

## **Early Dialogs between Mother and Infant**

### **A Study on the Situation of Deaf and Hard of Hearing Infants in the Process of Early Bildung**

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#### **Abstract**

**Background/Aims:** From the very first day of life parents are in close contact with their infant. They introduce as well other people as the world to their newborn in a mutually dialogical way. Proceeding hand in hand they pass on basic dialogical competences which are responsible for the development of Early Bildung. The research project *Dialogic Development of Infants* (Horsch et al. since 2004) addresses the broad dialogic development of parents and infants within the first 18 months of life. Our objective is to describe these preverbal dialogs and their relevance for processes of Bildung.

The following presented research project is realized in Germany, but we just start at SEKOMU with this study. So we are able to take the pictures out of the SEKOMU project.

**Methods:** Particular emphasis will be placed on these dialogic elements: vocalisation of the infants, dialogic echo and greeting behaviour of the parents and motherese/fatherese. The empirical date is derived from a longitudinal study within the first 18 months of the infant's life. The data is collected monthly by video recording in a natural setting. Computerized analyses (interact) are used for the evaluation of the data to study the correlations among the dialogic elements.

**Results:** The significant correlations of infants with normal hearing are compared with the data of the deaf or hard of hearing infants and are discussed in relation to aspects of Bildung.

**Key words:** early education, deafness, dialogue, Bildung

#### **In the focus: Early education research studies**

Early education of deaf and hard of hearing infants has achieved a new dimension since the newborn hearing screening, because now, for the first time, there is a possibility to discover the hearing impairment as early as possible. There is also the possibility, to give an early counselling to parents supported by technical supply, to ensure the infant an ideal growth in all areas which are necessary for a natural growth. Though only some evaluated information exist, concerning the early dialogic development between infants and parents, (1.-18. month of life). That's why the demand that parents should follow the natural development of the

child and the acquisition of language can only be maintained, if we practise evidence-based research, which tests the early dialogical interactions between parents and infants: hearing and as well deaf and hard of hearing infants and analyse these interactions, if, and when yes, in which way in this interactions early processes of education can be observed.

All these questions have to be urgently resolved, because they are also founded in the demand of inclusion, which is currently highly up to date and which tries to implement the demand of corporate participation and education processes, with the aim of unrestricted participation of life within the community. For people with disabilities this education offensive is regulated by article 24 of the UN resolution, which ensures the right of *Bildung* for people with disabilities and demands an integrative educational system on all levels as well as the right of lifelong learning, with the aim to enable people with disabilities to a real participation in the community. This is also valid for infants with hearing disabilities. For this reason the question of education has to be resolved and it may not be reduced to the question of acquisition of language only.

My so far settled research projects, concerning this early area, especially this here reported research project ***Dialogical education of infants*** (Horsch et al., starting in 2004), has as the most important target to analyse this early area in order to receive research-based data and achievements, which make statements possible, concerning the contents of pedagogical follow-up.

The most urgent object of investigation is the analysis of

- these early dialogues and how they prove themselves as an expression of the relationship between parents and infants,
- dialogical elements which are of importance for this relationship,
- the quality and quantity they are to be observed during the course of this educational process and how within this process
- ***Bildung*** becomes possible and is created

### **When is a dialogue a dialogue?**

Dialogue resounds throughout the land. Logistic companies, life policies, discussion forums, magazines, intercultural associations etc. adorn themselves and their products with this vocabulary and by doing so dilute the precision of this term with regards to content.

*Dialogue* ( *gr. dialogos, lat. dialogus, fr. dialogue*) means, etymologically regarded, conversation between two or more people. The adjective *dialogical* comes across more less often than its base morpheme *dialogue*. It is more a philosophical-pedagogical term, which was given distinction by Martin Buber (Buber 1992) and which mainly the phenomenologists in special needs education took as a basis of their works (Fornfeld 2000, Rodler 2000). In

the last couple of years the term of Buber has been enhanced in the literature of special needs and early education mainly by Utley& Bellamy ( 2001), Kleinbach (1994), van der Geest (1978), Horsch ( 1999, 2001, 2003, 2006), Horsch, Bischoff (2008). In this connection the term is dialogically related to semantic closeness to relationship.

Being in dialogue with someone means to live in a ***Me -You-Relationship*** (Buber 1992). It takes more than mentioned above, to speak in the sense of Buber of a *dialogue*.

Specific actions have to come along, which regulate the relationship to others and to oneself.

Referred to the relationship between parents and infants, another detailed definition, concerning the term *dialogue* and *being dialogical*, has to be taken in order to make the meaning for the research process visible.



