

Teachers' Priorities and Beliefs

A Venture into Beliefs, Methodologies, and Insights

by

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Foreword

Throughout my career as a teacher I have often wondered about the role beliefs play and the possible negative or positive impact beliefs may have on interaction with children, students, parents, colleagues and others. “Beliefs” was an obvious choice for me to study in more depth. Pursuing an elusive element such as “beliefs” has been quite a challenge and a venture into unfamiliar territory. The whole landscape has been difficult to see. High mountains and deep valleys have obscured my perspective while bumpy, twisty roads have not made it easy to choose a path in this journey. On the other hand I have discovered very interesting places, met new friends and colleagues, and gained insights I would not have been without.

The poem *The Road Not Taken* by Robert Frost (1963, pp. 71-72) illustrates my journey:

Two roads diverged in a yellow wood,
And sorry I could not travel both
And be one traveler, long I stood
And looked down one as far as I could
To where it bent in the undergrowth;

Then took the other, as just as fair,
And having perhaps the better claim,
Because it was grassy and wanted wear;
Though as for the passing there
Had worn them really about the same,

And both that morning equally lay
In leaves no step had trodden black.
Oh, I kept the first for another day!
Yet knowing how way leads to way,
I doubted if I could ever come back.

I shall be telling this with a sigh
Somewhere ages and ages hence:
Two roads diverged in a wood, and I –
I took the one less traveled by,
And that has made all the difference.

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Last, but not least, a huge thank you to all the teachers participating in my study who shared their beliefs with me!

Stavanger, August 31, 2008

Arlene Arstad Thorsen

Summary

This study focuses on Norwegian preschool- and schoolteachers' priorities, beliefs and their subjective opinions about discipline and behavior management, group/classroom practices, beliefs about children, and teachers' instructional and disciplinary self-efficacy beliefs. The theoretical foundation of this study is on general and developmental systems theory and social cognitive theories with a major focus on beliefs, developmentally appropriate practices, and also the background and context in which teachers in daycare and school work in Norway.

Several methods are combined to study teachers' beliefs, but the main emphasis is on Q-methodology. R-methodology was chosen to seek knowledge of teachers' views of self-efficacy among 254 respondents. Q-methodology was used to gain an understanding of teachers' subjective feelings and beliefs about the other themes mentioned above. Analyses of Q-data were conducted on two subgroups of teachers (20 from daycare and 20 from school in each group) drawn among the 254 participants. In addition follow-up interviews were conducted with six participants from the cohort.

Research has established that beliefs play an important part in the life of individuals and groups. Teachers are expected to adhere to regulations and expectations stipulated by laws, policies and curricula, and to participate actively in relationships with children, parents, colleagues, and others. How this is done is strongly influenced by personal and formal knowledge, beliefs, understandings, and values that guide our choices. In addition teachers with a high sense of efficacy about their teaching capabilities can motivate children and enhance their cognitive development.

Results from both subgroups in this study point to strongly shared beliefs in an authoritative teaching style when dealing with discipline and behavior management. One almost identical operant factor emerged in both subgroups pointing to a caring, accepting and child-centered view on beliefs about children. Results here may represent teachers' existential beliefs independent of children's age. The results concerning group/classroom practices are more varied with two factors (A and B) in Subgroup 1, and three (C, D and E) in Subgroup 2, but with some similarities between subgroups. Factors A and C

represent a relational learning orientation, factor B an academic learning orientation, factor D a structured learning orientation, and factor E a model and community learning orientation. Results concerning self-efficacy show no reports of low instructional self-efficacy. In the whole group of teachers (254) 65.8% of them report to have a medium degree of instructional self-efficacy, while 34.4% use high values to indicate their own efficacy. There were statistically significant differences between teachers in daycare and teachers in school at the $p < .05$ level in favor of teachers working in daycare. There were no statistical significant differences between groups concerning disciplinary self-efficacy. Teachers working in school had a higher mean score ($M = 7.26$) than teachers in daycare ($M = 7.13$), but there were more teachers in daycare (66.3%) that reported to have a high degree of disciplinary self-efficacy than teachers in school (62.7%). There is a statistical significant correlation ($r = .63^{**}$) between instructional self-efficacy and disciplinary self-efficacy, indicating those teachers who report to have high instructional self-efficacy will also report to have high disciplinary self-efficacy. Comments from the interviewees help substantiate and shed light on results from Q themes and self-efficacy.

Becoming aware of personal subjectivity and how beliefs, knowledge and action interrelate in our contact and communication with others, can give a deeper personal insight and understanding of relationships between teachers and children and the intentions teachers have for teaching and children's learning. In combination with being a critically reflective practitioner, this can lead to a higher degree of openness and motivation to review and revise current beliefs and practices and lead to positive changes for both children and teachers. The possibility for such change has relevance for teacher education, in-service teachers' continuous growth, and for implementation of new curricula. One efficient means of tapping into operant subjectivity is by use of Q-methodology.

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1 Introduction and background

In the Norwegian daycare and school systems, all children have a right to participate, no matter what their intellectual, social-emotional, or physical abilities may be, and an *education for all* is a basic principle. In these settings children should meet teachers with a capacity to see their needs and teach them accordingly. There may be many sources of influence that affect a teacher's decision to choose to work and teach in a certain way compared to other possible alternatives. A teacher's beliefs may be one such source of influence.

Literature on 'beliefs' suggest that beliefs are value laden and can affect thinking and practice (Pajares, 1992; Richardson, 1996; Rokeach, 1976). We may also hold contradictory beliefs (Green, 1998). Some beliefs we may be aware of and can justify (Tabachnick & Zeichner, 1986). In other cases we might not even be conscious of them (Richardson, 1994). Teachers' beliefs are related to classroom practice (Richardson, 1994). On the other hand, practice may also affect beliefs (Aronson, 1995; Myers, 2004) and some call attention to the belief-action-belief loop (Haney, Lumpe, Czerniak, & Egan, 2002). Sometimes beliefs may be seen as espoused theories and used to describe and justify behavior and have a more public character, other times we may display theories-in-use being operational theories of action and may relate to more private beliefs (Argyris & Schön, 1974/1989). Occasionally there is discrepancy between beliefs and actions, and sometimes this may lead to change. According to Richardson (1994, p. 102) what comes first may not be that essential, the importance lies in the notion "that changes in beliefs, ways of thinking, and classroom actions all come into play in the teacher-change process".

There have been several reforms in the daycare system and even more so in the school system in Norway based on certain ideals which may imply change. Such ideals may be difficult to achieve and Kennedy (2005, p. 12) calls attention to some commonly mentioned reasons for failure:

- Teachers need more knowledge or guidance in order to alter their practices.

- Teachers hold beliefs and values that differ from reformers' and that justify their current practices.
- Teachers have dispositions that interfere with their ability to implement reforms.
- The circumstances of teaching prevent teachers from altering their practices.

In this case we can see that teachers' beliefs may have a negative impact and consequence towards changing practices in line with national reforms concerning learning and education of young children.

We guide our lives by our beliefs of personal efficacy (Bandura, 2002) and *"to understand teaching from teachers' perspectives, we have to understand the beliefs with which they define their work"* (Nespor, 1987, p. 323) [original italics]. The focus of this study is to shed light on Norwegian teachers' beliefs and priorities in daycare and school. Since this may comprise many different aspects of life in these contexts, an attempt has been made to narrow the field. The main goal of the study is to generate new knowledge and understanding of subjective priorities and beliefs about behavior management, group/classroom practices and beliefs about children, and also opinions of self-efficacy from a selection of Norwegian teachers in daycare and school settings.

Teachers in daycare and school systems have a comprehensive and complex vocation. There are many systems, contexts and relationships that have influence on teachers and give impact to their work. Beliefs are part of this complicated totality. Beliefs will always be part of our lives whether it is everyday activities, theories, philosophies, or the art of teaching. My interest is in these elusive elements and the impact they may have on our life and in our teaching, and the consequences this may have for children's different needs.

1.1 Research questions

There is a vast amount of international research and literature on attitudes and beliefs (Allport, 1967; Rokeach, 1976; Seligman, 1991; Stephenson, 1965), teachers' beliefs (Nespor, 1987; Pajares, 1992; Richardson, 1994, 1996; L. K. Smith, 2005), connection between beliefs and practice (Aronson, 1995; Haney et al., 2002; Milner, 2005; Tabachnick & Zeichner, 1986; Wicker, 1969), between practice and beliefs (Aronson, 1995; Myers, 2004), and beliefs of self-efficacy (Bandura, 1986, 1994, 2002; Brownell & Pajares, 1999; Goddard, Hoy, & Woolfolk Hoy, 2004; Maddux, 2002; Woolfolk Hoy, Davis, & Pape, 2006), to mention only some. There are several Norwegian studies addressing teachers, children and teaching in daycare and school (Haug, 1991, 1992; Lillemyr, 2004; Lillemyr et al., 1998; Løge, Bø, Omdal, & Thorsen, 2003; Ottosen, 2006). I have found few studies related to Norwegian teachers beliefs, and most are related to teachers teaching older children (Mosvold, 2006; Skaalvik & Bong, 2003). It therefore seems relevant to begin with exploring and uncovering beliefs that can be found among Norwegian teachers working in daycare and in school on specified themes.

Guiding research questions are:

- 1) What are the beliefs and priorities of teachers in daycare and school, concerning discipline and behavior management, group/classroom practices, and beliefs about children?
- 2) What are teachers' beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and are there differences between teachers working in daycare or in school?

Method

Illuminating such evasive aspects as beliefs can help teachers become more aware of their value systems and underlying assumptions which can be reflected upon and discussed if it helps or hinders good teaching practices in daycare and school (Arnesen, 2003, 2004; Katz, 1996; Larrivee, 2000; Schön, 1991). In an increasingly heterogeneous society where teachers are to meet children from many different cultures, socio-economic backgrounds, various family constellations, child traits and vulnerabilities, it seems ever more

important to uncover such aspects as beliefs. How can this be dealt with scientifically?

Society is continuously becoming more complex and many have advocated for combining methods to get a more nuanced picture of reality (Johnson & Onwuegbzie, 2004; M. L. Smith, 2006). In this study both quantitative and qualitative research methods have been used through questionnaire and follow-up interviews, but the main source of data has been obtained through Q-methodology.

This study has been carried out using mainly empirico-inductive method with clear traces of abduction logic which is a guiding principle in Q-methodology (Stephenson, 1961b). Data is collected exploratorily to discover underlying patterns in the phenomenon under investigation. Abduction is a mode of inference initiated by something one observes as puzzling or interesting (Brown & Robyn, 2004). Stephenson (1961a, p. 8) drawing upon Peirce, suggested that abductive logic is a loose body of pragmatic rules, aphorisms and technique which can make discoveries possible, and “the emphasis is on the discovery of hypotheses, not their deduction from postulates” (p. 7). There may be many different inferences and interpretations made from empiri which can lead to varying hypotheses that can later be tested. Andreewsky and Bourcier (2000, p. 843) suggest that “abduction patterns refer to the fairly common experience of dealing with unexpected phenomenon, which calls for developing a new interpretation or for extending an existing one”. To illustrate abduction, an example is given by Brown and Robyn (2004, p. 112) concerning a bag of beans and a handful of beans on the tabletop discovered upon entering the room. It could be reasoned that the beans outside the bag could come from the bag. However, there is no exact proof for such a conclusion, it is only plausible, and could be a mistake. Abduction is a process of reasoning that is used to decide which explanation of given phenomena we should select, and therefore, it is also called ‘argument to the best explanation’ (Baggini & Fosl, 2003). Such a process of reasoning is according to Haig, (2005, p. 377) involved in generation and evaluation of explanatory hypotheses and theories. Brown and Robyn (2004, p. 111) sum this up:

“...there is a sensuous element to abduction that is missing in deduction and induction; the former involved with elaborating propositions and the latter testing them. Abduction, on the other hand, seeks for explanations, and its reasoning process is not from general principles to specific consequences (deduction) or from specific observations to generalizations (induction), but from effects to causes.”

Such causes can be found through exploratory factor analyses in Q-methodology, especially by using centroid factor analysis which is indeterminate in the meaning that each of the factors could be interesting to pursue. By using judgmental rotation and hand-rotating factors to see the picture from different perspectives, one can be in an abductive process of reasoning to reach the ‘argument to the best explanation’. According to Stephenson (1961b, p. 13):

“...in Q-method the indeterminacy of the centroid solution in factor analysis makes possible the discovery of factors, which have to be interpreted, that is, not as afterthoughts or as *a posteriori* reasoning, but as abductory – because without the broad abduction or law one wouldn’t have known *what* to look for.”

Abduction is seen as a practical craft and is both active and reflexive (Curt, 1994, p. 88). Reichertz (2004) calls attention to the logical and innovative character of abduction, pointing to the logical inference as both reasonable and scientific on one hand, and on the other it extends into the sphere of deep insight and in this manner generates new knowledge. He draws upon Peirce and points to a three-stage discovery procedure which consists of abduction, deduction and induction. Since few studies have been conducted concerning Norwegian teachers’ beliefs, there is no main theory to deduce predictions from (deduction), nor are there grounds yet to search for facts to verify such possible assumptions (induction). In the present study discovery, explanation and understanding are of deepest concern, and abduction as a mode of inference is seen as the most relevant solution for this stage of discovery concerning Norwegian teachers’ beliefs.

To pursue teachers’ beliefs, theory has been drawn from the fields of philosophy, psychology, pedagogy, and empiri.

1.2 Central concepts

Teachers

In Norway teachers have been given different names according to their educational background and where they teach, for example “preschool teacher” (førskolelærer) and “teacher” (allmen lærer). In this study the term “teacher” is used to characterize teachers who work in daycare and in school.

Norwegian daycare & school

Norwegian daycare institutions have had many different names, and the most common is “barnehage” or a direct translation from the German “kindergarten”, and is available to several age groups before school start. This concept is used in US only for five year olds. To avoid confusion I have chosen to use the term “daycare” and pointing to teachers working in a pedagogical setting with focus on both care and learning, and mainly with children from three to five or six. Daycare in Norway may also include mixed age groups (blandede alders grupper) where children can be as young as one year old together with the older children. In this study “school” accounts for first and second grade and the teachers working mainly with these age categories, from six to eight. In addition some of these teachers also teach in other grades with older children.

Beliefs

Teaching new generations basic skills in daycare and in school, is an important goal of society in collaboration with families (BFD, 1995; KUF, 1996). These basic skills include preparations for and working with reading, writing, mathematics, social skills and in this modern age also knowledge about the inter-net and computing skills (Kunnskapsdepartementet, 2006; UFD, 2003-2004). A lively public discussion of education is going on in virtually every developed country in the world (Bruner, 1996). Although different countries represent different cultures, there are some elements that seem to be in common. Curriculum, culture and traditions, daycare and school settings, teachers’ education all have an influence on what children will learn and how they may be taught. The aspect of lifelong learning seems to become more and more important in societies with rapid changes. From a systemic point of view there are many elements that contribute to the influences that

affect developing children (Apter, 1986; Urie Bronfenbrenner & Morris, 1998; Pianta & Kraft-Sayre, 2003b). There is well documented research on the importance of families' and friends' major impact on children's development, thriving and wellbeing (Bornstein & Sawyer, 2006; Bowlby, 1994; Inge Bø, 1989; Guralnick, 2006; Pianta & Rimm-Kaufman, 2006). Among the systems surrounding children are also teachers and their influence and performance in daycare and school, but also how they contribute to build binding, healthy relationships with children in their care (Abrahamsen, 1997; Arnesen, 2004; Arnesen, Ogden, & Sørli, 2006; Pianta, 1999; Pianta, Hamre, & Stuhlman, 2003a; Salzberger-Wittenberg, Henry, & Osborne, 1986). To understand these teachers, how they think and perform in group/classroom settings, we also have to look beyond what we see towards conditions that lie behind and affect teachers' actions. In this sense attitudes and beliefs, although elusive, are important concepts (Richardson, 1996; Tschannan-Moran & Woolfolk Hoy, 2001; Woolfolk Hoy, Davis & Pape, 2006). Beliefs are a person's understandings of the world and how it is or should be, consciously or unconsciously held, and which guide one's actions (Richardson, 1994, p. 91). Among the many beliefs teachers may hold, this study will mainly focus on teachers' beliefs concerning four specific areas: behavior management; group/classroom practices, beliefs about children, and teachers' self-efficacy. Beliefs concerning these themes are understood as expressions of teachers' subjectivity.

Subjectivity

Subjectivity is sought in this study and has an important place in Q-methodology. According to Stephenson (1953, pp. 248-249) the word "subjective" has two meanings. In one meaning of the word it is contrasted to "objective" and seen as "unscientific". The other meaning of the word refers to our self-referent notions, and this self-reference is a central focus in Q-methodology. Behaviorists such as Watson, Hunter and Skinner were aware of the importance of the latter "subjectivity", but in Stephenson's view they had problems in finding "objective" or dependable *operations* for it. Subjectivity has been explored through psychoanalysis and dynamic psychology and drawn attention to terms such as "projection" and "repression", through free association techniques. Through these techniques it remained exploratory only, and according to Stephenson lacked an

“experimental methodology particular to its own needs”. Subjectivity from a self-referent standpoint is seen as behavior that can be explored through Q-technique, and Q-methodology and has also been applied for clinical use (Goldman, 1999; Goldstein & Goldstein, 2005). “... all that need be at issue is behavior, whether this is subjective to the person or objective to others” (Stephenson, 1953, p. 348). Subjectivity is rooted in the common and sharable knowledge known to all in the culture (Stephenson, 1980b, p. 75). Anchored in self reference, subjectivity is a person’s communication of his or her point of view (Brown, 1972; McKeown & Thomas, 1988; Stephenson, 1953). From the centrality-of-self standpoint, every one is assumed different until there is evidence of the contrary (Stephenson, 1961c). In this study subjectivity is foremost investigated through the operations of the Q-sorting process of rank-ordering statements in relation to each other and in accordance with personal preferences, hence depicting operant subjectivity. Other subjective responses are sought through questionnaire and interview.

1.3 Presentation of this study

In chapter 2 , theory is presented. First an overview of Norwegian daycare and school systems is addressed through a historical review, and new perspectives and common goals of present day. Next, there is a dive into the concept of ‘beliefs’ and a view of what constitutes beliefs, its relation to knowledge, what affects beliefs, and an address of self-beliefs. It is also important to see the connection between beliefs, understanding, and practice in relation to teachers. In our complex world, systems play a part and this has been addressed in connection to development and learning. Research is presented concerning developmental appropriate practices and the themes of the study. In addition methods to assess beliefs are briefly discussed before a working hypothesis and research questions are presented.

The methods used in this thesis are presented and discussed in more detail in chapter 3. Q- and R-methodology are described, but with a more comprehensive outline of Q-methodology. Differences and similarities between methods are noted and argumentation given to support the combination of methods to ensure both quantitative and qualitative aspects

which lately has been recommended (Johnson & Onwuegbzie, 2004; M. L. Smith, 2006). This is not a new notion, and Stephenson has been a proponent for combining qualitative and quantitative elements in science since 1935 (Stephenson, 1935, 1953, 1986d). Q-technique with rank ordering statements, questionnaire, and follow-up interviews have been explained and used in this study. The participants are presented, first as a view of the total group of 254 respondents, and secondly in light of the two subgroups that were drawn to better elaborate on beliefs about discipline and behavior management, group/classroom practices and beliefs about children. The follow-up interviews were conducted with six teachers who are part of Subgroup 1. Procedures for data collection are described, and a data analysis plan is presented. Reliability, validity and ethics are presented in general and discussed in relation to the present study.

In chapter 4, the results of the study are presented, first the results from the Q sorting process and analyses concerning beliefs about discipline and behavior management, group/classroom practices and beliefs about children. Then data concerning teachers' self-efficacy beliefs is offered. Data from the follow-up interviews are added to bring the voices of the teachers to our attention and to elaborate on the initial findings.

The results are discussed in chapter 5 where attention is also given to the investigators' subjectivity and role. Due to a surprise that emerged in the process, abductory logic was put into practice. Q data was also viewed from a different perspective and seen in relation to Stephenson's (1983c, 1986c, 1986d) view of similarity between Q-methodology and quantum theory as well. Teachers' self-efficacy beliefs are discussed and a connection to collective efficacy is noted. Through this research process I have had a lot to reflect on, among other things methodological issues and concerns. These are duly noted, as are limitations and strengths of the study. Relevance and further research is discussed in relation to teacher change concerning teacher education, in-service teachers' continuous growth, and implementation of new curricula.

2 Theory

This chapter's focus is on the history of how the daycare and school systems developed in Norway over the years to the present day. Durkheim (1977, p. 9) focusing on educational theory, called attention to the importance of studying the past to be able "to anticipate the future and to understand the present". Although educational theory is not the main issue in this study, looking at the past gives a background for the context in which teachers work today. It is in this setting, in addition to other systems teachers join in, that beliefs become and play a part of the whole system. A review of theory and studies concerning beliefs will follow before addressing how systems play a part and point to possible developmental pathways for children. Research concerning developmentally appropriate practices and the themes of the study are reviewed. This chapter ends with a short summary of methods to assess beliefs before a working hypothesis and research questions are presented.

2.1 Norwegian daycare and school systems

Childhood is relative to time and context (Nilsen, 2005). Teaching and what may be looked upon as important values and goals in educating children have developed over time, along with the teachers' role and aims.

