

The Pyramid Method

Educational method for 3 to 6-year-old children

Preface

The design, development and research of the Pyramid Method has been a large-scale, labour intensive piece of work, which took six years to complete and to which many have contributed with much enthusiasm.

In this scientific background description we report about the theoretical foundation and the effectiveness of the Pyramid Method, which were examined in an experiment subsidized by the Ministry of Public Health, Welfare and Sports and the Ministry of Education, Culture and Sciences. The objective of this study was to draw up policy lines for pre- and early school education and the disadvantaged children policy. This scientific background description is the result of practice tests of the Pyramid design theory, the purpose of which was twofold. The playgroups and the schools taking part in the experiment were tested to see whether the operationalisations of the Pyramid Method theory were feasible in practice or needed improvement, and the effectiveness of the method itself was tested as well.

Six experimental locations took part in this study:

- Ede/Barneveld: PVP (Preschool project) Sindibad, Sim-Sim, Minik, playgroup: De Zon; primary schools: Juliana van Stolberg and De Delta; public primary school: De Zonnebloem; program coaches: drs. Karin Zuidweg and drs. Janneke van de Griend, M.A., Stichting Region Ede;
- Rotterdam: playgroup: De Dolfijn; Roman-Catholic primary school: Valentijn; program coaches: drs. Ageeth Koemans, M.A. and Els Vollering-Gloudemans;
- Zwolle: playgroups: Holtenbroek and De Klooienberg; public primary schools: Het Klankbord and Peter van Anrooy; Protestant primary school: Het Carillon; coaches: drs. Piet Bakker and drs. Piet Wijbenga, Zwolle educational priority area;
- Breda: playgroup: 't Blokkendoosje; Roman Catholic primary school: De Liniedoorn; coach: drs. Mariëlle Merx-van den Brand, Breda school advisory service;
- Emmen: playgroup: Dribbel; public primary school: Emmermeer; Roman-Catholic primary school: Sint Frans; Protestant primary school: Groen van Prinsterer; coach: drs. Isabell Drewes, Drenthe educational priority area;
- Den Ham/Vroomshoop: playgroups: 't Schakeltje, Waggel Waggel; Protestant primary school: De Linde; public primary school: De Schakel; coaches drs. Kristel Schellings, drs. Jannie Lensen and drs. Arnica Derkink, Veenstreek educational priority area.

The following Cito staff have trained and coached the teachers and tutors:

-
- drs. Dita Breebaart,
 - drs. Saskia van Berkel,
 - drs. Carolien van den Broek,
-

-
- drs. Henriëtte de Groot and
 - drs. Ria van Kessel.
-

We would like to thank all teachers, tutors, program coaches and Cito staff for their critical and co-operative contribution to this exciting experiment.

The following Cito employees have helped in the various test administrations. Daan Verwoert and Johan Cremers have prepared the printed matter and Eric Beatse and Theo Lukkezen have reproduced the test materials. The logistic part of the experiment was taken care of by Rolf van der Kemp and Marianne van der Burg. Geert Evers and Harm van der Meer collected and classified the research data.

Cito contributors to the scientific report:

- drs. Frans Kamphuis, who has made the analyses of the Cito research,
- Steven Rijdsijk, who was responsible for the design and production of the pictures and graphs, and
- Marie-José Maas, who handled the administrative process.

We would like to thank all of them for their loyal co-operation.

Cito Netherlands

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Introduction

In a survey study of the effectiveness of preschool programs Royce, Darlington and Murray (1982) and Leseman (1992) mention the following characteristics of successful programs:

- sufficient intensity (at least four mornings/afternoons a week),
- a reasonable period of intervention (two or three years),
- early starting age (two or three years),
- favourable teacher-child ratio (1:12),
- parent involvement.

A study by Karweit (1994) shows that early intervention works, but that preschool intervention is not enough. It must be continued in a school environment, as the study by Royce et al. shows. Primary school failure can be prevented by development stimulation in preschool education and continued intervention at primary school level.

According to Slavin, Madden and Karweit (1994) successful education is not determined by separate elements, but by the coherence and co-operation of all effective elements.

The question is whether it is possible to develop an educational method which meets the conditions mentioned above, characterized by the co-operation of all effective elements and an optimum result.

In 1994 the Dutch government was looking for educational programs meeting the criteria mentioned above, so that it would be able to conduct an effective policy aimed at the prevention of delays. From six concepts the Meijnen committee (Leseman and Cordus, 1994) selected the American High Scope developed by Weikart (Weikart and Schweinhart, 1991) and Pyramid, developed by Van Kuyk (1994, 1997).

The assignment was to show the effectiveness of the two educational methods in a three-year experiment, so that the government would be able to make a policy decision.

The criteria drawn up by the committee were met in the following manner in the Pyramid Method.

- A complete educational method for all 3-to-6-year-olds, with specific detailing, particularly for ethnic children and Dutch low-SES children, for extra stimulation of children's development (intensity).
- 4 mornings/afternoons of preschool a week for three-year-olds and 9 mornings/afternoons of primary school a week for 4-to-6-year-olds (an intervention period of 3 years).
- Children can start visiting preschool when they're 2 1/2 years old, the methodical features are introduced at the age of 3 (early start).
- A preschool and kindergarten child monitoring system (Van Kuyk, 1997, 2000) based on Item Response Test methodology (Eggen and Sanders 1993) to be able to closely monitor the development of all children.
- Support by a tutor (Slavin et al., 1994) for 4 mornings/afternoons a week for children belonging to the 25% with the lowest scores in the preschool and kindergarten child monitoring system. This tutor's task is mainly preventive (favourable teacher/child ratio).
- Strong parent involvement. At home the parents carry out play and project activities, parallel with the playgroup and school activities.
- All activities, of teacher, tutor, parents and ethnic language and culture teacher relate in content and organizational set-up, and are performed in coherence for effect accumulation.

In this paper a description is given of the Pyramid concept design – its theoretical base and practical implementation. We also present the structure of the educational experiment as it was carried out between 1996 and 1999 with a grant of the Ministry of Education, Culture and Sciences and the Ministry of Public Health, Welfare and Sports. Finally we mention the results of the study conducted by Cito as part of this experiment with the help of its preschool and kindergarten child monitoring system. The results are compared with the reference group of the monitoring system, which is representative of the Dutch

population and serves as a control group. The results will be compared with those of the external assessment studies commissioned by the Dutch government. The effect study was conducted by the University of Amsterdam (Leseman, Veen, Trieschijn and Otter, 1999; Veen, Roeleveld and Leseman, 2000). The implementation research was carried out by Groningen University (Reezigt, 1999).

2 Theoretical basis of the Pyramid concept

Starting-point for the development of the Pyramid educational method was the fact that it had to meet scientific and practical quality needs. To provide the scientific quality, the concept is based on psychological theories concerning the development of young children with which successful studies have been or are being conducted.

The concept is based on the following theories, which will be commented upon in more detail later on:

- attachment theory,
- distancing theory,
- dynamic development theory.

The practical quality demands aim at the development of a coherent method, which can easily be used by various team members, its methodological practice being captured in a notation which offers sufficient freedom and creativity for one's own interpretation of the method and one's own orchestration of the educational process.

The practical quality demands are that:

- the method is comprehensible for all teachers; it is a simple support for their teaching practice,
- method-related action is laid down in writing, if possible, to ensure continuity of action, particularly when there are changes in the team and there are several teachers in a group. Transferability is ensured,
- skills which are needed to carry out the Pyramid Method are taught in training sessions and by coaching in the teaching practice,
- the educational method must be practice proof and build on a successful practice,
- the method has special detailing for specific target groups like ethnic children and disadvantaged children.

In the design the successful psychological theories have been combined with successful practices into a coherent educational method.

Before giving a more detailed description of the design a definition will be given of what we mean by education.

2.1 Education

Education is defined as the action of the adult who takes care of the child, protects it and makes it independent. By supporting the child – a kind of behaviour which suggests love and care and which aims at the physical and emotional wellbeing of the child, so that it will feel understood and accepted – it will be able to develop the confidence to explore the world (Deković, 1992). At the same time the adult will have to take the risk to allow the child to become independent. This independence is created in a process in which the adult stimulates the physical, emotional and cognitive development of the child, enabling it to fulfil its tasks in life independently. Education in preschool and in primary school is a specific form of this growth towards independence.

The educator – the teacher in preschool and kindergarten – will have to strike a balance between proper protection and sufficient space and support to let the child gain its independence. Children with chronic illnesses are often overprotected. Because of this they cannot develop sufficiently and start having behavioural problems. Lack of protection, however, creates fear in children and makes them afraid to develop. Education is protection, offering safety and security to the vulnerable child which cannot fulfil its tasks in life independently, at the same time making sure that it separates from its educator, irrespective of the risks involved.

The educator is and remains close to the child and steps back to allow the child to become independent. This paradox called education is the basis of the Pyramid concept. In it we discern four elementary notions which we have called the cornerstones of the Pyramid concept (see figure 1):

- psychological nearness,
- psychological distance,
- child initiative,
- educator (teacher) initiative.

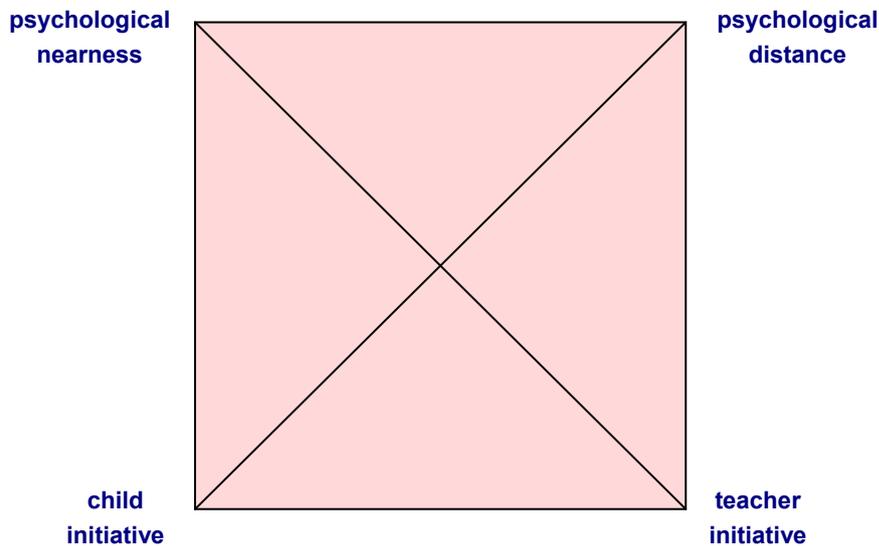


Figure 1 The Pyramid as a metaphor: four cornerstones

2.2 Psychological nearness

The teaching practice aims at giving the child a feeling of protection and security through the nearness of the teacher. At first this will be the actual physical nearness of the educator, but soon the actual presence will no longer be important but rather the psychological nearness or the feeling of nearness which will make the child feel safe. This concept is based on the attachment theory (Bowlby (1969), Ainsworth, Blehar and Waters (1978), Erickson, Sroufe and Egeland (1985)). This theory initially focused on the study of the mother and child relationship, but is increasingly used in preschool and early school contexts (Van Lieshout, 1987, Riksen-Walraven, 1989).

The psychological nearness concept is an extremely elementary concept. From attachment theory we know that feeling secure is essential for being able to explore the world. A feeling of fear, on the other hand, is like a thermostat. It starts working when the fear goes up. All the energy is then needed to survive, to overcome fear. When fear decreases, energy is set free to explore, energy for distancing from the immediate here and now. Psychological nearness is an essential condition for effective psychological distancing. The two concepts reinforce each other and their coherence is the basis for the Pyramid concept.

To promote the creation of psychological nearness, the educator's attitude must be sensitive and responsive. The teacher creates an attachment relationship by using the following elementary principles (Erickson et al., 1985):

- creating a secure environment by giving the child emotional support and encouragement and by refraining from negative remarks,
- showing respect for the autonomy of the child,
- drawing clear lines and adding structure if necessary,
- making sure that one's explanations are tailored to the child (informative feedback).

2.3 Psychological distance

The psychological distance concept is the basis of the distancing theory (Sigel, 1970, 1993; Cocking and Renninger, 1993). This theory too has its roots in the mother and child relationship and one of its features is identifying the mother and child relationships that have a positive effect on development. The distancing theory also finds its way into pre- and early school environment. Psychological distance (Cocking et al, 1993) is the increasing skill of the child to understand that an object (thing, person, idea and the like) can be represented by something other than the concrete object itself. By means of representations the child learns to abstract from the immediate here and now. An example of this is an experiment by Perner (1991).

Perner presented one-year-olds with a box with a drawing on the bottom. The one-year-olds, when asked to show the drawing, did not understand the assignment. They threw away the box. Two-year-olds, however, did show the drawing, but they made sure they were able to see the drawing themselves. They made sure the drawing was there. Three-year-olds showed the drawings without looking. They already had a representation in their heads. This teaches us that 3-year-olds have representations and it also shows us how convenient they are: representations help you do away with immediate nearness, with the here and now, The major advantage of the distancing theory is that in principle it can be applied to all areas of development (Cocking et al, 1993).

The distancing process is a two-sided process. On the one hand the child has to be addressed as close to its level of knowledge and experience as possible, on the other it has to learn to step back and reach the highest possible level of representation.

There are two aspects to staying as close as possible to the child's own level of knowledge and experience:

- a motivational aspect: what is close to the child is familiar; it's something the child is interested in (the world of experience of the child; the world it lives in). It is a process of looking for the familiar. The point of departure is the level of the concrete objects, the child's world-of-experience contexts and attractive features. Starting from this concrete level increasingly higher levels of representation, complexity and abstraction are being introduced (Van Kuyk, 1985).
- a development aspect: the child is addressed at its level of development (DeLoache, 1993; Mischel and Rodriguez, 1993; Flavell and Miller, 1993).