Pic.1: Mother and newborn – first emotional contact  
The beginning of relationship – dialogue – Bildung

### **Background, Aims and Questions:**

#### **Is the parent-child-relationship dialogically?**

A survey by the emperor Friedrich II concerning the history of the protolanguage of mankind could give a first answer to that. The emperor gave infants to nurses for custodial care, but he ordered them not to talk to the children at all, in order to make the speech develop itself without external influences. This prohibition was probably responsible that the nurses weren't able to build up a relationship to the children, because all forms of expressions of the relationship could lead to the use of speech without fail. The result is well-known to us: all children died. Superficially you could say that the infants died, because they didn't have any

address. That's only right at the first sight, respectively then, when we confuse address and speech. Even more serious for the upbringing of children was the non-relation of the adult-child-interaction and this was destructive in the end.

The connection between dialogue and relationship, as observable exchange between parents and infants, is very clearly comprehensible, due to this historical example, because it visualizes, that any relationship has to be lived. Relationship can not only exist in our heads or hearts, relationship must be concrete. The infant must have the experience that his parents love him, like him and be there for him, that they are responsible and faithful.

Therefore relationship needs its forms of expressions. These are, new research results taken as a basis, mainly given in the different elements of the dialogue, such as eye-contact, the typical parental speech: motherese/ fatherese, the dialogical echo, the attention and care to one another, which shapes up the dialogical competences of parents and infant from the first day of life (Gopnik, Meltzoff 1998, Gopnik, Meltzoff, Kuhl, 2005, Horie 2006, Horsch 2003, Horsch 2004, Horsch 2006, Horsch, Roth 2005, Horsch et al. 2007, Scheele, Horsch 2007, Horsch, Scheele. 2009, Keller 2006, Largo 2009, Papousek 1994).

**Project:** ( Horsch et al. since 2004)

### **Dialogic Development of Infants**

The analysis of the monthly video recording of parent- child- interactions from our research documents with every emphasis, the meaning of these elements for the initiation, arrangement and maintenance of the dialogue.

In order to be relevant for education and Bildung, more has to be added. Attitudes and competences which signalise the infant, beyond dialogical elements, *that the parents see him as a partner, to whom they like to do things in a mutual way, to whom they introduce the world, to whom they share emotions, to whom they negotiate – over and over again.* There must be a solid and valid stability of parental behaviour, which contains the useful and valuable message: *you are the most important person for me, we belong together, we explore the world together, we share emotions with each other.* A **between** (Zwischen, Buber 1992) comes into the relationship between parents and infant, which is affected by trust, closeness and love and gives the infant the necessary social security to engage himself and to be able to experiences that he is loved, that he is taken seriously, that he is a partner, to whom the parents negotiate, to whom they like to do something together. If you take the modern sense of education as a basic, then these experiences contain a high relevance in Bildung, because the infant can acquire the competences mentioned above itself and can promote the process of self-Bildung (Datler et al. 2009). Essential and most decisive for the success of these processes is the individual fitting between parents and infant. The fitting in the dialogue is decisive.

Relationship and dialogue, love and attitude build therefore a close, immediate interrelation. They form a mosaic of parental and childish possibilities of interaction, where education and Bildung become possible. Dialogical competences, here educational researchers currently agree, can be seen as the key qualification for education and Bildung (Horsch 2007, v. Henting 2001, Klafki 1973). The ability and competence of dialogue is therefore way and goal of early education and Bildung in equal measure.

In this close connection the assumption that Bildung and education start with the birth and which is represented in many publications, is easy to comprehend (Schäfer 2005, Fthenakis 2004, Largo 2009, Weber 2004). This change of view was not at least provoked by comparing international educational studies (Horie 2006, Hirsh-Pasek, Golinkoff 1997, Keller 2006) but also by results from different fields of research, such as neuroscience, infant research studies (Helenius et al. 2008, Largo 2009, Papoušek, Papoušek 1990) or even the brain research studies (Bauer 2006, Hüther 2006, Spitzer 2005).

Even if the infant educates himself, it's the father or mother in the first instance, who create educational and Bildung processes. This happens, as mentioned above, nearly exclusively in face-to-face situations in a direct dialogical exchange (Horsch, Bischoff, Fautz 2002, Horsch 2006, Papoušek 1998).



Pic.2: Eye-to-eye-contact one of the first dialogic element within the face to face situation

From a certain stage of development, objects of the environment are added. The mother-infant dyad becomes a mother- infant- object triad. The connection between relationship, dialogue education and Bildung is illustrated in the picture above (Tab.2).

