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**BACKGROUND PAPER FOR 8th OECD ECEC NETWORK MEETING ON ‘STANDARDS,
CURRICULUM AND PEDAGOGY’**

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Background paper for 8th OECD ECEC Network Meeting on ‘Standards, Curriculum, and Pedagogy’

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Recent insights in early childhood development

Early childhood development has traditionally been the subject of study in a variety of scientific disciplines: psychology, pedagogy, linguistics, medicine, cultural anthropology and sociology. Child care workers, pre-school and kindergarten teachers have learned from all these disciplines, as part of their professional training. But they may be less familiar with sciences that are providing breakthrough insights into child development: sciences that study the relationship between brain development and learning. It is this kind of research in particular that has provided a wealth of information, which pre-school and kindergarten teachers can use to their advantage in the classroom.

The developing brain

Research shows that the brain of a baby continues to develop during the first years of his/her life and that the environment (parents, child care workers, pre-school teachers and kindergarten teachers) can impact a child’s development. It is definitely not true that a child has to ‘make do’ with the brains that he or she was born with. On the contrary, the human brain continues to develop during childhood, and it even goes on to mature well into early adulthood. This indicates that in early childhood the brains are highly sensitive to external stimuli that promote development.

The pliancy of the human brain has a positive and a negative side. With each new and stimulating experience, the brain learns to handle changing circumstances. But the downside is that also negative experiences can have far-reaching effects: a traumatic experience affects the brain so dramatically that it might lead to problematic behaviour later in life. Therefore, it is particularly important that pre-school and child care workers not only offer challenging and stimulating learning experiences, but also create a safe environment where children feel supported and appreciated, and where children's self-esteem is reinforced. For this reason, teachers should be trained in not only how they can enrich children's language and math skills, for instance, but also in how they can enhance children's self-confidence and sense of well-being.

Specific developmental domains versus general developmental needs

Approaches to ECEC differ from country to country. Some ECEC programs emphasise specific developmental domains, while others focus more on general developmental needs. Table 1 presents examples of both areas:

Table 1: developmental domains and developmental needs

Specific developmental domains	General developmental needs
language	self-confidence
math skills	independence
motor skills	well-being
general knowledge	autonomy
cultural development	communication
computer skills	creativity
cognition	health

Up until a few years ago differences between countries on emphasising developmental domains versus developmental needs, were more apparent than now: Germany and the Scandinavian countries had ECEC programs that emphasized general developmental needs, while Belgium, France and the UK were using programs designed to enrich specific developmental domains. The *current* trend worldwide for ECEC programs is to offer a combined approach, with equal attention to specific developmental domains and general developmental needs.

Active learning

A lot can be learned from (recent) brain research. Studies have shown that the brain capacity increases when children are actively engaged in the learning process. Children benefit not only from external stimuli such as adults reading them a story, explaining how something works, or showing how a problem can be solved; children also need the chance to come up with their own answers and solutions. For example, finding out for themselves what a word in a picture book means, whether or not a jacket will fit the doll, or why the little boy in the story is so sad.

The fact that a child's own activity promotes brain development means that ECEC professionals can 'get the best out of children' when they encourage them to actively use their knowledge order to learn something new. The following example from my book (please see reference at the end of this paper) shows how this works. Here, the teacher is reading from a picture book and the child actively looks for the meaning of a word that she does not understand: *orphan*.

'What's wrong?' the bear asks. 'I don't have a mother or a father,' says the rabbit. 'Oh dear,' the bear thinks, 'the poor thing doesn't have a mother or a father. He's an orphan, with no one to take care of him. I better take him home with me and give him something to eat.'

The teacher can help the child in finding out what the word means by going over the story with her, by pointing to the clues in the story and helping the child to link these clues to the unfamiliar word. Stimulating the child's own problem-solving skills has far more benefits than simply providing the required knowledge (e.g. *An orphan is...*).

In developmental psychology they indicate this with pointing out that learning is primarily *constructive* and not so much *receptive*. This learning behaviour is further explained in table 2.

Table 2: theory of learning (developmental psychology)

Receptive	Constructive
one-way communication	Interactive communication
child is passive (receiver)	child is active (constructor)
teacher offers solutions/answers	teacher encourages child to be active and provides support in discovering new knowledge by itself
child reproduces knowledge and solutions	child develops a problem-solving attitude
child follows teacher and only listens	child learns to regulate its own behaviour

By encouraging the child to actively contribute to the learning process, the challenge becomes a two-way street: the teacher encourages *the children* to try out new ideas and solutions, and they in turn stimulate *the teacher* to come up with new impulses.

