# Father's involvement in a parent-child development support programme for young children with developmental delay – a preliminary study

Gabor TOTH

## 1. Introduction

*"The miracle of children is that we just don't know how they will change or who they will become."*
(Kennedy-Moore 2011)

Families are dynamic systems changing in role and structure across their life course and in response to changing external contexts shaped by broader political, cultural, social and economic contexts. During the last 15 years, there has been an increased interest in "how to involve fathers" in early childhood care and development, especially in supporting the relationship between fathers and their young children with developmental delay, where usually the mother takes on most of the necessary tasks during the early years (Wolpert 2002, Bagner 2013). Early childhood is the period from prenatal development to eight years of age. It is a crucial phase of growth and development, because experiences during early childhood can influence outcomes across the entire course of an individual's life (WHO 2007). In the case of children with developmental delay, it is a vital time to ensure access to early interventions that can help them to reach their full potential (UNESCO 2009).

The developmental effect of mothers' involvement and interaction with their young children during the early years is well known, but recent research indicates that a responsive, adequate and sensitive father-child relationship also results in a more optimal early development (Magill-Evans and Harrison 2001, Shannon *et al.* 2002). There are a few studies related to the effectiveness of interventions with fathers, especially in community-based planned early intervention programmes for children with developmental delay.

Many of the principles that work for promoting the involvement of mothers can be applied to fathers but need to be focused in a different manner, especially in the early years setting. *Frieman and Berkeley* (2002) suggest that early intervention practitioners are often predominantly female, thus fathers may find it hard to relate and fathers did not see other men on the staff as an example how to participate.

An increased level of father involvement is potentially a goal attainable by all early years settings. A good basis for increasing their involvement is called *hooking* by *Levine* (1993). Hooking means, engaging fathers into activities that fit them (e.g. physical activities, which need strengths, speed, agility and stamina etc.). The timing of these events or workshops is significant to increase fathers' participation in an early intervention based program (Turbiville et al., 2000; Frieman and Berkeley, 2002). Cooperation is another keyword between parents. One of the central relationships within families is that between fathers and mothers. Thus programmes, which aim to reach both parents should be well planned. Father-mother pairs are often influenced by each other's responses and behaviours. Greater parenting efficacy has been associated with more positive perceptions of the child (Johnston and Mash 1989).

## 2. Sensorimotor dominated early intervention programme of the CDSC

In general, there have been three types of interventions or supports for families that have been subject to research evaluation: (1) training for parents designed to improve their parenting skills; (2) psychological interventions for parents designed to reduce distress; and (3) supports designed to help the family as a whole or focused on family members other than parents (IASSIDD Families SIRG, 2013). The present study was partially involved with all three types, but mainly with the first. In April 2013 at the Sagami Women's University a Childhood Development Support Centre (*Kosodate Shien Center:* CDSC) was established. First it functioned as a developmental support resource room for families in the area that needed advice and support for child rearing or developmental issues, like delayed development. Since April 2014 it functions as a multilevel support centre, with advisory, developmental evaluation, family support, research on parent education, parent empowerment and volunteer group functions.

The aim of this study was to overview an early intervention based family support programme and its effect on parent involvement, especially on how to increase fathers' involvement in development support of their child with developmental disability. The programme aimed to promote an increased involvement of fathers in their child's development progress during a sensorimotor dominated early intervention.

In one level, the present study introduces the CDSC's early intervention programme for children with developmental delay, where parents are actively engaged. Not just mothers, but fathers are also invited to participate in the complex developmental programme. This particular sensorimotor-based early intervention programme aims to effect positively neurophysiological (brain) dysmaturity through movement, sensory integration, communication support and social behaviour (Ayres 1979; Bundy *et al.* 2002;). This complex therapeutic approach aims to stimulate the postnatal maturational mechanisms of the central nervous system by activating different brain structures using sensorimotor stimulation and other activity areas to support child development (Kandel *et al.* 1995).

On the second level, the intervention programme aims to help and educate parents on how to deal with their child who has developmental delay, by giving them activity examples/models and show the way how those could be done together with the child as routine daily activities at home as well.