The goal of this study is to gain information about Norwegian teachers' subjective opinions concerning behavior management, classroom practices, beliefs about children, and teachers' self-efficacy. An understanding of these issues can lead to knowledge and a deeper understanding of teachers' beliefs and representations about children's social development and learning, how children should be taught, and teachers' feelings of self-efficacy. An understanding of these priorities and beliefs, which also comprise values can be a first step to the identification of professional development and education mechanisms (Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006) and give a foundation for tailoring interventions to meet the needs of different groups (Dennis & Goldberg, 1996). In the Norwegian educational system focus is more on "Bildung" ("dannelse" in Norwegian) than on training mechanisms in general, and processes are important. The concept of "Bildung" or "dannelse" has to do with humans' inner developmental

processes to form a picture or ideal that humans should strive for. It is comprised of theoretical knowledge in connection to ethics and culture in general. Nordenbo (2002) gives an account of “Bildung”, how it was in ancient Greece, and how it has evolved through the centuries. He points to the idea that “the individual and the general are brought to an inner harmony through *Bildung*” (p. 350). Nordenbo (2002) also calls attention to the individual as an active participant in the development, and suggests that gaining insight into one’s own insight is at the same time insight into the objective world.

It is a lifelong mental process concerning spiritual, cultural, and practical skills, and also includes personal and social competence. This view is incorporated into the Norwegian school law (Kunnskapsdepartementet, 2007) and Law concerning daycare (Kunnskapsdepartementet, 2005b). Learning and caring are key issues in the pursuit of creating conditions for a dignified life for all, and learning processes do not begin or end in school (Arnesen, 2004). These are important issues in what Arnesen calls “pedagogical presence” (pedagogisk nærvær), and to a pedagogical approach which emphasizes that children’s learning and development is basically dependant upon teachers meeting them as human beings and showing them interest and respect (Arnesen, 2004, p. 58). This also points to the importance of the values and beliefs teachers hold, and to the priorities and practice they display in their contact with children.

Below is a brief account of hallmarks in the history and traditions of schools and daycare institutions in Norway. I will begin with the school system since that has the longest traditions, and continue with the daycare system. Looking at history can give useful perspectives on teachers and teaching of today. Under 2.1.4 ‘New perspectives and common goals’ I will give a closer account of the aims, goals and challenges that Norwegian teachers in schools and daycare institutions face today and that may influence their beliefs, priorities, practices and feelings of self-efficacy.

2.1.1 School history

In 1739 the School Ordinance was passed which required all children in the country to attend school. The main goal was to teach them the fundamentals in the Christian faith. Hansen (2005) suggested this was based on the assumption that “all God’s children possessed the capacity to be saved and had an equal right to salvation” (p. 177), and points out that this represents a relatively early compulsory education program in European context.

The school system in Norway has developed from itinerant teachers dominating the period 1750-1850 and reflecting the notion that ‘the teacher is the school’(Hansen, 2005). Many of these teachers had a combined occupation, meaning they had more than one job. In time school-houses were built, and by the 1930s there were only 9 itinerant teachers left. Up to 1870 only men were allowed to become teachers, and they were either trained by clergy or self-taught. In this period the government instructed the clergy to make sure not to hire “*unknown vagabonds, dismissed military officers, and females*” (p. 176). Teacher training colleges were established in the early nineteenth century, and the percentage of trained teachers from these establishments increased from 38% in 1860 to approximately 80% in 1870.

Norway faced many challenges the next century from 1850 – 1950, which is viewed as a nation-building period. The nation was modernised economically, politically, in communication, in education, and teachers played an important role in this process. Laws were passed that prolonged the school year, increased the amount of lessons taught, and introduced more subjects. Another major change concerning teaching is the leap from a male to a female occupation. Most teachers in compulsory education today are female, and in primary schools more than 80% are female (Hansen, 2005).

An important factor that has had a tremendous effect on the Norwegian school system is the concept of a common school for all which stems from the latter part of the nineteenth century. Enlightenment should be available to all, and therefore everyone should have equal access to the educational system. Norway was the first country to pass laws that provided a free school open for all children regardless of their social background (Hansen, 2005).

Equality is a central value in Norwegian education, and *education for all* is a basic principle of educational policy. This has become even more visible in curricula through the years. According to Hansen (2005) the curriculum for primary schools published in the 1920s did not contain any basic values that the school should strive towards. Children in cities got more education compared to children in rural areas who had to combine school and farm work. In 1939 two new curricula were published and again there was the division between urban and rural areas. These curricula were later viewed as both creative and progressive, and Hansen explains this by pointing to the incorporated principle of the active learner and the working school.

The first national curriculum covering education for children from seven to sixteen years came in 1974 and was different in several ways. The curriculum was made for nine years and provided a basis for post-compulsory education. For the first time the whole country was united in one school system. The 1974 curriculum was a framework plan, and the teachers were intended to prioritize and work with the parts that were most relevant for the local culture. Two years later a new educational act was passed by the Parliament and stated that all children with and without special needs, should have the right to attend ordinary classrooms in their local school (Norge, 1975) . A curriculum that strengthened local freedom came in 1987. This was to enable schools to have a stronger local connection and to stimulate local identity. Another change concerned how the subject content was constructed. For the first time in Norwegian history there was no specific subject content for each grade, but instead organized in three-year blocks. It was up to the school and the teachers to decide how to organize the content. This was according to Hansen (2005) part of a central policy where management by objectives was important. Responsibility was given to local schools and teachers to run schools in ways they thought best, to make local plans with objectives and aims, central and local content and assessment systems. As with many major changes there was also criticism. Some of the criticism in this case was that too much focus on local content would decrease the national standard of schooling (p. 182).

Educational issues continued to be an area of debate and development, and a new curriculum (L97) came into force in 1997 (KUF, 1996). The focus was now more on knowledge, common national content and cultural heritage. From 1997 children were to start school one year earlier, and a 10 year

compulsory education was introduced in Norway. A common platform for primary, lower secondary and upper secondary school, and adult education was presented. In this curriculum, basic values are expressed through different idealistic portraits. *The spiritual human being* focuses on Christian and humanistic values. *The creative human being* has its main focus on the importance of scientific, creative and critical thinking. The third part called *The working human being* describes learning styles, adaptation to different subjects and the teacher's role. The part called *The liberally-educated human being* discusses the construction of knowledge and the body of knowledge and finding a balance between tradition and the future, the national and the global. *The social human being* places the student in social contexts both inside and outside school, pointing to both duties and responsibilities. In the Norwegian school system parents have the primary responsibility to bring up and educate their children. This means there is no duty to go to school, but there is a duty to be educated. In the majority of the Norwegian people there is a closeness to nature, and the section called *The environmentally aware human being* expresses important values in that area. Most elementary schools have one whole day a week through the school year where teaching is done outdoors (Hansen, 2005; KUF, 1996). The last idealistic portrait is called *The integrated human being* and seems to have apparently contradictory aims and points to the balance between them. This chapter ends with the following citation (KUF, 1996): "The ultimate goal of education is to inspire individuals to realize themselves in ways that serve the common good – to nurture humaneness in a society in development" (p. 50).

The most recent educational plans will be described under point 2.1.4 New perspectives and common goals, but first an account concerning daycare institutions in Norway.

2.1.2 History of daycare institutions

Daycare institutions are historical and social constructions created by different participants in society, and its mission will always be influenced by time, culture, view on children and childhood and the current challenges in society (Barne- og familiedepartementet, 2005). The first daycare institution in Norway called *Byens Asyl* opened in Trondheim in 1837 and can be traced

back to the ideas and practices in other European countries, for example Robert Owen and his 'Infant schools' in England. Young children were neglected while parents and older siblings had their long days work in the factory (Grude, 1987). A haven or *asylum* for these young children became a solution to the problem of poverty and need, and a help to poor families. The main goal at that time was supervision of the children including rearing and teaching while parents were at work (Flekkøy, 1987). The *Asylum movement* (Det Norske Asylselskab) consisted of idealistic, well educated and wealthy women and men (Grude, 1987), and published membership papers to spread information about the work. The program had similarities with what was being done in schools and consisted of morning prayer, meals, teaching language, math, bible-history, and gymnastics in addition to teaching arts and craft, with little room for free play (Grude, 1987). Later came the views of European educationalists like Friedrich Fröbel and Maria Montessorri to influence the development in Norway, and learning through play and activities became more central.

Societies' views on childhood and values connected with it have changed over the years and this has also affected and differentiated the institutions that were made available for children to attend. Daycare institutions in Norway have developed through the contribution of private persons, private organisations (frivillige organisasjoner) and public authorities. The first asylums were for children from two to nine years of age (Grude, 1987). The Salvation Army and other Christian organisations started nurseries (barnekrybber) for children under 2. Later came more differentiated alternatives like short-term kindergartens (korttidsbarnehager), and whole daycare (daghjem) and for a few years also preschools (førskole). While the two former offers were for preschool children in general, the latter was more focused on the needs of six year old children and the transition to school. Some of the private organisations developed daycare alternatives for the children with special needs, for example the seeing- and hearing impaired, and children with cerebral palsy to name a few, but this changed with the educational act of 1976 where children with disabilities were to be integrated into regular daycare institutions (Norge, 1975). Before the 1997 change of school curriculum and school start for six year olds, most daycare institutions had

some sort of program especially targeted towards children the last year before school started.

The school system in Norway has a much longer tradition than the daycare system, and also many more official documents that govern and regulate the goals, content, and every day activities in these institutions. From the first programs for asylums mentioned earlier, the content changed after inspiration from Fröbel's philosophical and pedagogical thinking. Until 1946 there was not much support or control from the state, but this changed in 1947 with law and regulations concerning all types of child welfare institutions. At that time there was some debate about the connection between daycare institutions and schools and which government department they should belong to. In 1951 child-care institutions were seen as part of family- and social-policy and were organized under the Department of Social Affairs. A new law was passed in 1953 and with appurtenant regulations in 1954 concerning structure quality. Regulations covered the staff's qualifications, the physical environment, material, and how the institutions should be organized and led. After being included in child welfare laws and regulations, the daycare institutions got their own law in 1975 (Forbruker og Administrasjonsdepartementet, 1975) and achieved an independent place in public politics (Barne- og familiedepartementet, 2005). The main purpose of the law was to ensure children the possibility for good development and activities in close understanding and collaboration with parents. This law continued the structure quality of the previous law and regulations, and strengthened another quality dimension, namely, the legal participation of parents (p.31). The 1975 law was revised several times without any major changes in the daycare institutions assignment. One exception though (Barne- og familiedepartementet, 2005; Tømmerbakke, 1987), came into force in 1983 when the preamble (formålsparagraf) was altered and a new section added: "The daycare institution shall help raise children in accordance with basic Christian values" (Lov om barnehager m. v., 1990, p. 1) (my translation).

A major change concerning daycare institutions occurred in 1995 with a new law and a national framework curriculum (BFD, 1995; Forbruker og Administrasjonsdepartementet, 1975). According to the authors (Barne- og familiedepartementet, 2005) this weakened the demand of structure quality by lowering the demands to teacher and area ratio. On the other hand the

demands towards content and results were strengthened by the framework curriculum. This plan required the daycare institution to help each individual child to develop basic competence (BFD, 1996, p. 22):

The child should:

- Be able to make and maintain contact with others
- Develop a positive self-awareness and a positive attitude to his/her own learning ability
- Develop independence, creativity and flexibility
- Be able to identify with other people's situations and see a situation from several angles
- Be able to collaborate, have regard to and show care for others
- Learn, and contribute him/herself, to formulate positive standards for working with others
- Develop good oral language skills
- Be able to communicate effectively on various levels

The modern form of Norwegian daycare institutions has emerged from social and educational traditions. The nurseries were open all day and their main goal was to take care of children. The part-time kindergartens were more focused on educational issues. These two traditions are merged into the current daycare institutions in Norway. Care of children, their learning and development are seen as a totality (BFD, 1996). From 2005 the present Government has put pressure on municipalities to establish enough daycare centers to secure a place for all children in the relevant age-group. In this process there is a danger of not meeting quality standards related to a shortage of educated preschool teachers. However, in August 2008 the Government has proposed a report to the Storting (whitepaper) focusing on quality in daycare to be presented in 2009 (Kunnskapsdepartementet, 2008). The newest law and framework plan concerning daycare institutions will be accounted for in section 2.1.4 together with the newest regulations and curriculum that guide

the teaching and content in schools, but first, a view of the different cultures and traditions in daycare and school.

2.1.3 Different cultures and traditions

It has been noted (Haug, 1991, 1992; Lillemyr, 2004; Ottosen, 2006) that there are different cultures in daycare and in school, with a stronger focus on play in daycare and learning subjects in school. Haug (1991) examined this closely when studying the Norwegian Ministry of Education's (at present called Department of Education) period of trial effort concerning where to offer 6 year olds a pedagogical experience, in daycare or in school. He used the dimensions structure - freedom, personal development - knowledge learning, and direct - indirect learning/teaching to illustrate different traditions in daycare and in school. In his view there was more freedom in daycare than in school at that time, since priority was on free activities and free-play with children's premises being paramount. At the same time daycare staff made huge efforts to create structure and order for the children, although structure was more focused towards discipline and guiding the children to follow the rules for behavior in line with ethical norms and psychological knowledge. Schools were also pre-occupied with structure, but according to Haug in a different manner. Discipline was of course an issue in schools as well, but structure was more focused on demands concerning knowledge and learning. Concerning personal development - knowledge learning, the two institutions were in different places on the dimension. In daycare there was more focus on personal development in a psychological meaning of the term, and although schools shared this view to some degree, there was much more focus on the acquisition of knowledge. In Haug's view it was easier to gain insight into the work in school than in daycare. He looked upon school as being more open and the work more visible, because the content was passed on to the children in a more direct and demonstrative manner. Compared to school the work tradition in daycare at that time was less visible, more indirect and left up to the children (Haug, 1991, pp. 167-168).

In a study of the Norwegian experimental educational program for 6-year-olds (Haug, 1992), schools at that time were under greater state control concerning economic, judicial, and ideological areas, than daycare. The schools also had

higher status and significance, and the mandates were different. Teaching of knowledge was the main responsibility for the school, while daycare had a more vague role and Haug mentions supervision, care, and creating a basis for personal development. While there was a long tradition of school curriculum formulated by the state, this was absent for daycare at that time. There was greater state control connected to schools and more restrictions compared to daycare. Haug (1992, p. 261) formulated curriculum codes for the two traditions. He viewed daycare as child oriented, giving higher priority to personal development and self-expression. Attention was given to behavior and the usefulness of here and now, all within a moral and rational framework. The schools had a subject-based curriculum code where the subjects were decided for them, but adapted to suit the psychological development of children, and focused on future usefulness. Haug called attention to school and daycare as different worlds, and the difficult task of writing a new curriculum where “the best” from both traditions are merged to benefit the 6-year-olds. Institutional traditions linked to codes, notions, and regularities have developed over a long period of time, and Haug had concerns about how easily daycare and school would allow themselves to change. The term “code” stems from Basil Bernstein’s pedagogical framework which is viewed as sensitive to cultural issues and differences, and to pedagogical identities (Hovdenak, Riksaasen, & Wiese, 2007).

The history and tradition of daycare is characterized by an oral tradition, tacit knowledge, and invisible pedagogy (Ottosen, 2006, p. 112). Students in the two teacher educational programs are, according to Riksaasen (1999), educated differently giving varying perspectives on teaching and learning. In her study using observation and interviews, she investigates educational knowledge codes which refer to underlying principles that shape curriculum, pedagogy, and evaluation. Through the period of teacher education one becomes acquainted with and socialized into different pedagogical codes. She states the Norwegian preschool teacher education curriculum is “weakly framed, and the lecturers have a relatively high degree of autonomy”, while school teacher education has a “stronger framing and classification of educational knowledge” (Riksaasen, 1999, p. 178). She described the code that preschool teacher students were socialized into as not being an integrated code of varying subjects, but of everyday knowledge and educational

knowledge, while school teacher students distinguished between classroom context and everyday context. Riksaasen acknowledges professional motivations and family influences on individual's responses to teacher training, but concludes (Riksaasen, 1999, p. 181):

“at the end of the study, it was possible to observe that the two groups of students had developed different professional identities. The ST [school teacher] students had learnt to teach like school teachers while PST [preschool teacher] students had learnt to teach like pre-school teachers. The differences between the students are cultivated and introduced as ideal types”.

Lillemyr (2004, pp. 27-28) points to the different views and understanding in daycare and school concerning the concept of play. Play and learning are seen as inseparable dimensions in the pedagogical work in daycare. Others consider them as different phenomenon that cannot be integrated. How one considers this aspect will have consequences when school is to integrate pedagogy from both daycare and from school into a new pedagogy for the first years in school (pedagogikk for småskoletrinnet). According to Lillemyr it is important to have a common understanding of play and learning to integrate school and daycare traditions. This will take time, but he has noted that the two traditions have come closer. This is also the case concerning the planning and development of an all-round competence in the child, and enhancing self-concept. However, he acknowledges that there are still considerable differences.

In my contact with daycare centers and schools, I have also experienced the different traditions that have been commented on, with lengthy periods of play and free activities in daycare, while schools were focusing more on subjects, although short play activities were accepted and acknowledged. In addition, change in line with educational reforms and curriculum can be time-consuming and difficult with many barriers to overcome (Kotter & Cohen, 2002; Langslet, 2000; Schön, 2002; Skogen, 2004). Even when official documents concerning daycare and school are becoming more alike, will this be depicted in the teachers' beliefs, thinking and practice? In light of these concerns, my expectations are that differences between the two traditions in priorities and beliefs concerning discipline and management behavior, group/classroom practices, beliefs about children, and teachers' self-efficacy

beliefs, will emerge in the present study through the data that was collected in 2004.

2.1.4 New perspectives and common goals

The educational system with its long traditions has developed and changed over time. This has affected the teaching of children in schools accordingly. Not all of the school reforms have been warmly welcomed, and implementing them is a huge task. Such reforms touch teachers' attitudes, beliefs and practices, which are not easily changed (Kennedy, 2005; Nespor, 1987; Pajares, 1992; Richardson, 1996; Rokeach, 1976), and the same applies to the daycare system. These two systems have developed different traditions based on different societal assignments, and the school system has a higher status. OECD points to the tradition of using more resources the older the children are, while knowledge of children's development should bring about a quite different priority (Barne- og familiedepartementet, 2005, p. 80). The two systems have also belonged to different government departments, one focusing on education and the other on social and family affairs. Norway has been criticized for this in OECD reports (OECD, 2001) recommending that it have an equal partnership between preschool and school education systems. The new government that came into office fall of 2005, gathered both systems in The Ministry of Education and Research, which has the total responsibility for lifelong learning from daycare institutions through university. According to the previous minister, Djupedal (2006), this is to ensure a totality and coherence in the education and training of children and the young. The fundament of learning is placed in early childhood, and Djupedal goes on to say that the importance of daycare centers as pedagogical institutions is greater than ever, especially when so many children attend them. Maybe signals like this can in time help build bridges and coherence between the two educational systems.

Other factors that may have contributed to the difference in status and traditions between systems are gender, salary level, work conditions, and different teacher educational backgrounds. While teacher education establishments for school teachers in Norway were established in the early nineteenth century, education to work with children under school age came

about approximately one hundred years later. In 1935 the first institution to educate staff for many different types of child care institutions was established in Oslo. Before that time one had to go abroad to Germany and Austria, and later on to Sweden or Denmark.

Preschool teachers and school teachers are educated separately in Norway, each study shaped in accordance with national framework or curriculum plans (KUF, 1994, 1995; Kunnskapsdepartementet, 2005a; St.meld.nr.16 (2001-2002)). Preschool teachers today have a three year college degree, whereas school teachers need a four year college degree. Although they attend classes at the same colleges throughout the country, and both groups study pedagogy, these and other classes are rarely combined (St.meld.nr.16 (2001-2002)). It has been suggested that the training of preschool teachers should follow that of school teachers and extend to four years (Barne- og familiedepartementet, 2005). Competence demands are increasing, and teacher-training courses and education have been criticized for not reflecting well enough the content of Framework plans for daycare institutions (St.meld.nr.27 (1999-2000), p. 61).

Different cultures and traditions in daycare and school have been documented (Haug, 1991, 1992; Ottosen, 2006) where a stronger focus has been on subjects and knowledge in the school tradition, while the child's general and social development has been emphasized in the daycare tradition. With the introduction of six-year olds to school, these two cultures and traditions have met, and teachers with preschool- and school teacher educational backgrounds have needed to work closely with each other. A pedagogy for the age group of children from 1 to 10 years, has to be anchored in plan documents for daycare and for school, especially when it comes to play and learning perspective, and according to Lillemyr (2004) there is also a need to develop a new and adapted pedagogy for the first years of school.

Although the history and assignments of the two systems have been quite different, there are signs that point to a closer connection between the two and that goals are becoming more alike. All children can, in theory, be included in daycare institutions and schools, no matter what their emotional, social, physical or cognitive needs may be. In later years minority groups living in Norway have increased, and the daycare institutions and schools reflect the more heterogeneous and complex community we live in. The national school

reform of 1997 lowered the enter age to school from seven to six, introduced one new grade level, and also placed a stronger emphasis on play and social competence in the first years of school. These changes have led to more preschool teachers being employed in the lower grades of school and a higher collaboration between teachers with different educational backgrounds.

Norway is among the countries that put most resources into the school system, and it has been a government goal to be among the best schools in the world (*PISA undersøkelsen - utfordringer for skolen*, 2002), but according to the PISA survey the quality in Norwegian school concerning reading, math and science could be better. There has been concern for Norwegian children's learning outcome, compared to other countries, and the former minister Clemet took steps to meet the challenges. This has resulted in several reports, among them Culture for learning (St.meld.nr.30 (2003-2004)), and a school reform called Kunnskapsløftet (UFD, 2005). These documents have prepared the ground for a new school reform where knowledge, diversity and equity are major elements. The core curriculum from 1997 is kept because it represents values that have a broad consensus. Subject syllabi will be simplified and clarified to express clear learning targets. Five basic skills have been identified (UFD, 2003-2004): being able to express oneself orally, being able to read, being able to express oneself in writing, being able to do arithmetic, and being able to use information and communication technology (p. 4). There is now a stronger focus on developing knowledge from early on, compared to the 1997 reform where play and developing social competence were seen as important factors in the learning process the first years of school. The introduction of national tests, underline the focus on knowledge and subject acquirements. The documents guiding what is being taught in school today are : I. General part (core curriculum)(KUF, 1996), II. Quality Framework (Kunnskapsløftet - fag og læreplaner, 2006), III. Subjects Curriculum (Prinsipp for opplæringa i kunnskapsløftet, 2006).

