

The Carnival of the Animals –

An iPad App to Support Interaction

*Kaarina Marjanen**

Abstract

Interaction sets the focus for this paper, observed through a project on “The Carnival of the Animals” app for the iPad. The interpretations of a small child’s playful interaction behaviour with the App 1) as investigated by early childhood teacher students – and 2) via the learning results gained as an understanding of interaction behaviour created on the basis of the current study project. The aim was to support the students’ professional identity development with the interaction experiences during the family visits included in the study protocol. The project was performed as group work and supported with a basic theory and some supervision during it. The aims for the students were two-fold: learning about the interaction behaviour of a child, and learning about doing research. These were used as tools for the professional development. Five students, one of each group, were interviewed six months after the project. Despite of the challenges especially in the beginning of the project, a clear finding of the professional development and an understanding of a child was stated. New ideas for teacher training as a ground for development can be considered for the future needs.

Keywords:

Interaction behaviour
Ipad App
Professional identity

1 Introduction

The Carneval of the Animals – COA - is a 14-page talking and sounding, multisensory storybook with a story created for the Camille Saint-Saëns world-famous composition by the same title, with vivid illustrations of animals, interlaced with numerous animated graphics and interactive elements. A fun and playful learning environment is offered for both children and adults. It fits for various people, children or anyone, despite of the level of specific language competences. This application was developed by Professor Markus Cslovjecsek from Switzerland, as a side-product for the European Music Portfolio - A Creative Way into Languages -project (EMP-L www.empportfolio.eu; 2009-2012). The writer, *Achim Lück*, wrote a poem telling about a bored lion and his animal friends that want to have a party. The texts can be read on each page of the App with a variety of sixteen languages currently available. Constant additions to the language selections are being developed (Cslovjecsek, 2016).

The main aims of the app are to enable children and adults to engage in music, language, art and technology by means of a suitable app; to playfully learn to interact – receive, send and creatively process information; to provide an attractive, multimodal and interactive resource to listen to the Carnival of the Animals musical masterpiece; to give opportunities to listen to different languages in a context and to compare them as well with the original music and visualisation; and to offer choices concerning what to listen and how to do it.

Interaction is one of the most important tools even for the life success. It creates the ground for learning and well-being (Marjanen, 2015). Interaction constructed of the shared musical and linguistic elements (Brown, 2000; Patel, 2008; Ludke & Weinmann, 2012), as observes of one another, and the expression ways opened via the support of multiple bodily and facial possibilities, create the basic understanding of interaction behaviour in

* Laurea UAS, Uudenmaankatu 22, 05800 Hyvinkää, Finland.
Corresponding author. E-mail: kaarina.marjanen@laurea.fi

this project: it starts from music, being strongly musical. Linguistic expression works as a core for interaction, but when combined with holistic bodily expression filled with musical thought, it will be more.

In this paper, an experience of Finnish social service's students with a special focus on early childhood education, is being described. COA created the main content for a course by the title "Child-oriented working methods and child-centred studies" (5 cr). Besides the meeting of the children with their families as a possible factor for their professional development, the learning pathway via a data collection process is presently being observed. The framework for the research project was given by the international pilot study protocol (Perez & Cslovjceksek, 2013). The theories on understanding of knowledge, 21st century skills and the Laurea UAS Learning by Developing model as a pedagogical tool with an understanding of learning processes supported the students in the study performance. Professional development, professional dialogue and the focus on professional identity created the theoretical background and the metatheory for the research performed by their course teacher to find out about the learning results according to the interviews with the students.

2 Towards the professional identity

2.1 The socionom/early childhood teacher training in Laurea UAS¹

Laurea UAS² is located in Helsinki Metropolitan area, Southern Finland. There are seven campuses, situated in Hyvinkää, Kerava, Otaniemi (Espoo), Tikkurila (Vantaa), Porvoo, Lohja and Leppävaara (Espoo). Two of the campuses, Otaniemi and Leppävaara, offer full degree programs in English. The Tikkurila Campus offers the Degree in Social Services given in English in 2016.

