. The ultimate goal is to build a strong Culture of Thinking (CoT) in the classroom.

MLV project makes use of Thinking Routines as a base for nurturing young children's creative thinking and critical thinking dispositions. Thinking Routines are helpful tools in building a Culture of Thinking. They are simple patterns of thinking which can be used over and over again and folded easily into learning. They need not be taught but can be put into practice straight away.

Review of related literature: A brief review of related literature in defining thinking dispositions and nurturing the same using thinking routine strategy and thinking based learning strategy are presented here -

Katz (1985) was the first to introduce the term "disposition" and its relevance to early childhood education and defined as "relatively enduring habits of mind or characteristic ways of responding to experience across types of situations' (p.1). The report on School Readiness is the Goal One Technical Planning Subgroup to the National Education Goals Panel (now named as Goals 2000: Educate America). One of the five dimensions included in school readiness is the "Approaches to learning". This dimension is defined as "the inclinations, dispositions or styles rather than skills that reflect the myriad ways that children become involved in learning and develop their inclinations to pursue it"

"Disposition is internal to the actor and is least influenced by the stimuli acting on the actor". Therefore, dispositions are used to identify broad categories of behaviour or characteristic ways of responding to a variety of situations. The best definition of disposition in a nutshell is given by Bus and Craik (1983, p.105) as "summaries of act frequencies". Perkins, Jay and Tishman (1993) define dispositions as "people's tendencies to put their capabilities into action" (p.75) Katz and Raths (1985) suggest that a person might have the skills required to do a task but be without the disposition to use them. Passmore, (1972) defines *habit* as a pattern of behaviour that is performed without conscious attention. However, *dispositions* are patterns of action which require some attention to what is occurring in the context of action,

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although the acts may appear to be spontaneous, habitual or even unconscious with practice and experience. (Katz and Raths, 1985; p.103). Hence the difference between habit and disposition is very clear – The term habit is used to refer to the acts that are neither intentional nor a consequence of thought, reflection and analysis. However, the term disposition is used to refer to trends in actions that are intentional on the part of the actor in a particular context and at particular times. Hence, Katz and Raths have rightly said "Dispositions are "habits ofmind"andnot 'mindless habits' ".The fact that students are lagging in problem solving and thinking skills is very obvious at all levels of education. The need to teach high order thinking skills is not a recent one.Every teacher needs to create an atmosphere where children are encouraged to read deeply, question, engage in divergent thinking, look for relationships among ideas and grapple with real life issues.Kathryn, S, Carr(1990) used children's literature, news, advertisement, entertainment, classification games can be used to nurture critical and creative thinking skills in young children.

Shari Tishman, Eileen Jay and D.N. Perkins (1992)**,** propose a dispositional approach to the teaching of thinking in their paper "Teaching Thinking Dispositions: From Transmission to Enculturation". While acknowledging that skills are important, the authors agree to the importance of dispositions as proposed by many others, (For ex: Baron, 1987 and Ennis,1987) and claim that being a good thinker means having the rightthinking dispositions. Based on this view, teaching thinking means not only inculcating particular thinking skills but also teaching students to be disposed to think creatively and critically in appropriate contexts.

The authors opine that a good thinker possesses certain abilities: cognitive capabilities as well as thinking strategies and skills. And, it is the thinkers abiding tendencies to explore, inquire, seek clarity, take intellectual risks, think critically and imaginatively which sets good thinkers apart. These tendencies they call as "thinking dispositions". Thinking dispositions are ongoing tendencies that guide intellectual behaviour and can be good or bad.