In reaching that level Sigel (1993) makes a distinction between three levels of distancing strategies (see table 1).

Table 1 Sigel's distancing strategies

low level	<ul style="list-style-type: none"> ▪ labelling ▪ reproduction
Intermediate level	<ul style="list-style-type: none"> ▪ inferring similarities and differences ▪ establishing cause and effect relationships
high level	<ul style="list-style-type: none"> ▪ anticipating ▪ reflecting ▪ evaluating ▪ drawing conclusions ▪ solving problems

This means that in the Pyramid concept nearness has a double connotation, a truly pedagogical one, relating to the security and protection of the child, and a didactical one that relates to the child's level of knowledge and experience, to learning to separate from an environment that is familiar – the here and now.

2.4 Child initiative

The question raised in this respect is: to what extent can the child optimize its development on its own? According to the Piagetian theory (1970) the child has enough cognitive power to direct its own development. This is done through confrontation with objects from its physical and social environment. The child develops in play, particularly by exploring and playing with objects and with other children. In its play the child is confronted with the perspectives of other children. The conflict situations which arise are particularly instructive, leading to a new balance in knowledge and skills. Study of the development of young children and of children's free play shows that the influence of adults on play is important and that play does not by definition lead to development. Sigel (1982) indicated the importance of social interaction. Sylva (1992) showed that play without the guiding hand of parents or teachers does not lead to learning and development effects, but also that the initiative and the active involvement of the child are of major importance to development. The past 10 years the constructivist way of learning has gained influence: active construction rather than passive absorption, using one's own experiences and learning to think for oneself being its main features. Child initiative is important, more in particular its own active involvement in learning activities. The guidance of adults which helps the child learn to plan and be effective is of explicit importance to its development.

2.5 Teacher initiative

The question to be asked in the teacher initiative context is: what teacher initiative secures optimum development? As we've said before, teacher initiative is important. This view is supported by the Vygotskian tradition (Vygotsky, 1962), also called the socio-constructivist vision. By the very interaction between child and adult the child is introduced to the culture in which it is growing up and learns to master cultural and social skills. The adults show which skills are important and how they can be learned systematically and efficiently. This helps the teacher to bring the child to the "level of proximate" development. What the child cannot do independently, it can do with the help of the adult. A term used in this context is "scaffolding" (Bruner, 1995). Scaffolding can mean both the offering of a pre-structured environment to play in and structuring and explaining a task a child has to perform. The teacher offers the support which the child needs to get a grip of the play and task it is involved in: by indicating direction, by giving hints and suggestions, by (pre)structuring the task and if necessary splitting it up into smaller parts. But this has to be done in a manner which makes the child learn actively, as was already pointed out in the constructivist view. From the information processing perspective this means helping the child to act strategically, to check itself and work systematically. In short, the child is taught to be aware of its learning. This is also called meta-cognition. They are also effective methods which teachers can offer to "teach children to learn" (Welsch, 1991). Helped by the teacher, children learn to learn on their own.

A theory which offers new perspectives in this area and transcends the theories of Piaget and Vygotsky (Van Geert, 1998) is the dynamic development theory. According to this theory development can be optimized and there is an important stimulating and optimising role for the teacher to play.

2.6 The dynamic development theory

The dynamic development theory is a dynamic system of activities, related to biological, psychological and social systems which contribute to each given activity (Fischer and Bidell, 1998; Fischer and Rose, 1998; Van Geert, 1998). According to this theory development is not made up of a number of development stages, like Piaget's stages, but of a long series of cycles which from birth to about 30 years of age take place at increasingly higher levels. It is a variable and flexible system of changes. These changes take place in two cycles: a short-term and a long-term cycle.

Short-term cycle

The short-term cycle creates successive levels of knowledge and skills, starting with simple units, followed by combinations of a number of units and finally resulting in systems characterized by a coherence of many units. A new kind of unit is created, in which the previous matter is simplified and restructured. The short-term cycle is more or less similar to the construction of a cube. The simplest unit is a point. This is made into a line, which is turned into a square and finally into a cube. The cube in its turn is a (simplified and restructured) unit in a new shape, more complex than the previous ones (see figure 2).

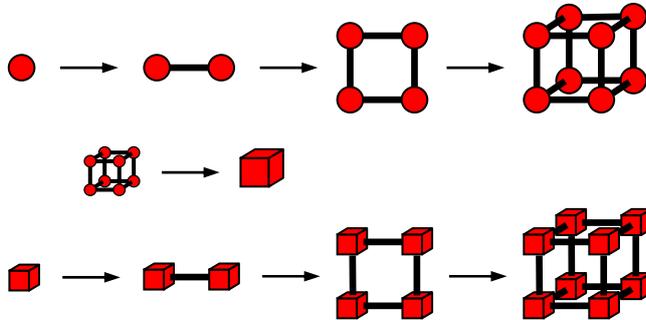


Figure 2 Development cycles according to Fischer and Rose

This short-term cycle which is simplified (abstracted) and restructured over and over again, is included in a long-term system, with four levels of action and thinking, also called “layers of development”.

Long-term cycle

The long-term cycle starts at birth with reflexes, followed by actions, which turn into representations and later into abstractions.

The interesting thing about these cycles is that they both follow the same pattern as the growth of neural (nerve) networks in our brains. Here too we start off with simple connections between brain cells, followed by connections between regions of the brain and finally between brain activities of various specific regions. Brain studies show that the brain is not fully developed at birth. A stimulating environment in particular helps to make connections between the brain cells which are very important to later functioning. With little stimulation the brain cells die and no connections are made. But it is also true for the development of thinking and learning that the cyclical changes do not occur spontaneously. They do not automatically accompany any child or adult action, because most of our acting, thinking and learning does not take place at optimum level, but rather at a lower level. We do not reach the boundaries of our potential.

Each new cycle is most clear at its optimum level. Usually a person only functions at optimum level with a strong support from his environment. This happens when there is a teacher available or a tutor who stimulates development or a text (if a child is able to read). Without such support learning and thinking will deteriorate and take place at lower levels. This means that the level of learning and thinking largely depends on the powerful stimulation by the teacher or tutor. Development stimulation is therefore of major importance to the optimization of acting, learning and thinking.

Below a representation is given of the short-term cycle, in which increasingly more complex links are made, and the long-term cycle with its four level (“layers”) of development (see figure 3).

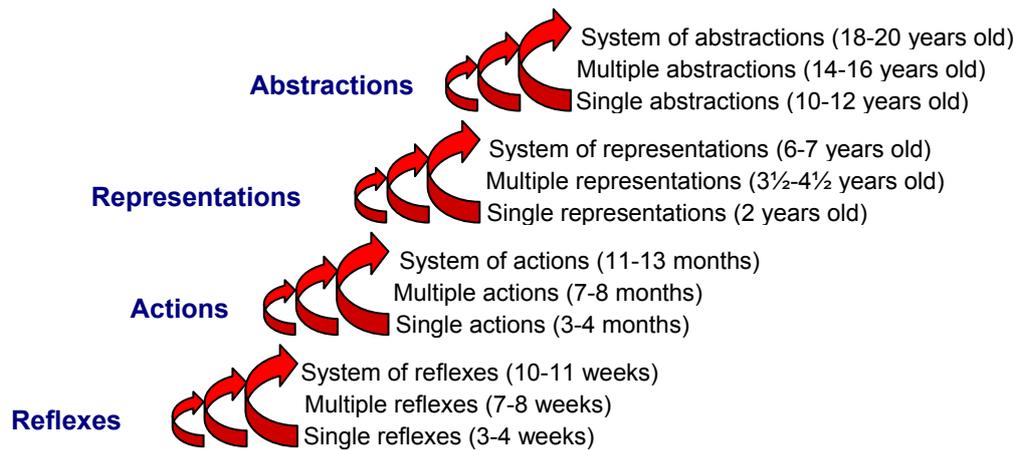


Figure 3 Short- and long-term cycle according to Fischer and Rose

Shortly after birth babies use reflexes. These reflexes become more and more complex and finally turn into reflex systems (sucking reflex, arm and leg movements, perception patterns), which then turn into actions (reaching for objects, watching, walking, eating). Between three months and two years the sensomotor actions are more complex in nature and they slowly turn into the first concrete representations (vocabulary, making sentences, recognizing persons and emotions, being able to cut, count and compare). Higher levels of representation are being formed in childhood between the ages of 2 and 12. Between the age of 10 and the age of 25 the child develops abstractions (literary and mathematical concepts, motivation and personality characteristics, and social, legal and philosophical concepts). These are then made into systems (e.g. the theory of evolution, psychological theories and the like). For the four levels the general ages have been indicated.

In the framework of this educational method our main area of attention is levels 2 and 3: actions and representations, on the verge of becoming abstractions.

3 Method content

An important question in the development of the Pyramid Method is: what should be the content of the program to warrant optimum all-round development?

3.1 Coherence and specificity

According to the dynamic development theory (Fischer and Rose, 1998) and Gardner's multiple intelligence theory (1993) a child develops a number of skills. These skills can be subdivided into a number of development areas, called intelligences by Gardner. According to Fischer and Rose (1998) connections are made between these development areas in each cycle of growth, the so-called development webs, in which the skills develop separately first and continue to connect to other development areas later on (see figure 4).

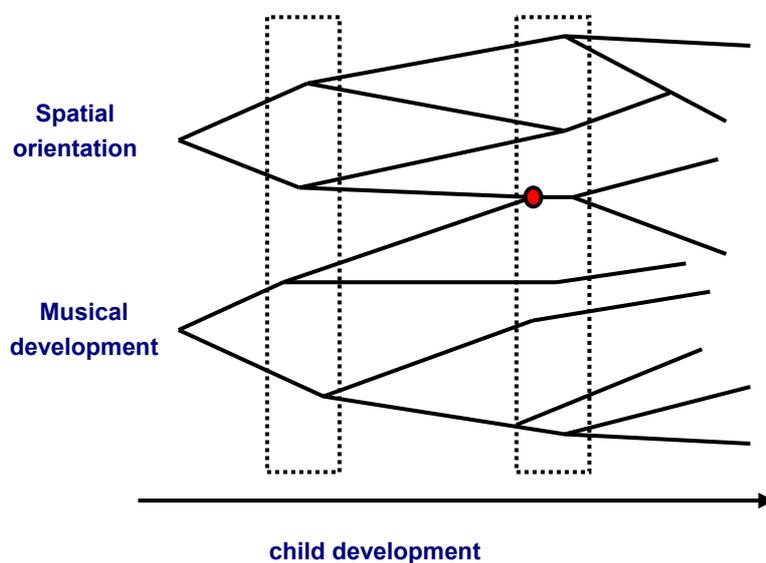


Figure 4 Development web according to Fischer and Rose

The child develops skills in separate development areas. Coherence is created when tasks require the integration of several development areas, like reading a musical notation. This is where spatial and musical tasks meet.

3.2 Intelligence and development areas in Pyramid

The Pyramid Method is based on a multiple intelligence concept (Gardner, 1993), with a limited number of intelligences. Three areas of intelligence are discerned, in which there are development areas which are representative of the education to young children (Van Kuyk, 1987). In Pyramid both the specificity of the activities in the development areas and the coherence between the areas is taken account of.

In Pyramid an intelligence area categorization is opted for which is related to what in education is called the gifts of head (cognitive intelligence), heart (emotional intelligence) and hand (physical intelligence). They are distinct, but they influence one another too. In these intelligence areas eight development areas are

identified, representative of the entire Pyramid program in preschool and the first two groups of primary education. They are the foundation for the play program, the projects and the tutoring program (see figure 5).

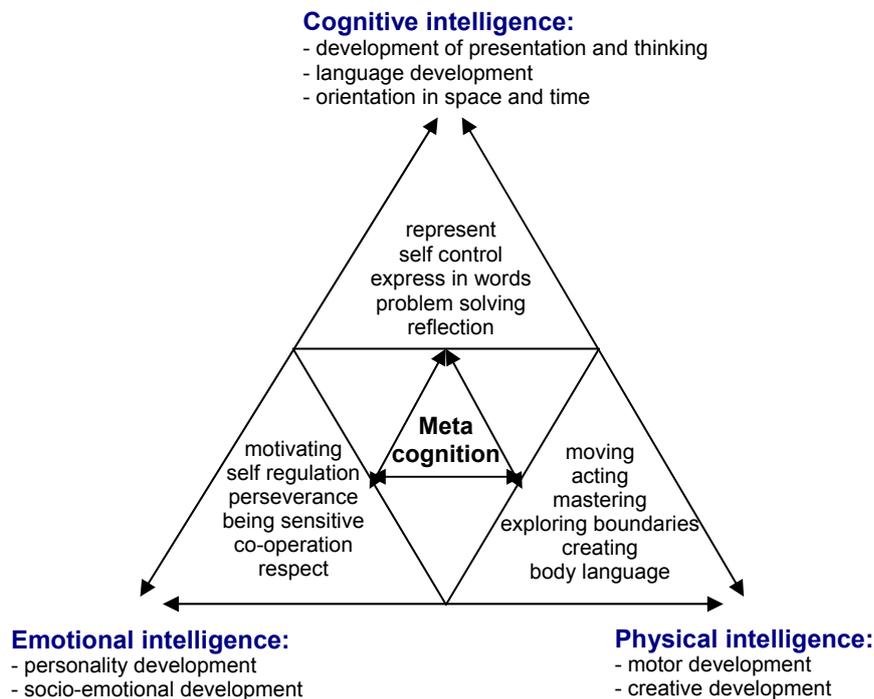


Figure 5 Intelligence areas and development areas in the Pyramid Method

Below the intelligence areas and the accompanying development areas will be represented.