The students of the COA project had started their studies on the social services program, towards the degree of the Bachelor of Social services (210 cr). The study duration given is 3,5 years. The COA project they participated was performed during their 3rd year of studies. After graduating from the program they will be working as experts in supporting people's life management with competences in the fields of education, rehabilitation, preventive work and maintenance of functional ability. The aim of the program is to take into account the working life possibilities and challenges associated with both, interpersonal relationships and the structures of the society. The competences for working in versatile social service roles to promote social inclusion, well-being, functional ability and safety of individuals, families and communities will be needed.

The working life demands include understanding of the societal significance of supporting people's life management skills and holistic encounters, interaction skills, responsibility, empathy, and skills in guiding individuals and groups. The students' future jobs may be in the public sector, private or the third sector. The key competences needed are associated with the ageing of the population, supporting children and families, marginalisation, social rehabilitation and reinforcing inclusion.

The core competences are taught via the four modules (150 cr): 1) working with customers in social services; 2) service systems, inclusion and exerting influence in society; 3) approaches and methods of work in social services; and 4) expertise in development and workplace renewal. As a part of the fourth module, the students also write their thesis (15 cr). The program includes a work placement/practical periods with 45 credits, constructed into three parts with 15 cr in each. Besides the core competences, the student's individual choices are supported as individualised study paths and competence development via the choices made from the complementary modules (the total 60 cr).

The complementary modules offer the choices e.g. for the kindergarten teacher qualification, and the choices for a school social worker, and for the creative approaches among the social field, with a focus for a special age, depending on the other choices. This creates the possibility e.g to choose both the early childhood and creative orientation, as a combination with the kindergarten teacher study path. The students of the current course with the COA project as the main content had mainly chosen the qualification of kindergarten.

In Finland, the kindergarten qualification (Bachelor in Early childhood education) is also provided by the scientific universities, as a part of the teacher (Master of Education) training programs. Thus, the kindergarten teacher also may continue to gain the Master's degree in the universities or, after three years of work experience, in the universities of applied sciences master's programs. The social services program and the teacher training have lots of shared interests worth collaboration, which, however, at the moment is not widely recognized. The Bachelors of Social Services do not get a teacher's qualification other than in the field of early childhood. Due to the guiding skills needed, the pedagogies and methods can be considered important.

2.2 Laurea Learning by Developing model

The Laurea Learning by Developing (LbD) model is a pedagogical tool developed in Laurea by Katariina Raj (2007), and chosen as a pedagogical model at the whole Laurea, easily to be accommodated for the purposes of various training programs. The LbD-model aims to support the building of new competence via the combined possibilities of individual and social learning with the collaboration with various communal/public, private or third sector participants. Five indicators as factors for the LbD can be observed, as presented in Figure 1 below. The LbD in higher education includes research, development and pedagogy. Because of the real-life connections and genuine situations faced, knowing, understanding, doing and controlling of the situations are experienced, and theoretically supported by pragmatism (collaborating, sharing to lead to new performances, interaction between the learner and the environment), socio-constructivism (the learner's active role, social interaction), humanism (self-directed learning, inner motivation) and cognition (learning as processing of information). (Raj, 2007) These LbD-pathways are strongly supported by artistic experiences, supporting artistic understanding.