The authors observed that much of conventional instruction reflects a granted conception of the teaching/learning process that might be termed as Transmission Model. In this model, the teacher's role is to prepare and transmit information to learners. The learners' role is to receive, store and act upon this information. Though there are advantages of the transmission model, it encounters difficulties while cultivating dispositions. In schools as in other settings, learners tend to act in ways cued and supported by the surrounding

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environment (Brown, Collins & Duguid, 1989; Costa, 1991; Perkins, 1992). Based on this, the authors suggest that a conception of teaching appropriate to a dispositional model of thinking is an enculturation model of teaching – a model that emphasizes the full educational surround. While the transmission model only expects teacher to prepare and transmit messages about what students are required to learn, the enculturation model asks teacher to create a culture of thinking in the classroom. In such an environment, the students are encouraged to tend towards healthy scepticism. Instead of taking information passively, the instruction will challenge them to ask questions, probe assumptions, seek justifications. Here, a culture is created in which students learn to be sensitive to the evidential foundations of claims and responsive to superficiality and over-generalisation. Along with theseinclinations and sensitivities, students learn corresponding thinking abilities, such as the ability todistinguish cause and effect, to identify logical structure, and to weigh and assess reasons. Amodel of teaching that can usefully guide a teacher in creating a classroom culture that fostersthese sorts of inclinations, sensitivities and abilities must be far-reaching and flexible. In conclusion, the authors advocate an approach of teaching of thinking that emphasizes the importance of culture in the development of good thinking dispositions.

Tay-Lim, Joanna(1995) in a study "Developing young children's critical thinking skills through conversations" investigated how critical thinking of a preschool child can be facilitated through conversation with an adult (sand play). It is a case study in which a 6-year old boy attending K-2 in a local kindergarten is interviewed one-to-one. The researcher has used open-ended questioning and reflective discourse on strategies for effectively eliciting and extending the child's thinking. The study showed that the child displayed a wide array of critical thinking skills such as logical thinking/reasoning, formulating hypothesis, constructing theories, analysing, evaluating, inferring relationships/associating, elaborating/illustrating, applying knowledge /ideas, sequencing, problem solving, reflecting and employing metacognition. The author recommends that the use of questioning can be more directed at nurturing children's thinking and more opportunities for structured conversations should be created in classroom.

Deen and Cheetham (2006);in their study – 'Supporting children's critical and creative thinking skills in the early years',the teacher supported the child through learning experiences and questioning and provided him with opportunities to share his knowledge and ideas in a playful way. The child's thinking throughout the learning experience is expressed through storytelling, drawings, dramatic play and conversation. Using play as a vehicle for

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children's explorations, they selectively move from one mode to another to represent or re-present what they know most effectively – drawing, storytelling or showing it through their bodies. (Wright, 2010, p.20). Wright opines that imagination is energetically deployed and reaches its peak in early years of life. However, it gradually declines, as children grow older. But imagination is precisely what is needed to keep us potentially active. The study concluded that early childhood is a critical period for promoting creativity and critical thinking skills.

Deen and Cheetam(2006) also conducted a study in two Reggio inspired schools where thinking routines were implemented to engage young children's minds in thinking activities. The teachers were involved in an action research project towards nurturing a culture of thinking in young children. Teachers used documentation as a key element to make children's thinking visible as they installed the culture and language of thinking in their classrooms. It is a well-known fact that the interplay of nature and nurture determines the child's individuality and uniqueness. Hence, the role of the adult is to nurture the child's natural disposition to learn by engaging his/her thinking dispositions towards cultivating a culture of thinking. The study found that when thinking is a part of the daily routine, children become alert to situations that call for thinking and hence build up positive attitudes towards thinking and learning. Thinking routines developed by Project Zero researchers were implemented in young children across disciplines and during various activities including play. It was found that the use of thinking routines promoted thinking dispositions in children favouring their desire to think out of the box and build a culture of thinking. Early childhood teachers should explore venues to adapt Project Zero thinking routines to young children from a developmental age appropriate perspective as there is a great potential for thinking routines in early childhood.

Salmon, Angela K, (2010), in her study "Engaging young children in thinking routines" involved a group of six pre-K-3 to 1st grade teachers from two preschool teachers, a university faculty member, a doctoral candidate and 60 children (mostly English Language Learners of 3 ½ to 6 years of age). The teachers explored how to engage young children in thinking routines and observed their responses. During the process, they tried to connect theory with practice while testing their understanding of young children's thinking and scaffolded their thinking.