Documents mentioned above also underline the importance of preschool age and the experiences children have from this period that affect basic attitudes towards learning. Daycare institutions are an important foundation for life long learning, independent of social background (St.meld.nr.30 (2003-2004)). The law concerning daycare institutions has been revised and came into force January 1st, 2006 (Kunnskapsdepartementet, 2005b). This law gives children a

legal right to participate and to express their meaning and view of every day activities in the organization, but their views should be valued in accordance with the child's age and maturity. This is based on the UN Convention on the Rights of the Child (FNs Barnekonvensjon). The national Framework plan for daycare institutions (*Forskrift om rammeplan for barnehagens innhold og oppgaver*, 2006) has also newly been revised and published on March 1st, 2006. It came into force on August 1st, 2006. These documents clarify daycare institutions societal mandate, basic values, content and assignments. It is founded on an overall view on learning where care, play and learning are central parts. In addition to social and language competence, there are seven subject areas that are essential to preschool children's learning according to this plan document (p. 3). These are (pp. 19-25):

- Communication, language and text
- Body, movement and health
- Art, culture and creativity
- Nature, environment and technology
- Ethics, religion and philosophy
- Local environment and community
- Numbers, room and form

This Framework plan (*Forskrift om rammeplan for barnehagens innhold og oppgaver*, 2006) emphasizes the importance of adult attitudes, knowledge and skills in meeting, understanding and raising children to active participation in a democratic society. It also points to the daycare institution as a unique pedagogical establishment.

Research has studied child development from different angles. Dominant thinking in teaching children of preschool-age has been child-centered from the days of Fröbel. The basis has been psychological theories although these have varied somewhat. Although different terms and approaches have been used, there has still been an emphasis on: seeing the child as central; the teacher should develop and not restrict the child's impulses giving enough

freedom and possibilities for self-expression; the teacher should interpret the child's needs and arrange for appropriate activities guided by the child's interests and maturity; allow the child to express experiences and impulses; the child as active learner is more important than what is learned (Haug, 1992, pp. 98-99). Viewing basic school education, Haug pointed to dominance of the teaching of subjects and topics, but that social education tasks gradually increased (Haug, 1992, p. 104). This became even more prominent in school over the years (KUF, 1996), but with a later refocus on subject content (St.meld.nr.30 (2003-2004), ; UFD, 2005) due to lower results than anticipated for Norwegian students on PISA studies.

Both daycare and school systems in Norway focus on children's development and growth in becoming knowledgeable and well adjusted adults. As we have seen, content, views, values and goals have changed over the years. This may also be seen in relation to perceptions of childhood and what being a child fathoms. From being looked upon as 'undeveloped' grown-ups, children are today seen as competent and active and should be treated as subjects (Barne- og familiedepartementet, 2005). According to this report the child is 1) fundamentally active, 2) viewed as a whole human being, 3) develops in interaction with their environment, and 4) that early experiences influence self concept (selvoppfatning) (p. 24). Childhood is a phenomenon, which is relative to time and space. Nilsen (2005) looks upon child-centeredness as a distinct trait of contemporary Norwegian society (p. 165). Can this be traced in what teachers express as their beliefs? Is it possible to see any connections to behavior management issues? How are teachers' views on self-efficacy in a changing society, and are there any differences or similarities between teachers in the two systems? These are issues that will be looked into. But also 'beliefs' have to be addressed; what beliefs consist of, how they develop and change, what affects them, and what kind of influence beliefs may have on teachers' practice and priorities. Staff and teachers are the most important resources in daycare- and school systems, both in society and in the lives of each and every child and family they interact with. Beliefs, values, knowledge and priorities are essential elements in teachers' performance in the vocation they have chosen.

2.2 Beliefs

Argyris and Schön (1974/1989, p. 3) point to the difficulties of integrating thought and action effectively and suggest that it “is one of the most prevalent and least understood problems of our age”. This has been a problem for some time. Myers (2004, p. 81) quotes Ralph Waldo Emerson, an American essayist, who said in 1841 “The ancestor of every action is a thought”, and the British Prime Minister Benjamin Disraeli who contributed with “Thought is the child of Action”. According to Myers most people agree with Emerson and the assumption that our private beliefs determine our behavior, and in order to change the actions of individuals, it is necessary to change their hearts and minds.

2.2.1 What constitutes beliefs?

There has been an interest in studying teachers’ thinking and classroom practice for many decades. Between the 1950s and through the early 1970s a lot of attention was pointed towards teachers’ attitudes. In later years there has been more focus on beliefs (Richardson, 1996). There have been several summaries of research pointing to both attitudes and beliefs and the influence they may have on teachers’ classroom practices and teacher change processes (Nespor, 1987; Pajares, 1992; Richardson, 1994; Murphy & Mason, 2006).

Several have attempted to define these concepts. Peirce (1877) noted we generally know when to ask a question and when to make a judgment. He argued there is a practical difference between belief and doubt, where “beliefs guide our desires and shape our actions” (p. 4) and saw beliefs as habits of action. Viewing historical foundations of the concept, Allport (1967) defined attitude as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (p.8). Richardson (1996) pointed to the sense of attitudes as predispositions and the influence this had on teaching and teacher education for years. She referred to several studies in the 1960s and early 1970s that focused on teachers’ social attitudes, their attitudes and values, and how attitudes affect teacher-student interactions. In this period the cognitive aspect of social psychology became

more prominent. Bandura's work concerning social cognitive theory and more specifically self-efficacy (Bandura, 1986, 2002), has had a major impact on theory and practice concerning teachers' beliefs and this will be returned to later.

Rokeach (1976) looked upon beliefs as "inferences made by an observer about underlying states of expectancy" (p. 2) and gave us this definition: "a belief is any simple proposition, conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase "I believe that...." " (p. 113). He goes on to describe beliefs as descriptive, evaluative or prescriptive and that "all beliefs are predispositions to action" (p. 113), not unlike Peirce's view, and have a cognitive, affective and behavioral component. In analyzing beliefs Rokeach made three assumptions (p. 3):

- Not all beliefs are equally important, but vary along a central-peripheral dimension.
- The more important or central the belief is, the more it will resist change.
- The more central the belief changed, the more widespread the repercussions in the rest of the belief system.

What is central or important in this case is, according to Rokeach (1976), defined in terms of connectedness, and he proposed the following four defining criteria of connectedness: Existential versus nonexistential beliefs; Shared versus unshared beliefs about existence and self-identity; Derived versus underived beliefs; Beliefs concerning and not concerning matters of taste (p. 5). The most central beliefs are those concerned with personal identity and these have the strongest connectedness and influence on other beliefs. When beliefs are shared with others, they tend to be more connected and important than those that are not shared. While the most central beliefs are learned by direct encounter with the object of belief, some beliefs are learned more indirectly from reference persons or groups. These types of derived beliefs are assumed to have less functional connectedness and consequences for other beliefs. The beliefs that seem to have the least functional connectedness and consequence are those perceived as more or less arbitrary and stem from matters of taste. Pajares (1992) summed up this conceptual model by pointing to the simple premise that "human beings have

differing beliefs of differing intensity and complex connections that determine their importance” (p. 318).

While Rokeach (1976) defined an attitude as “a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner” (p. 112), Fishbein (1967) separated attitudes from beliefs, and doing so narrowed the extent of the concept by applying it to the affective component. His definitions are: “Attitudes are learned predispositions to respond to an object or class of objects in a favorable or unfavorable way. Beliefs, on the other hand, are hypotheses concerning the nature of these objects and the types of actions that should be taken with respect to them”(p. 257). In his view the cognitive component of beliefs were about objects, while the conative or active component of beliefs concerned what should be done with the objects (p. 259). Fishbein (1967) goes on to distinguish between ‘belief in’ an object and ‘belief about’ an object. ‘Belief in’ has to do with the existence of an object, while ‘belief about’ refers to the “probability or improbability that a particular relationship exists between the object of belief and some other object, concept, value, or goal” (p.259).

Stephenson (1965) was concerned about the wide range use of the terms opinion, attitude and belief and called attention to the need to redefine them to fit operational possibilities and to provide rules for a model to study a person’s attitude of mind. In his view opinions are as numerous as the waves of the sea, attitudes of mind are considerably fewer, and beliefs are few indeed, and described the terms in the following manner (Stephenson, 1965):

“Opinions are judgments which are open to contention or doubt - in logic of science they are synthetic propositions and not facts. Attitudes, expressed in terms of such opinions, are neither true nor false: they are modes or instruments of behavior largely involving the self. Beliefs are deeply ego-involving systems, the truth of which is accepted by the person on the grounds of authority, trust, faith, evidence or by exigencies of upbringing. Beliefs, at root, are commitments, largely culturally determined” (p. 286).

Could Stephenson here be relating to existential beliefs as background for states of mind, opinions and consequently actions?

Although more attention was given attitudes in earlier periods, there has been more focus on beliefs in later years. Both seem intertwined and several researchers have studied different aspects of the phenomenon and given their definitions with some variations. Several have pointed to belief systems. Beliefs develop over time and some are more important to us than others, and therefore more difficult to change. We may be conscious or unconscious of our beliefs. Some of them may be difficult to pinpoint and are inferred by what we say or do. Different aspects of beliefs have been viewed and some wish to reserve the affective component to the term attitude, while the cognitive- and conative components are defined into the term belief. Beliefs are not necessarily facts, but issues we hold to be true and this suggests deeply ego-involving systems. Beliefs play a central role in teaching and teacher education (Green, 1998), and Green goes on to say: “Teaching has to do , in part at least , with the formation of beliefs, and that means that it has to do not simply with *what* we shall believe, but with *how* we shall believe it. Teaching is an activity which has to do, among other things, with the modification and formation of belief systems” (p. 48).

2.2.2 Beliefs versus knowledge

Richardson (1996) claimed there to be a considerable congruence among anthropologists, social psychologists and philosophers concerning the definition of beliefs and that they “are thought of as psychologically held understandings, premises, or propositions about the world that are held to be true” (p.103). Although there may be a common understanding of the nature of beliefs, many different words are being used that are closely related if not synonymous, and this may lead to confusion. Pajares (1992, 2003) accounted for several words like attitudes, values, judgment, opinions, perception, ideology, preconceptions etc., and that they can be beliefs in disguise. He also pointed to the confusion between beliefs and knowledge, a claim previously made by Clandinin and Connelly (1987). There are few clear distinctions made between knowledge and beliefs with the possible exception of work concerning mathematics and science education (Woolfolk Hoy et al., 2006). Nespor (1987) delineated four structural features of beliefs, and by doing so tried to distinguish them from other forms of knowledge. These are ‘existential presumption’, ‘alternativity’, ‘affective and evaluative loading’,

and ‘episodic structure’. He also used two other features ‘non-consensuality’ and ‘unboundedness’ to characterize the way beliefs are organised as systems (p. 318).

Drawing upon Abelson, Nespor (1987) described these belief systems more in detail and called attention to the propositions and assumptions that belief systems often contain about the existence or non-existence of entities. In the case of existential presumption, this may also occur “in less obvious ways and at much more mundane levels of thought” (p. 318). Such entities may be seen as immutable and according to Nespor, beyond the teacher’s control and influence. Teachers may hold strong beliefs about their students and what their students are capable of in terms of learning achievement possibilities (Milner, 2005). These beliefs may not only be descriptive, but can also become labels for entities attributed to the child or student, which in turn may enhance or limit learning possibilities (Løge & Thorsen, 2005).

Nespor goes on to describe the essence of alternativity as “conceptualizations of ideal situations differing significantly from present realities. In this respect, beliefs serve as means of defining goals and tasks, whereas knowledge systems come into play where goals and the paths to their attainment are well defined.”(p. 319).

Belief systems rely more heavily on affective and evaluative components than knowledge systems, but knowledge of a domain can be conceptually distinguished from feelings about that same domain (Nespor, 1987, p. 319). Our knowledge about disruptive behavior is different from our feelings, likes or dislikes about children displaying it and how we meet the challenge, although the affective and evaluative aspects may influence how we go to the task and the amount of energy we put into the activity.

The fourth structural feature is called episodic storage. Nespor (1987), referring to Abelson, pointed out “that information in knowledge systems is stored primarily in semantic networks, while belief systems are composed of ‘episodically’-stored material derived from personal experience or from cultural or institutional sources of knowledge transmission (e.g., folklore)” (p. 320). Episodic storage provides a weak basis for distinguishing beliefs from knowledge, according to Nespor, but he claimed: “beliefs derive their

subjective power, authority, and legitimacy from particular episodes or events” (p. 320). These special episodes may continue to influence the understanding of events at a later time. An example of this could be how teachers comprehend their own experiences from being a child or student in daycare or school, and how this may continue to affect their views and performances later on as teachers. Some of these episodic memories may serve as an inspiration or pattern for future teaching practices.

Non-consensuality is defined by Nespor (1987) as belief systems consisting of “propositions, concepts, arguments, or whatever that are recognized – by those who hold them or by outsiders – as being in dispute or as in principle disputable” (p. 321). Beliefs are relatively static and less dynamic compared to knowledge systems that can accumulate and change through well-grounded arguments. When beliefs change, according to Nespor, “it is more likely to be a matter of a conversion or gestalt shift than the result of argumentation or a marshalling of evidence” (p. 321). Knowledge systems can easier be judged, evaluated and agreed upon compared to belief systems, where there often is a lack of agreement on how beliefs are to be evaluated. Belief systems consist of affective feelings and evaluations, significant memories from personal experiences, thoughts about the existence of entities and alternative worlds. Nespor (1987) pointed to the fact that these beliefs are not open to critical examination or outside evaluation in the same way that knowledge systems are.

The last feature that Nespor used to distinguish belief systems from knowledge systems is unboundedness being described as “ people read belief-based meanings into situations where others would not see their relevance” (p. 321). This is one of the reasons why we see things from different points of view.

Richardson (1996) called attention to the ‘truth condition’ knowledge depends on in traditional philosophical literature, where a community of people agree upon a proposition as being true, and there is some evidence to claim this. Beliefs on the other hand do not require a truth condition (p. 104).

Not all differentiate as much between knowledge and beliefs and, according to Fenstermacher (1994), ‘knowledge’ can be used as a grouping term.

Alexander, Schallert and Hare (1991) gave us an example of this by suggesting “knowledge encompasses all that a person knows or believes to be true, whether or not it is verified as true in some sort of objective or external way (p. 317).

Although knowledge and beliefs have been studied separately through varying theoretical framework, it has often been difficult to distinguish what one researcher means by knowledge and what another means as beliefs (Murphy & Mason, 2006, p. 319). Knowledge and beliefs seem deeply intertwined and give us a filter by which new information, experience and phenomenon are perceived and interpreted (Nespor, 1987; Pajares, 1992). Teachers with their own personal history, educational background, teaching experiences, with updated or outdated knowledge of current curricula, meet children in day-care and school. Background, knowledge and beliefs play an important part in the interaction between teachers and children, and therefore it is significant to be conscious of these matters and possible consequences they may lead to.

2.2.3 What affects beliefs?

There are many different elements that affect our beliefs. Nespor (1987) suggested it involves feelings, moods, emotions and subjective evaluations and that these features make beliefs important in memory processes (p.323). Certain events may give us representations built on inadequate information and influenced by a ‘signature feeling’, which in turn may distort our perception and understanding.

According to Rokeach (1976) some beliefs are more central than others and consist of beliefs we acquire early in life and in direct encounter with the object of belief. This can be looked upon as primitive or core beliefs that are psychologically incontrovertible. This type of belief is rarely looked upon as controversial, has a taken-for-granted character, and represents a person’s “basic truths” about physical and social reality and the nature of self (p. 6). This can also be described in terms of object constancy, person constancy and self-constancy. Rokeach views object constancy also as a social phenomenon. For a child both object and person constancy is necessary for developing a sense of self-constancy and helps to build a basic trust that central people, the

physical world and objects in it remain stable. In this situation one might think if others know what I know, they would believe this too. These “basic truths” are not easily changed especially if they are shared by many other people. On the other hand “violation of any primitive beliefs supported by unanimous consensus may lead to serious disruption of beliefs about self-constancy or self-identity, and from this disruption other disturbances should follow...” (p. 7). This may lead to questions about competence or inconsistencies in a person’s belief systems. (Type A: Primitive beliefs, 100 % consensus)

Another type of primitive beliefs that Rokeach pointed to are those held by a person concerning existential beliefs, but not necessarily shared by others. In this case a person might think nobody else could know, so their beliefs do not count, but mine do. With no reference group or people outside oneself there is no one to controvert the beliefs, to give argument for or persuade in favour of other viewpoints. (Type B: Primitive beliefs, 0 consensus)

Both types of primitive beliefs have this taken-for-granted essence. As a child grows and develops, he or she has more contact with other people, authorities and contexts compared to the younger child. This leads to the discovery that some beliefs are not held by everyone else. This is the development of what Rokeach (1976) classified as nonprimitive beliefs, which stem from primitive beliefs and are in a functional relationship to them. This type of belief does not have the taken-for-granted character, but helps us to develop a wider picture of the world where we can expect differing opinions and also controversy. Nonprimitive beliefs are not quite as important as primitive beliefs, nor as resistant to change. Rokeach claimed the most important in this category are beliefs concerning positive or negative authority and goes on to say “ such beliefs concern not only which authorities *could* know but which authorities *would* know” (p. 10). Which authorities people either rely on or do not trust may differ according to each person’s social structure and context. (Type C: Authority beliefs)

Trusting and believing in an authority source implies that we may accept other beliefs that emanate from that source. Rokeach defined these beliefs as “derived beliefs”. These beliefs are “derived secondhand through processes of identification with authority rather than by direct encounter with object of belief...” (p. 10). Derived beliefs may form what is usually referred to as

institutionalized ideology. Identification with reference persons and groups based on underlying ideology may lead to group identity. Knowing that a person believes in a certain authority, we may deduce that the person agrees with some or most of the beliefs derived from that authority's ideology. Derived beliefs are according to Rokeach less important dynamically than beliefs about authority, and a change in belief here may also lead to change in relating beliefs. (Type D: Derived beliefs)

Matters of taste influence many of our beliefs. There may be strong feelings also attached to these beliefs though they tend to be more arbitrary. Rokeach (1976) called these inconsequential beliefs because they have few or no connections with other beliefs, and if changed they have few or no implications or consequences for other beliefs (p. 11). (Type E: Inconsequential beliefs)

Rokeach(1976) summed this up in the following manner (p. 11):

“A person's total belief system includes inconsequential beliefs, derived beliefs, pre-ideological beliefs about specific authority, and pre-ideological primitive beliefs, socially shared or unshared, about the nature of the physical world, society, and the self. All such beliefs are assumed to be formed and developed very early in the life of a child. They are undoubtedly first learned in the context of interactions with parents. As the child grows older, he learns that there are certain beliefs that virtually all others believe, other beliefs about which men differ, and other beliefs that are arbitrary matters of taste. Taken together, the total belief system may be seen as an organisation of beliefs varying in depth, formed as a result of living in nature and in society, designed to help a person maintain, insofar as possible, a sense of ego and group identity, stable and continuous over time – an identity that is part of, and simultaneously apart from, a stable physical and social environment.”

We have now heard in general terms about belief systems from Rokeach's (1976) point of view. How does this apply to teachers, and how are teachers' beliefs affected? We can assume teachers' belief systems develop in much the same manner as Rokeach has described. Primary and derived beliefs come early in life, influenced by family, peers and social environment. Beliefs that are shared or not shared with others become more apparent with age and different experiences. A person's developing belief system is also part of an

ego and group identity. What a person believes to be interesting, important, honorable and worthwhile, may also in time lead to the choice of becoming a teacher.

Teachers, whether they work in daycare- or school settings, experience multiple interrelated contexts. Examples of this from Norway could be collaboration between neighborhood daycare centers and schools. In addition many teachers are parents and have children attending daycare and/or school, but also have extended family relations. Some teachers might also have political engagements, and it is quite common to have leisure activities. In all of these different settings teachers as individuals have different roles and meet different challenges and they can meet many of the same people in different settings such as church, alpine skiing facilities, at the shop, etc. Hamilton's (1993) study addressed the influence of culture on beliefs and concluded that "personal cultural history and the culture of the school affects them as they enact their practice and work with their students" (p. 96). Also Rosenholtz (1991) drew attention to how teachers' thoughts and actions reflect the school culture in which they are embedded. The recent qualitative study by Smith (2005) pointed to contexts' potential impact on science teachers' thinking about academic content, teaching and learning, and emphasized the place of lived experience in specific contexts and how this shapes teachers' beliefs. The researcher claimed that the school-based context of the two teachers in the study was deeply influenced by local community, school district, state system of education, national context of science education reform, in addition to many other personal and professional contexts the teachers were rooted in. Different activities and experiences connected to these interrelated contexts "have shaped and continue to shape these teachers' beliefs and identities as teachers of science" (p.7). Research findings pointed to by Pajares (1992) state that teachers' beliefs profoundly influence their practice and are resistant to change, but research referred to by Richardson (1996) pointed to the impact of specific teacher education classes have on changes in conceptions and beliefs, although not as powerful an influence as life experiences and teaching experience. According to Smith (2005) through interactions with others within school contexts, teachers are likely to develop new perspectives and beliefs about what it means to teach and to learn (p. 29). In the study by Tabachnick and Zeichner (1986) addressing teacher beliefs, classroom

practices and responses to inconsistency they discovered a move to greater consistency between beliefs and behavior as the result of a negotiated and interactive process between individuals and organizational constraints and encouragements (p. 95).