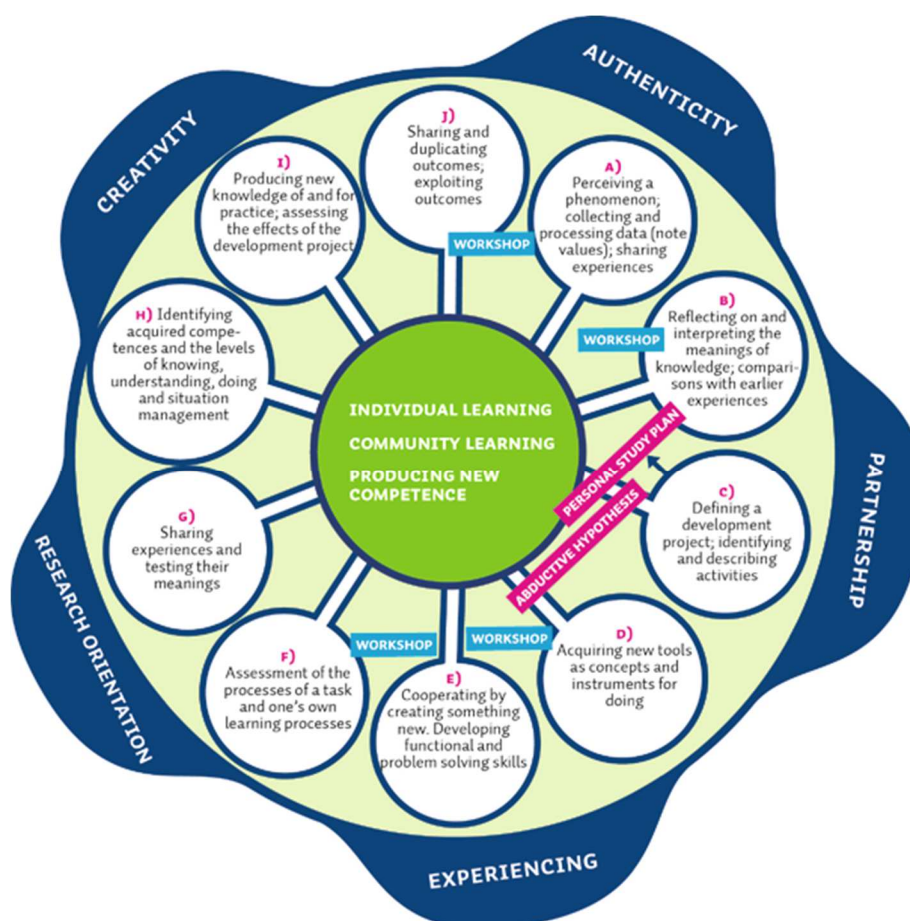


Figure 1: LbD Action Model in higher education. Laurea UAS (Raj, 2014, 15)

The model was also adopted for the needs of the comprehensive school, as presented in Figure 2 below. It served the COA project as a ground to follow the international study protocol, in a dialogue and as a support for the students' professional development. Various learners are provided with an individual space to learn despite of the learners' age or personal qualities. The university students and the school children, even the children at the day care include various personalities – active workers, logical thinkers, considerate observers and practical workers (Kaupilla, 2003) – and many kinds of mixtures of those.

The relationship between knowledge and skills include procedural information (knowing how), skill-based knowledge (know-how), declarative, propositional knowledge (knowing that), learning approaches (cognition and construction), remembering, understanding, experiencing (comprehension). (Juvonen & Anttila, 2008) A holistic understanding of a man/ of a world (Rauhala, 1988) creates the ground for values and ethics.