Meaningful and comprehensible

Another important principle for effective developmental learning is the relevance of meaningful and comprehensible situations. Learning activities should be offered in *meaningful contexts*. A meaningful context is particularly important because children are more motivated to learn when they are engaged in comprehensible activities that appeal to them.

But there is another reason why it is so important to create meaningful contexts. In meaningful contexts, children learn to develop behaviour that is appropriate, effective, and useful in real life situations. In order for a child to know what is an appropriate way of asking for something, or saying something, children need to be familiar with the real life situations. For those who lack this kind of knowledge, meaningful contexts are excellent learning opportunities.

Basic principles for ECEC teacher training

For these reasons, a central focus in professional training should be on the following aspects:

- Early childhood education and care not only promotes learning at an early age, but also benefits brain development, enabling young children to develop positively over the years.
- Developmental enrichment should be in line with the constructive way in which children learn. When children are challenged to actively use what they already know and know how to do, they will be able to master complicated tasks. This is not only true for language and math: children's social-emotional development also benefits from this approach.
- Above all, children's own activities foster their development. It is essential that teachers elicit these activities and create sufficient opportunities for children to learn in an active way.
- Children learn more effectively in situations that are meaningful and comprehensible. Meaningful contexts are not only highly motivating; they also provide the best environment for children to learn appropriate and effective behaviour.

What makes an ECEC programme effective?

Two factors play an important role in children's development in the early years. One is the quality of the ECEC programme, the other is the teacher's ability to stimulate children's development in an optimal way. I will look into both factors. The questions that will be addressed here are: i) What determines the quality of an ECEC programme? ; ii) What is the most effective way to enrich children's development?

ECEC centres who aim to work on developmental enrichment in the classroom might have various ECEC programmes to choose from, or they might even compose their own programme. Whether they select an existing ECEC programme or design their own programme, they need to consider some important issues: Does the programme focus on important developmental areas? Can the approach be effective? Is the programme sufficiently clear as to how it should be implemented? What kind of training will professionals need to achieve the programme goals? In order to answer these questions, three factors are believed to be crucial to the effectiveness of an ECEC programme:

- The programme should offer a variety of learning situations;
- The programme should promote qualitative teacher-child interaction;
- The programme should specify learning tracks for developmental enrichment in various areas.

Learning situations

“We want to bring the child's world into the classroom. When the topics emerge from the children themselves, children are more actively involved. And then they learn so much more” (as said by a pre-school teacher).

This statement makes sense: When children bring up something exciting that happened on the way to school (e.g. ‘a tree was lying in the middle of the street, because of the storm, we had to take the other street’) it forms an excellent opportunity to start a discussion, and professionals should take advantage of that opportunity. But professionals should not assume that there will be sufficient spontaneous learning situations for developmental enrichment. It is essential that they *create* learning situations, especially if they work with children who are developmentally at risk.

When the teacher consciously introduces certain learning activities (e.g. pedagogical games, picture-book discussions, watching a pedagogical DVD), (s)he can ensure that, for example, children are exposed to words that are part of basic vocabulary. But there is another reason why professionals need to *create* useful learning situations: expanding children's knowledge of the world. Not only is general knowledge useful in itself, but it also promotes children's development in other areas. For example, when children start learning to read, they understand the text more easily if their general knowledge is good. Evidence shows that this factor predicts reading comprehension achievements at school.

General knowledge is also important for the development of math skills. When children understand what you are doing in a shop and why you are there for instance, all kinds of learning activities related to numbers, weights and comparison become easier to understand and learn for a child.

ECEC programmes vary considerably in the degree to which content and activities emerge mainly from the children, or are part of the program. Some programmes consist primarily of suggestions as to how teachers should stimulate children's development in spontaneous situations, while others provide more detailed and elaborate activities for developmental enrichment. The truth is that children can benefit from both approaches. What really matters is that children become interested and are motivated to engage in, and talk about the activities. As long as this goal is achieved, it is not really important whether the learning situation was spontaneous or whether it was set up by the educator. Professionals who want to provide developmental enrichment should not only *seize the moment*, but also *create the moment*.

Basically, seizing the moment should be more than simply responding to whatever topic emerges from the children themselves. Daily routines - such as the mid-morning break or standard celebrating a child's birthday - can also be used to enrich children's development. For example, when children are putting on their coats to go outside, the teacher could try one on and say jokingly: *Look, it fits!* For children it is highly amusing to see an adult make a mistake. In a fun way, this situation becomes a learning opportunity because it gives the children a hands-on experience of the concepts of size and volume.