Several elements affecting beliefs have been pointed to. These beliefs concern both physical and societal aspects of life, the influence of contexts and culture, and the role of humans in it. Experiences, encounters, challenges, relationships, goals, our successes and failures, play a part in developing identity and beliefs about the world and ourselves. Over the years there has been a focus, to varying degrees, on self-beliefs and the impact this may have on human lives. There is also a vast amount of literature concerning beliefs, teachers and teaching. In the next section I will look into two aspects of self-beliefs; self-concept and self-efficacy, with a main focus on the latter and the impact it may have on teachers and their work.

2.2.4 Self-beliefs

Understanding critical issues concerning the self and self-beliefs, are crucial to understanding how people deal with many tasks and challenges in life (Pajares & Schunk, 2002). While William James (1908, 1990) had a dualistic perspective of the self as the knower (I) and the known (me), Bandura (2002, p. 5) states that social cognitive theory rejects this dualistic view of self and in self-reflection and self-influence, individuals are simultaneously agent and object. "It is one and the same person who does the strategic thinking about how to manage the environment and later evaluates the adequacy of his or her knowledge, thinking skills, capabilities, and action strategies." Cooley (1956) suggested an individual's sense of self is mainly developed through the self-beliefs created by perceptions of how others see them (the looking-glass metaphor). This underlines the importance of other people and the affect of how they perceive and respond to us, and in turn our experience of that. The importance of significant others to us, and the consensus connected with their views, may play a major role in shaping our beliefs (Rokeach, 1976). Bandura (1986) emphasized the critical role of self-beliefs in human cognition, motivation, and behavior. Myers (2004) stated that "our sense of self organizes our thoughts, feelings, and actions" (p.21).

Pajares and Schunk (2002) gave a historical overview of the self research area describing the changing weight research on 'self' has had over the years with the differing theoretical vantage points. They pointed to a shift in direction the past two decades regarding issues critical to human functioning, and the self has again become the focus for educational psychology research and practice on academic motivation. This marked a departure from previous conceptions of self-referent thought, and mostly due to interest and research on two self-beliefs, which are self-efficacy and self-concept (p. 16-17). According to Skaalvik and Bong (2003) the focus of self-concept is on general ability perceptions, while self-efficacy focuses on expectations of being able to execute specific actions.

Recent definitions of self-concept are, according to Pajares and Schunk (2002), informed by James' conception that "the self-concept is an individual's representation of all of his or her self-knowledge" (p.20). They go on to suggest that a person's self-concept is made up of the beliefs that the person holds to be true about his or her own experiences, and the accuracy rests in part on how well one knows oneself. Myers (2004) cautioned that sometimes "we *think* we know, but our inside information is wrong" (p.25). Studying processes connected to self-concept can help us understand how people develop attitudes towards themselves and may affect their outlook towards life (Bandura, 1986, 2002). This concept is related to perceptions of self-worth, or self-esteem. Self-concept feelings may differ from one area to another. How a person sees him- or herself as a teacher, may be quite different from the same person's perception of being for example a spouse or a local politician. In some areas we may have a more positive self-concept than in others.

According to Bandura (2002), people guide their lives by their beliefs of personal efficacy. He defines perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). In other words what I believe I can do with my skills under certain conditions (Maddux, 2002). There is a distinction between self-concept and self-efficacy. Pajares and Schunk (2002) described it this way "self-efficacy is a judgement of one's own confidence; self-concept is a description of one's own perceived self accompanied by a judgement of self-

worth” (p. 21). Bandura (1986) claimed both contribute in their own way to the quality of human life.

There are many stress factors connected to teaching and work in daycare institutions and schools. One has to fulfill the intentions of the curriculum, meet demanding situations and handle them in an appropriate way. There are many children, parents and colleagues to relate to that may not be easy to understand. A feeling of failure to meet these demands may cause a great deal of frustration and affect one’s self-confidence. Resources may be limited in several ways, there are new reforms to grasp and transform into practice, and many goals to meet, to mention a few stressors encountered among teachers in daycare- and school settings. Some people, teachers included, tolerate stress and difficulties better than others. With a strong belief in one’s own capability, it is easier to meet difficult problems as challenges to be mastered instead of threats to be avoided. An efficacious outlook can bring about personal accomplishments. In turn these experiences can reduce stress and lower vulnerability to depression (Bandura, 1994; Seligman, 1991).

Bandura (1994, 2002) pointed out four main sources of influences to develop people’s beliefs about their efficacy. These are mastery experience, social models, social persuasion and also to modify people’s stress reactions by changing their negative emotional tendencies and interpretations of their physical states. He also called attention to those that have a high sense of efficacy about their teaching capabilities can motivate their students and enhance their cognitive development, while teachers with a low sense of instructional efficacy seem to favor a custodial orientation that relies more on negative sanctions to get students to study (Bandura, 1994, 2002).

Thought and experience are powerful forces. These can help us or restrain us. It is helpful for a teacher to believe in his or her capacity to have the knowledge and the skills to be aware of children’s developmental state and to meet and enhance their potentials, to gain their trust, to guide them both socially and academically as individuals and as a group. Having this confirmed through the teaching experience, gives a good feeling of being successful and efficacious. Believing this beforehand contributes to a favorable result. On the other hand, when teachers try their best and still do not succeed, they can become troubled and feel inadequate. If this continues,

it can become a pattern and a feeling of hopelessness and failure as a teacher may be the result. This points to both low self-efficacy beliefs and declining self-esteem and self-concept as a teacher.

Through systems theory we presume that different parts interrelate and affect the whole. Through social cognitive theory we assume that humans are active participants with powerful cognitive capabilities, where environmental and personal factors can have reciprocal influence, where self and personality are entwined and where people are capable of self-regulation. Self-efficacy beliefs are also an important issue in this study because they can "...affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression"(Bandura, 1994).

2.2.5 Summary on beliefs

Before proceeding to more specifically relating beliefs to teachers' understanding, it is appropriate to summarize research on beliefs. Pajares (1992) sums up research on beliefs from the period of late 1960s to early 1990s and offers fundamental assumptions in studying teachers' educational beliefs; the main issues pointed to in the following text. Research has shown that beliefs are formed early in life and tend to persevere against contradictions. Each person develops a belief system through cultural transmission, and the belief system has an adaptive function, which helps us to understand and define ourselves, and the world around us. Knowledge and beliefs are intertwined, but beliefs' affective and episodic nature makes them a filter that effects interpretation. Although beliefs may start with thought processes, the filtering effect of belief structures screens, redefines, distorts, or reshapes the following thinking and information processing. A key role in knowledge interpretation and cognitive monitoring is played by epistemological beliefs. Beliefs are prioritized depending on their relationship to other beliefs or other cognitive and affective structures. Belief substructures should be understood in relation to their connectedness to each other but also to other, maybe more important, beliefs in the system. These substructures are usually referred to by psychologists as attitudes and values. Some beliefs are more incontrovertible than others, and the earlier a belief is established in the belief structure, the more difficult it is to change. On the other hand, newly

acquired beliefs are more easily exposed to change. A relatively rare phenomenon is a belief change during adulthood. When it occurs, it is usually a conversion from one authority to another, or a gestalt shift. Individuals tend to cling to beliefs based on incorrect or incomplete knowledge, even after scientifically correct explanations are given to them. Beliefs play a critical role in defining behavior and organizing knowledge and information. Beliefs strongly influence perception, but may not be a reliable guide to reality. Individuals' beliefs have a major impact on their behavior. Beliefs must be inferred, and one has to take into consideration certain aspects as congruence among a person's belief statements, intentionality to behave in a predictable way, and behavior related to the belief at issue. Beliefs concerning teaching are well established at the time a student enters college (Pajares, 1992, pp. 324-326). Varying theoretical framework has been used in studying knowledge and beliefs although few clear distinctions have been made between them (Murphy & Mason, 2006; Woolfolk Hoy et al., 2006).

Beliefs can be and have been studied from different angles and by using different methods. Despite thorough search of studies and literature concerning Norwegian teachers' beliefs, I have found few that relate to the themes of this study and therefore most of the research is from other countries. There are some exceptions, but most relate to teaching older children, such as beliefs and actions among Norwegian teachers in secondary school concerning mathematics in everyday life (Mosvold, 2006); bullying and prevention of bullying among older children and youths (Galloway & Roland, 2004; Olweus, 2004). Ramvi (2007) focuses on Norwegian teachers' perspectives of their relations with students in secondary school and the quality of the relationships in a professional role as teacher. Other Norwegian studies concerning differences and marginalisation in secondary school, and inclusive and exclusive practices in school (Arnesen, 2003), point to the relationship between vulnerable children in school and the manner in which they are defined by teachers and experts, and consequences this can lead to. With little information about the *beliefs* of teachers in daycare and early school years concerning behavior management, group/classroom practices, children, and self-efficacy, it will be of interest to uncover what the territory looks like.

2.3 Beliefs related more specifically to teachers

2.3.1 Do teachers' beliefs relate to their understanding of children and their work?

Although teachers in daycare- and school settings have different educational backgrounds, traditions, societal aims, and curricula, both groups have multifaceted tasks. A mixture of teaching and care apply to both categories of teachers, although in differing degrees. Nespor (1987) suggested: “*to understand teaching from teachers' perspectives we have to understand the beliefs with which they define their work*” (p. 323) [original italics]. To exemplify this he pointed to two teachers in his research; one viewing teaching as a job and making a living, while the other saw teaching as a moral mission to socialize children and make the community a better place to be. Nespor called attention to the importance of recognizing the different meanings teaching has for different teachers. As we have seen earlier, research verifies that beliefs play an important role in defining behavior and organizing knowledge and information (Bandura, 1986, 2002; Brownell & Pajares, 1999; Nespor, 1987; Pajares, 1992; Rokeach, 1976).

Nespor (1987) has suggested features that make beliefs important in memory processes, and emotion and affect have considerable implications for how teachers learn and use what they learn. He goes on to state the reasons for this lies in the “contexts and environments within which teachers work, and many of the problems they encounter, are ill defined and deeply entangled, and that beliefs are peculiarly suited for making sense of such contexts” (p. 324).

It has previously been stated that primary or core beliefs (Rokeach, 1976) develop early in life and are not easily changed. Looking at where teachers' beliefs come from, Richardson (1996) pointed to three forms of experience in a person's educational career which are: “personal experience, experience with schooling and instruction, and experience with formal knowledge” (p. 105). These different aspects contribute to the ongoing development of a teacher's understanding and how to approach teaching. Referring to life history studies, Richardson noted that personal and schooling experiences “strongly affect preservice education students' and in-service teacher's

beliefs” (p 106), while “...experiences with formal pedagogical knowledge are seen as the least powerful factor affecting beliefs and conceptions of teaching and the teacher role” (p.106).

Daniels and Shumow (2003) presented a framework for explaining how teachers’ perspectives and knowledge about child development contribute to classroom practices. They also reviewed research regarding how an understanding of child development contributes to teachers’ beliefs and practices. They pointed to different theoretical perspectives in educational practice that were dominant in the past, such as: learning and development defined by behaviorist tradition, or extreme biological views, or maturationist views, while more recently educational practices based on current knowledge about how children develop and learn have been endorsed. According to Daniels & Shumow there has been a refocus on “child-centered” practices identified with constructivist, social constructivist, or ecological theories (p. 496). They pointed to some connections between an adult’s opinions of a child’s developing mind and educational practices. This relates to the roles, values and practices the teachers embrace (p. 509).

An interesting aspect was raised by Olson and Bruner (1998) when they stated: “Scientific advances increasingly inform us of the effects of various treatments but the art of knowing “how, for whom, and when” to apply them remains as difficult as ever” (p. 9). They pointed to theories with absence of features very critical to pedagogy, and called attention to aspects as goals, purposes, beliefs, and intentions of both teachers and learners. In their opinion the absence of these features is what creates the gap between theory and practice. Our interactions with others are influenced by our everyday theories of how our own mind and the minds of others work. According to Olson and Bruner these lay theories are referred to as “folk psychology” and lead to assumptions which they called “folk pedagogy” that steer the activity of guiding children to learn about the world. These researchers stated: “educational practices are premised on a set of beliefs about learners’ minds” (p. 13). Drawing upon Tomasello, Kruger and Ratner, 1993, Olson and Bruner implied that “different approaches to learning and forms of instruction – from imitation, to instruction, to discovery, to collaboration – reflect differing beliefs and assumptions about the learner – from actor, to knower, to private experiencer, to collaborative thinker” (p. 13). According to them beliefs about

the mind alter beliefs about the sources of and communicability of thought and action, and advances in the understanding of children's minds are essential to an improved pedagogy. Change from the simplest pedagogies to the most sophisticated, Olson and Bruner concluded, "...is the development of an increasingly internalist or insider's view of thinking, learning, and knowing" (p. 25), and also pointed to "the increasing degree of common understanding or intersubjectivity to be found between theorist and subject". In practical terms this illuminates different understandings of children and teaching. Teachers may rely on theories that center on what the adult can do to promote learning, or they may depend on theories that focus more on what children can do or think they are doing as a basis for children's intentional learning experience.

Some studies report disappointing results in helping pre-service teachers develop more sophisticated beliefs and practices through teacher education programs (Richardson, 1996). On the other hand some, but not other, pre-service teachers develop beliefs that are consistent with practices approved by theoretically based staff developers (Daniels & Shumow, 2003). They pointed to the need for research on three general areas – "how to reveal teacher thinking about child development and their roles in fostering this development, how to best incorporate a developmental perspective into teaching, and how to support teachers' developmentally appropriate practices" (p. 517). According to Stott and Bowman (1996) child development knowledge, broadly defined, is necessary but not sufficient to teacher preparation. They suggested the root of the teaching-learning enterprise depends upon how individual teachers respond to individual children, and pointed to the ability to use relationships to stimulate development as essential. Stott and Bowman (1996) stated the goal of education is not to give a specific kind of information, but to provide a framework, a set of shared values, a disposition to understand, evaluate, and be open to the ideas of others. Reflecting on theories, new findings, formal and personal knowledge, values, practices, and different opinions are part of this process.

Others also identify the importance of enhancing relationships between teachers and children (Pianta, 1999; Pianta et al., 2003a; Pianta & Walsh, 1996), and the significance of collaboration between participants in children's environment (Pianta & Kraft-Sayre, 2003b). Relationships between child and

teacher are also related to indicators of a broader school climate and organizational ethos (Pianta et al., 2003a). Being informed of important aspects of developing relationships is one thing, understanding these elements and believing enough in them to pursue them as a goal, is something different.

Pianta (1999) described relationships between children and adults as a critical resource for development. Some of these relationships are impoverished and are a source of risk, while others are a potential resource for improving developmental outcomes. He cautioned that "...one cannot underestimate the extent to which relationships with people and environments support or inhibit developmental progress and functioning in school. Children are only as competent as their context affords them to be" (p. 64). This points to the significance of understanding the child as a developing system in an extended system and not just viewing competence as an assess of the child alone. In addition a teacher's relational background and history plays a part in the way teachers form relationships with children (Pianta et al., 2003a). Relationships between children and teachers in daycare and school are asymmetric and the degree of this varies as the child grows older and becomes more competent. According to Pianta et al. (2003a) a systems conceptualization of the child-teacher relationship can integrate child and teacher attributes, representations of relationships, child-teacher interactions and communication, school and classroom climate (p. 215). In light of this it can be interesting to study teachers' understandings, priorities and beliefs about discipline and behavior management, group/classroom practices and beliefs about children.

Values, priorities and beliefs are connected and influence our choices and behavior. Rokeach (1973, p. 25) gave the following definition of a value and a value system:

“To say that a person has a value is to say that he has an enduring prescriptive or proscriptive belief that a specific mode of behavior or end-state of existence is preferred to an opposite mode of behavior or end-state. This belief transcends attitudes toward objects and toward situations; it is a standard that guides and determines action, attitudes towards objects and situations, ideology, presentations of self to others, evaluations, judgments, justifications, comparisons of self with others, and attempts to influence others. Values serve adjustive, ego-defensive, knowledge, and self-actualizing functions. Instrumental and terminal values are related yet are separately organized into relatively enduring hierarchical organizations along a continuum of importance”.

What does this mean in everyday life for teachers? As we can see from Rokeach’s definition, many elements in human life are affected by our values and beliefs and some of these are more important to us than others. Our preferences are made visible when we prioritize. According to Rimm-Kaufman et al. (2006) teachers’ priorities are the lens through which teachers perceive practice decisions (p.143). The researchers described priorities as multi-determined and stemming from many different sources. In their view teachers ascribe to a set of principles or priorities loosely connected to classroom practices. These reported practices can shed light on different belief dimensions. When these beliefs or principles are challenged by new training or new experiences Rimm-Kaufman et al.(2006) claim teachers’ existing framework shifts and can lead to the emergence of a new practice. This is also verified in a study by Thorsen (1999) directed at Norwegian preschool teachers.

Understanding teachers’ priorities and beliefs about discipline and behavior management can point to what teachers believe they can and should do to develop and maintain a good learning environment in daycare or school settings. Do they for example express views that tolerate noise and lively play and collaboration, or are they more focused on having control, structure and rules? Do teachers emphasize prevention of problems, and what are their views on self-monitoring and autonomy? Do they express clear expectation of the children? What are teachers’ beliefs about using punishment, praise or rewards?

When it comes to practices in daycare- and school-settings, how do teachers express their meanings concerning results and processes, structure and play? Are they focused on routines, or do they follow children's initiative and/or reflections? Do teachers express a practice that emphasizes enhancing relationships? How do they view instruction and/or social support in learning?

Teachers' beliefs about children will in one way or another affect the relationship between them. Do teachers see children as potentially good and do they like the children they have contact with in daycare and school? Do teachers focus on children's strengths? Do teachers express meanings about care and closeness to children and families?

Many questions have been raised concerning teachers' possible beliefs and opinions. Different beliefs and theoretical convictions can lead to different priorities and practices. Rimm-Kaufman et al. (2006) pointed to differences in teacher education and experiences and hypothesized that pre-service and in-service teachers hold different beliefs and priorities about discipline and behavior, effective teaching practices and children. Could this be the case for teachers with different pedagogical backgrounds as well as here in Norway? Would it be possible to see traces or trends from policies and different curricula that express different standpoints and meanings among Norwegian teachers in daycare and school?

2.3.2 Do teachers' beliefs vary considering different traditions, educational background and cultures?

Many studies have been done concerning pre-service and in-service teachers. It has been established that prior beliefs and experiences affect teachers and the way they teach. Teacher education has a more moderate affect.

A study by Rimm-Kaufman et al.(2006) suggesting that teachers' beliefs are measurable and differ among groups of teachers who vary in relation to training and teaching experience, used the Teacher Belief Q-sort (TBQ) and produced three notable findings. First of all they advanced the TBQ as a reliable and valid tool for measuring teachers' priorities among their beliefs. Secondly they found Responsive Classroom (RC) teachers to appear to have a

distinct set of practices for discipline and behavior management and classroom practices compared to three other groups of teachers. They also found that there appeared to be different priorities and beliefs among pre-service and in-service teachers especially concerning classroom practices. The researchers cautioned that although TBQ distinguishes between those that are trained or not trained in the RC Approach, it is unclear if and to what degree this applies to teachers' beliefs and training in other interventions.

A study with the aim to increase knowledge and understanding about structural and process factors that influence early childhood professionals' working philosophies with young children was reported by McMullen (2003) using multiple perspectives. Developmentally appropriate practice (DAP) was used as the lens to interpret the information since this philosophy is used in the US to define and assess quality programs. This study uncovered differences in educational level and DAP beliefs and practices. Teachers with only high school diplomas held weaker beliefs and engaged less often than professionals at any other educational level. It was also reported that respondents with elementary teacher education background held weaker beliefs and practices scores than others trained in early childhood teacher education and or child development. There was also a very clear trend that showed the relation between increasing years of experience with increasingly stronger early childhood beliefs and practices. According to McMullen (2003) active engagement in professional development was positively related to both DAP beliefs and practices.

Another study by McMullen et al. (2005) compared beliefs about appropriate practice among early childhood education and care professionals from five different countries; the U.S., China, Taiwan, Korea and Turkey. The purpose of the study was to examine if teachers and caregivers from these countries had anything in common concerning self-reported beliefs and self-reported practices. DAP was used here as well. Although principles in DAP are built on research of European and/or American theorists, McMullen et al. articulate that the ideas are not necessarily new to other cultures, just put together differently. Although the researchers point to several limitations of the study, they do report some interesting findings. Four of the countries are more or less oriented towards collectivism, while the US is strongly individualistic oriented. McMullen et al. point to commonalities "...associated with beliefs

and practices about integrating content across the curriculum, promoting social/emotional development, providing concrete/hands-on materials, and allowing play/choice in the curriculum” (p. 461). Two items reflecting DAP’s underlying values of individualism and autonomy concerning responsiveness to individual differences in interest and differences in development appeared to be embraced also by respondents in collectivistic oriented countries. They also reported from Korea and Taiwan that child-centered philosophies and methods taught to future teachers are often in conflict with parents’ and the larger society’s ideas about how best to educate children. Similarities are drawn to the U.S. concerning the best ways of educating ethnic/minority/urban children. The researchers questioned “the ability of DAP or any single philosophy to be able to be applied universally to meet the needs of all children and families within a given context, let alone across multiple cultures and contexts” (p.462). A challenge they called attention to was how to maintain what makes each country unique concerning their curricular beliefs and practices while integrating beliefs from outside that make sense or go well together with local professional values.