Emotional intelligence

Emotional intelligence is the ability to be receptive to one's own and other people's emotions and adjust one's social actions accordingly (see also Salovay and Mayer, 1990).

This intelligence area comprises the development areas of personality development, which is intrapersonal, and socio-emotional development which is interpersonal (see also Gardner, 1993). The children learn to be confident, they learn to persevere and to control themselves and they learn to be motivated and curious when they play or learn, alone or with other children. They also learn to identify their own and other people's feelings and act on them.

Physical intelligence

Physical intelligence is the power to control movements and express oneself in a creative manner. In this area a distinction is made between motor development (intrapersonal orientation) and creative development (interpersonal orientation). In these areas the child learns to move, it learns to act and control its body and express its body language. It learns to be creative with its body, materials, tools and instruments (e.g. in visual arts education and music), in short it learns to create.

Cognitive intelligence

Cognitive intelligence is the power to master language and thinking, and act accordingly. Here we identify the development of perception and thinking (intrapersonal orientation) and the development of language (interpersonal orientation) and the orientation in space and time. All action takes place in space and time. Through the development of these areas the child learns to be aware of its everyday environment. It learns to get a grip of this environment and to separate from the here and now.

Language and thinking are particularly important instruments, directed, as they should be, by the concepts of space and time. The child learns to identify characteristics of the environment by making representations, it learns to solve problems, express itself in language and communicate with its environment, it learns control itself, to reflect on and become aware of its own actions.

We would like to repeat what we have said before: these three areas of intelligence each have their own specific characteristic, but they also show coherence – they influence and reinforce one another. Thus emotional intelligence will give the child confidence, which will enhance the cognitive development and will allow the child to control its motor behaviour. Absence of impulse control may, on the other hand, disturb both motor and cognitive intelligence. Physical intelligence will add co-ordination to movements, which in its turn will increase the courage for new challenges. This will make the child more confident. Creative expression will improve the child's socio-emotional communication skills. Insecure motor behaviour may result in more fear, which prevents the child from taking risks, possibly even at cognitive level. Cognitive intelligence makes children aware of their emotions; it gives them more insight into their emotions and they learn to solve emotional and social problems. Its cognition will help the child control and improve its movements. Guided by its cognitive intelligence the child may become aware of all its physical, emotional and cognitive action and learn to deal with it in a flexible way. This awareness is called meta-cognition. To create optimum coherence between the three areas of intelligence, the harmony of three components – the affective, the cognitive and the action component – is the Leitmotiv in all learning activities.

4 Stimulation of development at three levels

From the dynamic development theory (Fischer and Bidell, 1998; Fischer and Rose, 1998; Van Geert, 1998) we know that the role of the teacher is of extreme importance. The question is how to stimulate the development of these areas.

A Fischer and Bidell study (1998) has shown that adult intervention can optimize play and story-telling activities. The level of thinking of the children can be raised considerably by these interventions. Children watching play in which a mutual relationship was represented (mutual giving) or being told a similar story, also showed this mutuality in their own play or their own story. They showed an optimum level of thinking (6.5-6.2). The children were not able to generate this mutuality themselves. They turned out to be functioning at a lower, non-optimum level, when they started to play or tell a story without being stimulated in advance (3-3.7). Their level of acting and thinking was considerably lower (see figure 6).

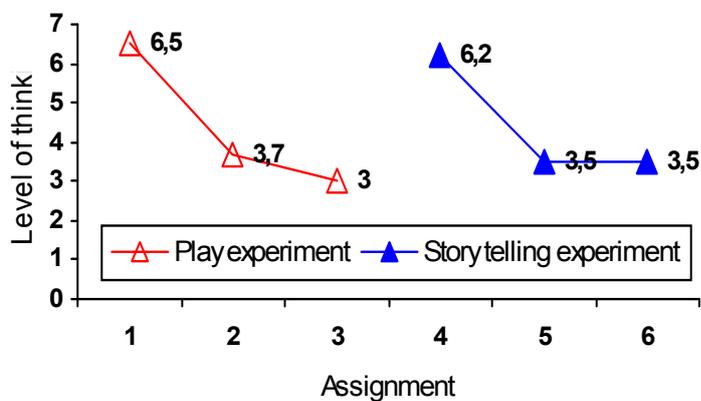


Figure 6 Play experiment and story telling experiment

This shows that the development of children can be optimized by stimulating it. This optimization is what we aim for in the Pyramid Method, but account should be taken of the fact that the teacher teaches a group and cannot optimize the development in each individual child all the time. Attention must be distributed over the group. That is why the teacher uses the optimization options in an economic way. Children play and work independently when the teacher is not available or is supporting other children. The tutor on the other hand – a tutor is a specific function in the Pyramid Method – can optimize the development of individual children. The teacher needs a sensitive-responsive attitude to notice the signals of the child or the children and react to them in an adequate manner. If the child takes much initiative and makes its own choices, support can be limited. If the child takes no or little initiative, support must be strong.

4.1 Complementary model

In Pyramid a complementary teaching model is used.

- The child's initiative is the starting-point and the final objective of education; the larger the intelligence skills, the more powerful the possibilities for self-direction.
- The teacher directs the child's development: she decides which objectives are important, in what way they are achieved and how the outside culture is brought into the school.

- The teacher coaches the development process in the large and small group through “scaffolding”, a process in which the teacher gives the child as many chances as possible to learn actively.
- Children with insufficient self-direction skills (learning problems, little initiative and little motivation) are supported, coached or directed by the teacher or tutor.
- The less a child is able to discover culture on its own and to learn actively, the more the teacher and tutor direction grows.

This complementary model is implemented in a climate of safety and security (psychological nearness, attachment theory), in which the teacher teaches the children to separate (psychological distance, distancing theory) from themselves and from the here and now by developing representations, in which optimization of the development level is the ultimate goal (dynamic development theory).

4.2 Levels of intervention

Handling this complementary model presupposes a wide range of teacher skills and a wide range of activities, to create a harmony of child and teacher initiative. To this end three kinds of educational contexts, three programs, representative of the Pyramid Method, have been identified:

- play program,
- group program with projects,
- tutoring program.

These programs are characterised by different levels of intervention and a different status of the child and teacher initiatives. In the play program the child initiative is central. The teacher does not easily intervene when the child’s play is rich. The teacher preforms the play-learning environment. The intervention level is raised when the child’s play is not rich or when the child is not able to play. In the group program of the projects the teacher takes more initiatives. She brings the outside world inside through different project themes, but in the four steps of the projects she also presents initiatives and ideas to examine the subject with the children, so that they learn to act independently as well, for instance in processing. And finally there is the tutoring program which has direct links to the projects. Its aim is to give individual coaching to children who do not benefit enough from the play and group explorations. The initiative rests with the tutor, but aims at challenging the child into active learning, so that later on in life it will be better prepared for learning, and learn more independently (see figure 7).

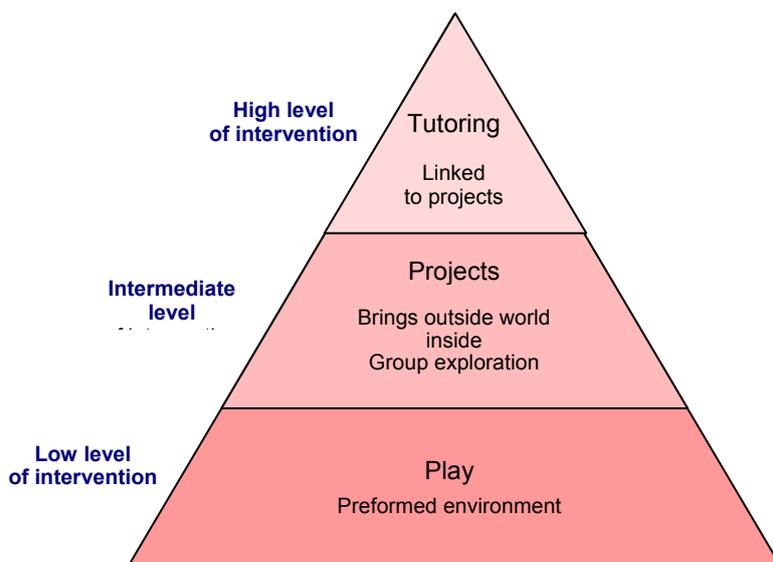


Figure 7 Three levels of intervention

5 Play program

Play is an activity initiated by the child, in which it can experiment and interact with its environment in a stress-free and open manner. It does this with self-selected goals, with actions or imaginary play, with rules of its own and action sequences which it can change when it sees fit. According to Vygotsky (1974) the ability to separate acting and thinking is called upon in play. Before the child can play its imaginary play, it is very much bound by perception and its immediate satisfaction of needs. In imaginary play it creates a distance between itself and its direct perception. It can think in terms of imaginary objects. Actions are no longer determined by perception but by thinking. Here we notice exactly the two kinds of play which, in the dynamic development model (Fischer and Rose, 1998), play an important role in the age group of 2-6-year-olds: action play at the action level and imaginary play at the representation level, also called representational play. According to Vygotsky (1974) the child transcends itself through imaginary play. It works on its level of proximate development. It represents both the real and the imaginary world. It plays with two worlds. By playing themselves children learn to make new representations. They learn from it, as a classic experiment by Sylva, Bruner and Genova shows (1976): children were found to be able to learn to solve a problem by playing with materials. Research in the Vygotskian tradition shows that imaginary play in the 0-4 age group is social play in 68-75% of the cases. An adult was the major play partner (Haight and Miller, 1993). For children both self-directed and adult-directed play are an important development phenomenon. That is why it was given such a prominent place in the Pyramid Method.

In Pyramid the play program consists of two components:

- The first one is free play. Children decide for themselves what they want to play, what they want to play with and with whom in the preformed environment.
- The second component is structured play, which is part of the projects. The structuring relates to the theme of the project, for which the teacher pre-structures and changes the learning preformed environment with suitable materials. She provides new stimuli in the corners of the room (see projects).

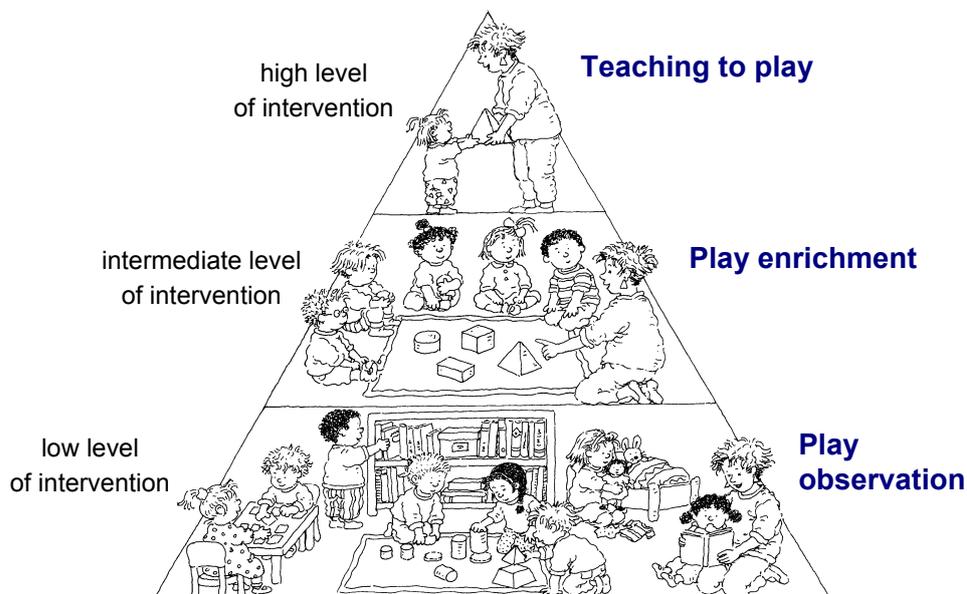


Figure 8 Play program in the Pyramid Method

In the play program (see figure 8) not only the low intervention level is found. Research by Fischer and Bidell (1998) shows, as we've seen before, that enriched play or good examples may bring children to a higher level of thinking. In the group the teacher may do this by offering activities in a play format, by playing herself and showing that play is valuable.

When children take enough initiative, make their own choices and engage in rich play, the teacher is slow to intervene. She will encourage and support the children, but she will allow the child to play on ones own, also to be able to support other children. Children who do not take enough initiatives or whose play is not rich will be supported by the teacher. Their play is optimized. Here there is an increasing level of intervention. The teacher will play with the child or will enrich play. Children who are not able to play on their own learn to play by following the teacher's example. Here the level of intervention is high. The child needs a lot of support, but this support is aimed at making the child play independently and make choices of its own.

6 Projects

A project is a well-balanced set of activities in a development area, which is supported by other development areas and which has a theme structure. Its aim is the optimization of child development. A project consists of 3 programs: a play program (see under play), a group program, followed by individual Processing activities and a tutoring program. Support is given at three levels of intervention, the child taking more or fewer initiatives (see figure 9). The level of intervention of the teacher is low in the play program, in which the child takes the initiative and makes his own choices to play in the context of the project theme. The teacher pre-structures the environment and gives new stimuli in each project theme by changing the corners. The level of intervention is average in group exploration, an activity in which teacher and children examine a theme together. The teacher offers concrete materials, questions and problems which make the children learn more and more actively and which make them learn to think with increasing independence. The level of intervention is high when extra attention is given by the group teacher and in the tutoring program, when the teacher or tutor gives individual coaching to a child in its learning activities. The support increases when the child is less able to perform effectiveness raising tasks independently and in the proper way.