In summary, the programme contains two main elements. The first one is the planned sensorimotor activity for children with the four "big" areas of developmental difficulties:

1. Motor development area (gross-, fine motor and speech movements);
2. Sensory development and psycho-cognitive areas;
3. Communication development area;
4. Social development area.

The second element is to provide parents, especially fathers with multiple opportunities to interact with their child, and also observe their child in a controlled therapeutic setting where parents work together with professionals. Participant observations, field notes, periodical short semi-structured interviews and video record analysis help them to provide positive feedback about the childrens' abilities and parental behaviour changes.

The Pyramid of Learning begins in the central nervous system as shown in Figure1 (Williams and Shellenberger 1996). Each level must properly integrate with the previous level or levels in order to progress to the next level. The ultimate goal is to reach the cognitive level of functioning. Progress to the cognitive level of functioning is necessary for children in order to attend to the tasks of learning and daily living (Bundy *et al.* 2002). Without the two lower levels of the Pyramid of Learning to work optimally and connecting well, this will not happen.

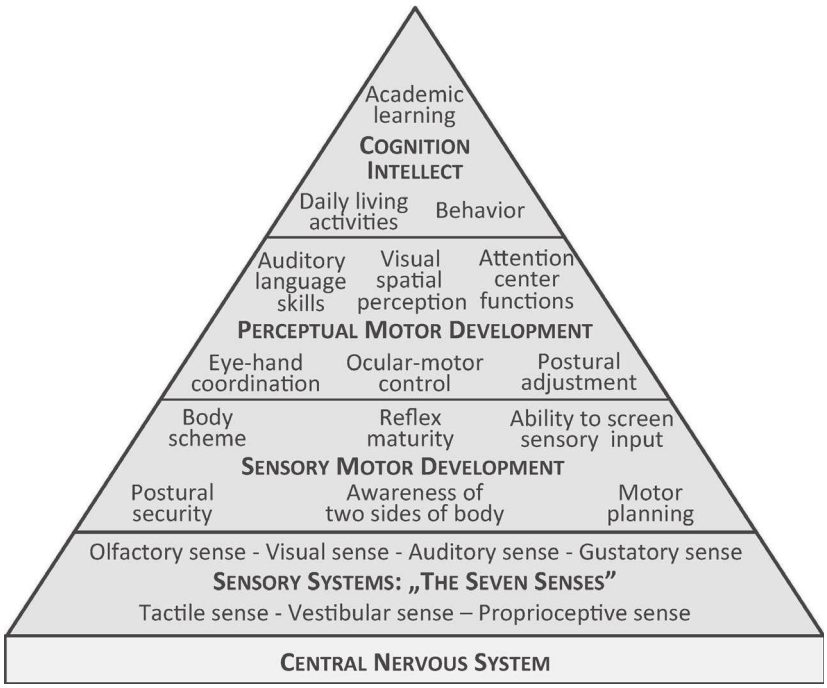



**Figure 1** Sensory integration foundations for behaviour and learning: The Pyramid of Learning (Modified from Williams and Shellenberger 1996)