This gives thought to the affect of teacher training courses in general but also when teachers have practiced teaching a while after the primary teacher education. Gaining experience as teachers will increase their notion of what works or does not work in the way they teach. With an increased globalization and exchange of information, ideas, and knowledge, teachers need to be alert and critical of which trends to follow. If teachers are reflective practitioners they may even seek more knowledge or ways of becoming better skilled in their profession.

2.4 Research and theory on what children need

Previously literature has been reviewed confirming that beliefs influence our thoughts, values, understandings and actions. Two areas that are especially important for teachers and their work are children’s development and how children learn. Teachers’ beliefs related to these issues will affect the way they understand the children and the manner in which they teach the children. In the following text the focus will be on aspects concerning children’s

development and learning in the context of daycare- and school settings, but first seen in relation to how systems play a part.

2.4.1 Systems play a part

Urie Bronfenbrenner (1979) has described how different parts in an ecological system from micro to macro interact and affect the whole. In more recent writings he (1995a) called attention to a bioecological model and stated that the biopsychological characteristics of the individual as being both the product of prior developmental processes and the partial producers of the person's future developmental course (p. 599). In doing so he pointed to the importance of four major components: process-person-context-time (1995b). Applying general systems theory (GST) to complex organizations as daycare institutions and schools can be helpful to understand how different aspects affect various parts of the system. Systems were defined by Pianta (1999) as "units composed of a set of interrelated parts that act in organized, interdependent ways to promote the adaptations or the survival of the whole unit" (p. 24). He also called attention to the fact that in some units the systemic nature is easy to see, while in other cases it can be more difficult to notice. In my contact with teachers, some have indicated that the sources of problematic behavior that children display stem from the child's traits or family background, not always seeing the possible connection to other interactive parts of the system as child-teacher relations, how the daycare center is organized, or which methods are used (Thorsen, 1999). According to Pianta (1999) GST principles "emphasize understanding the behavior of the system's parts in relation to the unit as a whole and understanding the dynamic properties of the whole in relation to its context" (p. 24).

A solid base for life-span development in a systems perspective was provided by Ford (1987) with Living Systems Framework (LSF) and the application of LSF to guide scholarly and professional activities (D. H. Ford & M. E. Ford, 1987; M. E. Ford & D. H. Ford, 1987) . This has been further elaborated on through the work of Ford and Lerner (1992) where they combined a metamodel called developmental contextualism and a model of individual development and functioning, LSF, mentioned above. Both were based upon a similar framework of assumptions.

It is interesting to see how the pendulum swings in a historical period of time and the many scholars who have contributed to thesis and antithesis in an effort to gain more knowledge about humans and the world around us. An example of this is when focus was mainly on genetics, before it turned towards the environment. Today we see more of a combination of the two, in which two examples are Bronfenbrenner's bioecological model and Ford & Lerner's Developmental Systems Theory (DST). Focus is on the dynamic influence of biological and psychological processes and contextual conditions. According to Ford & Lerner (1992) the multilevel framework proposed in DST can encompass both organismic and mechanistic types of development that could occur in some aspects of humans at some phases of development (p. 12). Others have elaborated on this as well (Pianta, 1999; Pianta & Walsh, 1996) and applied it to children in school contexts. This is depicted in a figure by Pianta (1999), (adapted from Pianta and Walsh, 1996 and Sameroff, 1989), that illustrates contexts for development.

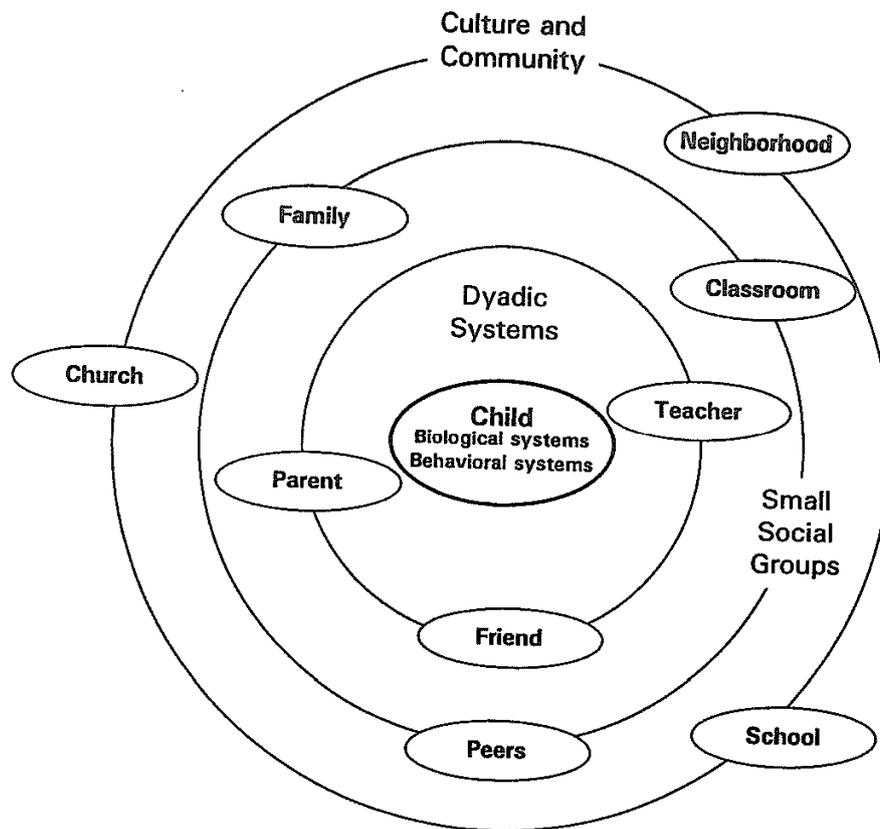


Figure 1 – Contexts for development (Pianta, 1999, p. 26)

Looking at the example of teachers' beliefs about problem behavior mentioned above, it could be wise to consider both biological and behavioral systems in the child and also the teacher and their dyadic system or relationship. In addition it would be useful to take into account the various relationships and contexts that child and teacher are part of and try to understand both intra- and interrelatedness in the various systems. Teachers' belief systems and the influences it has on behavior are also part of the whole picture. Ford (1987) pointed out that humans shape their own future by what they choose to believe and how they choose to act and also called attention to the potential of self-fulfilling prophecies. According to him thinking and

acting (in adults) starts with prior assumptions that need to be re-examined at regular intervals to be sure they are not misleading us (pp. 23-24). In the following text I will relate to this in view of children's development and daycare- and school settings.

2.4.2 Developmental pathways

Development was defined by Ford and Lerner (1992) in the following manner:

“Individual human development involves incremental and transformational processes that, through a flow of interactions among current characteristics of the person and his or her current contexts, produces a succession of relatively enduring changes that elaborate or increase the diversity of the person's structural and functional characteristics and the patterns of their environmental interactions while maintaining coherent organization and structural-functional unity of the person as a whole.” (p. 49).

In this definition Ford and Lerner (1992) took into account systematic change, successive change, aptive and adaptive change, and change that takes place through the interactions of current conditions. In their view development is open-ended and they account for different implications. Development can be seen as a never-ending possibility. Because persons and contexts can change in unexpected ways, each individual's developmental pathway may also take on an unexpected course. When development is looked upon as open-ended and a product of current conditions Ford and Lerner conclude that a person's future is not prisoner of his or her past. When development is defined as elaborative change, it helps create new possibilities for people. A developmental pathway will open up possibilities that did not exist before and may lead to gains or losses in future possibilities. Since the future is difficult to predict, it is not possible to know which of an individual's capabilities may be most valuable in the future. Their definition cannot be understood only in terms of person or context characteristics, but requires a theory of human development where person and environment factors interact dynamically to produce developmental change. Relations between these factors expose the basic process of development. The last implication the authors pointed to is that their definition identifies two basic processes, incremental and

transformational change processes, and these can both produce continuities and discontinuities in development (pp. 50-51).

Under ideal circumstances development leads to growth and well-being. Even in a not so perfect world, children can develop into well functioning adults depending upon resilience and the support they receive. On the other hand certain circumstances can also lead to risk factors, problematic relationships, disruptive and/or deviant behavior and in turn affect school outcome and job possibilities. This points to different developmental pathways. The Norwegian government is concerned about these issues and depicted their thinking in what they called the ‘Learning elevator’, presented at a hearing conference on June 13th, 2006 called *Grunnleggjande dugleik for alle* or *Basic competence/skills for all* by the Department of Education (my translation).

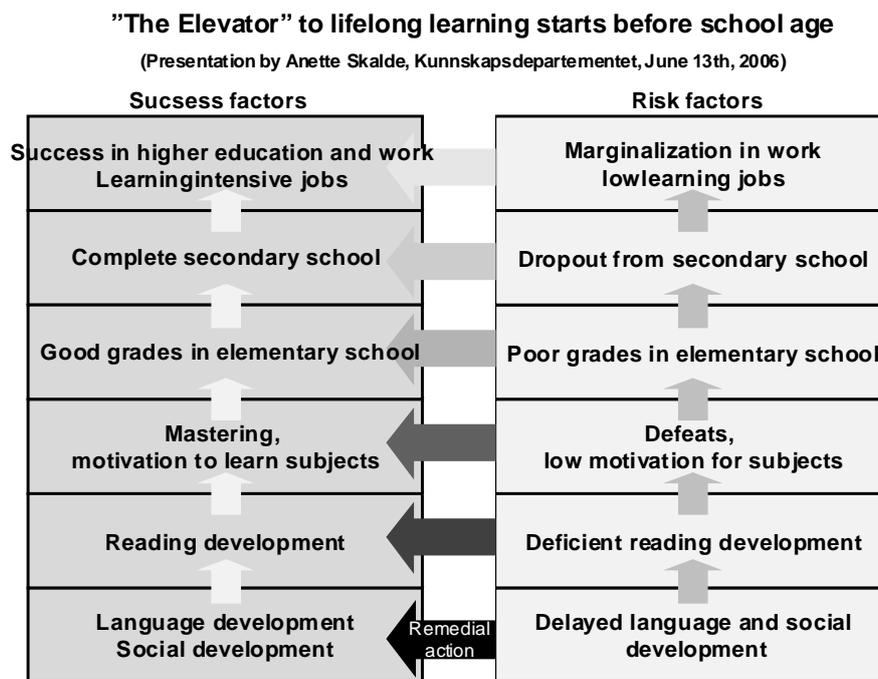


Figure 2 – “The elevator” to lifelong learning

As we can see two pathways have been outlined, one leading to success while the other points to risk factors. The emphasis is on the development of

language and social skills from an early age on. Remedial actions have the strongest effect when initiated at an early stage illustrated by darker arrows at the bottom and more translucent further up. The government accentuated that life long learning begins before school age (which in Norway is six). The developmental aspect is also present with the building blocks or levels in the 'Learning elevator' building on one another both in positive or negative directions. An obvious goal will be to get as many children as possible away from the escalating effects of the risk factors and into the 'Learning elevator' towards success. Teachers in daycare and school and the quality of their work are important factors in reaching such a goal. Quality elements are the teachers' understanding and beliefs about children and learning, how they build positive relationships and practice teaching, and utilize learning opportunities in different contexts. Another quality element is the teachers' knowledge about developmental aspects and how children's minds work at different ages/stages.

Drawing upon Sroufe and Greenspan, Pianta (1999) has pointed to six developmental key themes that are important in early childhood and emerge at different ages. These themes become organized within later patterns of adaptation, and thus affect us the rest of our lives. Pianta emphasized the important role of adult-child relationships in regulating a child's adaptation to each theme, and went on to say: "Understanding these themes, their organization, and the role for context is critical to understanding the role of relationships with adults in development for all children" (p. 50). In addition to parents, teachers can be 'significant others' to all children they teach, and maybe play an even more important role in contact with children at risk.

A limited summary of the key themes highlighted by Pianta (1999, pp. 51-63) will be addressed in the following text :

*The regulation and modulation of physiological arousal and joint attention
(pp. 53-54)*

This is a period where the newborn and the caregiver get to know each other and have to tolerate more complex situations including stimulation and activity, rest, soothing, feeding and care, and an increasing amount and quality of joint attention. The interaction between caregiver and infant prepares the ground for relational and behavioral patterns. In competent forms

of adaptation, the infant responds to regulations and routines set by the caregiver and regular rhythms are established. In this interaction the caregiver is sensitive towards cues from the infant and responds adequately to the developing child's needs. Not all dyads develop as smoothly. In some cases where there are less competent forms of adaptation, over- or underarousal may be seen in the infant and consequences can be less predictability, lower interest in interaction, more difficulty in soothing, which in turn can stress the caregiver and affect his or her ability to meet the infant. Maladaptation at this stage and disordered child-caregiver interactions contribute to difficulties later on.

The formation of an effective attachment relationship (pp. 54-56)

A major theme during the second six months in an infant's life and throughout childhood is the development and maintenance of an effective attachment relationship, which develops "as a consequence of early patterns of interaction, affords the child a sense of security in the context of a relationship, and provides a basis for exploration of the object and the interpersonal world" (p. 54). Important elements in regulating experience, are according to Pianta, adult responsiveness, emotional availability, the use of an effective signaling system, the caregiver's previous attachment experiences and self-regulation of attention and emotion. When attachment relationships do not develop effectively, the child can react in one of three ways to regulate emotional arousal through contact with caregiver: 1. avoidant, 2. ambivalent, and 3. disorganized. These reaction patterns also appear in the interaction between the child and other adult caregivers, such as teachers. On the other hand, nonparental figures in a different relational context may provide the child with new experiences that enhance the attachment relationship, which in turn can enable the child to use adults more competently. Pianta called attention to research that connects the degree of attachment and children's later performance in social and learning settings and may explain some of the difficulties that arise.

The development of self-reliance or autonomy (pp. 56-57)

This third theme becomes increasingly more important in the child's second year and continues through childhood. According to Pianta confidence in self and others are hallmarks of competent adaptation and "The concept of self-

reliance recognizes the relational base of the child's efforts to meet social and task-related demands and focuses on the child's use of his or her own and others' resources" (p. 56). An important part of this is for the child to have a secure base from which to explore and caregivers who accept and tolerate the child's autonomy efforts while also providing adequate support. Communication becomes more advanced in this period, but gestural support is still a very important factor. Pianta pointed to the connection between a child's self-esteem, self-reliance and competence in the classroom, and the challenges he or she will meet there.

The formation of an expanded ability to organize and coordinate environmental and personal resources (pp.58-60)

The fourth theme builds on prior developmental issues as attachment and self-reliance. The child encounters demands that become increasingly more multifaceted and abstract as he or she reaches school age. The intentional and functional use of symbols and words to express ideas, meanings, goals, experiences and interactions, becomes more prominent at this stage and is an important factor in self-regulation. Competent adaptation at this and later periods involves the capacity to modify arousal using accessible resources. In Pianta's (1999) view: "The emergence of a representational capacity is a fundamental shift through which experience is no longer coded only in behavior but in symbols that can be used" (p.59). He also pointed to the important role that contexts play in supporting the development of representations. Possible problems can be traced to how contexts support this development.

Caregivers who show behavior that is coercive, controlling, negative, power oriented, indicate contexts that do not enhance the representational capacity of a child. On the other hand, interactions between children and caregivers who "recognize and label the child's experience, respond to the child's signals for help or assistance, and allow the child "room" to explore and try alternatives are all styles that encourage a shift to representational processing" (p. 59-60). Observations of this can be seen in interactions between children and "good" teachers and according to Pianta reflects how a relationship supports the development of self-regulation.

The establishment of effective peer relations (pp.60-61)

The fifth theme Pianta called attention to is central from preschool age onwards and concerns effective peer relations. These relationships have in common with child-parent relationships that they develop over time and the exchanges become more abstract and representational as the children grow older. Peer relationships are linked to the child's prior attachment history with significant others. While children with secure attachment adapt well in relation to peers, children with an insecure attachment history adapt more poorly. The same tendency has been documented with children who have had avoidant or anxious-ambivalent attachment in infancy. Drawing upon Birch and Ladd, Pianta (1999) called attention to three relational styles that characterize relationships with teachers, parents, and peers: moving toward, moving against, and moving away, and pointed to the suggestion by Birch and Ladd "that these similarities reflect an integration of experience across relationships and a common set of strategies for organizing interpersonal behavior"(p. 61). When children fail to adapt well concerning peer relationships, this can be a strong predictor of later disorder.

The formation of a sense of self, an effective use of self-control, and the use of abstract symbols (pp.61-63)

The last of the six themes that Pianta called attention to is the formation of a stable sense of self, effective use of self-control and use of symbolic representation. These developmental elements in middle-late childhood build on the child's prior experiences and relations in different contexts and mutual influences with parents, teachers, peers and others. According to Pianta (1999) they are "key elements of cognitive-academic achievement, cooperation in social groups, and identity" (p. 61) and he called self-regulation a hallmark of competence at this period of late childhood. At this phase peer relations become increasingly more important. Supportive systems and good role models enhance the chances for a child's well functioning development in accordance with this theme as well. Conversely children with avoidant, resistant or ambivalent attachment relations adapt poorly and develop strategies that do not function that well for the child or in relation to family, peers and teachers.

Children at different ages spend many hours in daycare or school settings every day and teachers and peers play important roles in the lives of each

child. The quality of the relationships and interactions influence the pathways along which children develop. Pianta (1999) described relationships as “the cornerstone of development – they are in large part the infrastructure of school success not only for high-risk children but also for all children” (p. 63). Both systemic and relational aspects are important factors in helping teachers to help children in direction of positive developmental pathways.

2.4.3 Research on developmentally appropriate practices (DAP)

We may also come to believe in theories for example about what is good for children. Some of these may originate from our core or existential beliefs, while others may be derived from authorities we trust and also from majority opinion (Rokeach, 1976). The more empirical proof that seems to support a certain view, the more reliable it seems to be.

National Association for the Education of Young Children (NAEYC), Washington, DC, provides a forum for the discussion of major issues and ideas related to early childhood education from birth through 8 years. Views are grounded on Anglo-American and European traditions. High quality, developmentally appropriate programs have some things in common. They are based on what is known of how children develop and learn, and promote the development and enhance the learning of each individual child (Bredekamp & Copple, 2004).

“A high quality early childhood program is one that provides and promotes the physical, social, emotional, aesthetic, intellectual, and language development of each child while being sensitive to the needs and preferences of families.” (p. 8)

Since learning and development is so complex Bredekamp & Copple (2004, p. 9) note there is no one theory alone that explains the phenomena, and turn to a broad-based review of literature on early childhood education to generate a set of empirically based principles of child development and learning to inform and guide decisions concerning early childhood practice.

There are 12 principles of child development and learning that inform developmentally appropriate practice (pp. 9-15):

1. Domains of children's development – physical, social, emotional, and cognitive – are closely related. Development in one domain influences and is influenced by development in other domains.
2. Development occurs in a relatively orderly sequence, with later abilities, skills, and knowledge building on those already acquired.
3. Development proceeds at varying rates from child to child as well as unevenly within different areas of each child's functioning.
4. Early experiences have both cumulative and delayed effects on individual children's development. Optimal periods exist for certain types of development and learning.
5. Development proceeds in predictable directions toward greater complexity, organization, and internalization.
6. Development and learning occur in and are influenced by multiple social and cultural contexts.
7. Children are active learners, drawing on direct physical and social experience as well as culturally transmitted knowledge to construct their own understandings of the world around them.
8. Development and learning result from interaction of biological maturation and the environment, which includes both the physical and social worlds that children live in.
9. Play is an important vehicle for children's social, emotional, and cognitive development as well as a reflection of their development.
10. Development advances when children have opportunities to practice newly acquired skills as well as when they experience a challenge just beyond the level of their present mastery.
11. Children demonstrate different modes of knowing and learning and different ways of representing what they know.
12. Children develop and learn best in the context of a community where they are safe and valued, their physical needs are met, and they feel psychologically secure.

In addition to these principles, there are also guidelines for decisions about developmentally appropriate practice (DAP) addressing five interrelated dimensions of early childhood professional practice (Bredekamp & Copple, 2004, p. 16): “creating a caring community of learners, teaching to enhance development and learning, constructing appropriate curriculum, assessing children’s learning and development, and establishing reciprocal relationships with families.” In their book there is also presented examples of appropriate and inappropriate practices in relation to each of these dimensions for different age levels. There are many interrelationships between principles of child development and learning and also between guidelines for early childhood practice and the NAEYC also call attention to the usefulness of a position of both/and in addition to cautioning against the polarizing into either/or choices.

Teachers make many decisions every day that affect individual children, the whole group, and what goes on in the classroom considering activities, interaction and learning possibilities. Three critical, interrelated bodies of knowledge are important elements in teachers’ decision making concerning developmentally appropriate practices: 1. what teachers know about how children develop and learn; 2. what teachers know about the individual children in their group; and 3. knowledge of the social and cultural context in which those children live and learn (Bredekamp & Copple, 2000, p. vii). Decisions are also based on teachers’ subject content knowledge and how they pass this on from e.g. facts to an integrated understanding of key concepts and principles (Pianta, La Paro, & Hamre, 2006).

Although scientific advances have given us information, knowledge and tools that are effective this does not necessarily mean we abide by it. As pointed out by Olsen and Bruner (1998, p. 9), it still remains difficult to know “how, for whom, and when” to use it.

2.4.4 Studies concerning management behavior, group/classroom practices, and teachers’ beliefs about children

The following text is an elaboration of issues of importance in DAP and relevant research from different periods will be presented.