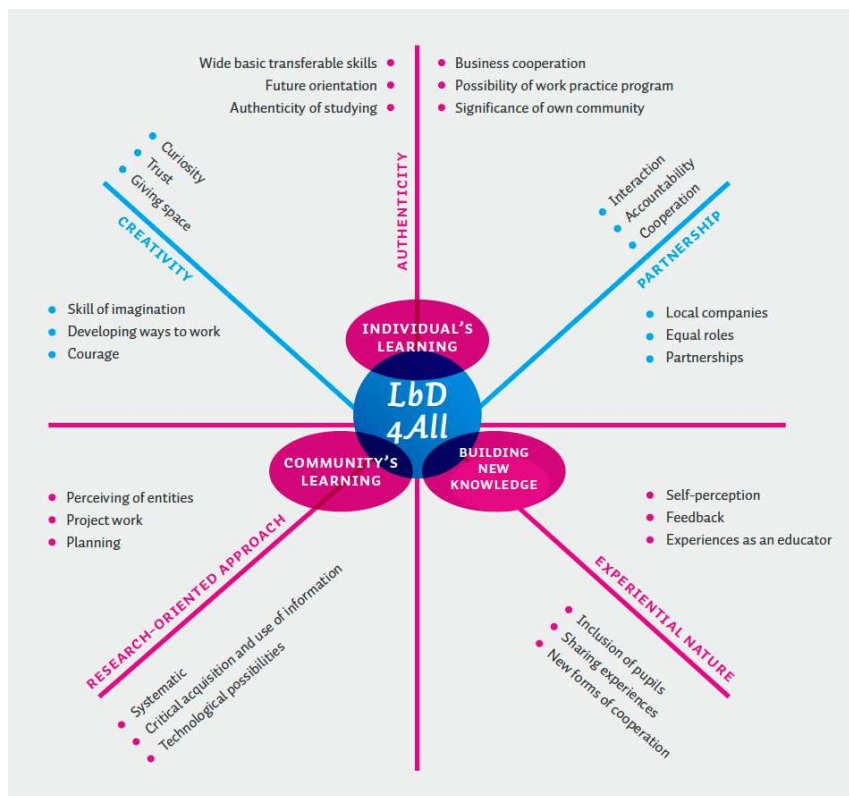


Figure 2: The LbD4All model adopted for comprehensive schools (Henriksson, Korkiakangas & Mantere, 2014, 13)

2.3 Professional dialogue towards the core identity

In the professional identity model by Ellström (1997), the professional growth is described as starting from the choosing of the professional field, the growth towards it and development in the profession. The formulation of the professional core identity is created with the focus on work, supporting the understanding of the competences required by the work, the individual competences and the practical competences. Work experience is considered as a condition for the core identity defining.

As a part of a wider model, including professional growth and learning, professional ethics, ecologically, socially, culturally and economically sustainable development in nursing, caring and fostering work, professional dialogue and interaction are constructed of two systems: 1) active collaboration in the working community, team work and multiprofessional collaboration, active participation in networks; 2) customer service, dialogical interaction, dialogical supervision and caretaking & fostering via a professional companionship. These are supported by the modern communication technologies and intercultural abilities and skills, such as a specialized capacity in various work environments and wide professional basic skills³. This focus arises the understanding of Tacit knowledge (Polanyi, 1966) into a very solid position – directing us towards the meanings of the arts in the human being and as a condition for life.

2.3.1 Arts, interaction and musical interaction

Relationships (Hinde, 1997) can be described via the participants, and strongly effected by them in the interaction situation. The contents of interaction, the way of doing/sharing things together, the versatility of interactions, the characteristics of various interactions, the qualities that are generated because of various interactions with their relational incidence and form, the reciprocity and the complementarity of interactions, intimacy, discovering the other and the commitment for the situation define the quality of the presence and the direction of the future. The basis for this interaction behaviour derives from the prenatal phase, as a consequence from the mother-fetus experiences with their nature and quality (Marjanen, 2009).

Musical interaction can be observed and compared on the basis of an understanding of the musical elements, also as a ground for languages (Brown, 2000). The functions at the prenatal phase affect the

development and personality growth supported by the appearance of the 12 senses of the fetus (Chamberlain, 2003). The familiar sound environment from the prenatal period supports the baby at the moment of birth, and during the first months of life (Chamberlain, 1996). It is being claimed that infants possess complex endowments from the prenatal period for perceiving and stimulating the postnatal communicative signals from the parents (Malloch, 1999/2000). Babies are able to discriminate pitch, time patterns, loudness, harmonic interval and voice quality (Trehub et al., 1993). Body language can be also understood as communication, to start long before the formal language and with universal meanings through the life span (Chamberlain, 1999, 169). These kind of theories created the basis for the understanding and interpretation for the students, to support the analysing of the data.