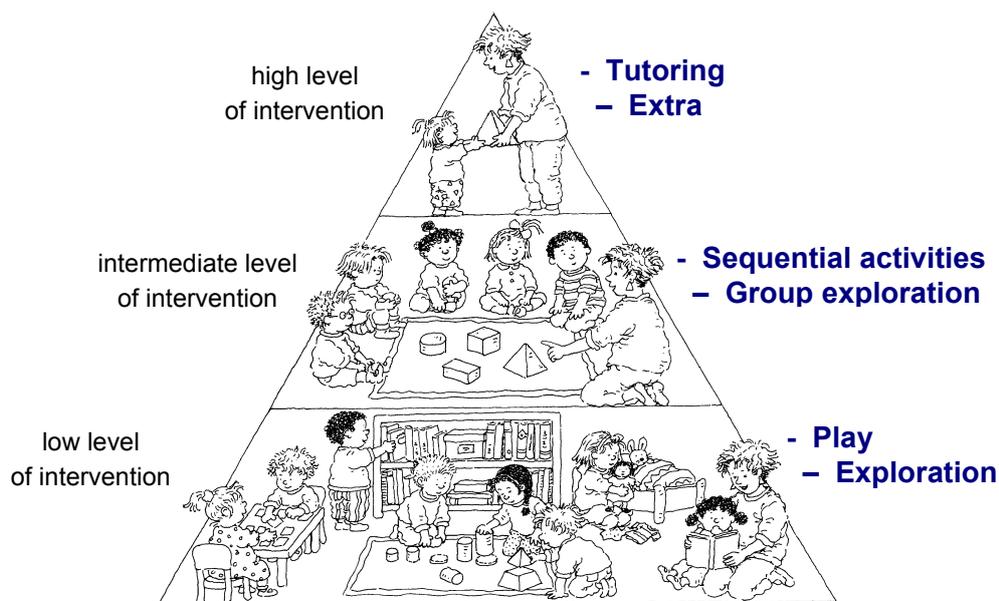


Figure 9 Practical implications of the three levels of intervention in the Pyramid Method

6.1 Short- and long-term cycle in the projects

In analogy with the dynamic development theory (Fischer and Rose, 1998) there is a short-term and long-term cycle in the projects. The short-term cycle is found in each project, its long-term counterpart in the corresponding project themes of the various years. Because of the short- and long-term cycle the children do not learn skills and notions only once, but they learn and relearn them in each following cycle, and at a higher level.

Short-term cycle

The short-term cycle consists of the steps in each project. In each project theme there are four steps:

- Orientation,
- Demonstration,
- Broadening,
- Deepening.

These steps are based on Sigel's distancing theory (1993). According to Sigel optimum development can be brought about by separation from the here and now, in a very specific way – by making representations. These representations develop, from the age of two, from simple to complex. First they are very concrete: concrete pictures of objects or situations, close to reality. Later on, when the child is 6 or 7, representations become more and more abstract. In the steps the various representation levels are built up, from concrete to more abstract. To this end we use Sigel's three levels of representation. Low level representations, like perceiving, listing and naming, are close to the here and now. This level is mainly used in Demonstration. Intermediate level representations are characterized by a higher level of abstraction (comparing, identifying similarities and differences, et cetera). This level is used in Broadening, while in Deepening high-level representations are used, which have been further abstracted from the here and now (learning to see relationships, evaluation, generalization). For each development area children develop representations at increasingly higher levels. As the developed units of a development area become more and more complex, connections are made with other development areas. That is why one development area is central in a project and other development areas have a supporting role.

It is very important that we start close to the child, who is in the here and now, and start distancing from there. Apart from the fact that starting close is important to make the children feel secure – things that are close are familiar and do not cause fear or insecurity, but rather prepare the child for exploring – there is another reason for starting close to the child. In everyday life children learn all kinds of notions which are tested against what other children or adults say. These notions are not complete yet and often still incorrect (misconceptions). They may be based on misunderstandings or misinterpreted information. Starting close to the child implies Orientation on the familiar elements of the theme and a clear Demonstration of objects and situations that can be perceived by the child. Through perception the children are introduced to the proper features. In the process their existing knowledge is optimized and corrected, if necessary. With this knowledge the children are better prepared when in the Broadening and Deepening stages they have to take more and more distance from the here and now. In Orientation and Demonstration the concrete foundation is laid for the further abstraction of Broadening and Deepening.

Long-term cycle

The long-term cycle consists of making the project themes return each year at the same moments in time, but at higher levels. The projects are carried out in the development period which covers the ages of 2 to 6, a period in which the child mainly uses representations. The dynamic development model of Fischer and Rose (1998) shows that particularly in the 2-6-year-old age group development is strongly determined by representations as a means for building knowledge and skills.

In this period three annual plans are carried out. Each year starts with a Welcoming program, followed by 12 projects which take two or three weeks each. Both in preschool and groups 1 and 2 of primary school the same theme is worked with. In each project the child can examine the theme at a higher level. We will give an example. The "House" project is the third thematical project in the year. In preschool the project is called "This is where I live". It is a theme which is close to the world of experience of the child and is related to its need of security. In this preschool project the exterior of the house is dealt with (not in too much detail). The child is encouraged to learn about the house and its notions. The project theme for group 1 of primary school is called "Rooms in the house". Here the interior of the house is examined and the place and function of the various rooms in the house are dealt with. Here the children learn and relearn to deal with the house in a more objective way. The children learn to look at the rooms separately and compare them. In Group 2 the theme is "We're going to move". Here the child learns to separate from its own house even more, because it has to make a representation of its own familiar house, but also of another, new house and of the consequences of moving, in an emotional sense (saying good-bye, the fear of the

unknown) but also in a cognitive sense (what is different, what is the same, what problems do you have to solve when you leave one house and move to another). The child must learn to handle two systems of representation: the familiar and the unfamiliar house. The children learn and relearn to make representations at increasingly high levels and of an increasingly complex and abstract nature. This shows that there is not just distancing from the here and now in each project, but also between projects of a similar nature. The themes are not so close to the child's world anymore and new elements are added, because the children have been introduced to the subjects before. This generates sufficient familiarity and newness, sufficient opportunities for learning and relearning, in the long-term cycle too (see figure 10).

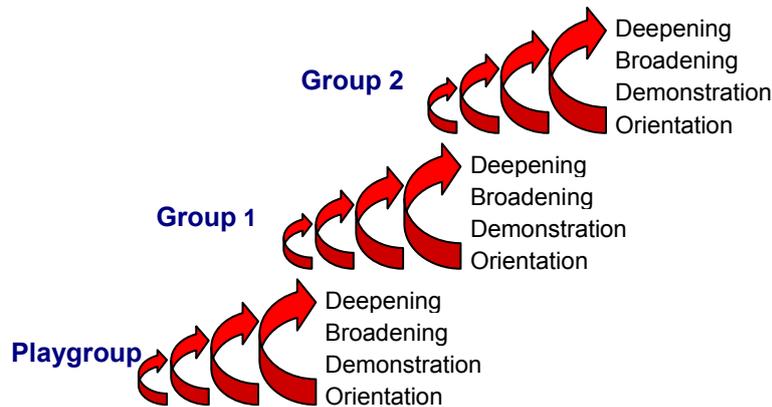


Figure 10 Short- and long-term cycle in the Pyramid projects

6.2 Representation in the four steps

Representations are images of reality or of a non-existent reality. We have indicated before that children frequently have to work with representations. Copple, Sigel and Saunders (1984) have made a distinction between two kinds of representations. When we think we use internal representations. We also need these representations to recall our experiences, so that we do not have to re-invent the wheel over and over again. When we want to express our ideas, for instance in language, or when we want to draw them, we use external representations. There are all kinds of external representation systems, which we call media. The most important medium is language, for instance an assignment, a poem, a story, but also a drawing, a collage, a photo. These are representations which we ourselves or other people have made. Children learn to understand representations, to “read” meanings, but they also learn to make them themselves and communicate about their meaning.

These representations are learned best when – in knowledge and experience terms – the child is thrown slightly off its knowledge-and-experience balance. It has to find a new balance (usually at a higher level (Van Geert, 1998)). Making sure that learning activities are surprising or hide a discrepancy is the best motivation for children to learn because it invites them to find a new balance.

The four steps in group exploration are meant to examine and give meaning to a subject step by step. We start close to the child, in Orientation and Demonstration, and try to create as much distance as possible from the here and now in Broadening and Deepening (Cocking et al., 1993; Sigel, 1993). We also make children aware of what they are doing, so that next time they can perform the activity independently and after they have given it some thought (meta-cognition).

As for content, the theme is based on a network of notions, which is addressed at increasingly higher levels of abstraction with each step. The network includes familiar notions, which are repeated in Orientation, elementary notions, which are introduced in Demonstration and which all children must be familiar with at the end of the project, and extra notions, which are repeated several times in Broadening and Deepening.

Orientation

Orientation is not a learning step. The aim is to make children focus on the project theme, the overall context in which all learning activities will be set. In Orientation children also have to get in the right mood, and finally the activities must match their experience and their knowledge about the subject. This makes the children feel safe and secure; it makes them feel they can face the learning activities with confidence. Encouragement by the teacher might be essential here. Starting close will get the child in the right mood to start exploring and separate from the here and now.

All contexts which hold familiar and surprising elements for the child, or which call upon their previous experience (for instance a previous project about this subject) qualify. These elements of repetition can be offered in various shapes and sizes.

Demonstration

Demonstration is the first learning step, which should start close to the experience and knowledge of the child. The aim is to give clear examples of the notion or the subject of the project, to develop a stable knowledge base. The relevant and non-relevant features of the notion are set apart. The relevant features must be clearly present in the examples. The notions must also be named and discussed in the context of the subject. In Demonstration perception is an important element. Children must be able to feel, taste and smell (proximate sense) and they must be able to see and hear (distant senses). The material must be selected in a manner which facilitates all-round perception for all children. Here learning is: using one's senses to the full.

Contexts used in Demonstration may consist of concrete objects that fit the project theme. These objects are put in the circle or on the discovery table. Use can also be made of pictures which hold relevant elements or of a story which contributes to notion building and addresses important features. It is essential to show the coherence between concrete objects and their varied representations (conservation of understanding).

Broadening

Broadening is an extension of the notion; it is searching for the relevant features in a number of examples. Here too, clear but different and more difficult examples must be given. This makes comparing possible: what are the similarities and what are the differences? The latter are more easily identifiable than the former. In similarities it is the essential, the relevant features that count, in differences it is the non-essential features that are crucial. Language plays an important role and much attention is paid – again – to the elementary and the extra notions. In Broadening there is more separation from the here and now than there was in Demonstration, because here reference is made to other examples, to things which are not physically present or to things which have happened at an earlier moment in time. The child's own experience is called upon. What have they seen or experienced before and how do we link this to the here and now? New presentations are introduced and used in the learning process. The context features of Demonstration apply here as well. In Broadening too a number of senses are activated, but to make it more difficult sensory switches can be made within an activity (see Deepening).

Deepening

The aim of Deepening, the final step, is to implement whatever has been learned in Demonstration and Broadening, in new situations and on one's own. Here children should learn to solve all kinds of little problems independently and start using the representations at the highest possible level of abstraction. In this process there is a major role for language but also for thinking. The children communicate about the notions and name them. The problems will generally be discrepancies, which promote active learning. To increase flexibility, they must frequently switch from one sense to the other: from visual to auditive (when showing a picture of the rain pouring down one might ask: what do you think you would hear when you're in the rain?), from tactile to visual (in a touch-and-feel box: the child explores a shape with its hands and tells the others what it looks like) and vice versa. The child must find the right words itself. Flexibility must also be increased by switching between types of internal and external representations: from expressing to representing, from drawing to model, from here to the past or the future, from here to somewhere else, to far away and vice versa.

Working with representations and making them oneself go hand in hand. In Deepening reflection on one's own actions is important too: how did I do, was it all right, is there another way? The child is made aware of its own action (meta-cognition). In Deepening the contexts are generally broader; they give the child the space to solve problems.

6.3 Coherence and specificity

To make sure that the content of each development area and the coherence between the development areas are given equal chances, so that connections can be made between the areas, we identify a horizontal and a vertical line. The horizontal line monitors the various contents and their coherence. In the vertical line the rising degrees of difficulty of skills in each development area (sequencing) and the specificity of the skills in the development areas are taken care of.

Horizontal line in the projects

The horizontal line represents the selection of the development areas in the projects. In the Welcoming program and each of the 12 themes one development area is focused on and the other development areas have a support function. Four development areas are central during the year:

- | | |
|---|------------|
| ▪ Socio-emotional development and personality development | 3 projects |
| ▪ Language development and development of reading and writing | 3 projects |
| ▪ Development of thinking and development of maths | 3 projects |
| ▪ Orientation in space and time and knowledge of the world | 4 projects |

Development of language is important in every project. In every project there is a special language line, especially for children with language delays. All projects are based on a network of notions. This network is the starting-point for the play-suggestions. Each project step includes vocabulary extension activities. This is also true for the tutoring program. Language is not just a development area, it is also the means of communication between teacher and child and it is a means of learning. Especially for children from disadvantaged backgrounds and for ethnic children this emphasis is of major importance. Language is not the only development area in the projects. Other areas of development have a permanent place as well:

- Development of perception in Play and development material
- Motor development and development of writing in Play and movement
- Creative development in Visual arts activities.