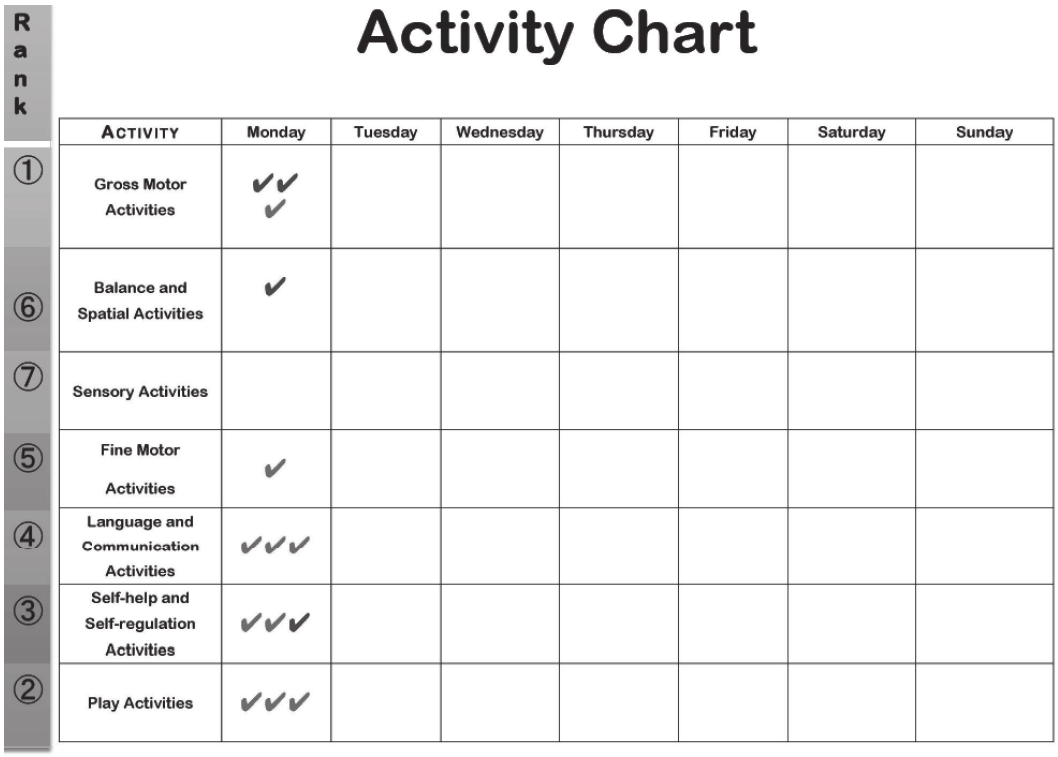
Looking at the Pyramid of Learning, it becomes obvious that if the malfunctioning of the higher levels is caused by the sensory and sensorimotor systems (if those are not developed and/or working properly), then a therapeutic approach, which focuses at restructuring the neurophysiological system of these levels, seems to be a valid and a logical start for an early intervention practice.

## 3. Methods (participants, material and procedures)

Participants were fathers and mothers of young children with developmental disability (n=20). The children's age ranged from ten months old to 4 years 9 months old (average age: 2 years 7 months). Nine fathers were actively involved in the programme; others received necessary information from mothers together with prepared exercise materials.

While an 18-months period of a *sensorimotor dominated early intervention programme* with children, parents were asked to participate actively in group activities. The approach was based on psychomotor therapy that needed physical strength, stamina, agility, speed and peer work between parents. Parents were asked to use the CDSC's *Home* A*ctivity Chart* at home and record their *activity type* and *frequency* of their engagement with their child every day in weekly sheets (see Figure 2). Later these sheets were the basis for semi-structured short interviews. Other data were obtained through qualitative analysis of semi-structured short interviews, field notes of participant observations and analysis of slow-motion short video recordings. Slow-motion short video recordings were analyzed in terms of communicative action, the directions of the face and the body, the facial expressions, their eyes movement and the other behaviours of both the parent and child.

The programme setting used most of the public holidays on Mondays (approx.10-12 times/year in the Japanese calendar) to allow greater levels of participation by fathers (during 18 months, 45 times, 15 times with active participation of 9 fathers; fathers' participation ratio 33%).



# Activity Chart

| Rank | ACTIVITY | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|---|
| ① | Gross Motor Activities | ✔✔ ✔ | | | | | | |
| ⑥ | Balance and Spatial Activities | ✔ | | | | | | |
| ⑦ | Sensory Activities | | | | | | | |
| ⑤ | Fine Motor Activities | ✔ | | | | | | |
| ④ | Language and Communication Activities | ✔✔✔ | | | | | | |
| ③ | Self-help and Self-regulation Activities | ✔✔✔ | | | | | | |
| ② | Play Activities | ✔✔✔ | | | | | | |

*** It shows the activity frequency of parents (father, mother), and activity group ranking; It helps to make plans for the following days etc.**