Picture 2 shows that the basic and also the frame and therefore the common ground of dialogue and education is to be seen in the relationship of people with each other. Within a dialogical attitude, the relation to each other is lived for every single participant and concrete experiences of these competences became possible. Experience and knowledge build the foundation for learning processes. Therefore these competences can only be gained and developed in concrete experienced dialogues.

Even here the experience hurries ahead the term. Long before the human being can express what he is willing to do, his experience will guide him and determine his decisions. The neuroscience has already presented series of evidence based research data (Bauer 2006, Hütter 2006, Spitzer 2005). Relationship and dialogical attitude are therefore closely affiliated, its connection is affected by interdependence, it is one of an inverse exchange. A clear dividing line cannot be done. So it is comprehensible that relation doesn't end, if there is no current conversation between the dialogue partners; for example between mother and child, because they are otherwise engaged. Dialogical attitude and relation are always existent, they build the *between (Zwischen)* between parents and infants, just as Buber (1964) named it. It is therefore not enough to look at the frequency of observable elements of the dialogue to be able to suggest offers in education. You have also to look at the context, in which they are lived, the frames.

Studie:

The focus of the analysis lies on the contents of the dialogical interactions, lived in frames, recurrent situations of daily routines and in the observation, which is seen in the attitude of the partners towards each other, how the *between* between mother/father and child is developed personally..

Essential for the relevance of learning, education and Bildung concerning the frames is that mother and infant stay in the exact same frame, which they never form identically, because mother and infant change and compare within the frame the particular content (for instance how to build a tower), they negotiate about, who is the next in building, they look at the result together *from all sites*. Only in this consistent reference within a frame, an infant has the chance to be able to learn. Here it can rediscover trust and discover something new. Here he can enhance the chance of learning and experience educational offers of Bildung

This is a very important knowledge.

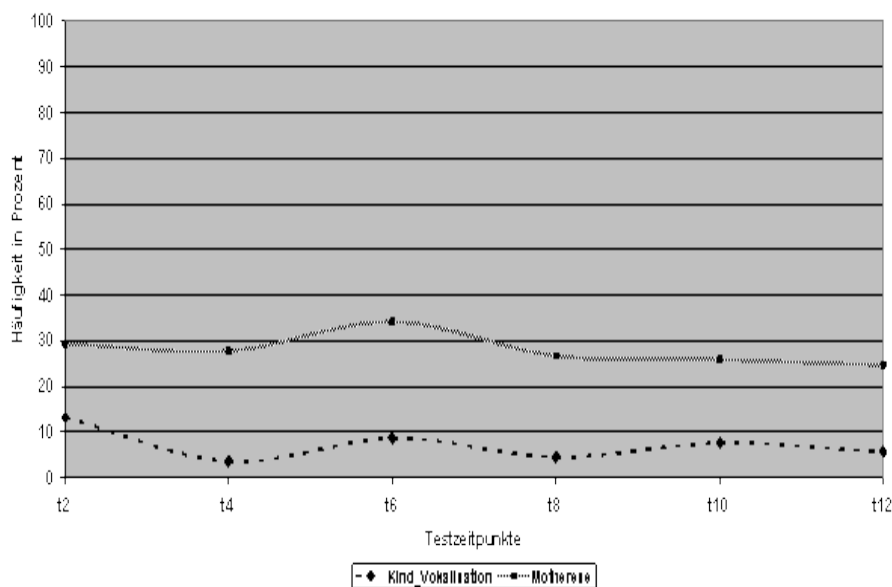
## Methods

The research project (Horsch et al. since 2004) was created as longitudinal study. For the first 18 months mother and father are videographed monthly during interactions with their baby/infant in a natural setting. All together we have 754 videographies from 111 parents-infant-groups from Germany, 33 couples have a child with disabilities (n= 227 videographies), out of that group eight children are hard of hearing (n= 49 videographies). The evaluation results from using a special computer software *Interact* (Mangold). Here the first four minutes, concerning the most frequent elements of dialogue are analyzed. The collected data were correlated and resurveyed of significance. Because of the huge amount of data, not all videorecordings could be evaluated. From the pool of the not disabled parent-infant - groups, those with the most regular times of recording were picked up (n=20).

## Results: Dialogic Development of Infants

### Results concerning the dialogic elements as an expression of relationship

Analyzing the videorecordings a number of dialogic elements could be evaluated, which could be seen as a basic for the parent-infant -interaction. These are: motherese, greeting behavior, dialogical echo, and vocalization of the infant. The following picture 3 exemplifies the dialogical reference of the elements vocalization and motherese in the first year of life of the infant.