Young children usually externalise their thoughts through drawings, pretend play, building and speaking. Gallas (1994) found that children use narratives to construct mental

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models of their experiences as they draw, role-play, build or talk. Therefore, incorporating a thinking language was a crucial step towards engaging young children in thinking routines.

Ritchhart and Perkins (2005) suggested that children's natural thinking needs to be nurtured towards high-end thinking or creative and critical thinking. Research shows (Ritchhart and Perkins, 2008) that teachers with well-elaborated conceptions of thinking adopt strategies which support and scaffold thinking in children better. Therefore, the teachers' job was to find ways to involve children in high-level and productive thinking and tie those thoughts to an agenda of understanding or learning by doing. Malaguzzi (cited in Rankin, 2004) believes that children continuously reconstruct their identities as they discover that they are different from what they were yesterday. Through children's work, the teachers discovered that the use of thinking routines deepened their thoughts and created thinking dispositions. These dispositions are inclinations and habits of mind which lead to productive thinking and are teachable over time, across diverse thinking situations (Ritchhart, 2002).

Thinking routines have the potential to create thoughtful classrooms and nurture children's thinking dispositions. Since learning is a product of thinking, preparing teachers to create thinking dispositions is necessary for fostering a culture of thinking which will be reflected in students' learning. Salmon (2008) opines that as teachers and children gain ownership and awareness of their thinking processes, they will begin to shape their own culture of thinking. The routine Think/Puzzle/Explore(Project Zero, 2009) was used by one of the teachers to analyse Rousseau's Notre Dame paintings. The routine helped children stimulate children's curiosity, because art makes people think and lays the groundwork for independent inquiry. It also helped children make personal connections that helped teachers identify the children's zones of proximal development (Vygotsky, 1978) and scaffold their thinking.

This group of 3-,4- and 5- year olds was unique because many of them spoke Spanish as first language. Language researchers (ex: Cohen, 1991; Nelson & Gruendel, 1986) reported that routines support language acquisition. The use of thinking routines engaged the children in thinking activities in Spanish and the teachers scaffolded their ideas in English. Salmon (2008) concluded that the use of routines not only gave children a sense of security and confidence but also guided them in developing a culture of thinking.

Sand and Gonzalez(2012);adapted a science curriculum model for preschool English Language Learners (ELL) based on the integration of socio- constructivist theory, content-based instruction and the Ethnic Educator approach. Science was taught through –

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- Conceptual approach stimulating high order thinking strategies.
- Inquiry based and problem-solving pedagogical strategies.
- Students' prior cultural and first language knowledge.
- Active learning and social participation of students in learning communities.

Curriculum components stemmed from three approaches as it ---

1. Used a conceptual approach for learning as it stimulates pre-schoolers to develop high order thinking strategies and conceptual knowledge in science.
2. Used an inquiry based pedagogical strategy for teaching science content through a problem-solving approach of scientific inquiry.
3. Integrated science content knowledge with the students' prior cultural knowledge and their personal histories.
4. Used active learning and the social participation of students in learning communities in the classroom.

Though educators are not required to test the children in preschool, there are Early Learning Content Standards state departments of education that need to be met. Teachers at the end of the school year found the children meeting almost every state standard in the physical sciences, science and technology, scientific inquiry and scientific ways of knowing, as well as few standards for earth space sciences for early childhood.

Swartz and Mc Guinness (2014) in their final report on "Developing and Assessing Thinking Skills, The International Baccalaureate Project have discussed the development and assessment of thinking dispositions at length. The framework for teaching higher order thinking skills according to the tradition in education is the Bloom's taxonomy of six educational objectives (Bloom et al., 1956) – knowledge, comprehension, application, analysis, synthesis and evaluation. This framework is probably the best-known framework and the final four objectives have come to define "higher order thinking" (application, analysis, synthesis, evaluation).