Discipline problems among children are seen as a major concern for teachers (Jones, 1989), and how to maintain control and to enhance learning has been focused on for many years and has been dealt with in different ways. Jones recalls several shifts in focus. Before the late 1960's there was an emphasis on discipline and what to do after children had misbehaved, then came a period in late 1960's and early 1970's with a shift to personal growth and awareness, advising teachers to concentrate on understanding children's problems and helping them to understand themselves and to adopt more functional behaviors. There was concern of increasing disruptive behavior and there came a shift in direction of teacher control much inspired by behaviorist methodology and the use of behavior-modification techniques. While counseling and control-oriented approaches were competing in popularity, Jones points to a development with an emphasis on classroom management characterized by how teachers prevent or contribute to children's misbehavior that was later labeled teacher effectiveness. In this line of thought, there are three sets of teacher behavior that influences students' learning and behavior: "(1) teacher-student relationships, (2) teachers' skills in organizing and managing classroom activities, and (3) teachers' instructional skills"(1989, p. 331). Jones suggests there are multiple factors that comprise an effectively managed classroom, and professional training, role and bias will also influence what goes on in the group or classroom.

Empirical studies have shown consistent findings of teachers' beliefs being relatively stable and resistant to change, and are also inclined to be associated with a congruent teaching style (Kagan, 1992). Brody (1998) calls attention to the importance of teachers' beliefs concerning what they do in the classroom, how they conceptualize their instruction, and how they learn from experience, and it is important to be aware of this aspect in teacher development processes. Two fundamental assumptions are made by Kagan (1992, pp. 73-74): "most of a teacher's professional knowledge can be regarded more accurately as belief", and "knowledge of his or her profession is situated in three important ways: in context (it is related to specific groups of students), in content (it is related to particular academic material to be taught), and in person (it is embedded within the teacher's unique belief system)".

A systematic review of research between 1998-2007 concerning teacher competence and students' learning in daycare and school was done at the

Danish Clearinghouse for Educational Research (Nordenbo, Sjøgaard Larsen, Tiftikçi, Wendt, & Østergaard, 2008) on behalf of Kunnskapsdepartementet (Department of Education) in Norway. The goal was to find which dimensions of competence among pedagogical staff in daycare and school could, through effect studies, prove to contribute to children's learning. In this process Nordenbo et al used Muijs and Reynolds' (2002) theoretical model of the relationship between teacher characteristics and students learning that contains 'teacher personality', 'teacher beliefs', 'teacher behavior', 'teacher subject', and 'student achievement'. Through their systematic review, Nordenbo et al (2008) found three teacher-competence components that were important to children's learning: relational competence (relasjonskompetanse); competence to enforce rules through leadership (regeledelseskompentanse); and didactical competence (didaktikkompentanse), not unlike what Jones presented (1989).

Based on extensive research, The Classroom Assessment Scorings System (CLASS) (Pianta et al., 2006) was originally developed as an instrument to observe and assess classroom quality in preschool through third grade classrooms, and is being further developed to assess middle and secondary school classes as well. It is based on developmental theory and reviews of research signifying the importance of student - teacher interaction as an essential mechanism of student development and learning. These interactions are grouped into four main domains: Emotional Support, Classroom Organization, Instructional Support, and Student Outcome. Each of the three first domains consist of dimensions such as positive/negative climate, teacher sensitivity, and regard for student perspectives (Emotional Support); behavior management, productivity, and instructional learning formats (Classroom Organization); procedures and skills, content understanding, analysis and problem solving, and quality of feedback (Instructional Support). The focus is on what teachers do and their interactions with children/students. The fourth domain concerns Student Outcomes with a focus on student engagement, and here the student's behavior is being observed in relation to active versus passive engagement and also sustained engagement. Although I have not observed teacher- or child/student behavior in this study, these dimensions of teacher competences and interactions are important in illuminating teachers' priorities and beliefs for the areas of focus in the present study.

Collaboration between home and daycare and home and school is important (Barner-Rasmussen & Hermansen, 2004; Beveridge, 2005; Ingerid Bø, 2002; Jensen & Jensen, 2007; Kristiansen, 2004; Malmo & Stemshaug, 2002; Minke & Anderson, 2005; Nordahl, 2003) and the quality of this collaboration can affect the relationships that develop and the trajectory of the children. Collaboration between families, daycare and school is also important in the transition from one educational system to the other (Løge et al., 2003; Pianta & Cox, 1999; Pianta & Kraft-Sayre, 2003b; Thorsen, Bø, Løge, & Omdal, 2006). Although it would be interesting to pursue these important topics, it would exceed the scope of this study.

Discipline and behavior management

As with families, schools and daycare settings are complex ecologies for development. Schools and daycare are also settings for assessment of adaptive and maladaptive behavior patterns and can be sources of influence on such patterns (Pianta, 2006, p. 494). If conduct problems are defined as a matter of individual trait, daycare and school systems can avoid critical self-questioning and evaluation (Drugli, Clifford, & Larsson, 2008). Teachers in the study by Drugli et al were reported to be highly engaged and worked hard to support children with conduct problems. The teachers in daycare and school seemed to base their work with these children on “subjective and individual perspectives and preferences, rather than professional evaluations”, and as such were more attuned toward “practice-based evidence” than evidence-based knowledge and methods (Drugli et al., 2008, pp. 289-290). Child characteristics such as language, attention and social maturity can place children at risk, but also the quality of interaction patterns between adult and child, and how teachers perceive child behavior can also affect child development (Pianta & Stuhlman, 2004). What teachers believe to be important in this aspect will influence and guide their priorities and actions in dealing with discipline and behavior management.

There have been many views on how to deal with deviant behavior, and there are proponents for both reactive and proactive solutions. In Jones’ (1989, p. 335) view “only a multifaceted approach can provide adequate structure and consequences while simultaneously attempting to enhance a student’s motivation and academic success”. Teachers may choose to use different

means to reach such goals. Some may value aspects such as reinforcement strategies, shaping, timeout, and response cost (Berggrav & Eriksen, 1977; Justen & Howerton, 1993), while others are proponents for a more relational oriented approach (Calderhead, 1996; Pianta, 1999; Pianta & Stuhlman, 2004). Teaching is seen as an intensely psychological process (Rimm-Kaufman & Sawyer, 2004, p. 322) where “teachers’ ability to maintain productive classroom environments, motivate students, and make decisions depend on their personal qualities and ability to create personal relationships with students”. In a relational perspective it is essential to develop a constructive relationship with each individual child, to spend time on community building, and to establish routines in the group/classroom to assist in reaching goals such as reducing discipline problems, making transitions effective, and creating an environment with support and concern, collaborative work and decision making (Battistich, Solomon, Watson, & Schaps, 1997; Pianta, 1999) which can promote adjustment and learning (Hamre & Pianta, 2005). This is also in line with aspects of an authoritative teaching style (Hughes, 2002; Querido, Warner, & Eyberg, 2002; Roland, 2007; Roland & Vaaland, 2006; Roland, Vaaland, & Størksen, 2007).

Group/classroom practices

Kagan (1992) discusses two specific forms of teachers’ beliefs: self-efficacy, and content-specific beliefs. She points to research that describes elements from classroom practices that are positively related to a teacher’s sense of self-efficacy such as: “the tendency to use praise rather than criticism; to persevere with low achievers; to be task oriented, enthusiastic, and accepting of student opinion; and to raise student’s levels of achievement in reading and mathematics” (Kagan, 1992, p. 67). She claims that although teachers’ beliefs may vary when teaching different academic content, their beliefs usually reflect the nature of the instruction they use. This was also found in a study by Berry (2006).

Teachers have a lot of responsibility and are expected to meet many goals in a limited amount of time. In such a situation it is necessary to prioritize some practices over others. Rimm-Kaufman et al (2006, p. 145) note that teaching practices which support instruction are associated with improved achievement and the transfer of learning to new contexts, and point to techniques such as

“sustaining and confirming feedback, encouragement of student thinking and active discussion, and use of meta-cognitive strategies”. These authors also suggest that teaching practices which give social support for learning have been associated with a child’s perception of “belonging”, with a decrease in delinquency and improved social competence, and also to improved academic performance. Examples from this tradition are reflections concerning social interactions in the group or class, and creating a sense of community in the classroom (Battistich & Hom, 1997). Emotional and instructional support for learning has been associated with student engagement in first graders (NICHD Early Child Care Research Network, 2002), an issue also focused on in CLASS (Pianta et al., 2006). Corrective comments and modeling are practices that can improve child behavior, contribute to a positive class environment, and also give children a sense of group membership (Rimm-Kaufman & Sawyer, 2004). These authors also point to research where the use of sustaining and confirming feedback is linked with improved reading scores in kindergarten, and student reflection on what works or does not work is related to being able to transfer learning to new situations.

A study by Berry (2006) focusing on two elementary multi-age inclusion classrooms including 5 teachers, 44 general students and 23 special education students, investigated teachers’ pedagogical beliefs and teaching practices concerning writing instruction. The teachers shared similar views on inclusion and also the uniqueness of their instructional approaches. The findings reported by Berry suggest that the teachers “nuanced their writing instruction to conform to their implicit theories about teaching, learning, and disability” (p. 11). One set of teachers used a *structural* approach described as being sequenced, individualized and the advantage of this approach was in using explicit and direct instruction in writing skills. Another set of teachers advocated for a *relational* approach with a focus on social interactions and activities where students with disabilities are “protected” and “empowered”. The advantage here was in its repudiation of deficit as a basis for instruction, with emphasis on collaboration and student choice. This study points to the effects teachers’ personally held beliefs have on their instructional decision making and on their students’ experiences in school. Implications for practice suggested by Berry, are to challenge teachers using a structural approach to also consider interactive problem solving to facilitate learning, and to ensure

that individual learning needs are appropriately recognized and met by teachers using a relational approach. Here too we find it is not necessarily an either/or approach, but a both/and view that can facilitate learning.

Using a combination of survey, drawing, and interview tasks, Murphy, Delli and Edwards (2004) conducted a study to explore second-grade students', preservice teachers', and inservice teachers' beliefs about good teachers and good teaching. They found that "good teachers are believed to be caring, patient, not boring, and polite... it does not seem necessary to be soft spoken, ordinary, or strict to be considered a good teacher" (p. 87). The authors also found much agreement across varying educational communities of what characterizes good teachers. Good teaching and good teachers were characterized by student-centered instruction, active teaching and learning with reciprocal communication of ideas. Literacy as a content area was important since children both learn to read and read to learn at this stage. Not unnaturally, Murphy et al found that beliefs of the different groups progressed in sophistication from second-graders to preservice teachers to inservice teachers. Implications for research and practice that these authors call attention to is the potential that complementary methods have in providing quite different information, and also how powerfully beliefs are being shaped in classrooms. In addition, the importance of discovering students' deeply held beliefs and what this brings to the classroom could guide teachers' decisions and instructional approaches.

Beliefs about children

Teachers' beliefs can be illuminated through the way they relate to children, and are important in understanding how teachers teach (Nespor, 1987). Children's learning environment should be nurturing, stimulating and educating (Shonkoff & Phillips, 2000), and beliefs in accordance with these aspects could prove helpful.

Rimm-Kaufman et al (2006) call attention to two common dimensions, one concerning interpersonal beliefs about children, (children's desire to learn and likeability), and the other concerns how children learn, for example the belief in a child's need to be actively involved, and have choice possibilities. The authors draw upon Hargreaves (1975), and point to "deviance-insulative" teachers who believe children are essentially good and ready to focus on

school work, and to “deviance-provocative” teachers who are inclined to be distrustful of students and think they may be rebellious and want to avoid work.

Teachers may believe in different ways of how children learn and it can range from a “transmission” approach to an “absorptionist” approach. The former has to do with transmitting information and factual knowledge to the child or student, while the latter has more focus on how to facilitate children’s development, critical thinking and construction of new ideas (Prawat, 1992). Other beliefs may encompass a continuum with focus on an approach ranging from “teacher-directed” to “child-directed” (Minor, Onwuegbzie, Witcher, & James, 2002; Rimm-Kaufman et al., 2006). Another dimension is how teachers perceive teaching and learning as passive acts or more active processes with teachers as facilitators. Minor et al studied pre-service teachers’ educational beliefs and perceptions of what characterizes effective teachers and found that student-centered descriptors received the greatest endorsement. They also found that pre-service teachers who approve of enthusiasm in connection to effective teachers were least likely to endorse subject knowledge as an effective trait (Minor et al., 2002, p. 121), although the authors note this may reflect the intended grade level in which to teach.

A meta-analysis of the effectiveness of learner-centered teacher-student relationships was done by Cornelius-White (2007). He reviewed 1 000 articles to synthesize 119 studies from the period 1948 to 2004. Cornelius-White notes that person-centered education is a counseling originated, educational psychology model. He concludes that learner-centered teacher variables have above average associations with a positive student outcome, and points to variables such as positive relationships, nondirectivity, empathy, warmth, and encouraging thinking and learning (p. 134).

A study focusing on Squires (2004) affective, cognitive and executive functions of teaching was done by Berthelsen and Brownlee (2007) concerning practitioners of early child care and their beliefs about their role. Affective functions are the interpersonal elements of the teaching role, cognitive functions point to the actions that assist and support a child’s engagement with materials, peers and adults, and the executive function has to do with metacognitive elements of teaching. Berthelsen and Brownlee used

video taped practice sessions and interviews of twenty-one child care workers. They found that all child care workers identified the importance of the affective function, a focus on care, with the strongest emphasis on developing relationships with children and understanding their individual needs. There were 71% who referred to the cognitive function of their role to support children's learning. Elements here are to be a role model for children, to teach specific developmental skills, to encourage independence in learning, and that quality of interactions influence children's learning. 38% of the child care workers gave evidence of the executive function. Features here included beliefs that decision-making and actions were based on developmental knowledge and observation, but also that important aspects in working with young children are flexibility and adaptability. The emphases could be indicative of informed theoretical understandings (Berthelsen & Brownlee, 2007, pp. 358-361).

Olson and Bruner (1998) have noted that lay theories lead to assumptions on how to guide children and help them learn about the world, and call attention to the importance of making changes from the simplest pedagogies to the more sophisticated. If beliefs are based on more informed understandings this can imply that the practice with children can be of a higher quality (Berthelsen & Brownlee, 2007; Wood & Bennett, 2000).

In his study of prospective teachers' beliefs about diversity, Milner (2005) called attention to consequences of cultural and racial mismatches, colorblind beliefs and ideologies, and the development of deficit thoughts and beliefs about diverse learners. He claimed: "deficit thinking and beliefs result in inaccurate, incorrect, and harmful perceptions of diverse students..." (p. 771) and pointed to the problems this leads to for teachers to develop effective lessons. In Norway we have children in daycare- and school settings with a wide diversity in abilities. The extremely gifted and the developmentally handicapped attend the same group/class. This reflects the beliefs that all children can learn from each other, and should also have equal opportunities to attend the daycare institution or school in their home community. In addition, Norwegian society is becoming more and more heterogeneous with the growing contingents of families from many different parts of the world. This gives Norwegian teachers an extremely challenging work situation in the first place, and deficit beliefs can only enhance the possible problems.

2.4.5 Studies of self-efficacy

In addition to research on developmentally appropriate practices and enhancing children's learning, believing that you can is an important factor related to what children need. In relation to self-efficacy, Anita Woolfolk Hoy, makes a fundamental assertion: "*Beliefs matter, self-efficacy is a powerful belief, and teachers can make a difference for their students and themselves through self-efficacy*" (Woolfolk Hoy, 2004, p. 3) [original italics]. In her view, self-efficacy beliefs are about the future, what one is capable of accomplishing in a given situation, and not what already has been achieved or why one was successful in the past. There is no need for comparisons, because the concern is on one's own ability to succeed on a certain task, and not if others would be successful. With a high sense of efficacy in a given area, Woolfolk Hoy suggests we set higher goals, are less afraid of failure, and we can find new strategies if our old ones fail. However, if our sense of efficacy is low, we may keep away from a task all together or give up easily when problems occur. Woolfolk Hoy states that "*self-efficacy mobilizes cognitive and motivational tools*" (Woolfolk Hoy, 2004, p. 5) [original italics]. Among the four sources of efficacy identified by Bandura (1994, 2002), mastery experiences, modeling, persuasion, and physiological arousal, Woolfolk Hoy points to mastery as the most important, most of the time.

In social-cognitive theory human functioning entails reciprocal interactions between behaviors, cognition, other personal factors, and environmental events (Bandura, 1986). Self-efficacy is not an isolated construct but an integral component in this theory (Schunk & Pajares, 2004). Others have also pointed to efficacy as being bidirectional. Teachers feel more efficacious when students do well, and students do well when teachers feel more efficacious (Rimm-Kaufman et al., 2006; Ross, 1998). Fives and Alexander (2004, p. 333) argue that teacher efficacy is "a changeable and developing construct that fluctuates with experience, knowledge, and interpretation of contextual factors". In this sense it represents an immediate response but also an ongoing process.

Teacher efficacy is powerfully related to student outcome, and also to teachers' persistence, enthusiasm, commitment and instructional behavior

(Tschannan-Moran & Woolfolk Hoy, 2001). The potency of self-efficacy beliefs impact on teacher motivation and commitment should according to these authors, be used to rethink how novice teachers are introduced to their first teaching assignments and induction-year experience. They point to allowing for more protection and more support. Sometimes class assignments are seen as rewards for status and seniority. A problem here is that new and/or inexperienced US teachers are given the most challenging teaching assignments, and this is not an unknown practice in Norway either. From an efficacy standpoint this is a dysfunctional practice and can lead to low efficacy beliefs in novice teachers with the possible consequence of decreased effort and enthusiasm for teaching (Tschannan-Moran & Woolfolk Hoy, 2001).

Goddard, Hoy, and Woolfolk Hoy (2004) synthesize existing research and argue for collective efficacy beliefs importance for an organization's operative culture. They associate perceived collective efficacy with "the tasks, level of effort, persistence, shared thoughts, stress levels, and achievement of groups" (p. 8). This can also be seen in a systems perspective where several elements influence each other. When teachers experience doing well, achieving good results, and also perceive their colleagues doing the same, this means something. Sharing knowledge, for example, of child development, effective teaching procedures, and how to deal with or prevent disruptive behavior can promote experience of collective capability (Roland, 1995) and of being a competent teacher in a group of competent teachers at 'our' daycare or school. According to Goddard et al (2004, p. 10) "a strong sense of collective efficacy enhances teachers' self-efficacy beliefs while weak collective efficacy beliefs undermine teachers' sense of efficacy". One way of achieving this can be by enabling teachers to exercise some control over school decisions, but they call attention to the understudied area of "how perceptions of group capability might be changed to strengthen organizational culture" (p. 10). Examples of such efforts are programs in Norway focusing on helping teachers to reduce and prevent bullying among children and to enhance schools' social environment through organizationally based efforts and an authoritative teaching style (Olweus, 2004; Roland & Vaaland, 2006; Roland et al., 2007).

2.4.6 Authoritative focus

In addition to being aware of child development and how children best learn, there has been research focused at how parents differentiate their control over children, and Baumrind has done important work here with his classification of parenting styles (Hughes, 2002; Querido et al., 2002). There are two dimensions of parenting with high versus low control and high versus low warmth that describe four parenting styles: authoritarian (high control, low warmth); authoritative (high control, high warmth); permissive (low control, high warmth) and neglectful (low control, low warmth) (Hughes, 2002). An authoritative parenting style is, according to Hughes, associated with parents who are involved with their children but who also supervise, set and enforce limits for children's behavior, but that this control is combined with acceptance, respect for autonomy, and warmth. Such a parenting style is associated with positive child outcomes, positive peer relations and view of one's own competence, and prosocial behavior (Hughes, 2002, p. 487). A study by Querido et al. of parenting styles and child behavior in African American families with preschool children showed that the authoritative parenting style was most predictive of fewer child behavior problems. The authors point to the findings being similar results from studies done among European American, and Chinese families, and state the results "provide strong support for the cross-cultural validity of the authoritative parenting style" (Querido et al., 2002, p. 272). The relationship that develops between children and parents using an authoritative parenting style, and the positive outcomes it provides, can be transferred to the child and teacher relationship in daycare and school.

Research supports a clear classroom leadership giving better results both academically and on psychosocial matters (Roland, 1999). This does not mean being authoritarian which implies using fear as a weapon to enforce ones will. Instead it accentuates the authoritative adult who uses a combination of support and control in dealing with children/students (Roland, 2007; Roland & Vaaland, 2006; Roland et al., 2007). An essential factor is to develop and maintain trust in a caring environment, using structure, humor, empathy, and an ability to correct unwanted behavior on this background (Roland, 1995). Control in this aspect is not on behalf of the adult, but by caring for the child and the fellowship in the group/class and daycare/school environment

(Roland et al., 2007). Roland and Galloway (2002) note essential aspects, such as adults demonstrating that they care about each child by giving them attention and respect, and helping them both socially and academically.

2.4.7 Summary

In presenting research and theory of what children need, a focus has been placed on the role different systems play and the interaction between them in relation to children in daycare and school. Teachers should be aware of these aspects and the effect it may have on children's developmental pathways. The ideal is that development leads to well-being and growth, but other trajectories may be characterized by risk factors such as deviant behavior, problematic relationships and difficulty to succeed in school. In addition to families, teachers are important facilitators in helping children to develop well and to meet individual children's potentials and learning needs. Quality relationships are essential. Among the many possible and relevant themes concerning teaching in daycare and school, this study concentrates on teachers' beliefs concerning discipline and behavior management, group/classroom practices, and beliefs about children. These issues have been seen in relation to research on developmentally appropriate practices. Research on self-efficacy and collective efficacy has been presented, and both aspects have powerful influence on teachers and children in daycare and school. In addition, reported research supports the positive outcomes of an authoritative parenting and teaching style. As noted above, teaching is multifaceted and, although I have presented research relating to these themes separately, they are also connected. A teacher's feeling or belief of self-efficacy is entangled with his or her ability to maintain enough behavior management to recognize and enhance children's learning potential, but also to have adequate teaching and organizing skills and content knowledge to promote learning in line with curricula and children's developmental stages. This is also influenced by teachers' beliefs about children, what children need and how their needs should be met.