**Figure 2** The CDSC's Home Activity Chart

## 4. Results, Key Findings and Future Directions

*Video Enhanced Reflection on Communication* (VEROC) technique was developed and first used 1990's in the Netherlands. Later it was modified and renamed as *Video Interaction Guidance* (VIG) at the University of Dundee (UK) (Fukkink and Tavecchio 2010; Kennedy *et al.* 2011). There are approximately 500 practitioners of VIG in the UK including educational psychologists, speech and language therapists, teachers, social workers, family therapists and academics. VIG is designed as a family centred intervention and based on observation of real life communication, between parent and child. Moments from the video are then selected and played back to the parent. It demonstrates what the "guider" (professional) has identified as successful communicative events and it also aims to co-construct an understanding of the success of the moment. In this way, it is hoped participants will perceive existing positive contingencies and be able to build upon them in future communication (Pilnick and James 2013). The study of *Fukkink and Tavecchio* (2010) shows that video feedback training for early childhood educators is a promising method to increase their socio-emotional support and verbal stimulation in childcare practice.

Key points of the VIG method relating to parent-child interaction are the followings:

- The parent is more able to understand the child and to choose an appropriate response to a specific need of the child;
- 'Sharing magical moments' to bring about change that is positive (meeting the child at an emotional and cognitive level);
- Promotes empathy and builds positive relationships by reviewing micro-moments (metacommunication signals);
- Provides with 'moments of vitality' and 'communicative dance' (Murray and Trevarthen 1985).

This study used a further modified version of the VIG video analysis. Slow-motion video with 120/sec frame was shot on site by a professional participant observer and used as shared reflection on short clips of parent-child interaction to support the parent by building on current strengths and "positive moments". The clip showed as positive feedback at a "here and now" situation (right after those moments just happened = straight reflexions). The VIG recordings are short approximately 2-3 minutes videos with slow-motion recording and playback option where the parent (e.g. father) "engaged" with his child in an activity. Observed behaviours of the parent, as well as reciprocal behaviour of parent and child, were then searched and "positive moments" shared from the video.

There are eight VIG measurement points for video evaluation on parents' behaviour:

1. Turning toward child (directions of face and body)
2. Making eye contact (eye movements)
3. Following child
4. Verbal reception
5. Non-verbal reception (e.g. facial expressions)
6. Letting child take a turn
7. Acknowledging child
8. Parent acknowledges self

The VIG analysis influenced and helped the fathers' perception of their child's behaviour or knowledge of their behaviour. In general the VIG video analysis assisted fathers to perceive their child more positively or to feel more self-confident in fathering.

Results of the semi-structured short interviews showed that fathers were well acquainted with the general concept of child development, but the way in which they engaged their child with developmental disabilities, leaves the space for early intervention programme and parent education. Nearly 80% of interviewed parents said that they felt *"very involved"* in their child's development since they joined the program. Two-thirds of fathers said that they would like to *"get more involved"* in their child's development progress. The interview results with fathers and mothers also showed that fathers with a higher level of participation had better skills sorting out childcare problems at home as well.

The CDSC's Home Activity Chart showed that all fathers acknowledged increased involvement (from 10% to 33%, respectively) in support of the individual child at home using the chart. However, the *quality and content of fathers' involvement* matter more for children's outcomes than the quantity of time fathers spend with their children.

The field notes of participant observations showed that children became more positive in mood and behaviour and more overtures to the father. Also, children made more eye contact with their father, after their father was actively engaging and not just as an observer during the early intervention programme. Fathers became more and more active after each session where they participated, needed less instruction and used their imagination to combine different play activities together where they felt confident. Especially in structured physical activities, that needed strengths, agility, stamina and speed.

Fathers who participated in VIG video analysis sessions of parent-child interactions, and recorded their activity type and its frequency on the weekly Activity Sheets at home, showed more engagement in other home-related tasks as well (shopping, cleaning, cooking etc.).