Perkins(1995) in his Outsmarting IQ identified an emerging science of learnable intelligence (Perkins &Grotzer, 1997; Perkins, 2008). Lucas and Claxton (20101) talk about a "new kinds of smart" also give prominence to learnable intelligence and in theoretical work on why education needs a more 'plastic' view of general ability (Adey et al.,2007)

Torrance ('A tribute to E.Paul Torrance' in a special issue of Creativity Research Journal, Kaufmann & Baer, 2006; and Treffinger et al., 2012) and Osborn, Parns and Treffinger (summarised in Isaksen &Treffinger, 2004) threw an important influence on the

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teachability of problem solving. Though Bloom's taxonomy can be said to have a prevailing influence on what is now called as higher order thinking skills, the different origins and theoretical approaches outlined above introduces newer concepts related to metacognition, thinking dispositions and self-regulation and expands the range of types of thinking that might be desirable to pursue as educational goals in a thinking curriculum.

John Dewey in "How we think" (1933) said "You can teach students how to think reflectively but if they don't care about doing this, they won't". The same comment was made earlier by William James and J.J. Rousseau. This problem is reflected in a set of approaches which stresses the need to teach "Thinking Dispositions" (Ennis, Ritchhart and colleagues) or "Habits of Mind" (Costa and Kallick and colleagues) as well as thinking skills. Hence, it is important to teach students certain thinking dispositions if students have to become good thinkers. Robert Ennis was the first to note that "thinking dispositions" are not just the habitual use of a skill but is like character attributes, attitudes or values which incline students to exercise skill at thinking when it is called for. He identified several dispositions as important for critical thinking – the desire for clarity, to understand other points of view and be understood, to be truth-seeking, to be open-minded and seek alternatives; to be precise (Ennis 1987,1996). He pointed out that people should not only be able to think skilfully but also need to have an inclination to do it regularly and dispositions represent such an inclination.

The Delphi Report, Facione (1990), an expert consensus statement on critical thinking for the purposes of education and assessment, published by the American Philosophical Association further confirmed the distinction between thinking skills and thinking dispositions. The statement pointed to a range of dispositions like inquisitiveness, open-mindedness, honesty in facing one's own biases and prejudices, fair-mindedness and so on which they called as 'affective dispositions for critical thinking'. Perkins and his colleagues (Perkins, Jay and Tishman, 1993) have explored how a thinking skill or ability can become habitual/dispositional. The active use of thinking skills has three components – inclinations, sensitivities and abilities, each of which can be taught and can be an objective for a thinking curriculum.

Lipman, Martin (Lipman et al.,1980; Lipman, 2003) developed "Philosophy for Children' which was one of the first stand-alone courses designed with a focus on developing younger children's reasoning abilities through a form of Socratic questioning and enquiry. Two kinds of problems which arise out of stand-alone courses are the practicality of

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implementation as there is no room for adding a separate course in an already jam-packed curriculum. The other one is the ineffectiveness in changing the thinking habits of students both in their academic work as well as in their lives outside the school. Students tend to treat these as self-contained skills and may not retain with them albeit doing well in these courses. Trickey& Topping, 2004, have opined that rigorous research evaluations of Philosophy for Children programmes have shown positive effects of participation on the quality of the children's discussions, on post-test measures of their reasoning abilities and on measures of achievement such as reading comprehension. But,there have been no studies that have examined the degree of transfer of the children's newly acquired reasoning to other areas of curriculum learning or to their thinking outside the classroom. The main concern was about how well the critical thinking skills were transferred to other situations through the stand-alone courses.

Swartz (2007) and his colleagues practised 'Thinking -Based Learning' (Swartz & Parks, 1994; Swartz et al., 2007) which involved teachers designing lessons where the thinking skills and the curriculum content are taught simultaneously. TBL approach is found to be successful by the participating schools around the world giving testimony and results obtained from formal research evaluations of the general infusion approach in the UK (ex: McGuinness, 2006; Dewey & Bento, 2009; Burke & Williams, 2008) and in Spain (De Acedo Lizarraga et al., 2010). There is evidence that sustained practice in forms of skilful thinking taught to students even as early as in the pre-K instruction is desirable to create a pattern and habit of using the strategies being taught. This means that students have to use the same thinking vocabulary, the same thinking strategies, with adjustments upwards in complexity as the grades progress and need to be integrated into the teaching of all of the teachers in a school and coordinated with each other, across grade levels and subject areas. This has become a practice in many schools now. Singapore was one of the first countries to adopt infusion model as a national goal which was followed by other countries including New Zealand, Northern Ireland and Israel (Zohar, 2008; Gallagher et al., 2012), Australia being added to the list. The concept of "Thinking schools" was introduced by the Prime Minister of Singapore in 1997 at the 7th International Conference on Thinking hosted by his country then. His concept was to convert all Singapore schools into Thinking Schools thereby making Singapore a "Learning Nation" (Saravanan, 2005).