2.5 What are the methods generally used to investigate beliefs, and are there different ways of assessing beliefs?

In his more recent work, Pajares (2003) pointed to philosophy and “that the critical questions in human functioning involve matters that cannot be settled by universal prescriptions” (p. 178), but demand attention to the many forces that shape our lives. In this sense cognition and action cannot be separated from the context in which they occur, or boundaries provided by conditions in the situation, previous comprehensions and efforts to combine new information that makes sense and gives understanding to those involved. Pajares (2003) also recalled Cronbach’s (1975, p. 125) caution that “when we give proper weight to local conditions, any generalization is a working hypothesis, not a conclusion”.

There have been different methodologies and different ways of assessing attitudes and beliefs in the past. Richardson (1996) called attention to the paradigmatic shift in research strategies from a positivist standpoint to a more hermeneutic approach. Research goals in mid-century attempted to develop predictive understandings of teacher attitudes and behavior to use in selecting teachers. Most of this research was done by large scale, multiple-choice surveys. Research questions lead to large scale correlational studies. According to Richardson some of these measures were disguised so the subject would not know that attitudes were being measured. She also pointed to critique of multiple-choice measures of being to constraining.

In later years qualitative methodologies have been used to study teachers’ beliefs inductively. In this tradition we find observations, interviews or a combination of the two. The goal here is according to Richardson (1996) “not to develop predictive indicators of teacher effectiveness but to understand the nature of teachers’ thinking and world view” (p.107). She pointed to several that have critiqued qualitative research procedures and concluded that in determining teachers’ cognition multiple measures should be used.

Using multiple measures in gaining knowledge about teachers’ priorities and beliefs seems reasonable. One way of assessing this could be to use a traditional Likert-scale questionnaire and combining that with interviews of

some of the teachers in the study. In addition Q-methodology could be useful in gaining knowledge about teachers' subjective priorities, values and beliefs.

Q-methodology, innovated by William Stephenson embraces a distinctive orientation toward the systematic study of human subjectivity (McKeown & Thomas, 1988). Subjectivity is a person's point of view from any matter of personal and/or social importance. According to this tradition, subjective points of view are 'communicable' and always advanced from a position of 'self-reference' or a person's internal frame of mind. Interpreted this way, "subjective communication is amenable to "objective analysis" and understanding *provided that* the analytical means for rendering such communications objective do not in the process destroy or alter the self-referent properties of such communications" (McKeown & Thomas, 1988, p. 7).

This research method of gathering knowledge of individual's subjective points of view has been used in several areas of research; among them political science, advertising, health, psychology, education, and others. It has been described as a method combining the strengths of qualitative and quantitative research traditions, and in other circumstances it can provide a bridge between the two (S. R. Brown, 1996; Dennis & Goldberg, 1996). Q-methodology is chosen as the main research method in this study because of the manner in which it combines qualitative and quantitative aspects and in the way it attains the participants' self-referent views as configurations of a number of statements in relation to each other and according to personal preferences. This should prove useful in illuminating the subjective priorities and beliefs among Norwegian teachers.

2.6 Working hypothesis and research questions

Through review of research literature it has been established that beliefs play an important part in the life of people, both individuals and groups. Teachers are no exception. Essential aspects are understanding of and beliefs about: what teaching is, the role of the teacher and learner, which theories to rely on, which goals to meet, how to enhance each child's learning experience at his or her developmental level, and take appropriate priorities to ensure a beneficial

practice in educating our young ones. In a society with many and rapid changes, and a time of daycare and school reforms with an increasing diversity among the children attending these establishments, teachers meet numerous challenges. Teachers are expected to meet certain goals and expectations, which are regulated by laws, policies and curricula, and to participate actively in relationships with children, parents, colleagues, and others. How this is done is strongly influenced by personal and formal knowledge, beliefs, understandings and values that guide our choices. It is essential to be aware of these aspects and how they influence relationships and activities in the lives of teachers and children in daycare institutions and schools.

Through work experience from daycare and schools, pedagogical psychological services, child psychiatric ward, and at a national resource center in Norway focusing on relations and behavior, my attention has been drawn towards teachers' beliefs and understandings, their priorities and actions. I have seen wonderful examples of teaching that have benefited both child and teacher, but I have also witnessed troubled systems and troubled relationships with minimal or negative learning outcome. Signs of despair, disillusionment, and hopelessness have been obvious in both child and teacher. Misinterpretations and misunderstandings occur and can be more obvious to those outside the troubled system or relationship than to those within. At one time a teacher's aid cried out in despair: "This child just breaks me down emotionally!" The child was in preschool age. In such cases one might wonder: How did this happen? Are certain characteristics being attributed towards the child? How does this influence the relationship between adult and child? Do other adults share the same feeling? How can the teacher in charge deal with the problem? Sometimes the despair becomes so overwhelming that it is difficult to see where and how to start dealing with the problem.

Trying to understand teachers' psychological processes can be useful to problematic situations as mentioned above. It can also be helpful in teacher education and a contribution to help pre-service and in-service teachers become better practioners, a point focused on in research. The majority of the research that has been referred to in this thesis stems from other countries. It

is necessary to collect information and gather knowledge of how this applies to Norwegian teachers.

The main goal of this study is to generate new knowledge and an understanding of subjective priorities and beliefs. When choosing *which* beliefs to study, theory recited in chapter 2 underline the importance of behavior management, group/classroom practices and beliefs about children in relation to children's learning and experiences in daycare and school. Also, research on self-efficacy proves to have influence on teachers' performance and student outcome. Reported surveys (TIMSS & OECD-PISA, 2006) have stated that Norwegian students' subject outcome could be better in comparison to other countries. Teaching is multifaceted. One step in improving this picture is to understand teachers' subjective priorities and beliefs, not yet that well documented in Norway. Among many possibilities, in this study I have therefore chosen to concentrate on uncovering beliefs among Norwegian teachers in relation to discipline and behavior management, group/classroom practices, beliefs about children, and self-efficacy beliefs related to instruction and discipline. This will put us in a better position to help pre-service and in-service teachers become even more reflective and enlightened concerning their role as teachers, their relationships to children, parents and colleagues, and the role their priorities and beliefs play.

Guiding research questions are:

- 1) What are the beliefs and priorities of teachers in daycare and school, concerning discipline and behavior management, group/classroom practices, and beliefs about children?
- 2) What are teachers' beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and are there differences between teachers working in daycare or in school?

3 Method

Research questions and the rationale behind the choices were presented in the previous chapter. The present chapter will focus on methods and procedures chosen to investigate teachers' priorities and beliefs on the selected themes. The participants, instruments, and data analysis plan will be presented. Issues concerning reliability, validity, and ethics will be discussed.

One important area of educational research is to gain more knowledge of what goes on in the classroom, and what affects teaching and learning processes and the influence this has on children and teachers. A goal can be to improve education through research that can document and have a positive effect on teaching practices and student outcome. PISA surveys <http://www.pisa.oecd.org> are an example of regular research that documents student outcomes in many countries. Through study and documentation, research can contribute to enhance the learning environment and procedures to accommodate a child with special needs, or contribute to change education policy. This research can be done in many different ways and according to Gall, Borg and Gall (1996, p. 16) focus on description, prediction, improvement, or explanation. Descriptive studies can increase our knowledge of structure, activities, relationship to other phenomenon etc., and what happens in daycare centers and schools. It can also produce statistical information. Prediction is another aspect of research knowledge with intent of predicting outcomes to occur at time *Y* with information available at an earlier phase, and can reveal factors of social importance. Research knowledge concerning improvement, focuses on the effectiveness of interventions, or factors, that can lead to interventions. An important goal here is to consider if the effect of the intervention is large enough to make a difference that is worthwhile to pursue (pp. 4-8). Gall et al (1996) account for the fourth type of research knowledge – explanation – that subsumes the other three, as the most important in the long term. “If researchers are able to explain an educational phenomenon, it means that they can describe it, can predict its consequences, and know how to intervene to change those consequences” (p. 8). We can do research and obtain new knowledge through quantitative and qualitative traditions and methods.

3.1 Research methods

The intention of this section is to present and assess an overview of the methods and methodologies used in this study and to provide a rationale for the choices that have been made. There are different ways of obtaining data that have corresponding approaches to compute and interpret the results. Different methodologies and practices will give different kinds of information. This does not mean that information or data collected in one scientific tradition is necessarily more correct or better than any other (Ragin, 1994). There has often been a polarization between quantitative and qualitative research methods (Ercikan & Roth, 2006; Lund, 2005; Teddlie & Tashakkori, 2003) and advocates from both traditions have engaged in passionate debates (Johnson & Onwuegbzie, 2004). Ercikan and Roth (2006) stated that polarization can be confusing and tend “to limit research inquiry, often resulting in incomplete answers to research questions and potentially inappropriate inferences based on findings” (p.14). A problem they call attention to, is that the quantitative-qualitative dichotomy both can distort the conception of education research and be fallacious. According to them the material world has both quantitative (continuous) aspects and discontinuous (qualitative) aspects and “there are quantitative and qualitative notions that describe and explain nature” (p. 14). In teaching it can be appropriate to focus on for example interaction between teachers and children and look at types of interaction, qualitative aspects of them, and also how frequently they occur. As has been pointed to previously in this study, teachers’ beliefs can be elusive and difficult to grasp. Social interaction can be complicated as well, and combined with development and learning in addition to the beliefs individual’s hold, it can be quite challenging to document. When reality is complex and contingent, research should also be, and researchers should study the phenomenon from various angles (M. L. Smith, 2006, p. 471), a point also made by Newman et al (Newman, Ridenour, Newman, & DeMarco Jr., 2003). Different approaches can lead to various kinds of information and complement each other. From this point of view it seems reasonable to use varying approaches to gather information and understanding about the topics in this study.

The methods used in this study have been a combination of questionnaire, interview and Q technique and represent both quantitative and qualitative traditions. The questionnaire was aimed at getting demographic information and data concerning teachers' self-efficacy beliefs and analyzed according to R-methodology principles and by using SPSS (SPSS Inc., 2007). Follow-up interview data was collected from six teachers from the cohort, three from daycare institutions and three from schools as a supplement to the data received through the Q sorting process and questionnaire. NVivo 7.0 (QSR International, 2007) was used not as a complete hermeneutical analysis at this point but to categorize the spoken contributions which teachers shared with me of their opinions, priorities and beliefs concerning the themes in this study. Q-technique was applied to three themes concerning teachers' beliefs about discipline and behavior management, group/classroom practices, and beliefs about children, and was analyzed according to Q-methodology principles. The different procedures and methodologies will be described more thoroughly later on in this chapter, but with a main focus on Q-methodology.

3.1.1 Q- and R-methodology

Since Q-methodology research so far has been less well known than traditional quantitative or qualitative research, it may be appropriate to describe the methodology more closely. First I turn to the development of the terms R-methodology and Q-methodology.

Karl Pearson and Charles Spearman were responsible for major contributions to correlational and factor-analytic approaches to the study of human behavior. This has been labelled R-technique, where the R is a generalized reference pointing to the product-moment correlation coefficient, or Pearson's r in studying trait relationships (Brown, 1980; Ernest, 2001; McKeown & Thomas, 1988; N. W. Smith, 2001; Stephenson, 1953). Stephenson (1953) used the term "R-methodology" about the complex system of postulates that underlie a number of tests or traits being applied to a sample of persons, which are scored objectively, and where the fundamental concern is with individual differences. In R-methodology, analyses may include t test, analysis of variance, multivariate analysis or covariance, regression, discriminant analysis, canonical correlation, etc. to study relationships

between items for a number of people (Ernest, 2001, p. 342). The term R-methodology has been used by many in Q literature to distinguish it from Q-methodology and is therefore used here.

R-methodology is used in most of academic psychology and other human sciences (N. W. Smith, 2001), and this tradition requires large populations, and looks for population differences (p. 320). The goal is to gain objective pieces of information that can be looked upon as facts about a certain issue. Instruments such as scales or questionnaires are created to measure for example traits or test results as objectively as possible. This procedure reflects internal traits that all people have to some degree. This same procedure has been used to study likes, dislikes or beliefs (Ernest, 2001). Some researchers have been skeptical as to how well traditional research measures uncover subjective elements such as thoughts, points of view, values, and feelings (Brown, 1980; Stephenson, 1953). Brown (1980) cautioned that “what a person *has*, in some sense, is not necessarily related to what he *does*: Abilities and traits do not necessarily go hand in hand with subjective likes or dislikes” (p. 44).

Brown (1980) pointed to Sir Godfrey Thomson’s effort in the mid 1930s to call attention to computing correlations between persons rather than tests. Thomson also suggested using the letter *q* to distinguish the correlation of persons from the more generally used correlation of traits articulated by Pearson’s *r*. Almost simultaneously and independently, William Stephenson was working on the correlation between persons as well and presented this in a letter to *Nature* dated June 30, 1935 (Stephenson, 1935, 1953). While Thomson was pessimistic about the technique’s possibilities, Stephenson was concerned not only with *Q*-technique, but with what he called Q-methodology being a set of statistical, philosophy-of-science and psychological principles, and much more optimistic for the method’s scope and possibilities. Being Spearman’s assistant and having a PhD in both physics and psychology (Brown, 1997), Stephenson seemed well equipped to take on the challenge. He was met with critique from prominent factorists such as Sir Cyril Burt, Thomsen, Catell, and later Babington-Smith, who supposed “that only one matrix is ever at issue, involving individual differences either directly, indirectly, or fundamentally, which, looked at *down* its columns is R, and *along* its rows is Q” (Stephenson, 1953, p. 51).

Stephenson (1953) on the other hand, claimed that there were always two different matrices grounded in different methodologies. In a 1936 paper for *Psychometrika* he wrote about “Foundations of Psychometry: Four Factor Systems”. The following quote is from Stephenson (1953, pp. 51-52) :

System 1 – (R). Tests are applied to a sample of persons, and the correlations between the tests are factored. Individual differences are at issue.

System 2 – (Q). Persons are applied to a “sample” of statements or the like, and the correlations between the person arrays are factored. Intra-individual “significance” is involved.

System 3 – The transpose of 1. Data which have been standardized in *columns* for purposes of 1 are now standardized along the *rows*, and the correlations between *persons* are factored. (Cattell’s P-technique is of this system)

System 4 – The transpose of system 2. Data which have been standardized in *columns* for purposes of 2 are now standardized along the *rows*, and the correlations between “statements” are factored.

In view of this a single matrix of data may be properly factored by columns and then by rows only under very special conditions, when the same unit of measurement is common to both rows and columns (Brown, 1980). Stephenson (1953, p. 15) stated: “There never was a single matrix of scores to which *both* R and Q apply.”

Q-methodology deals with subjectivity, or, to be more precise, with an individual’s communication of his or her point of view (Brown, 1972; McKeown & Thomas, 1988; Stephenson, 1953) and is based on a twofold premise that subjective points of view are communicable and that these views are always anchored in self-reference. In other words opinions are subjective, can be shared and measured, and are based on each individual’s experiences, both past and present; and these philosophical assumptions lie behind Q-methodology and contribute to its usefulness in studying subjective opinions (Mrtek, Tafesse, & Wigger, 1996). According to Stephenson (1980b, p. 75) “...subjectivity is rooted in conspire, in the common knowledge, the shareable knowledge known to every one in the culture”. In the current study this applies to the culture and context of teachers in Norwegian daycare centers and schools who have participated in this study.

In Q-methodology communication on any topic is called ‘concourse’. This represents the many different viewpoints and feelings concerning a topic, which can be positive or negative, of any subject matter. Statements from people in a particular context can be collected through interviews and conversations, by sampling newspapers, essays, scientific literature, etc. portraying self-referenced opinions and feelings. The universe of a concourse is never ending. A set of representative, but not exhaustive, statements is drawn from the concourse and called a Q-sample. A set of persons or P set is instructed to rank order (Q-sort) these statements according to a specified condition of instruction, which could be ‘most like’ or ‘most unlike’ me or agree/disagree. Each individual’s subjective point of view is depicted in his or her rank ordering of *all the statements in relation to each other* and in accordance with the condition of instruction. These are called Q-sorts. The results of the Q-sorting are submitted to correlation and factor analysis, which in Q-methodology gives natural classes of response (Brown, 1980, 2006a).

The emphasis is on “discovery and upon the use of laws, theory and instrumentation to reach *understandings*, not facts, by proceeding from concrete situations to interpretations and explanations which are subjective to the proponent of knowledge” (Stephenson, 1986a, p. 38). The researchers using Q do not have fixed categories a priori. Instead the participants categorize themselves according to their personal Q sorting of all the statements as a whole. The results of each of these Q-sorts (one persons rank ordering of all the statements and their relative importance to him or her) are then looked upon as a variable that can be correlated with other Q-sorts. (People’s points of view and not traits are being correlated). A person’s point of view is according to Brown (2002, p. 157) “represented not as a single point object (like a score on a variable), but as an elongated dimension (ranging from +4 to -4, for instance) that forms a pattern.” Q-sorts with similar points of view or patterns join together on the same factor, and we can view their shared opinions. Different factors represent different viewpoints from a self-referenced position, and similarities and differences between these viewpoints can be studied.

It is most common to use this methodology on small groups of people or on single cases with different conditions of instruction, which is in accordance with its rich description of subjectivity (Brown, 1980; McKeown & Thomas,

1988; N. W. Smith, 2001; Stephenson, 1953, 1978). Stenner et al. (2006, pp. 671-672) call attention to its usefulness as a tool in exploring similarities and differences of a broad, cross-cultural nature, although they point to limitations concerning generalization (p. 671-672). By using Q-methodology we will not find how large a percent of people have this or that point of view, but that such points of view exist and can be found among others as well. Watts and Stenner (2005) noted that the method uses a by-person factor analysis, which can identify groups of participants that make sense of a number of statements in similar ways. An overview of the philosophy that lies behind Q-methodology and predicaments a Q novice may encounter can be viewed in Thorsen (2006). See Appendix no. I.

Post-interviews are often conducted after Q sorting to let the participant have the possibility to elaborate more on his or her point of view. Through interviews we can obtain information about what is in and on someone's mind in a different way than by self-reports or observation.

Behind qualitative interviews is the assumption that the perspectives of others are "meaningful, knowable, and able to be made explicit" (Patton, 2002, p. 341), not unlike the view in Q-methodology. In interviews it is important to focus on the participants perspective and not the researchers point of view (Marshall & Rossman, 1999). According to these authors, important skills for an interviewer to have are: superb listening skills, being skilled in personal interaction, question framing, and gentle probing for elaborations (p. 110).

Mrtek et al.(1996) claim opinion research previously was usually carried out entirely within the qualitative paradigm or within the quantitative paradigm, pointing to the use of interviews and focus groups in the former, while using survey questionnaires in the latter. The authors note that qualitative methods are useful for discovery and exploration, while a problem can be the generation of vast amounts of data that can be difficult to summarize and analyze. They also draw attention to the usefulness of survey questionnaires to identify consensus of opinion tendencies across large numbers of individuals, while a weakness in such data analysis is the assumption that those individuals hold more or less one homogeneous opinion. Results can be of less value when participant groups have views that represent differences in their individual profiles. Consensus is usually sought through statistical

averages across aggregate groups of participants. Q-technique and the underlying philosophy of its methodology is designed to “focus on the individual person as irreducible whole in whom all these variables come together and are integrated as a part of the opinion forming process” (Mrtek et al., 1996, p. 55). In this present study questionnaire data from large groups can generate knowledge of trends in self-efficacy beliefs among teachers in daycare and school settings. A more precise description of an individual’s expressed beliefs can be obtained through the Q sorting process of all the statements as a whole in each of the Q-sample themes. A closer elaboration of viewpoints of participants from Q-sorts and questionnaire are sought through follow-up interviews.

3.1.2 Differences and similarities

In Stephenson’s foreword to Brown’s book *Political Subjectivity* (Brown, 1980), he pointed to the fundamental differences between objective and subjective as a matter of self-reference, and claimed that “modern science has prospered by eliminating whims and arbitrary subjectivities from its fact-finding missions into the world “outside”. *Q* methodology follows the same prescriptions for what we consider “inside” us, matters of mind, consciousness, wishes and emotions, and it does so in terms of theories, universals, and laws, precisely as for modern physics.” (p. x). What is involved, according to Stephenson, is “ the discovery of hypothesis and reaching understandings, instead of testing hypotheses by way of predictability and falsifiability” (p. x).

Factor analysis was invented by Spearman and contributed to by Burt, Thomson and Thurstone. This was initially a procedure for studying differences between traits (R-method) (Brown, 1980). Correlation and factor analysis are used in Q-method as well, but Stephenson had something different in mind. While R-method mostly focuses on individual differences between people, like individual *a* has more of trait *A* than individual *b*, in Q-method the focus is on the subjectivity of each individual such as individual *a* valuing trait *A* more than trait *B*. This is something completely different from the reanalysis of a transposed R matrix (Brown, 1980).

Brown (1980) called attention to basic phenomena that differentiates between R and Q. R has its focus on traits, attributes, or characteristics which are thought to be objective and measurable for all people in the population, and efforts are made to break a phenomenon down to its smaller parts. In this case the whole is thought of as the sum of its simpler parts.

In Q it is the whole response that is of interest (viewpoint, concentration, image, etc) and is presumed to be irreducible and stems from the person giving it. This approach preserves the functional relationships between the parts within the context of the whole (p 173).