In the future, it might be important to determine whether the parent training and intervention is more effective if both parents participate or if the intervention is directed to fathers only. There is evidence that dosage of the intervention may be important. Fagan and Iglesias (1999) found that fathers with the most exposure to an intervention over eight months had the greatest changes in behaviour. This preliminary study showed that fathers, who participated more than six months in the sensorimotor based early intervention programme had the greatest positive change in direct interaction with their child, the largest increase in accessibility to their child and provided he

greatest increase in support to their child for learning new things. Figure 3 shows the VIG cycle how the relation changes between a parent and child during an interaction cycle.

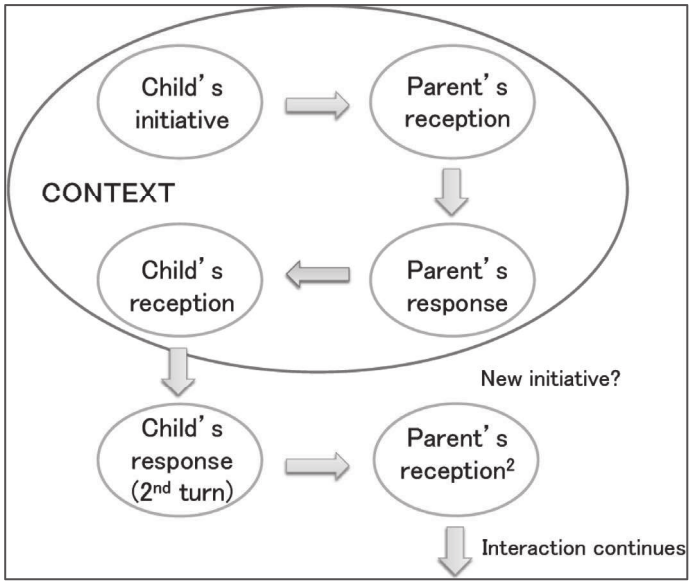



**Figure 3** The VIG Cycle shows the relation changes between parent and child

Summarizing the result of parental interviews on parental work-share and participation:

- Sensitive and responsive parent-child interactions are related to more optimal child development;
- Interventions with mothers have been successful in increasing maternal sensitivity and responsiveness;
- Exercises that involve active participation of the father with or without observation of their child enhance father-child interactions;
- Intervention is more likely to be effective if the father has multiple exposures to the programme (regular participation);
- There was a high agreement between mothers and fathers concerning the extent of "family participatory role" of fathers with the highest in playing, nurturing, deciding on services and discipline.
- Mothers explained that while fathers personally concerned with coping (that their child has developmental delay), mothers are concerned with the complex task how to work together for the child.

Being mature for school and fitting in well into the community presupposes the child being able to function adequately in his/her environment. Learning has three "classical" domain categories: *psychomotor, affective* and *cognitive* (Bloom's Taxonomy). The psychomotor domain involves development of the body and skills it performs. The psychomotor domain contains seven levels: perceiving, patterning, accommodating, refining varying, improvising and composing. Psychomotor learning is mainly contained sensorimotor related perception based actions (physical learning) that need speed, accuracy, dexterity and physical skills (Bloom 1956). The affective domain addresses the acquisition of attitudes and values (e.g. receiving, responding, valuing, organisation, characterization) (Krathwohl *et al.* 1956). The affective domain mainly based on feelings that come from emotional learning. Emotional learning is concerned with attitudes, appreciations, interest, values and adjustment. The cognitive domain involves the learning and application of knowledge

(rational learning). The cognitive domain contains six levels, namely: knowledge, comprehension, application, analysis, synthesis (creative thinking) and evaluation (critical thinking) (Bloom 1956).