The horizontal line warrants an even distribution of each development area over the project content and sufficient coherence between the development areas in a theme. Coherence is also provided by the networks of notions mentioned above. In the network interrelated clusters are being discerned. They promote the development of links in the project theme.

In table 2 a survey is given of the intelligences and development areas in the projects.

Table 2 Intelligences and development areas

Physical intelligence	▪ Motor and writing development	all projects
	▪ Creative development	all projects
Emotional intelligence	▪ Socio-emotional development and Personality development	3 projects
Cognitive intelligence	▪ Language development and development of reading and writing	3 projects
	▪ Special language line	all projects
	▪ Development of thinking and development of maths	3 projects
	▪ Orientation in space and time and knowledge of the world	4 projects
	▪ Development of perception	all projects

Vertical line in the projects

For each development area a sequential line (a line with a hierarchical structure) has been developed, in which degree of difficulty determines the order of the activities. Activities from this sequential program are specifically selected for the sequential part of the project. The sequence of the projects in the year creates a hierarchical line, from simple to difficult. The sequential line fits in closely with the reading, writing and maths program in group 3 of primary school. In the preschool projects no sequential activities are included. The following sequential activities have been included in the project books of groups 1 and 2:

- Drawing and writing motor skills,
- Language development,
- Development of thinking,
- Orientation in space and time.

These activities are practiced in the sequential circle and in individual Processing.

6.4 Annual program

The Pyramid Method projects consist of three programs, each covering one year – one for preschool, one for group 1 and one for group 2. In content and hierarchy they are closely related. The annual programs reflect the short-term and long-term cycle and the horizontal (content and coherence) and vertical (succession in order of difficulty (sequencing) and specificity) line of the project program.

Table 3 lists the entire project program for three years.

Table 3 Survey of the three annual programs of the Pyramid Method

Development area	Project	Theme preschool	Theme group 1	Theme group 2
Personality development	Welcome	preschool	Welcome to school	Welcome to school
Spatial orientation	Space	What do I look like?	My body	In space
Development of thinking	Colour and shape	To the toy shop	At the supermarket	At the market
Orientation in time	Autumn	Rain and wind	Leaves and seeds	Autumn weather!
Language development	House	This is where I live!	Rooms in the house	We're going to move!
Socio-emotional development	Saint Nicholas	"Sinterklaas kapoentje" Saint Nicholas song	Saint Nicholas' birthday	Saint Nicholas' birthday
Socio-emotional development	Christmas	Lights	Christmas festivities	Christmas festivities
Development of thinking	Counting	Bear's birthday	My birthday	We're having a party!
Language development	Clothes	What am I going to wear?	Look at me!	Who am I?
Orientation in time	Spring	Get out!	Going outside	Growing and flowering
Development of thinking	Size	Mr Mouse and Mr Elephant	I'm growing!	Making a journey
Language development	Traffic	Close to home	In the street	Will you join us?
Knowledge of the world	Water	Nice water!	Water in the house	Water outside

7 Tutoring program

To extend the learning time of children who need extra stimulation, the effective method of tutoring has been opted for (Slavin et al., 1994). Tutoring is used by Slavin as a means to teach children to read in the first grade (group 3). In the Pyramid tutoring is used in preschool and in kindergarten.

According to Slavin et al. tutoring is most effective when it contributes to the daily program. A second aspect of effectiveness is the length of the tutoring period (Leseman, 1996). A short period is generally not effective, but a longer period with a quality program **is**. That is why in the Pyramid Method tutoring has been linked to the projects and is practiced for a period of at least half a year. To this end a special tutoring program has been written connected to each project, which includes differentiations. The tutoring program activities can be simplified when they are too difficult and made more difficult when they are too easy. The tutoring program is part of each project book. It is to be expected that by dedicating more, and more intensive, learning time to young children serious learning delays later on can be prevented. If this expectation turns out to be right, an expensive intervention like tutoring by an additional teacher in the group during several mornings/afternoons a week is justified. It is a long-term investment. There are two types of tutoring:

Preventive

The tutor prepares the child for the steps of the group exploration of each project: Demonstrating, Broadening, Deepening. The child is introduced to major notions and situations at increasingly higher levels. This improves its chances of being able to join in with the other children, which increases its confidence. This may create a positive spiral and experiences of failure may turn into experiences of success. Prior to each step in a project the tutor gives individual help.

Remedial

Children who do not benefit enough from preventive tutoring are given remedial tutoring at the end of each project, when they turn out not to have mastered the elementary project notions. These notions are tested at the end of each project with the help of a list of notions. The tutoring activities, especially the elementary notions are repeated and varied.

8 Parent activities

Parent involvement is important, as is also clear from the meta study conducted by Royce et al. The educational task is shared by school and parents (Gestwicki, 1987). Parent activities are important: they are the manifestations of the co-operation between education at home and at school. Parents can help to extend the child's learning time, which can have an effect on its development. Thus effective educational aspects support each other to create optimum development.

The following types of parent activities are carried out.

- The teacher makes an annual parent plan, outlining the various interrelated parent activities.
- Every morning there is "open-house play" – parents are free to play with their children in the classroom. This low-threshold activity links the education at home with the education in the playgroup or at primary school.
- At the beginning of each year there is a parent week. In this week parents work with their own child in the group after the teacher has demonstrated an activity, for instance interactive reading aloud or explaining an assignment. These activities may be continued in the home environment.
- In the Welcoming program at the start of the year and in all projects parents take home play and learning activities to extend the learning time of their children at home. These activities enhance the project activities in the group or classroom. If necessary the instruction is given in the parents' own language. Parents are also encouraged to provide their children with theme-related materials, including materials which are part of their specific culture, to take to school with them.

Especially the involvement of parents in the project activities is a "binding agent" to make children benefit frequently and permanently from activities which can be carried out in the home environment. Open-house play and the discovery table that accompanies each project theme introduce the parents to the project theme in a very visual manner.

9 Focusing on ethnic children and the teaching of ethnic language and culture

Longitudinal studies with the Cito child monitoring system (Van Kuyk, 1996, 1997) show that ethnic children have a 20% lower score, on average, than Dutch children both in the field of Language, Thinking and Notions of Time and Space. Dutch children are also, on average, given a higher assessment on observation scales for socio-emotional and work-play behaviour. For these very reasons ethnic children need extra attention, not counting the extra effort they must make to master the Dutch language, which, and this is another handicap, is the language of education.

Pyramid aims at learning in Dutch and learning the Dutch language is the best possibility for school success. It is a fact, however, that many children have insufficient oral command of Dutch and as yet have better learning options in their own language.

This is done in the following manner.

- If possible ethnic children are given the opportunity to learn in their own language from ethnic teachers in the group.
- At the beginning of the year ethnic children get some extra support in the Welcoming program, to learn the most important rules, rituals and notions in a short time. Being familiar with them makes the children feel secure. In tutoring extra attention is paid to their second-language learning process.
- All important notions learned in the Welcoming program and in the projects have been translated into four ethnic languages to give teachers the opportunity to address children with some words in their own language. This makes them feel safe and secure.
- In each project there is a special language line, to be able to offer ethnic children extra language activities: play suggestions in the play programme, vocabulary extension in each project step of the group program and tutoring in the tutoring program; here vocabulary extension plays an important role too.
- In groups 1 and 2 ethnic language and culture teaching activities are included in the projects by the ethnic language and culture teachers. In these activities the children are addressed in their native language and special attention is paid to the difficult steps of Broadening and Deepening, which the children can understand more easily in their mother tongue.

10 Development monitoring

For longitudinal monitoring of all children, to be able to optimize the development of each child, a monitoring system has been developed which can be used for the entire program period. It is based on the same theoretical and practical insights discussed before. With it the teacher can cater for the differences between children and react to these differences with much sensitive responsiveness.

The monitoring system is also characterized by three levels of intervention. For the daily observations the teacher does not intervene or hardly intervenes. She observes the children in their natural setting without them noticing it. For day-to-day teaching an observation system has been created. Long-term evaluation is characterized by a “medium” intervention level, where use is made of a non-curriculum-embedded preschool and kindergarten child monitoring system which is related to the Pyramid Method in content. The tutor tests in small groups. In preschool this is done individually and observation scales are used as well. For diagnostic evaluation the intervention level is high. Children who need it are tested individually to see which special help they need.

10.1 Daily observations

Children are observed in the daily practice of teaching. These observations are used for adjustments in the pedagogic and didactic activities (see figure 11):

- observation of pedagogic activities: security, autonomy, emotional support (attachment theory),
- observation of didactic activities: play, projects and tutoring in the various development areas (distancing theory).

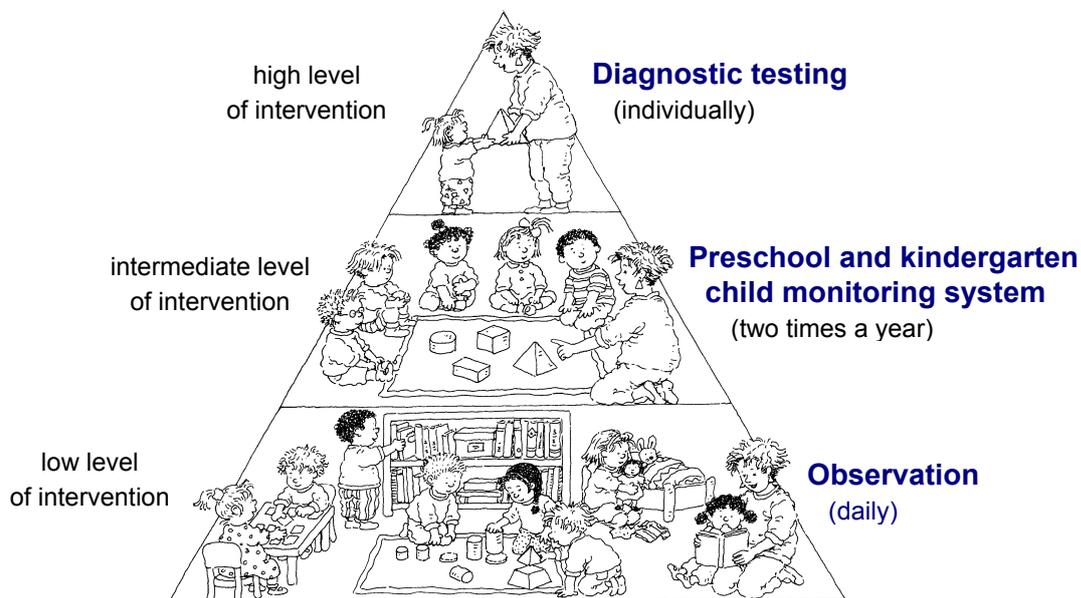


Figure 11 Observation and testing

10.2 Long-term evaluation

Children are observed and tested twice a year to monitor the development lines of the children and to decide which children need extra help and tutoring. Children who need extra help or tutoring will be given extra learning time. This extra time is valuable and must be allocated on the basis of reliable and valid information.

For this purpose the Cito preschool and kindergarten child monitoring system is used (Van Kuyk, 1997, 2000). It is developed in a scientific manner and tested for reliability and validity with the help of the Item Response Theory (Eggen & Sanders, 1994, Verhelst, Glas & Verstralen, 1995).

The system consists of observation equipment and a testing system. For physical and emotional intelligence observation instruments have been developed:

- observation of socio-emotional development and play-work behaviour,
- observation of gross, drawing and writing motor skills.

For cognitive intelligence three tests have been developed:

- language development and reading development,
- development of thinking and development of maths,
- orientation in space and time.

On the basis of the children's scores and with the help of a norm scale the ability of the children compared to the level of their peers or children who've had a similar amount of education can be established.

There are five score levels:

- A: 25% highest scoring children,
- B: children scoring slightly above average (25%),
- C: children scoring slightly below average (25%),
- D: children scoring far below average (15%),
- E: 10% lowest scoring children.

This norm scale is very practical because the teacher or tutor can see at a glance whether the child has made progress in its development compared to its previous achievement (comparison with itself), but also compared to its reference or norm group (comparison with peers).

By using the preschool and kindergarten child monitoring system twice a year the teacher will be able to be objective about her daily activities and reflect on the practice of teaching, to see whether it needs some general adjustments. The preschool and kindergarten child monitoring system offers another option: the assessment of the quality of teaching over a period of three years. This system will also be used for determining the result of the experiment described below.

10.3 Diagnostic evaluation

For children, the development of whom is not clear from the daily observations and the long-term preschool/ kindergarten child monitoring system, diagnostic assessment is available. With the help of diagnostic tests from three observation and help programs children are diagnosed. For children who need it an intervention plan is made, based on the remediation programs linked to the observation programs. The following remediation programs are available:

- Language fun (Van Kuyk, 1999),
- Thinking (Van Kuyk, 1999, 2nd edition),
- Orientation in space (Van Kuyk, 1983).

11 Research

Objective of the study was to prove the effectiveness of the Pyramid Method for children who need extra stimulation for a successful primary school career. The investment in risk children, however, should not result in the fact that children in the Pyramid groups who were successful in their primary school careers would suffer.

To be able to judge whether the Pyramid Method is effective for 3-to-6-year-olds who need extra development stimulation a three-year experiment, referred to in the introduction to this paper, was carried out from 1996-1999 (simultaneously with the Kaleidoscope project), subsidized by the Ministry of Public Health, Welfare and Sports and the Ministry of Education, Culture and Sciences, and assessed externally by the Universities of Amsterdam and Groningen. As part of this experiment Cito has also carried out an effectiveness study with the Pyramid Method.