3 The COA study protocol

The Carneval of the Animals study protocol (Perez & Cslovjecsek, 2013) was piloted by an international group of researchers among children from 2-8 years of age. The protocol was also benefitted in the current project, giving a framework for the process. The protocol includes four home visits with initial and final family interviews, video recordings, a tracking tool and the researcher notes. The tracking tool provides the researcher with a variety of factors to observe. The categories for the tracking tool are both visual and auditive, as described in Table 1 below.

Visual	Auditive
	Language
ANIMAL	No sound
	Language
	Music
	Descriptive sound
	Other sound
SCRATCH	Music
OBJECTS	No sound
	Descriptive sound
	Other sound
INSTRUMENTS	No sound
	Music
	Descriptive sound

Table 1: Categories for the tracking tool

In Finland, the prior investigations as a ground for the COA presently under focus, were the research with the 6-year-olds (Marjanen, during 2013-2014), the comparative studies with the American children (Marjanen & Ming-Tu, during 2015). These experiences supported the current project with the Laurea students with 3-4 year old children (Marjanen, during 2015-2016).

4 The current COA project performance

The prior studies already pointed out towards the COA app as a positive tool to support the child's interaction behaviour. It seems to fit the child's natural ways to communicate, with the holistic use of the body, the facial expression, the gestures, the voice qualities, playful and creative appearances of communication. It supports the child in imitating, repetition, improvisation, listening and focusing. It gives the child a space to create and to share, starting from his / her own ideas and motivation. Thus it seemed to offer the students an interesting platform or learning space in a real-life situation, to meet the child with his / her family in domestic surroundings and supposedly acting as a genuine natural individual, in a domestic role.

4.1 Student's group work

The students (N=20) to perform the study project chose the target age group together, being 3-4-year-old children (N=10). After learning about the basic theory and the study protocol (Perez & Cslovjcscek, 2013) with its references, they formed five groups of four students and started their domestic visits. They were supported with group-based supervision, but the responsibility of the study project was theirs. They were asked to formulate the study questions, the collaboration model and the methods to find out about the results.

4.2 Interviews with the students

Five students, one from each group, participated in the interviews five months after the study project. The goal of the interviews was to clarify, if this research experience had supported them in their professional growth and identity formulation, and if so – how. A model was created beforehand, as a hypothesis on the basis of the theories, to direct the discussion with the students, giving them space but a clear framework and focus. The students represented various backgrounds and ages, the eldest being born in the 1970's and the youngest in the 1990's. One of the interviewed was a male student. The theme interview was supported by a hypothesis-based structure, as described in Figure 3 (below). 195,16 minutes of data was collected via the interviews with the five students, being analyzed to follow the theory based structure to follow the figure created for the interviews.