Pic.3: Comparison of the dialogic elements vocalization of the infant and motherese in a chronological process: infant not being disabled, n=20

On the x-axis the moment of testing in a two-month-interval from t2 until t12 is given, on the y-axis the frequency is given in percent about the whole period of the evaluated video. The lower line represents the frequency of the child's vocalization, the upper line the motherese. It's shown that the motherese is quantitatively located above the child's vocalization, but what especially becomes evident is, that both curves resonate, that these both elements are related to each other and therefore it is given a dialogical cooperation between mother and infant. The dialogical concept of early interactions becomes visible.

### **Evaluation of correlation by statistical analysis of the dialogic variables**

The evaluated data set (n=20) were effected correlation calculations via SAS/SPSS. The results of the group of hearing infants show a negative correlation, concerning the greeting behavior with the dialogical echo ( $r = -0.30$ ) and the infant's vocalizations ( $r = 0.45$ ;  $p = 0.20$ ). That means that the less the infant vocalize, the more often parents use the greeting behavior and the more less they show the dialogical echo. We assume that the more frequent use of greeting behavior on the part of the parents result from the fact to encourage the infant to restart or to continue the dialogue.

The correlation between greeting behavior and the use of motherese/fatherese ( $r=0.0126$ ) underlines this result.

All further analyzed variables correlate without level of significance.

Within the group of hard of hearing infants (n=8) correlations were also found, but they are not as strongly effected or they correlate on a lower level of significance. If you compare the results of the group of hearing infants and the group of hard of hearing infants within a correlation analysis (after Pearson) and screen them for significance, the results are as follows:

- ⇒ The amount of the greeting behaviors correlates significantly negative with the infant's group membership ( $r = -0,573$ ,  $p < 0.01$ )
- ⇒ The amount of motherese also correlates significantly negative with the infant's group membership ( $r = -0,752$ ,  $p < 0.01$ )
- ⇒ The amount of infant vocalizations correlates significantly negative with the infant's group membership ( $r = -0,309$ ,  $p < 0.05$ )
- ⇒ The amount of eye-to-eye situations correlates significantly negative with the infant's group membership ( $r = -0,405$ ,  $p < 0.01$ )

That means: The higher the amount of these dialogical elements is the more it is an interaction with a hearing infant. In comparison with the group of hearing infants the result of the group of hard of hearing infants shows a slightly pronounced dialogical competence relating to the most important elements of the dialogues.



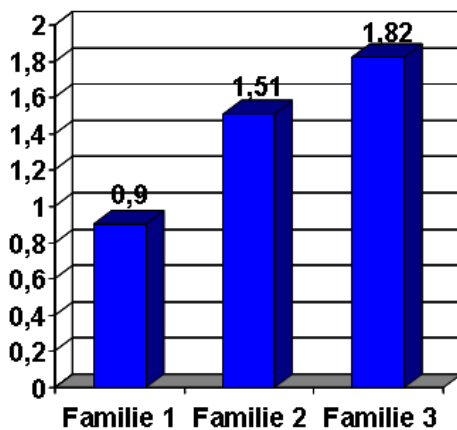
But can this quantitative analysis and its results be considered as a statement for the relevance of Bildung?

### Results concerning the relevance of education and Bildung

In order to be able to verify evidence-based the correlation between dialogue and Bildung, it was tested in a next step, if a correlation between the frequency of dialogical elements and the investigated data of a test procedure concerning the development of the infant can be noticed. To that, the ELFRA 2 test was applied. ELFRA 2 is a development test in form of a parental questionnaire.

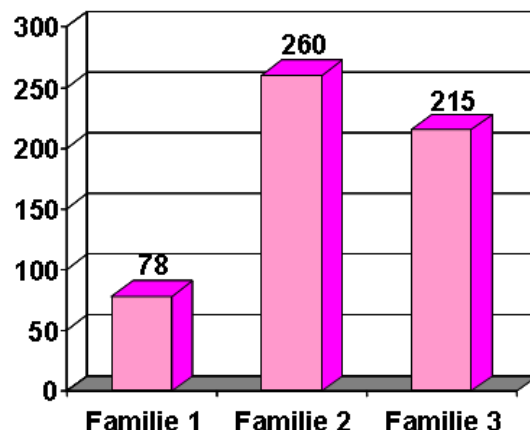
Because we are still in the process of data evaluation, we are at the moment only able to present exemplarily the results of three families with a not-disabled child; families with a hard of hearing or deaf child haven't been evaluated yet. We will do it later.