11.1 Selection of the experimental locations

A committee appointed by the national government – the Preschool and Early Education Committee, VVE in Dutch (Van der Ley, 1996) – selected 6 Pyramid locations of preschool playgroups and primary schools in disadvantaged areas with large numbers of ethnic children (particularly in the larger cities) or Dutch children with poorly educated parents (in the smaller cities and rural areas). At the start of the experiment these locations had to meet criteria drawn up by the Meijnen committee (Leseman et al., 1994):

- co-operation between preschool and primary school,
- 4 mornings/afternoons a week of preschool and 9 mornings or afternoons of primary school,
- a preschool teacher-child ratio of 1:15 and a kindergarten teacher-child ratio in groups 1 and 2 of primary school of 1:25,
- 4 mornings/afternoons of double staffing per group (tutoring in Pyramid),
- parent participation.

The locations were selected in two cohorts: the first cohort consisted of a large city, a medium-size city and a small city (Rotterdam, Zwolle, Ede-Barneveld). The second cohort was selected half a year later and consisted of a medium-size city, a small city and a rural location (Breda, Emmen and Den Ham). The first three locations were involved in the experiment for three years; the second three locations were involved for 2 1/2 years.

11.2 Test subjects

Three experimental groups were monitored: group I, N = 49, the group which, after the baseline measurement, from the start of preschool has taken the entire experimental route to the end of group 2 (PPJJOO), group II, N = 230, the group which, after the baseline measurement, has taken the experimental route from the start of primary education group 1 (JJOO) and group III, N = 301, the group which, after the baseline measurement, has taken part in the experiment from the start of primary education group 2 (OO). At the start of the experiment all preschool children (3-year-olds) and all children of primary school group 1 (4-5-year-olds) and primary school group 2 (5-6-year-olds) were tested for their starting skills. Every half year they were monitored until the end of primary school group 2. Each subsequent year new children entered the groups. In preschool and in primary school group 1, children enter when they become 3 or 4 years old or at another moment to be chosen by the parent. Group 2 children have to go to school because at the age of five school is compulsory. This means that in the year the size of the groups varies, except in group 2. Children also change playgroup and school during the experiment.

That is why for the experiment we used three clearly distinguishable experimental groups. The groups are different in period (1, 2 or 3 years) and intensity of the treatment (A number of children, especially D and E children were offered a tutoring program, in addition to the regular program). In the experiment we also had to take account of the fact that parents are free in their selection of a primary school. The transfer from preschool to primary school is not a certainty. Primary school selection is not only determined by distance and educational content. Social factors play a role too. Parents of native Dutch children often decide in favour of a school visited by many native Dutch children. The result is that only in half of the cases there was a transfer from the Pyramid playgroup to the Pyramid primary school. That is why the group which took part in the experiment from preschool till the end of primary school group 2 is relatively small.

11.3 Participant teachers and tutors

The experiment was taken part in by 11 preschool locations, sometimes with two groups, and 13 primary schools, all of them with 1 or more groups 1 and 2. Each group had a tutor for 4 mornings or afternoons a week and in a number of cases there was also an ethnic assistant teacher. A number of schools had an ethnic language and culture teacher. In all about 120 teachers, tutors and some ethnic language and culture teachers were involved in the experiment. All teachers and tutors had to take part in training and coaching sessions.

During the experiment the teachers and tutors of the first tranche (the first three schools) had 20 days of training in 3 years (10-5-5). Their colleagues of the second tranche had an 18-day training covering a period of 2,5 years (5-8-5).

11.4 Training and coaching

In a study of over 200 studies of effective training methods the following training components were considered to be effective by Joyce & Showers: presentation of the theory, learning by observing and demonstration, practice and implementation in non-threatening situations, structured and non-structured feedback and coaching (Tulder, 1992). These training components were largely adhered to in the Pyramid training.

The training started with a material change process, followed by a mental change process. The philosophy behind this set-up was for the participants to make physical changes first, who would make mental, more abstract changes take place more easily. In the training sessions a balance was created between transfer of information, training of skills and exchange of experiences.

The training started off with two consecutive introduction days, in which the structure of the training, its theoretical starting-points and the elementary Pyramid concepts were highlighted and extra attention was paid to the pedagogical approach (attachment) and to preparing the classroom. The participants were asked to map their existing classroom situations, compare them with the Pyramid lay-out and then produce a blueprint of the change options that were feasible in terms of finance and space. Then the changes were actually carried out. The following part of the training aimed at the introduction of the three major programs in the Pyramid Method, preceded by the welcoming program and the testing program (by the tutor), with which the first month of the school year started. The three programs were: the play program, the projects and the tutoring program. The participants were trained in pre-structuring the play and learning setting, the elementary notions of play, play observation, play enrichment – for instance through playing side by side with the child – and giving suggestions and teaching children how to play. A similar program was carried out for the projects, which focused on learning to take the project steps (distancing), on challenging the children and on making representations, but also on learning to make a project of one's own. Tutors were given extra training in tutoring, in learning to observe, in testing children and in individual coaching and stimulation of children. The third part consisted of classroom and school organization, management, parent involvement and ethnic language and culture teaching, and monitoring children's development and problem behaviour. Learning to observe and test was practiced with the help of videotapes and practical exercises. In the fourth part of the training the content was dealt with: physical intelligence, emotional intelligence and cognitive intelligence.

In the latter the development areas of language and thinking, particularly language stimulation, were paid extra attention to. In the fifth part the main subjects were reintroduced to consolidate what had been learned and to create a firm foundation for independent implementation. In this process intervention was used. The by now experienced participants asked each other questions to establish their expertise. After each training session the participants were given assignments to carry out in the teaching practice. For coaching purposes Cito trainers or local program counsellors visited the participants in their class or group and discussed their findings with the playgroup- or school teams. Three times a year the teachers were videotaped in practice; this made it possible to have video interaction with individual participants and groups in the schools and in training.

The training sessions were given per location and involved the teachers of preschool, the primary school teachers of group 1 and/or group 2 and the tutors. The common training sessions were considered extremely important, because they emphasized the equality of all participants, despite their differences in educational background. The collectivity also enhanced the synergy. On a regular basis experiences were exchanged between preschool teachers and primary school teachers and tutors. A number of subjects was suitable for differentiation, e.g. tutoring, content-related aspects and approach aspects. Participants taking the entire training route were presented with a certificate. About 60% of all participants completed the training. Forty percent of the participants had a change of group or job, or left the experiment for another reason (contract not extended).

In this report we will describe the study carried out by Cito as part of the experiment, limiting ourselves to the results of the cognitive domain. Reports of other domains will be published at a later stage. The results will be compared with the external evaluation. It should be noted that the Pyramid educational method was in a development stage during the experiment. On the basis of critical remarks from the teaching practice, the practical experience gained and critical comments of the VVE counselling committee and of external evaluation researchers a second version was made during the experiment. After the experiment a third, final version followed. It is especially the first version which has been studied.

12 Set-up of the study

To operationalise the objective of the experiment, the tests of the Cito preschool and kindergarten child monitoring system were used to draw up criteria for successful primary education in the field of cognitive intelligence. In the reference group of this system the 25% lowest scoring D and E children are considered to be risk children. To prevent children from running the risk of an unsuccessful primary school career, this percentage must be kept as low as possible. The presupposition is that this percentage in the experimental groups to be studied will be considerably larger than 25%. The standard was to reduce the percentage to such an extent that it would correspond with the percentage of the reference group. The percentage of children with successful primary school careers, the C, B and A children is 75% according to the reference group. In the experimental groups this was expected to be considerably lower at the start of the experiment. The aim was to raise this percentage substantially, if possible to the 75% of the reference group. Every six months, in preschool and in groups 1 and 2, the tutors set the preschool and kindergarten child monitoring system tests, to measure the effectiveness of the Pyramid Method. They were the Language, Thinking and Space and Time tests. The control group consisted of the reference group of the preschool and kindergarten child monitoring system (Van Kuyk, 1997, 2000). The experimental groups were made comparable with the reference group by making corrections for average age. The reference group is representative of the Dutch population of 3-to-6-year-olds, visiting preschool and/or primary school. This group was monitored in a longitudinal study in playgroups and separately, at primary schools, where a program, but not the Pyramid Method, was implemented. In figure 12 an example is given of a scale, the Language scale, with which children can be monitored for a period of three years and the results of which can be compared to the five ability levels of the reference group.

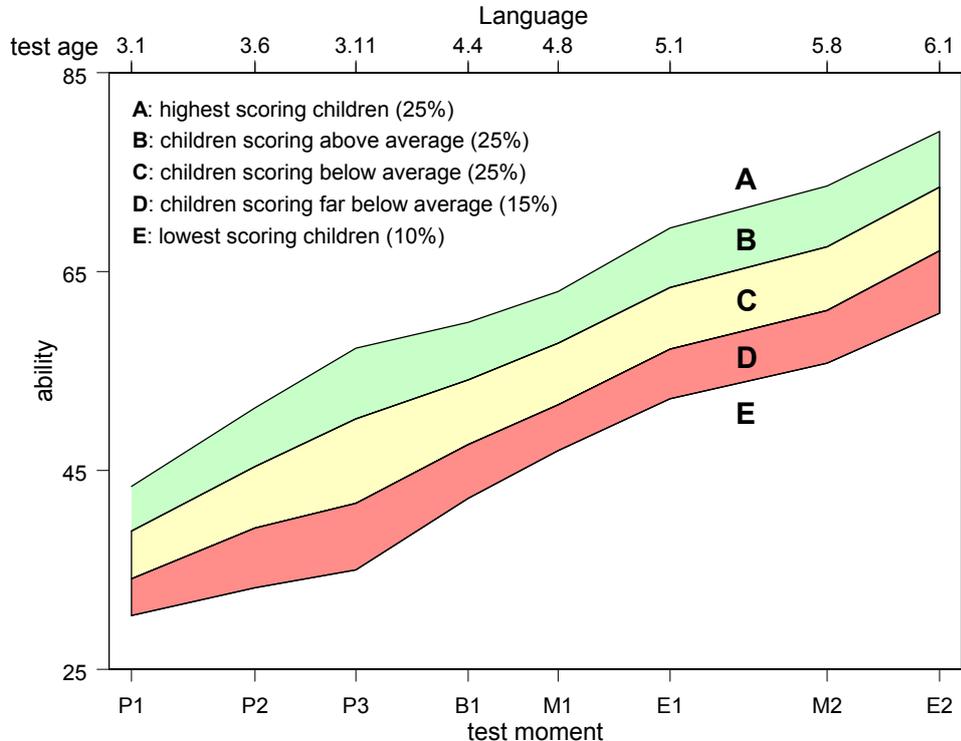


Figure 12 Language scale

Figure 12 shows that 3-to-6-year-olds can be tested 7 times, three times in preschool (P1, P2 and P3), twice in group 1 (Middle of group 1 (M1) and End of group 1 (E1) and twice in group 2 (Middle of group 2 (M2) and End of group 2 (E2)). Children, who had had no preschool tests when they entered primary school, were given a beginner's test (B1) in September. In between test administrations there were six periods of six months each, in which the Pyramid Method was implemented, so a total of 3 years. Above the graph is the average age of the reference group at the test moments given. As discussed before, the scale has 5 ability levels: A through E, whereas the D and E children being the risk children. The levels were used for the identification of tutoring children (A, D or E level) for at least two of the three tests and the scales and levels to determine the effectiveness of the Pyramid Method.

In a quasi experimental design three experimental groups were discerned. Group I (N = 49) completed the entire three-year Pyramid program. This group was monitored from the start in preschool to the end of group 2. Group II (N = 230) only took part in the primary school program, from the age of 4. This group was also monitored to the end of primary school group 2. Group III (N = 301) consisted of children involved in the experiment from the start of primary school group 2. Thus the length of the monitoring period was three years for group I, two years for group II and 1 year for group III.

13 Results

The results of the cognitive development areas will be presented in two ways. First of all it is determined to what extent the Pyramid Method facilitates development acceleration in the experimental children compared to the children of the reference group. Secondly an attempt was made to establish whether it was true that the experimental groups had considerably more risk children and fewer successful children than the reference group at the initial measurement and whether the Pyramid Method was able to substantially reduce the percentage of risk children and raise the number of successful children.

13.1 Development acceleration

Figures 13, 14 and 15 show the results of the three experimental groups, compared to the reference group. The average ages of the experimental groups at the time of administration have been taken as a starting-point, rather than the moments of administration themselves. This makes some ages of older children drop out of the scale.