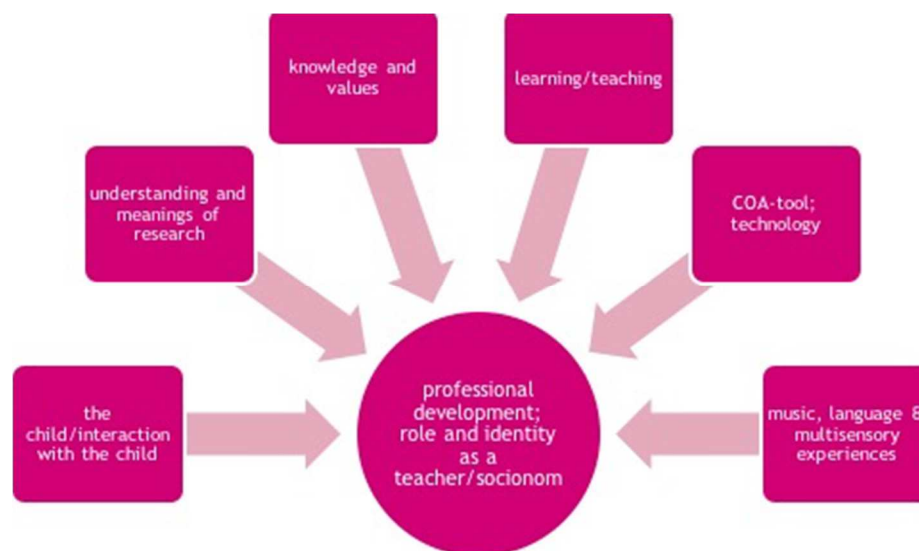


Figure 3: The pre-assumptions of the effects of the research project for the professional development of students

5 Results

5.1 Students' group work

The study questions formulated by the student groups were different, varying from one group to another. The results from the app use found by the students revealed the importance of the atmosphere for the child, the impact of the app use in the emotions, the ability to name them, supported by music and sounds, visualization and colours. The COA app supported the children in self-identification via the comparison tool of the app creatures. The story was found genuine, with easily empathizing qualities. The students were able to observe the concentration abilities of various children, and the inputs for the imagination experienced and observed in the behaviour of the children. Lots of interaction behaviour was payed attention to: use of gestures, mimics, imitation and active behavior. The child was provided with an opportunity to see oneself through the eyes of the other, and to see the others in a wider sense. Individual behavioral models and differences in them were recognized. The app was found educational and amusing, and a clear process during the four weeks was created.

5.2 Interviews with the students

The interviewed students found the figure (above) as a good support for them. They agreed on all the parts of the figure, with no aim to add or delete some part, emphasizing them in personal ways on the basis of their prior experience and background. They found it very surprising that their teacher was interested on their experiences, and especially on their professional identity and the meanings of the project for other than learning results. They described their learning experiences in learning of the child and in the interaction with the child (with the app, with other people). The information gained of the interaction behavior, process and development and the abilities to focus, and the real-life connections created by the child between the app and his/her life awoke a lot of thinking. They also talked about the importance of motivation, the qualitative nature of interaction, about the core understanding and meaning of interaction, how this kind of a project had opened a space for the family to combine them because of these interaction moments to share. Lots and lots of tiny details on interaction behavior, research thinking, understanding of knowledge and values, learning and teaching, the Carnival of the Animals App as a tool and ICT in a wider sense, the distances of music, language and multisensory experiences were discussed about.

A holistic figure as a learning result was created, pointing out to the multiple connections between the hypotheses parts with others. Professional development, role and identity were found strongly supported by the COA project experiences, pointing out to the interaction behavior as a core concept and meaning for their own development. They learned about the meanings of a developmental approach – the need to follow and keep on the tracks of the professional development, of research in general, but with a special focus on the childhood studies, the various places and definitions of qualitative and quantitative study methods, the meanings of question formulation for the analysis and the results, in a dialogue with the theories. The value of childhood, tacit knowledge in childhood and the abilities of being present for the child really had stopped some of the students. They observed the learning processes of children – how they repeated, imitated, listened, used the time and space they needed, interaction to support their learning processes, and the process lines to follow certain laws and personal qualities. The COA as a technological tool was found as an open possibility, easily accessible and as a possibility to follow the development and experience the child's life. Music, languages, and multisensory experiences opened by the app were found motivating, natural, combining, supportive and interesting.

6 Conclusions

Sounds can be stated to be important for communication, but the tool for communication is our whole being, the holistic capacity. The tracking analysis needs the clarification from the qualitative research, but it creates a very good start for asking. The videos have a big role in the analysing and understanding the human behavior. Interaction is connected with creativity and wellbeing, also on the basis of this study.

On the basis of the current data, the understanding of musical interaction was supported; musical interaction seems not only to function as a tool for playful activities, or as a tool of the child or the teacher, but the understanding of the phenomenon also supports the understanding of human behavior. The results communicate with Vygotsky's (1990) idea of learning: it is socially constructed. The motivation theories by Ryan & Deci (2000) were also supported, explained and confronted via the videodata as a whole. Musical and linguistic development really seemed to function in a communicative way, and explained also by the theories on motherese and musical communication (e.g. Brown, 2000; Gratier, 1999/2000; Malloch, 1999/2000 and Papousek, 1996).