Swartz and McGuinness (2014) have reported that all the explicit approaches had a more positive impact on critical thinking than the immersion approach. Hence, making

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thinking explicit refers to the actions which the teacher takes to make mental moves in the thinking more transparent to the learner. These techniques are often referred to by the general term "thinking organisers". Ex: Thinking Maps (Guiding Questions) and the graphic organisers. Other thinking organisers include CORT programme, created by Edward de Bono (de Bono 1985, 1986, 1990). The program consists of a series of activities in which people were given short explicit procedures to guide their thinking and they were asked to use these to think about certain interesting situations, initially outside the curriculum. Ex: PMI – Plus, Minus, Interesting. De Bono's thinking strategies have been the backbone for the creation of Thinking Routines by Ritchhart and his colleagues (Ritchhart et al., 2011). A wide range of new Thinking Routines have been developed by Ritchhart and his colleagues who argue that their most important educational use is infused into content instruction.

When the practices for teaching dispositions are examined, there is common appeal to ideas like socialization of thinking, creating thought-full classrooms, enculturation and cultivating of thinking (Ex: Ritchhart, 2002). However, there are many references to 'immersion' in a classroom culture of thinking but there is no clarity on how this works in building thinking dispositions. The clearest illustrations are the Pictures of Practices described in Tishman, Perkins and Jay's (1995) The Thinking Classroom. Tishman and Andrade go much further than these ideas to identify elements of classrooms that may impact on the development of dispositions:

- Making models of good thinking dispositions available in the classroom;
- Providing explanations of the tactics, concepts and rationales for good thinking dispositions; Prompting peer interactions that involve thinking dispositions;
- Providing formal and informal feedback around thinking dispositions.
  With the following added
- Thinking dispositions should be the focus for metacognitive examination in the same way asthinking skills.

Michalopoulou, (2014) in his study"Creativity Expressed through drawings in early childhood education" made children create different meanings at their drawings through pictures of art and these meanings are more original when the stimulus is a picture of art that belongs to abstract art. The sample consisted of 28 children (4.5 to 6.5 years) attending two kindergarten classes in Volos, Greece. The study involved asking the children to try to imitate the way the picture of art is designed but at the same time children become creative by thinking of new ideas and ways of doing things. Three pictures of art were used as an

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opportunity for each young child to his creativity within the school setting. Creative tests using hidden shapes were adapted to the level of preschool children (Jeffrey and Craft, 2001). It was concluded that art provides a stimulating environment in which creativity, originality and expressiveness are valued and encourages young people to develop and demonstrate creativity and innovation. (Ernarsdottir, Dockett & Perry, 2009). Zimmermann noted that creativity takes place when teachers cannot predict results and are surprised by their student outcomes. In their drawings, children tried to imitate the way the picture art is designed, in a way but at the same time they are creative by thinking of new ideas and ways of doing things.

Conclusion: Thinking dispositions have been found to be equally important as thinking skills as persons should possess the attitude and alertness to use the skills in a given point of time. Various strategies have been used to effectively nurture thinking skills and dispositions. It is to be noted that persons with skills may not be able to utilize them if they do not possess the right dispositions. Therefore, along with skills, dispositions also need to be nurtured and research shows that it can be effectively nurtured right from the early years. Among all the strategies, well researched and effective strategy is that of thinking routines where children are habituated to thinking in a culture of thinking with the use of thinking language. Most of the developed countries have incorporated strategies to nurture higher order thinking skills and dispositions through their national curriculum frameworks. Thinking skills have also found a place in their national policies.

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