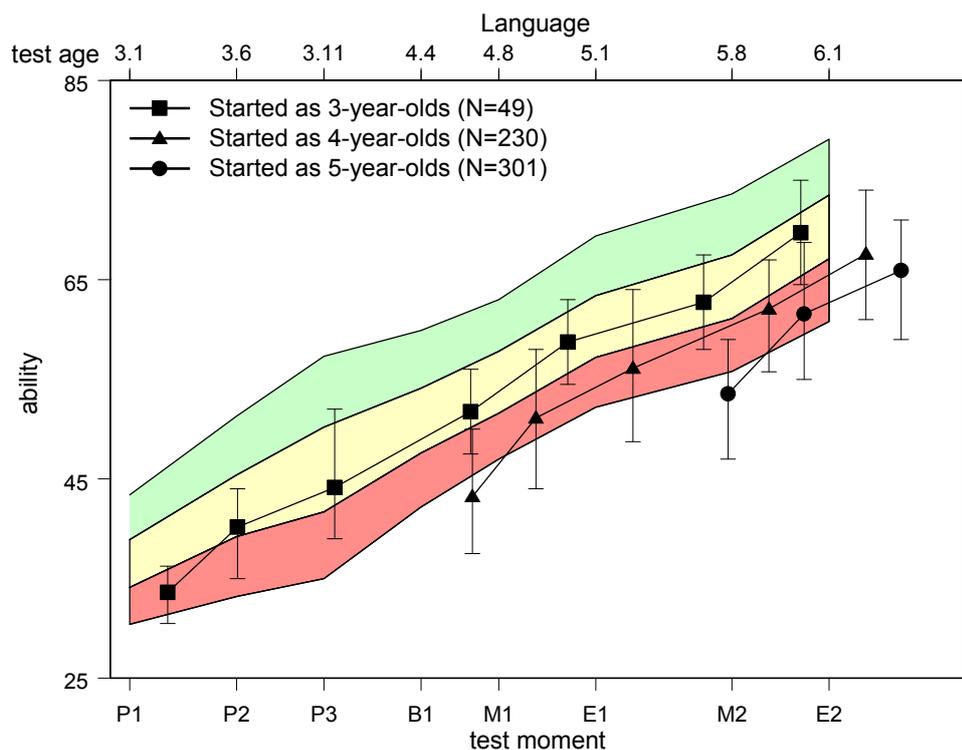


Figure 13 Results of three experimental groups for Language

Figure 13 shows that the mean score of group I is at D level, far below average (indicated by a closed square). The top end of the vertical line above each moment of administration indicates percentile 75 in the ability distribution of the group concerned, or in other words 25% of the children have a higher ability and 75% have a lower ability. In the same manner the bottom end of the line indicates percentile 25, 75% over and 25% under. So 50% of the children in the group concerned are between the top and bottom end of the line. Of the group I children 75% have a D or an E level in the pre-test. At the end of the experiment, at the

end of group 2, this has been reduced to 25%, which is comparable to the reference group. For group II the percentages are 75 en 50 respectively and for group III they are approximately 80 and 65 respectively. The development of group I (preschool) is quick compared to the reference group. This result is continued in groups 1 and 2 and there is development acceleration at the end of group 2. At the end they almost reach an average level, the reference group level. The development of group II (kindergarten children group 1) is also faster than that of the reference group, but on average the children start at the lower E level. There is development acceleration at the start and a less fast rise during groups 1 and 2. At the end they reach a high D level. Group III shows a similar pattern, but at the end of group 2 there is an average D level, so no acceleration compared to the reference group. Groups II and III start at a lower level, but they do not reach the level of the group I results either. Children who start in preschool and continue the program in groups 1 and 2 rise the most and have the best results compared to the reference group. All three groups benefit from the Pyramid Method in the language field, but the group which starts in preschool, benefits the most.

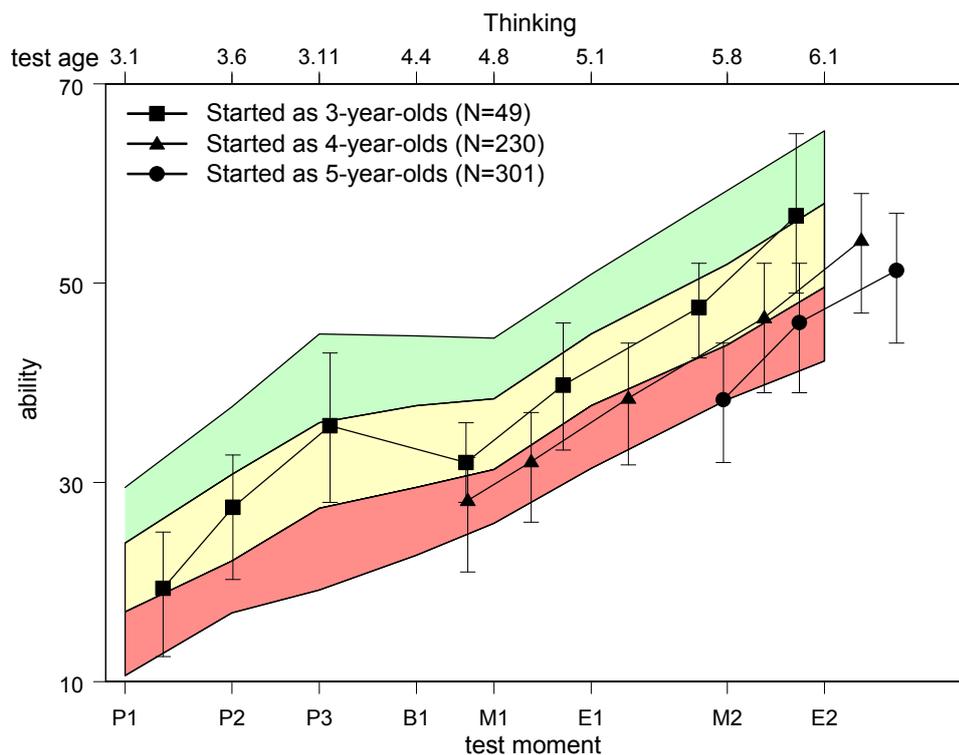


Figure 14 Results of three experimental groups for Thinking

Figure 14 shows the Thinking results. Group I starts at a high D level and develops very strongly in preschool compared to the reference group, but there is also a setback at the start of group 1. This setback might be an artefact of the administration procedure. The preschool tests are set individually, the kindergarten tests are administered in small groups. Combined with the more abstract assignments of group 1, especially the more difficult items, this might explain the fall. After this setback, results start to rise again, especially at the end of group 2 and the final result is definitely strong, compared to the initial measurement. The group ends at a low B level. Group II starts a bit lower than group I, at the middle of level D and its rise is stronger and more even than that of the reference group. Group III starts low in level D. Its rise is strong but tops off a bit at the end. Of the group I children 50% have D and E levels in the pre-test. At the end of the experiment, at the end of group 2, this has been reduced to 25%, which is comparable to the reference population. For group II the percentages are 75 and 50 respectively and for group III they are approximately 75 and 50.

Here the conclusion equals the one for language: all experimental groups benefit from the Pyramid Method compared to the reference group, but early introduction in preschool gives the best results compared to groups II and III.

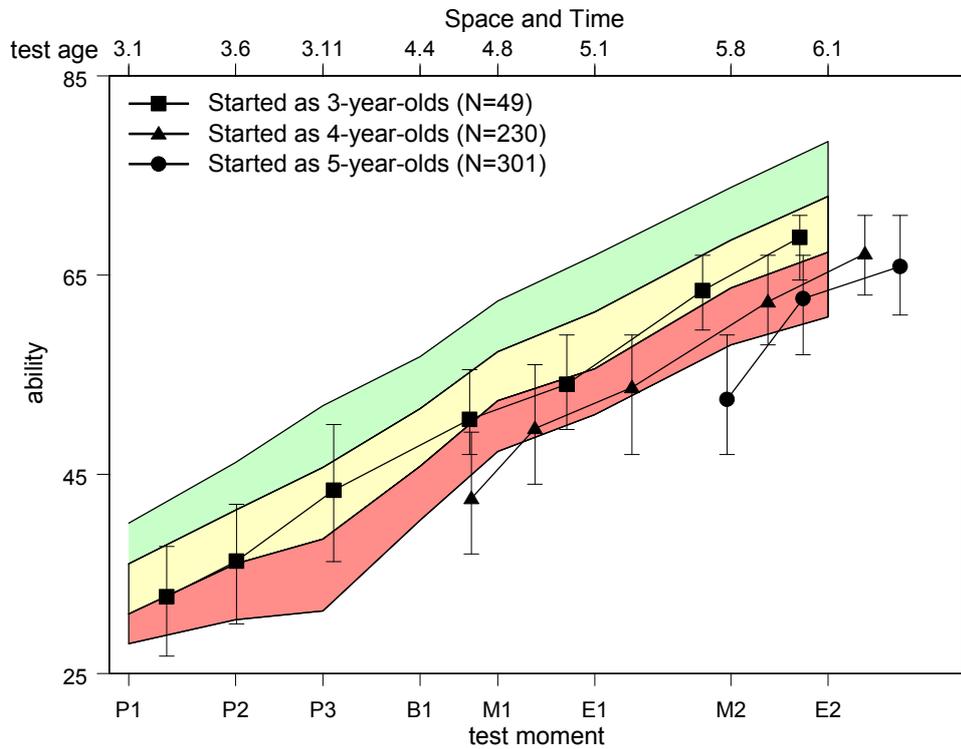


Figure 15 Results of three experimental groups for Space and Time

Figure 15 shows the results of Space and Time. Here too there is a rise of group I compared to the reference group, but the results are less strong than in Language and Thinking. At the end of preschool the rise is strongest, compared to the reference group, although after a fall in group 1 there is a stronger rise in group 2. Groups II and III show a stronger rise at the beginning, while Group II keeps on rising and group III tops off, as in Language and Thinking. 50% of the children of group I have D and E levels in the pre-test. At the end of the experiment, at the end of group 2 this has been reduced to 30%, almost comparable to the reference population. For group II these percentages are 75 and 50 respectively and for group III approximately 70 and 60.

During the experiment the children of all groups have progressed more than the reference group.

The progress of groups II and III is larger than the progress of group I, but the results of the children of group I, who started in preschool and completed the program are at the highest level: middle of level C. The low initial level of groups II and III might have been caused by the large number of Turkish children in these groups. Turkish is an agglutinate language, which does not have the separate space notions that Dutch has. This might explain the low initial score and the slower rise of the effects of the experimental group.

On average the children, especially of group I (starters in preschool) reach a higher level. This is most true for Thinking and Language and less true for Orientation in space and time. The group I level is never reached by the children of groups II or III.

13.2 Risk and success

Two hypotheses were tested. Hypothesis 1: is it correct to assume that the percentage of risk children is considerably higher at the first measurement and the percentage of successful children considerably lower than in the reference group? Hypothesis 2: is it true that the percentage of risk children (D and E children) is lowered as a result of the experiment, without a decrease in the number of C, B or A children? For a better insight into these hypotheses, the results of the children have been represented in cumulative histograms, which were based on the following starting-point. All children that were tested once, were put together, the children who were tested twice were put together, and so on, up to and including seven-time testing.

Seven is the maximum number of administrations in the experiment. This means that children who were tested 7 times have been involved in the experiment over a full three-year period from the very day they entered preschool or with a longer pre-school period, a longer group 1 period or a longer group 2 period (e.g. they spent two years in preschool or were tested three times in group 1 and/or 2). Children who were tested once might be children who only took part in the final measurement of group 2, but they might also be children who left preschool after the first preschool test or who did not go to a Pyramid primary school after the first Pyramid preschool measurement.

Figures 16, 17 and 18 represent the cumulative histograms of Language, Thinking and Space and Time. The numbers of each administration differ. Not all children were involved in the first measurement.

The number of children being measured 6 or 7 times is limited because of the limited number of children visiting preschool.

When we compare the initial measurements of figures 16, 17 and 18 to the cumulative percentages of the reference group, we are immediately struck by the fact that our hypothesis is confirmed. The percentage of risk children is much higher than the percentage of 25% D and E children. In Language the percentage is 66, in Thinking it is 56 and in Space and Time it is 62. As a result the percentage of successful children is substantially lower than 75. The percentages are: 34, 44 and 38. The percentage of risk children is highest in Language. The percentage of E children is 44, while in the reference group it is 10. The percentage of E children is more or less similar in Space and Time and lowest in Thinking. So our hypothesis turned out to be correct.

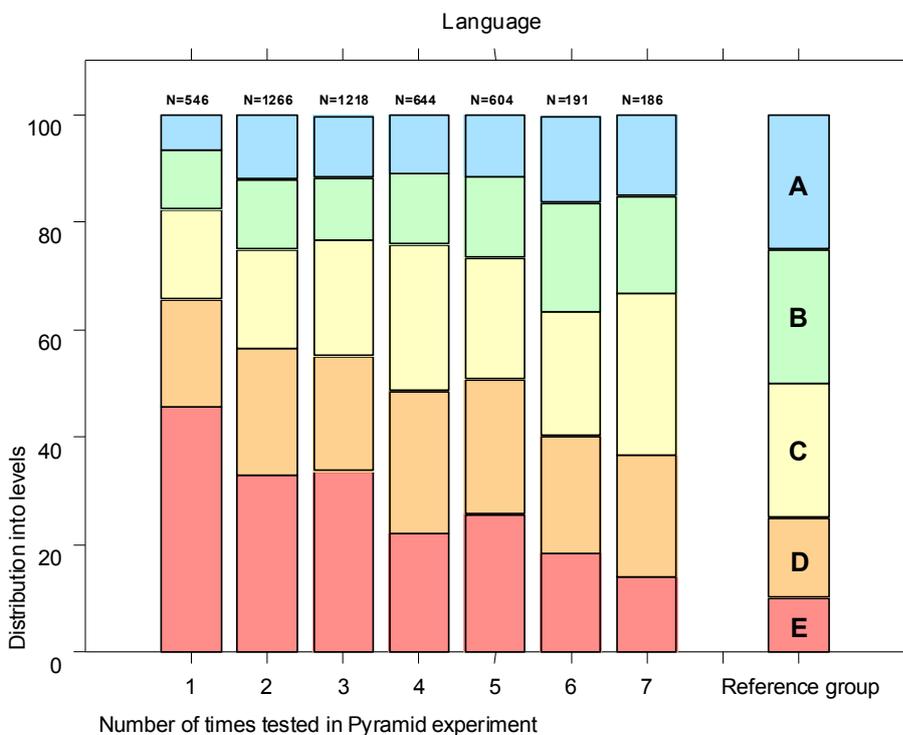


Figure 16 Cumulative histograms of the level distribution for Language

Figure 16 shows that in Language 46% of the children have a group E score and 20% a group D score (a total of 66%). Administration 7 shows that 14 per cent still has an E score and 23% a D (a total of 37%). In E there is a very strong fall from 46% to 14%, which almost equals the percentage of the reference group. The percentage of D children has hardly changed (from 20% to 23%). Here we have to keep in mind that E children undergoing development acceleration generally become D children. When we take a look at groups C, B and A we notice a percentage of 34 at the first measurement, and a percentage of 64 at the seventh administration, a 30% rise. It is not only the percentage of children that rises, but more in particular the percentage of B and A children.