The teacher should pay attention to the process while planning and working with children: inner motivation is important for the aim to share, and to gain contact and interaction. The understanding of early mother-child interaction would support the creation of the methods and the didactical choices made, thus it should be strengthened to be better known also in the teacher training. The detailed observation and presence with a child really supported the student's professional identity formation, with flow (Csikszentmihalyi, 19980/2008). Please see Figure 4 as a conclusion of the study.

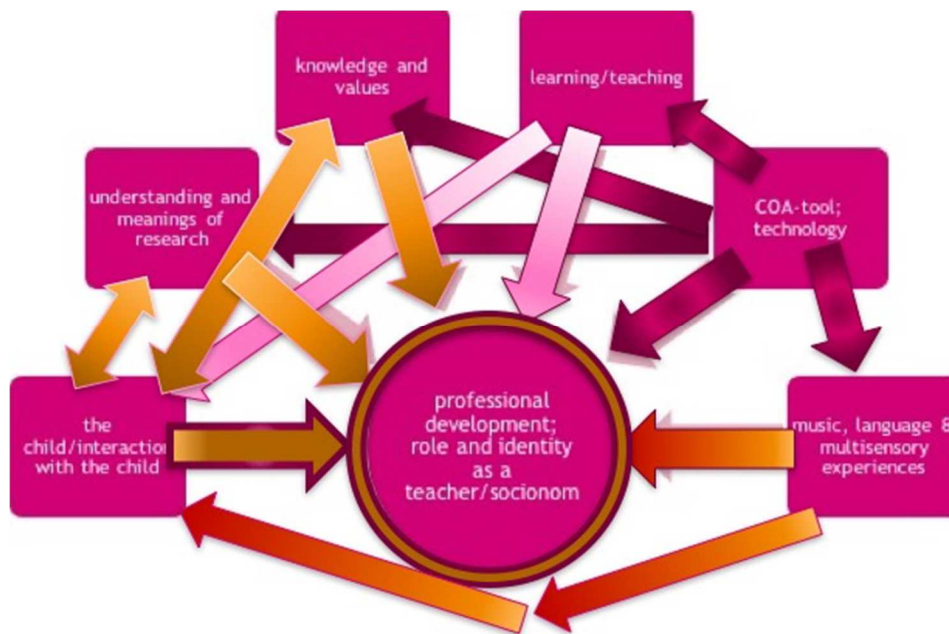


Figure 4: The processes of professional identity in a dialogue with the COA project