The list below gives a summary of the aims and exercise groups of the sensorimotor programme that parents – after required explanation and tutoring – can carry out at home with their children between 1-3 years old:

- Aims to improve the child's visual and acoustic attention (e.g. familiar sound, words, toys, pictures);
- Aims to improve the child's ability to imitate (e.g. animals, basic movements, emotional faces);
- Physical endurance (whether the child can do exercises for about 30 minutes);
- Understanding task situations (e.g. repetitive movements, new movements, basic tool use);
- Staying in the task situation (e.g. passive vestibular exercises);
- Aims to improve the child's ability to calm down (e.g. start points and closing exercises);
- Aims to improve the quality and quantity of the child's social interactions (e.g. pair-exercises);
- Making it possible to motivate the child (e.g. using favourite things);
- Aims to improve the interest towards objects (e.g. interesting tools/toys, sounds, lights, tactile simulation).
- Exercises for adaptive motor responses (e.g. rotational exercises)
- Children will be able to participate in-group activities other than gross motor exercises (e.g. active vestibular exercises);
- Developing balance ability and synchronizing movements;
- Satisfaction of the parents is a very important factor.

Advantages of successfully applying sensorimotor programme in small-group sessions:

- Small group activities help the children to experience the sensorimotor and the concrete operational stages of development in a quality way in order to facilitate reaching the formal operational level (abstract thinking);
- Small group activities make it possible to correct children's posture as well as to develop their physical abilities (starting positions that inhibit unnecessary primitive reflexes, balance, strength, speed and endurance);
- Developing a feeling of security in small group setting;
- Parents (especially fathers) by participating in their children's therapy, as "helper", will be able to do exercise at home with them and became "partners" with their children. Fathers become more competent to deal with other matters as well;
- Parents gradually go to the background, transforming from active helper to participant observer.

Other recommended example of small group aims and exercises for 3-4 years old children with developmental delay (e.g. Down syndrome)

- Developing the ability to imitate: in serial and in coordinated form (2, 4 or 8-cycle exercises);
- Physical endurance (loadability): 45-90 minutes (Active vestibular exercises, Basic movements)
- Memorizing and remembering complex task situations (2-4-8-cycle serial exercises);
- Developing a sense of rhythm;
- Rhyme a common children song (e.g. Genkotsu Yama) for synchronizing movement and words (2-4-8-cycle of coordinated tasks);
- Be able to do exercise on stairs;
- Be able to do exercise with ropes;

- Improving the quality of social interactions (e.g. exercises that develop multi-channelled attention, exercises in pairs);
- Be able to do exercise while sitting, standing, walking or skipping;
- Developing inner controls and keeping rules (e.g. exercises involving bilateral motor coordination, cognitive tasks);
- Developing the ability to recognize and to solve basic problems;
- Developing adaptive motor responses.

Advantages of successfully applying early intervention programme with active participation of fathers (besides reaching developmental aims and goals):

- About 30% of fathers took part in the sensorimotor dominated early intervention programme.
- They brought their children and came to the CDDS with them.
- Fathers actively participated and assisted their child during sessions.
- Fathers felt that it was good to come to therapy, where their child was happy to be in the group and play with the equipment and toys.
- It is also a very good feeling for the fathers that they can give their child a hug, and they feel they are part of their developmental progress; thus they become a competent parent.

## 5. Conclusions

Further research is needed to address the questions of father's involvement in child rearing and the future direction of early intervention practice to establish well-working relationships between families and development support centres. The present preliminary study is a good foundation for providing additional motivation for family support programmes, how to work with parents especially with fathers, involving them with their child's developmental progress.

The limitation of this study is the small number of participants and that there was no control group setting in the study. More research is needed to determine the type of early intervention that is more likely to be effective if the father has multiple exposures, the appropriate dose of effective interventions, the impact over time, and the differential impact of early interventions with mothers and fathers of children with developmental delay.

The cultural context of early intervention needs to be considered with care when implementing a programme with participating fathers, because father roles; parental expectations and the father's social/economical status are different in European and Asian cultures.

The present study shows that fathers and mothers respond differently to an intervention but found little information on whether the presence of the other partner enhances or diminishes the influence of an intervention. As the family is the context in which "fathering" takes place, it is likely that other members of the family have an influence on whether fathers choose to participate in the early intervention.

Despite the limitations mentioned above, the result of this preliminary study showed, that participating in an early intervention programme could be effective - with fathers of children with developmental delay-, if the intervention involves active participation with or observation of the father's child.