However, professionals do not always know how to exploit a situation in terms of developmental enrichment. In the above example, this started in a really interesting way: When an adult is obviously making a silly mistake, children are quick to react to the situation. But how can the teacher generate interaction that benefits child development? An ECEC programme should provide clear guidelines on this issue. It helps professionals to understand what actions can create qualitative teacher-child interactions.

Qualitative teacher-child interactions

When preschool and ECEC professionals engage in conversations with children, they should not 'talk too child-like'. It is important that teachers use challenging language. If their language use is occasionally even slightly too difficult, that is fine. Teachers who habitually speak in a simple way are denying children the opportunity to actively discover how language works. Children's innate language potential may be smothered in this way.

Questioning

Children should get ample opportunities to actively develop this innate potential. One possibility is that the programme provides suggestions as to how the teacher can use picture-book reading to ask questions and start discussions in a way that stimulates children's imagination and their logical thinking. As an example, when a teacher is reading from a picture book about a little boy who is exploring the playground, the teacher could ask questions such as: *What do you think those two other children are talking about? And: Why is that little dog crawling under the hedge?* These type of questions are much more demanding in terms of language and thinking than simple, descriptive questions such as: *How many trees do you see in the picture?* Children can answer this question without much reflection: *Four*. But such a question does not exactly make a huge contribution to children's language development.

Plan-do-review

An effective kind of interaction which stimulates language development is the *plan-do-review* method that is included in some ECEC programmes (e.g. High Scope). In plan-do-review children state an intention and make a plan for it, carry it out during work time, and then reflect on what they have discovered and discuss this with the educator and other children. However, plan-do-review does not *guarantee* e.g. language enrichment. If the teacher-child interaction is limited to simple questioning situations (e.g. *Amber, what do you want to do? - I want to paint!* and asking afterwards: *How did it go? -*

Good!) this will not contribute much to the child's language development. Professional training should enable teachers to create more lively and stimulating interactions with children. For this reason, teachers and care workers who want to start in ECEC programme should think about what kind of training they will need in order for them to be able to use the programme effectively. It is a good idea to include training in which professionals learn how to stimulate children to use their language potential to the full.

Play

An excellent way to stimulate early development is through play. Research has shown that children tend to try out more complex language during play first, before they start using difficult words and sentences in real-life conversations. Also interesting is the finding that children use even more complex language and continue playing longer when the teacher joins in. This is not only essential for language development, but also for children's social development (understanding the thoughts and feelings of others, being able to work together), emotional development (expressing your feelings, knowing who you are), as well as gross motor and fine motor skills.

Learning tracks

A third requirement for an effective ECEC programme is identifying specific learning tracks for various developmental domains. Programmes vary widely in this respect. For example, some programmes describe learning tracks for early literacy and early numeracy. The learning activities offered by the programme are in line with these tracks. But there are also programmes that take a more general approach, based primarily on the children's choices and initiatives. ECEC professionals who work with this type of programme often indicate that 'You can't plan everything in a strict way, because that doesn't leave any room for the spontaneous ideas and initiatives that the children come up with'. True enough, but it would be wrong to assume that there is *only* room for children's spontaneous ideas and initiatives in open-approach programmes.

Structured programmes can offer all kinds of opportunities for teachers to respond to the children's interests. Whether or not an educator is able to make use of these opportunities depends not so much on the structure of the programme as on the teacher's didactic abilities. Every ECEC programme should have a clear framework based on specific learning tracks. The structure contributes to the confidence of the professional.

Additionally, he/she always has a range of stimulating learning activities at his/her disposal that can promote interaction and development. This not only guarantees that the educator offers an adequate and balanced series of activities, but – equally important – it also makes him/her aware of key aspects of children's spontaneous activities. A professional who has worked with various games that promote spatial orientation, for example, will be more effective in *seizing the moment* in situations that occur during outdoor play or excursions.

How effectively the teacher responds in these situations depends to a large extent on good training and coaching. Training and coaching is basically an absolute necessity, whether professionals work in a structured programme, or in a more open approach programme. Generally speaking, professionals who work with an open-approach programme are supported by training that enables them to work with, and in, the programme effectively, while teachers who use a more structured approach can also rely on the elaborate learning activities set out in the programme. This is another point to consider when selecting a suitable ECEC programme and designing or implementing a curriculum.

This background paper is based on my book:

Cohen de Lara, H. (2008), *The Basis: Theory and practice of early childhood education*, Sardes, Utrecht, the Netherlands.