References

- Brown, S. (2000). "The Musilanguage model of music". In N.L. Wallin, B. Merker & S. Brown (Eds.) *The origins of music*. London: The MIT Press, 271-300.
- Chamberlain, D. (1996). *The mind of your newborn baby*. Berkeley, CA: North Atlantic Books.
- Chamberlain, D. (1999). Prenatal body language: A new perspective on ourselves. *Journal of prenatal and perinatal psychology and health*, 14 (1 and 2), 169-185.
- Chamberlain, D. (2003). Communicating with the mind of a prenat. Guidelines for parents and birth professionals. *The journal of prenatal and perinatal psychology and health*, 2 (18), 95-108.
- Ellström, P-E. (1997). The many meanings of educational incompetence. In Brown, A. (ed.) *Promoting vocational education and training: European perspectives*. Hämeenlinna, Finland.
- Gratier, M. (1999/2000). Expressions of belonging: the effect of acculturation on the rhythm and harmony of mother-infant vocal interaction. In *Musicae Scientiae. Special Issue 1999/2000*, 93-119.
- Henriksson, K., Mantere, P. & Mänty, I. (2014). *LbD4All käyttöopas. Luovuus*. Laurea julkaisut. Retrieval in <https://www.laurea.fi/dokumentit/Documents/Henriksson%20et%20al%20LbD4All%20Luovuus.pdf>
- Hinde, R.A. (1997). Etologinen teoria ja suhdeteoria. In R. Vasta (Ed.) *Kuusi teoriaa lapsen kehityksestä*. Kuopio: Kuopion yliopiston painatuskeskus, 289-320.
- Juvonen, A. & Anttila, M. (2008). *Kohti kolmannen vuosituhatosen musiikkikasvatusta. Osa 4: Luokanopettajaopiskelijat ja musiikki*. Joensuu yliopisto, 2008.
- Kauppila, R.A. (2003). *Opi ja opeta tehokkaasti. Psykkinen valmennus oppimisen tukena*. Opetus 2000. Skustannus: Jyväskylä.
- Ludke, K. & Weinmann, H. (2012). *The European Music Portfolio. Teacher's Handbook*. Comenius Lifelong Learning Project 502895 LLP-1-2009-1-DE-COMENIUS-CMP
- Malloch, S. N. (1999/2000). Mothers and infants and communicative musicality. In *Musicae Scientiae. Special Issue 1999/2000*, 29-57.
- Marjanen, K. (2009). *The Belly-Button Chord. Connections of pre-and postnatal music education with early mother-child interaction*. Doctoral Dissertation. Jyväskylä Studies in Humanities no 130. University of Jyväskylä, Finland.
- Marjanen, K. (2016). *A cross-cultural study on young children's interactivity with an iPad App-- The Carnival of the Animals (COA): Finland and United States*. A paper abstract for a presentation in a symposium. K. Marjanen (chair) "The design and method of the Carnival of the Animals: an international study to

- explore children's interactivity with an app for iPad". Proceedings 32nd World Conference of the International Society for Music Education ISME: 24-29 July 2016, Glasgow, UK.
- Papousek, M. (1996). Intuitive Parenting: a hidden source of musical stimulation in infancy. In I. Déliege & J. Sloboda (Eds). *Musical beginnings. Origins and development of musical competence*. Oxford University Press, 37-55.
- Patel, A. D. (2008). *Music, Language and the Brain*. Oxford University Press: New York.
- Perez, J. & Cslovjcek, M. (2013). *The Carnival of the Animals: a collaborative research project to explore the interactivity of 2 to 8 year-olds from diverse locations with and App for iPad*.
- Polanyi, M. (1966). *The Tacit Dimension*. First published Doubleday & Co, 1966. Reprinted Peter Smith, Gloucester, Mass, 1983.
- Raj, K. (2007). *Learning by Developing*. Laurea Publications A 58. Retrievable in <https://www.laurea.fi/dokumentit/Documents/A58.pdf>
- Raj, K. (2014). *Learning by Developing Action Model*. Laurea Publications 36. Retrievable in <https://www.laurea.fi/dokumentit/Documents/36%20%20Raj%20LbD%20Action%20Model.pdf>
- Rauhala, P. (1988). Holistinen ihmiskäsitys. *Sosiaalilääketieteellinen Aikakauslehti*, 25, 190–201
- Ryan, R. M. & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78. doi:10.1037/0003-066x.55.1.68.
- Trehub, S.E., Trainor, L.J., & Unyk, A.M. (1993). Music and speech processing in the first year of life. In H.W. Reese (ed.) *Advances in child development and behavior*. Oxford University Press: London, 24, 1-35.
- Vygotsky, L.S. (1982). *Ajattelu ja kieli*. Espoo: Weilin + Göös.

¹ <https://www.laurea.fi/en/studying-and-applying/bachelors-programmes-in-english/social-services>

² <https://www.laurea.fi/en/about-laurea/campuses>

³ <https://osaavalahihoitaja2020.wikispaces.com/file/view/osaava+l%C3%A4hihoitaja+2020>