**References**


1. Kennedy-Moor E and Lowenthal MS (2011): Smart Parenting for Smart Kids - Nurturing Your Child's True Potential. San Francisco: CA, Publisher Jossey Bass, pp.320.
2. Wolpert R (2002): Assessing Parenting Capacity Guidelines, Journal of Ontario Association of Children's Aid Societies, Vol. 46, No.1.
3. Bagner DM (2013): Father's role in parent training for children with developmental delay. *Journal of Family Psychology*, Vol.27, No.4, p.650-657.
4. WHO (2007): Early childhood development: a powerful equalizer. Geneva, World Health Organization.http://www.who.int/social_determinants/resources/ecd_kn_report_07_2007.pdf (accessed 2 January 2015).
5. UNESCO (2009): Policy Brief on Early Childhood. Inclusion of Children with Disabilities: The Early Childhood Imperative. No. 46, April-June (REV.)
6. Magill-Evans J and Harrison MJ (2001): Parent-child interactions, parenting stress, and developmental outcomes at 4 years. *Children's Health Care*, Vol.30. p.135-150.
7. Shannon JD, Tamis-LeMonda CS, London K, and Cabrera N (2002): Beyond rough and tumble: low income fathers' interactions and childrens' cognitive development at 24 months. *Parenting: Science and Practice*, Vol.2, No.1, p.77-104.
8. Frieman BB and Berkeley TR (2002): Encouraging fathers to participate in the school experiences of young children. *Early Childhood Education Journal*, Vol.29, No.3, p.209-213.
9. Levine J (1993): Involving fathers in Head Start. *Families in Society*, Vol.74, No. 1, p.4-19.
10. Turbiville VP, Umbarger GT, and Guthrie AC (2000): Fathers involvement in programmes for young children. *Young Children*, Vol.55, No.4, p.74-79.
11. Johnston C and Mash EJ (1989): A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, Vol.18, p.167-175.
12. IASSIDD Families SIRG Position Paper (2013): *Families Supporting a Child with Intellectual or Developmental Disabilities – The Current State of Knowledge.* IASSIDD Publication.
13. Ayres AJ (1979): *Sensory Integration and the Child*. Los Angeles, CA: Western Psychological Services.
14. Bundy AC, Lane S, Murray E (2002): *Sensory integration: Theory and practice.* Philadelphia; F. A. Davis Company.
15. Kandel ER, Schwartz JH, and Jessell TM (1995): *Principles of neural science* (4th ed.) East Norwalk, CT: Appleton & Lange, p.330–331.

16. Williams MS and Shellenberger S (1996): *How Does Your Engine Run? Leader's Guide to the Alert Program for Self-Regulation.* Albuquerque, NM: Therapy Works Inc., pp.130.
17. Fukkink RG and Tavecchio LWC (2010): Effects of Video Interaction Guidance on early childhood teachers. *Teaching and Teacher Education*, Vol.26, No.8, p.1652-1659.
18. Kennedy H, Landor M, Todd, L (Eds.) (2011): *Video interaction guidance: a relationship-based intervention to promote attunement, empathy, and wellbeing.* London-Philadelphia, Jessica Kingsley Publishers, p.336.
19. Murray L and Trevarthen C (1985): Emotional regulations of interactions between two-month-olds and their mothers. In.: T.M. Field, N.A. Fox (Eds.): Social perception in infants, Ablex, Norwood, NJ (1985), pp. 177–197.
20. Pilnick A and James D (2013): "I'm thrilled that you see that": Guiding parents to see success in interactions with children with deafness and autistic spectrum disorder. *Social Science and Medicine*, Vol.99, Dec., p.89-101.
21. Fagan J and Iglesias A (1999): Father involvement program effects on fathers, father figures, and their head start children: a quasi-experimental study. *Early Childhood Research Quarterly*, Vol.14, p.243-269.
22. Bloom SB (Eds.) (1956): *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain.* New York: Longmans, Green and Co., 1956.
23. Krathwohl DR, Bloom SB, Masia BB (1956): *Taxonomy of Educational Objectives, Handbook II: Affective Domain (The Classification of educational goals).* New York: David McKay Co. Inc.