Out of the records of these three families, two dialogical elements were chosen: the infant's vocalization and the motherese/fatherese. The rate of the appearance of vocalization and motherese was added and correlated to each other for over one year. (Picture 4, relation motherese/fatherese). The results of the same families out of the test procedure ELFRA 2 were detected, where the productive lexis and also the most important grammatical steps in progress are evaluated. (Picture 5, ELFRA).



■ Verhältnis Motherese /Vokalisation (relativ)

Pic.4: correlation motherese/ fatherese/vocalization



□ ELFRA

Pic.5: results ELFRA 2

Comparison of the results of the 3 families: Relative relation of motherese/vocalization in comparison to ELFRA 2

The comparison of the two charts shows as a first result that the infant in family 1 vocalizes more in relation than the parents answer in form of motherese/fatherese. On the contrary the linguistic offers of family 2 and 3 are about a third up to the half above the infant's offers, which indicates a steady and durable individual fit. In comparison with the results of ELFRA 2

the results of the development for the infant in family 1 are clearly weaker than those of the analyzed infants of family 2 and 3. The average value of the standardized procedure is at 150, the as critical estimated lower value at 50. In consideration that the parents evaluate the growth of their infant because the test cannot be realized by a third person, a first tendency can be noticed. This can, with all given carefulness, be interpreted as evident references that dialogical elements and their individual fitting supply an essential contribution, which is relevant in education and Bildung. This thesis is furthermore supported by the fact that ELFRA 2 covers a field of scope, which is far beyond the linguistic one. Nevertheless much more evaluations with a larger group are necessary to confirm the here presented results.

### **Discussion:**

#### **Early education of hard of hearing infants as a dialogically process of Bildung**

Reconsidering the results we could try to analyze their importance for the discussion concerning Bildung. The comparison on the level of significance according to the particular group membership shows a significant difficulty, which is given for hard of hearing infants. Hard of hearing infant's parents should make more offers to their infants in all researched areas of dialogical behavioral patterns mentioned above, such as greeting behavior, eye-to-eye contact and motherese/fatherese. In a deepening study with the same group of infants, we evaluated which kind of vocalization of the infant provokes a mother's answer in form of motherese (Horsch 2008). Even here the comparison showed that mothers of hard of hearing infants don't answer their infant's vocalization in the way mothers of hearing children do. In the end they speak less, too less, with their infants. However in comparison to that the hard of hearing infants (of these mothers) made more offers in vocalization than hearing infants do, that they are, however, not heard or too little heard by their mothers and get too few answers.

These results confirm therefore the data of the correlation analysis from a different kind of view, however only in the areas of listening and answering. Therefore in this field exists an urgent demand in research and development.

In addition the difficulties in maintaining of frames became apparent. A comparative study showed furthermore that mothers of hard of hearing infants tend to change frames. They try to gain the child's attention by presenting new acoustic stimulations again and again and therefore they have problems or aren't even able to abide, to turn to each other, to play together or to negotiate, in a way that frames in their genuine sense cannot develop. By doing so opportunities of Bildung cannot be used.

Frames offer an ideal possibility to negotiate about the joint doing and the intended intentions, to share emotions and so on. These frames are important for developing of

processes of Bildung. The playing situation is perfectly suitable for addressing the infant as a partner, getting into a dialogue with him, giving him offers in learning. Here the motherese proves to be the decisive medium. Especially because motherese contains, unlike any other dialogical element, messages for the infant. It transmits the feeling of being taken seriously, of being loved, it already negotiates on a prosodic level, makes suggestions etc. Infants feel this and act accordingly. Because when infants feel that they are noticed as a partner in the dialogic setting, that they are important for their mother, that they can make proposals and can even change something, that they are responsible for the dialog and successful in it, all these enable them to share emotions with their mothers, and if mom says something like: "You did that extremely well!", and when this resonates in mothers' speech, then motherese is much more than being only an offer for learning to listen, to hear and to acquire language, then motherese creates opportunities for learning, which help the child to develop basic processes of Bildung itself.

Furthermore the results of this study refer to a relation between relationship, dialogue and Bildung. Even if this data have to be furthermore evaluated, you can summary with given carefulness, that the results confirm the assumption that the relationship between parents and infant, early dialogical interactions and early processes of Bildung are decisive for the infants' development.

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Motherese/Fatherese is the language addressed to the child. It is the invitation to a dialogue, contains a level of relationship and a hear- speech, teaching and learning strategy

Greeting behavior brings the child's attention to its mother's face / father's face. The eyebrows are lifted, the head nods as if you are greeting someone, and an encouragement or a "Hallo" is expressed, hand in hand there goes the eye- to eye –contact

Dialogical echo is the identical repetition or correction of the childish vocalization through the parents, whereat the dialogue comes from the child

Vocalization is every form of childish expression