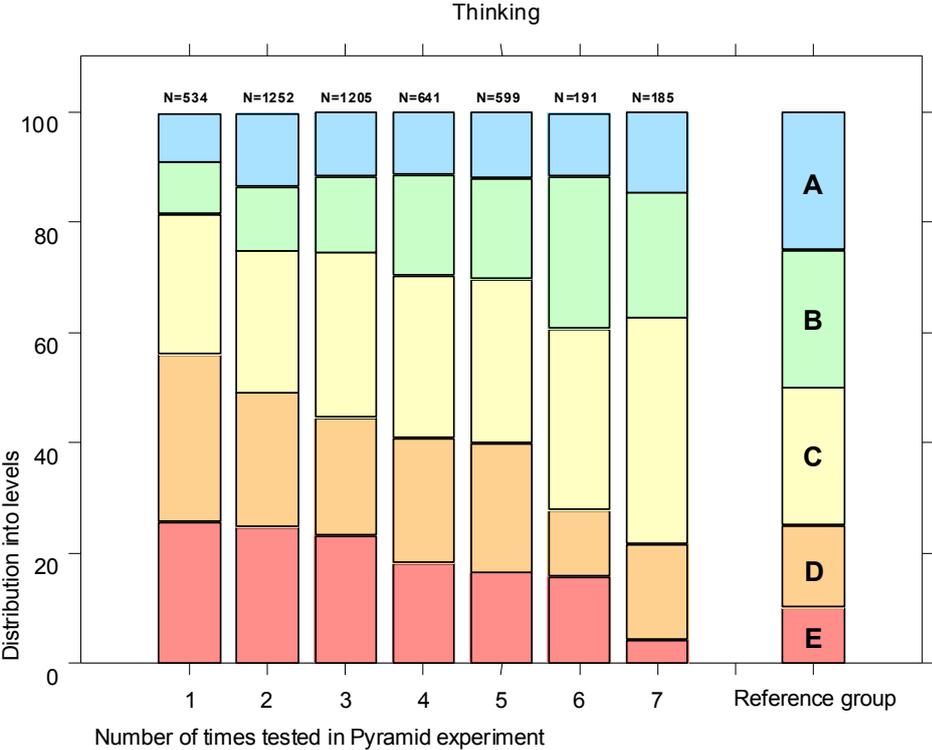


Figure 17 Cumulative histograms of the level distribution for Thinking

Figure 17 shows the results for Thinking. At the first measurement the percentage of E children is 26 and the percentage of D children is 30 (a total of 56%). At measurement 7 the percentage of E children has dropped dramatically to 4 and the percentage of D children has dropped to 17, a total of 21%, a lower percentage than the 25% of the reference group. The percentage of C, B and A children has also risen considerably. At the first measurement the percentage is 43, but after the seventh measurement the percentage is 79, a spectacular rise, exceeding the 75% of the reference group. Here it must be noted that the rise of the percentage of B and A children is less sharp than the rise of the percentage of C children.

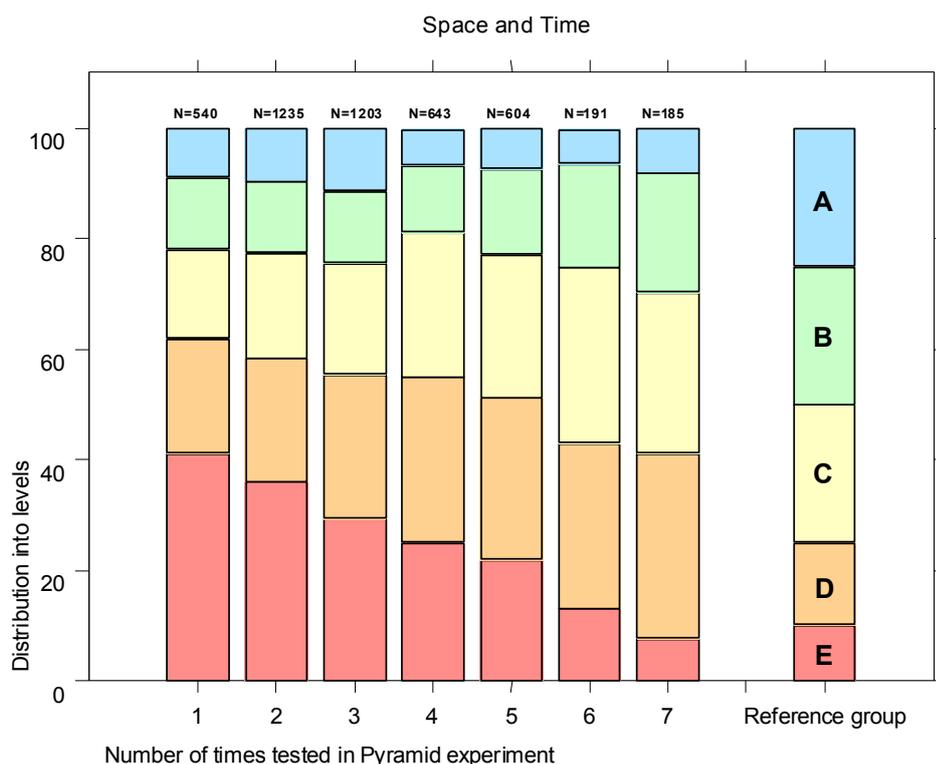


Figure 18 Cumulative histograms of the level distribution for Space and Time

Compared to figures 16 and 17 the results of figure 18 are less strong but more or less similar. At the first administration the percentage of E children is 41 and the percentage of D children is 21; a total of 62%. At the 7th measurement the percentage of E children has dropped considerably to 8, a drop of 33%. The percentage of D children is still 34. These children are partly former E children. The total percentage of D and E children is 42, a 20% drop. At the first measurement there is a 39% C, B or A score, at the 7th measurement the C, B, A score is 59%, a 20% rise. Here too there is the same trend: a strong fall of E and/or D children and a rise of C, B and A children, although there is no rise of A children. It must be noted, though, that the fall of the percentage of E children is largest in Space and Time. Both hypotheses were confirmed. In the experimental group the percentage of risk children is considerably higher at the start of the Pyramid experiment than in the reference group. The percentage of success children is considerably lower than in the reference group. The Pyramid Method helps to substantially reduce the percentage of risk children (to reference group level) and the percentage of success children can be raised considerably, also to reference group level.

13.3 Tutoring

As we have said before, there are differences in treatment of the children in the experiment. Children who at the start, but also later, after each test, had a D or an E level score on at least 2 of the three cognitive tests were given tutoring for half a year. This tutoring was preventive, and linked to the projects. There was also remediation tutoring after each project for a limited number of children who had not mastered the elementary notions. So these children were given more learning time and a more intensive, i.e. tutoring, program. To examine the effectiveness of tutoring, a research set-up with a pre-test and a post-test was opted for. We had a look at all children who took part in the Pyramid Method for half a year. For all these children ability scores are known for language, thinking and space and time. These scores are the pre-test. Part of this group is given tutoring in the period following this pre-test (experimental group), another part is not (reference group). Half a year later the children are tested again (the post-test). If tutoring is effective, then in the experimental group the percentage of risk children must be considerably lower in the post-test than in

the pre-test. We can also compare the percentage of risk children in the experimental group with the percentage of risk children in the reference group in the pre-test and the post-test. In the event that the percentage of risk children in the reference group also turns out to have dropped dramatically in the post-test compared to the pre-test, it cannot be concluded that the positive effect of tutoring in the experimental group is caused by tutoring. It is quite possible that in this case tutoring does not add much to the regular program. Table 4 shows the results.

Table 4 Pre-test and post-test percentages of risk children (tutored and non-tutored)

	no tutoring (n = 855)		tutoring (n = 219)	
	pre-test	post-test	pre-test	post-test
thinking	43.2	41.6	74.4	53.4
language	48.1	48.4	88.1	73.5
Space and time	51.2	48.9	84.4	74.0

The number of risk children is shown to be dropping dramatically in the experimental group (where tutoring is offered) between pre-test and post-test. In the reference group there is no such drop. We should keep in mind, however, that our tutoring effectiveness study covers only half a year and does not include longer periods of tutoring. A quick glance at the diagrams above (figures 16, 17 and 18) suggests that extended periods of tutoring will make the number of tutored children drop even further. It can be concluded that tutoring is effective indeed. Further studies will have to be made of the complex relationships between the number of times a child has been offered tutoring, the ability level of the child, the amount of time spent in the Pyramid program and the amount of time the child has been tutored. These complex relationships will be reported about in a following publication.

14 Conclusions and discussion

From the Pyramid Method two conclusions can be drawn. The Pyramid Method helps create development acceleration, so that – on average – ethnic and Dutch disadvantaged children can function at a successful level in primary school. The chance of success is highest, when the Pyramid Method is started in preschool and continued in groups 1 and 2 of primary school. Children, who do not start the Pyramid Method until group 1 or group 2 of primary school, do benefit, but they do not reach the level that preschool children achieve and maintain at the end of group 2. It also proves to be possible to optimize the development of children, which is something that is also suggested in the dynamic development theory (Fischer and Rose, 1998, Van Geert, 1998). The second conclusion is that the Pyramid Method helps to considerably reduce the number of risk children and substantially raise the number of success children, so that the chance of success of a large number of children rises considerably.

It can be concluded that the Pyramid Method, in which the Distancing concept (Sigel, 1970, 1993) is the basis for the thematic projects, is useful both for preschool children and for children in primary school. The method is effective for all ability groups and it is strong where it has to be strong: the reduction of the number of risk children, the lowest 25% of the reference group. The children who need extra stimulation will be given this stimulation in an effective way and the children who are not at risk, do not suffer, on the contrary, they profit too.

This means that it is attractive to start Pyramid-based education in preschool and continue this program in the first two years of primary education. As indicated before, tutoring is a major instrument to give preventive assistance, directly related to the thematical projects, to children who function at level D and level E.

The study shows that the extra learning time of tutoring works very well. Especially at the beginning the effect is strong (Van Kuyk, in preparation). These results are consistent with the analyses of Royce et al. (1993) and Leseman (1992): make an early start with an intensive program that is continued over a long period (three years) with a favourable teacher/child ratio, in the Pyramid tutoring format.

The results also match the results of the external evaluation studies of the Universities of Amsterdam and Groningen.

The effect study of Amsterdam University (Leseman et al., 1999; Veen et al., 2000) shows that the Pyramid Method score is significantly better than a control group with an educational program in preschool and in groups 1 and 2 of primary school, both in language development and development of thinking terms.

At the interim measurement the effect in preschool turned out to be strongest, which confirms our findings.

The Groningen University implementation study (Reezigt, 1999) shows that the Pyramid Method was implemented at a high level and that, compared to a control group, the Pyramid children have a better learning environment, communicate better with the teacher and are very much involved (83 per cent high involvement). The latter study also contains some critical remarks: in Pyramid more attention should be paid to the language component in the project themes and to the more difficult steps of Broadening and Deepening in the projects. During the experiment these critical remarks could not be incorporated. In the third version of the projects, which is about to be published, a special language line has been developed especially for the ethnic children and the Dutch disadvantaged children, partly on the basis of practical experience and practical testing. This special language line can be found in the play suggestions, in the project steps – which now include Vocabulary extension activities – and in tutoring, which also comes with a Vocabulary extension supplement. The two project steps of Broadening and Deepening have been improved, especially the active learning part has been reinforced, learning to anticipate new situations and learning to be aware of one's own actions (meta-cognition).

The results of this experiment are important to policy makers. It has been shown, partly (Leseman et al., 1999; Veen et al., 2000), that the use of a well-structured educational method which starts early, at 2 or 3 years of age, which is intensive and is continued for a long period of time with a favourable teacher/child ratio can contribute to fighting educational delays both in Dutch and ethnic children.

It is of major importance for preschool to become a structural facility, which has strong links with the primary school to secure the preschool-to-school transfer. At the moment there is no legal basis for it in the Netherlands. The pre- and early school policy is still in the hands of two different ministries. Here streamlining should take place as well. At national policy level the first steps have been taken, but locally too a common policy will be needed to create one educational facility which can be used by all parents free of charge (see also Van Kuyk, 1996). In Amsterdam the first attempts have been made to create a structural facility in the Voorschool (Preschool) project. Pyramid and Kaleidoscope are the well-structured effective methods which are used for actively fighting educational delays. The local Amsterdam governments provide extra means for setting up playgroups for four mornings a week and for tutors, to have more "hands" in the classroom. The tutoring model is a flexible and suitable way to introduce extra learning time in the group or class (depending on the severity of the problem). The tutoring model, used by Slavin et al. (1994) in the "Success for All" program for initial reading in group 3, is also effective when it is used in a preventive manner, at a much younger age in preschool and groups 1 and 2 and in a wider context of thematical projects. A more detailed study must be made of the precise "weight" of tutoring, in terms of duration and intensity. The effects of the regular Pyramid program and the tutoring program muse be studied too. And finally it is relevant to find out when tutoring is most effective, at the start or during the entire program. This study will show what tutoring can add to the regular Pyramid program.

A structured, coherent and theory-based educational method like Pyramid, in which education, tutoring, parent help, and if necessary ethnic language and culture teaching are combined in a creative setting, can contribute to the improvement of the quality of pre- and early school teaching.

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