Brown (1980) summed up some of the important differences in this way (p. 322):

“...R method focuses on what is objectively measurable about a person in comparison with the other n persons in the sample, all of whom are equally measurable and only differ in quantitative degree. What is unique to the person, apart from what he is being tested for, is included in the error term. *In the R-methodological approach to human behavior, therefore, subjectivity is random and accidental.*

...Q method focuses on the subjective significance to a person of a statement in terms of the relative importance given it compared to other N statements in the sample. What is unique to the statement itself as an object, i.e., objectively and apart from what the individual does with it, is included in the error term. *In Q-methodological approach to human behavior, therefore, objectivity is random and accidental!*”

In R, outliers tend to disturb the picture and skew the results and are sometimes removed. In Q, such results are looked upon as a person's unique point of view, and a display of his or her subjectivity and could be especially important if the diverging view for example stems from the leader of the organization.

According to Brown (1980, pp. 132-133), scaling methodologies assume everyone to have all traits to some measurable degree, examining the positive aspects of a phenomenon and generally use a range from most to least. The mean in R, therefore, has weight, symbolizing an average amount of the trait. In Q the scale ranges from most to most, with extremes being of equal

significance and the middle being neutral or unimportant. In Q the mean is weightless and the continuum reflects the positive side of a variable, but also the relationship to the opposite. Ernest (2001) claims that the traditional R-methodological approach to research is based on mechanistic and reductionistic principles which focuses on the properties of the objects, items, or statements under investigation. In contrast to this, “Q-methodology explores a person’s perceptions of the objects, as a person compares all the objects, items, or statements in relation to each other” (p. 349).

Several have accounted for the misunderstandings and misinterpretations while using Q- method (Brown, 1980, 1997; McKeown & Thomas, 1988; Stephenson, 1953; Watts & Stenner, 2005). Watts and Stenner (2005) called attention to the tendency to erroneously (mis)identify Q-methodological factor analysis with its more familiar R-methodological incarnation which is a statistical method of data reduction focusing on identifying and combining sets of dependent variables measuring similar things (p.68). Watts and Stenner conclude that Q-methodology makes no such psychometric claim: “the method employs a by-person factor analysis in order to identify *groups of participants* who make sense of (and who hence Q ‘sort’) a pool of items in comparable ways. Nothing more complicated is at issue” (p.68).

Differences between Q and R have been pointed to mostly because there has been so much misunderstanding especially concerning the use of Q-technique and the philosophy behind the methodology. Q-methodology draws upon both quantitative and qualitative approaches (Corr, 2006). It can be useful to view essential aspects concerning quantitative and qualitative methods, and how these are similar or differ from Q-methodology. For this I turn to Corr’s (2006) outline of the comparison of Q-methodology with qualitative and quantitative methods in the following table 1 (p. 392):

Table 1 – Comparison of Q Methodology with Qualitative and Quantitative Methods

Issue	Quantitative Methods	Q Methodology	Qualitative Methods
Purpose	Identify changes or characteristics in large populations	Identify ranges of viewpoints	Explore individual experiences
Constructs being explored	Researcher identifies these at the outset.	Researcher provides the broad framework; the process enables the constructs to emerge.	Constructs are usually unknown and they emerge through the research process.
Population	Large populations are usually required.	The population needs to represent those who have a view on the topic in questions (all stakeholders). Between 20 and 40 are common population sizes.	A small population is used, and may even just be one individual.
Tools	Measurable items such as interval score and objective measurement scales.	Statements (or similar materials) that reflect the research topic.	Free-flow conversation via interviews.
Data collection	Objective measuring and recording of data usually in a numerical format.	Statements are sorted by individuals using an ordinal scale.	Interviews are using unstructured or semistructured.
Analysis	Uses descriptive and inferential statistics to look for trends and comparisons.	Uses a statistical process (factor analysis) to identify range of viewpoints and differences and similarities of views.	Content or discourse analysis used seeking meaning units and themes.

Table continued next page

Issue	Quantitative Methods	Q Methodology	Qualitative Methods
Interpretation	Reports results as statistical findings indicating levels of significance.	The researcher tells the story of the emerging viewpoints and explains differences and similarities.	The researcher interprets the data but may use techniques such as member checking to aid this.

(Corr, 2006, p. 392)

It is important to be aware of differences between research traditions to help make informed choices of which method or mixture of methods that can be of help in collecting data in accordance with the purpose of the study. It can be equally important to be aware of similarities. As noted earlier, accentuating differences and continue to polarize research traditions may not be that helpful and can limit and distort results of research findings (Ercikan & Roth, 2006; Johnson & Onwuegbuzie, 2004; Lund, 2005; Teddlie & Tashakkori, 2003). Yu (2002, p. 28) encourages researchers to “keep an open mind to different methodologies, while retaining skepticism to examine their philosophical assumptions of various research methodologies instead of unquestioningly accepting popular myths”.

Should a theory always stay the same or is there room for it to develop and change? A similar question was addressed by Hurd and Brown (2004) when they studied the future of the Q-methodology movement. The sharpest differences of opinions that they reported were between “whether Q should be further explored as a full scientific theory of subjectivity in the tradition of Stephenson or whether its impact should be in its practical applications to research problems and its engagement of alternative epistemologies that may force Q to evolve” (p.10). Hurd and Brown also recognized the dilemma between safeguarding things of value and obtaining new things of value, which consecutively depends on the ability to recognize value.

Differences in research methods have been pointed out, but there are also similarities according to more recent literature. Johnson & Onwuegbuzie

(2004) advocating for mixed methods research, view today's research world as increasingly more interdisciplinary, complex and dynamic. They suggest complementing one method with another and that all researchers "need a solid understanding of multiple methods used by other scholars to facilitate communication, to promote collaboration, and to provide superior research" (p. 15). In addition they list some issues in which many qualitative and quantitative researchers have reached basic agreement. A shortened version is listed below (Johnson & Onwuegbzie, 2004, p. 16):

- a) what appears reasonable can vary across persons
- b) observation is not a perfect and direct window into "reality"
- c) it is possible for more than one theory to fit a single set of empirical data
- d) a hypothesis is embedded in a holistic network of beliefs and alternative explanations will continue to exist.
- e) the future may not resemble the past
- f) researchers are embedded in communities and they clearly have and are affected by their attitudes, values, and beliefs
- g) human beings can never be completely value free, and values affect what we choose to investigate, what we see, and how we interpret what we see

There can be other commonalities as well. Research questions can be addressed by empirical observation by both quantitative and qualitative researchers (Johnson & Onwuegbzie, 2004). Although they may have different philosophical assumptions, and ways of collecting and making sense of their data, Sechrest and Sidani (1995, p. 78) point to aims they have in common, such as to "describe their data, construct explanatory arguments from their data, and speculate about why the outcomes they observed happened as they did". Researchers from both traditions also integrate safeguards into their inquiries as a precaution against sources of invalidity or lack of trustworthiness which potentially may exist in any research study (Johnson & Onwuegbzie, 2004). Stephenson also argued for a combination of

qualitative and quantitative aspects and said “there can be unity in science, provided objective and subjective parts are granted, each rooted in quantum theoretical concepts” (Stephenson, 1986d, p. 529).

In general R methodology and quantitative methods require the use of standardized measures so varying perspectives and experiences of many different people can “fit into a limited number of predetermined response categories to which numbers are assigned” (Patton, 2002, p. 14). In this way it is possible to measure the reactions of many individuals, and this gives broad and generalized information that can be presented economically in a few words. Qualitative methods in general give us a wide range of detailed information about a smaller number of individuals. This can increase our understanding of the issues being studied, but reduces generalizability (Patton, 1990; Thagaard, 2003). This type of data is usually presented through richly detailed descriptions in contrast to the more parsimonious practice with quantitative data. Both traditions have strengths and weaknesses, but according to Patton (2002, p. 14) “they constitute alternative, but not mutually exclusive, strategies for research. Both quantitative and qualitative data can be collected in the same study”. Lund (2005) addresses some stated discrepancies between qualitative and quantitative research by examining actual studies. The differences between the two traditions have often been exaggerated. He claims they do not represent two paradigms but one, based on critical realism and combined within a common frame in empirical research. Lund also accentuates that “research problems are not answered by empirical results directly, but by conclusions based on such results” (2005, p. 120). Johnson and Onwuegbuzie (2004) suggest mixed methods research, not to replace quantitative or qualitative research traditions, but to draw from the strengths and minimize weaknesses in both. They view pragmatism as an attractive philosophical partner and framework for mixed methods research and advocate consideration for the pragmatic method of Charles Sanders Peirce, William James, and John Dewey, the classical pragmatists. These are only a few examples of the increasing body of scientific literature that focuses on not polarizing quantitative and qualitative traditions but to combine their strengths and to become more aware of communalities instead of focusing solely on differences.

In this light it is quite interesting to see the work by William Stephenson more than 70 years ago, when he combined sophisticated statistical analysis with qualitative aspects in Q-methodology, and was so misunderstood. What he understood so clearly many years ago, the rest of the world needed some extra time to catch up on. Q-methodology combines qualities from both quantitative and qualitative traditions, and has done so from the very start. Its focus is on subjectivity and how the individual values some issues higher than others in comparison to the presented statements as a whole and communicated through the language of feelings, more so than by examining facts. In addition it depicts shared communicability among participants on topics in a certain context or culture. Statistics are used in analysing the data, but it also relies on the researchers' ability to tell the story of the participants' emerging viewpoints (Brown, 1980; Stephenson, 1953).

3.1.3 Summary and reasons for choice of methods

In quantitative research social reality is seen as relatively constant across time and settings. One takes an objective stance towards participants and phenomenon in the study. Human behavior can be studied in natural or contrived surroundings. Data is collected in large numbers under certain restrictions to be able to generalize to a larger population. Preconceived concepts and theories are used to decide what kind of data to collect. Data is organized numerically and analyzed using statistical methods. This type of data is generally reported in an impersonal and objective manner, and a lot of information can be placed in a short space (Gall et al., 1996) . Questionnaires are typically used to gather this type of data. It is possible to use scales and/or questionnaires that have been applied before and documented to have been reliable and to give valid information. In this study I chose to use the Teacher Self-Efficacy Scale (Rimm-Kaufman & Sawyer, 2004) because it has been used previously to study teachers' beliefs concerning efficacy.

Through qualitative research methods the aim is to study chosen issues in depth and detail. This gives a wide range of information and increases the understanding of what is being studied, but reduces generalizability. In this tradition the researcher is the instrument (Patton, 2002). Data can be collected through interviews, direct observation, and written documents, or through

combinations of the different elements (Patton, 2002). In general, qualitative data is presented through rich descriptions and focuses on depicting social reality from the participant's perspective. In the present study, interviews were used as follow-up information on topics being researched. Interviews can be done in varying ways and Patton pointed to three basic approaches: the informal conversational interview; the general interview guide approach; and the standardized open-ended interview (p. 342). Each approach has its strengths and weaknesses. In the follow-up interviews I chose to use an interview guide because it provided a framework to help me obtain basically the same information from my interviewees and in a limited amount of time. At the same time this approach is flexible in the sense that I was not restricted from using probes or spontaneous questions within the subject areas. The essence here is that each interviewee responds with his or her words to portray their personal perspectives. There are no predetermined phrases or categories supplied by the interviewer that the interviewees must use. The focus is on capturing the complexities of the individual participant's perceptions and experiences (Patton, 2002). According to Patton (2002, p. 348) "the fundamental principle of qualitative interviewing is to provide a framework within which respondents can express *their own* understandings in their own terms".

Through the Q-sorting process, individuals can display their subjective points of view on a sample of statements from a concourse concerning a theme. Through the configurations of the statements their personal preferences come to light and are communicated. Through Q factor analysis, factors emerge on the background of respondents who categorize themselves. People with similar views, beliefs and preferences join together on the same factor, while those that differ will define another factor or factors. Each factor will have a distinct feeling running through it from the negative to the positive pole and this is the basis for our understanding of the factors that emerge (Stephenson, 1983a).

With these issues in mind it becomes quite clear that different traditions will necessarily give different types of information and hopefully a deeper understanding of the themes in this study. That is why I have chosen to use different procedures and methods in my endeavor to gain knowledge of teachers' beliefs. A potential problem in combining methods is the huge

amount of data that has to be dealt with and results that need to be presented in a coherent and clear manner. Although there can be drawbacks in combining methods, there are also apparent advantages.

Using R-methodology with a large group of participants I can gain and compare information concerning quantitative demographic data and the participants' responses to self-efficacy beliefs. Through interviews with a small group I can get qualitative aspects concerning themes in this study. Using Q-methodology principles and Q-technique the subjects are put up front in the research process, and their subjective points of view will emerge from the data. Some indicate that Q-methodology combines the strengths of both qualitative and quantitative research traditions, and in other circumstances it can provide a bridge between the two (S. R. Brown, 1996; Dennis & Goldberg, 1996). This is in line with Ercikan and Roth's (2006) suggestion of using multiple approaches and modes of inquiry to get different forms of knowledge, and with points made by Lund (2005), Johnson and Onwuegbuzie (2004), that different traditions can be combined in the same study. Since life in general can be complex and complicated, and work in daycare and school is no exception, so, research should also be and study phenomenon from many angles (M. L. Smith, 2006). Opinions, values, beliefs are also complex entities, as has been noted several times before. Therefore, to answer my guiding research questions, I have chosen a main focus on using Q-methodology since its very essence is to combine rigorous statistical analyses with qualitative aspects such as subjective feelings, values, thoughts, beliefs and understandings. Data from questionnaires and interviews contribute to and expand the knowledge and perspectives that are illuminated through this total enterprise.

In the next section a presentation will be given of a group of teachers from the multifaceted world of daycare and school. They are the participants in this study, and they have given valuable contributions to a deeper understanding of teachers' beliefs in this context.

3.2 Participants

The 254 participants will first be presented, before I give a description of two subgroups that were drawn to better elaborate on beliefs about discipline and behavior management, group/classroom practices and beliefs about children. The interviewees, who are part of Subgroup 1, will also be introduced.

Both teachers in daycare and teachers in school were approached to comply with data for this study. Teachers in these contexts generally have different educational backgrounds, but will this emerge as different beliefs? To differentiate teachers' educational backgrounds I will refer to 'teacher education' concerning preparation to teach school aged children, and 'preschool teacher education' to point to teachers who have completed early childhood studies.

The general term 'daycare' is used to convey the Norwegian pedagogical institutions for children between one and six, where children participate for longer or shorter parts of the day. Larger daycare centers may be partitioned into one or more sections, often according to age of children, and each directed by a qualified preschool teacher (a three-year bachelor's degree in early childhood studies). There are generally also two teachers' aids to help meet the children's needs in accordance to curriculum and framework plans. The head leader (*virksomhetsleder*) of the daycare institution is obliged to have a pedagogical education preferably with a preschool teacher background. Several preschool teachers may have additional teacher training such as special needs education. Since there are more positions than educated preschool teachers, some municipalities have had to seek dispensation from teacher qualification requirements for a limited period of time. In daycare centers where there are children with special needs, additional staff is necessary. These may have preschool teacher background and additional teacher training or have other qualifications. Sometimes unskilled laborers have these positions.

In addition to teachers in daycare, this study's focus is also on teachers in first and second grade (pupils are six to eight years old). Teachers in school have generally had a four-year college education, but teachers with a preschool teacher background have also been able to teach children in first to third grade

in school. This changed and teachers with an early childhood degree need one more year of relevant education to be able to teach in 1st to 4th grade in school (St.meld.nr.16 (2001-2002)) Some teachers working in first and second grade also teach lessons in higher grade-levels. Teachers in school may also have additional education.

The participants were selected from six municipalities in southern Norway. Since the goal was to gain an understanding and knowledge about teachers' beliefs, the participant group was sought among teachers in daycare and school settings, and they came from both urban and rural areas. One municipality had only respondents from school participating in the study.

There were 407 teachers who were asked and agreed to take part in the study, and 295 returned information, giving a response rate of 72.5%. Several had not completed the Q sorts as described in the included information and were excluded. There were also some flaws in registering other Q-sorts that led to the exclusion of these as well. The number of respondents dropped to 254 informants and a response rate of 62, 2 %.

From 5 municipalities, 122 teachers report working in daycare institute, and 132 teachers from 6 municipalities report working in school. This gives a fairly even distribution with 48% in daycare and 52% in schools.

Among the respondents, 241 of them are female and 9 are male (4 missing). The registration of age was categorized into six groups from younger than 25 years until older than 61 years of age. There were no reports of informants over 60 years among these participants. As we can see from table 2, there is a higher rate of older teachers working in school than in daycare. We can see the same tendency in national demographic information as well. In 2003 the average age of teachers in school was 44.8 years and 40.1 % of teachers in elementary school were more than 50 years old (Statistisk sentralbyrå, 2006a). The most common age among teachers in daycare was between 25 and 39 years (Statistisk sentralbyrå, 2006b)

Table 2 – Age variation by sum and total percent

Age Da	ycare	School	Total	%
Younger than 25 years	7	4	11	4.3
26-30 years	38	14	52	20.5
31-40 years	45	39	84	33.1
41-50 years	26	43	69	27.2
51-60 years	5	30	35	13.8
Sum				98.8
Missing	1	2	3	1.2
Total	122	132	254	100

The participating teachers were asked if they worked in private or public daycare or schools. All of the teachers in school and a majority of teachers in daycare worked in public settings, while 26.2% of teachers in daycare worked in private organizations.

In table 3 we have an overview of the type of education that teachers working in daycare have in this study. The majority (63.1 %) have preschool education only. Today this is a 3-year college study, which gives a bachelor's degree. Some of the older teachers might have the 2-year version of the degree. The teacher education law from 1973, paragraph 6, stated the education of teachers (preschool and school) should be at least of three years length (Lov av 8. juni 1973 nr. 49 om lærerutdanning med endringer sist ved lov av 10. juni 1977 nr. 77, 1977). There are 17.2 % teachers with preschool education combined with other extra training. One example is PAPS (Pedagogisk Arbeid På Småskoletrinnet) concerning the teaching of children aged 6-9 years where school subjects are to be combined in a way that children experience teaching and learning as a whole (Kibsgaard, 2000). Other examples are: transition from daycare to school, social pedagogy, counseling, drama, arts and craft, multiculturalism, and Islam. 15.6 % of the teachers have extra education in special needs. In this study there are also two teachers with a masters' degree in pedagogy, and two teachers said they had a different college degree education (one with school education, and one with social

welfare education). All the teachers in this study who work in a daycare setting have college degrees. That has not always been the case everywhere in Norway, so these participants have more education than what is typical to expect. National statistics from 2003 show 90.7% of the leaders (virksomhetsledere) in daycare had approved preschool teacher education, and 91.6 % of the section leaders (pedagogiske ledere) had the approved education. (Statistisk sentralbyrå, 2005).

Table 3 – Frequency and percent of teacher education among teachers working in daycare

Teachers working in daycare	N	%
Preschool teacher education only	77	63.1
Preschool teacher education + other	21	17.2
Preschool teacher education + special needs	19	15.6
Preschool teacher education + master's degree	2	1.6
Other college education	2	1.6
Sum	121	99.2
Missing	1	.8
Total	122	100

The background of the teachers' education working in a school setting seems more diverse. Many years ago the teacher training course was a 2-year college degree. Then it increased to three years giving a bachelor's degree (Lov av 8. juni 1973 nr. 49 om lærerutdanning med endringer sist ved lov av 10. juni 1977 nr. 77, 1977). In 1992 this became a 4-year college education (Sunnanå, 2005), but still only counts as a bachelor's degree. If the teachers join a Master's program and do one more year of training, it will give them a master's degree (a total of 5 years). None of the teachers working in school among my respondents reported to have a master's degree. In table 4 we see the largest group (47.7%) reported to have regular school education and a few noted 'other' as PAPS, English, Norwegian, Nordic, and social pedagogy. The majority of the teachers in school with preschool education background, also

reported to have ‘other’ as PAPS, one had sports and one had sign-language. 12.1 % of the teachers with preschool education also reported to have special needs training at some level. 30.3% of all the teachers in school had special needs education. A small group of four people reported to have both preschool- and schoolteacher education. Table 4 also indicates that 33.3% of the teachers working in school who are included as participants in this study have preschool teacher education. This is higher than national statistical data from 2005 where 12% of teachers working in school have preschool teacher education (Lagerstrøm, 2007).

Table 4 – Frequency and percent of teacher education among teachers working in school

Teachers working in school	N	%
Teacher education + other	63	47.7
Teacher education + special needs	24	18.2
Preschool teacher education + other	24	18.2
Preschool teacher education + special needs+ other	16	12.1
Preschool teacher- + school teacher education + other	4	3.0
Sum	131	99.2
Missing	1	.8
Total	132	100

A majority of the teachers working in daycare and in school, have a tenured employment position (70.5% and 82.6% respectively), while 21.3% and 11.4% mentioned temporary placement. In the total group there is 7.1% of the teachers that did not answer this question.

Tables 5 and 6 give an overview of the experience the teachers in daycare and school settings have. Among the teachers in daycare, 91.8 % of them report to have no experience from working in school, but 7.3 % do, although none of the teachers have worked there more than five years. In school 63.6% of the teachers report to have no experience from work in daycare. On the other hand, 31.3 % of teachers in school report to have daycare work experience with a mean average of 3.1 years and a range from under one year to 21 years

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or more experience from daycare. From 1- 5 years experience is the highest mean rating for teachers in daycare (33.8 %), but the experience varies from less than a year (6.6 %) to 21 years or more (8.1 %), with a mean average of 9.5 years. The highest report of years experience for teachers in daycare is 28 years. For teachers in school the highest mean rating reported is 6-10 years (28.1 %), while 25.4 % have worked between 1-5 years and 21.3 % have worked 21 years or more. The range here is from less than one year to some teachers that had almost 40 years of experience. This corresponds with the age level we have noted in table 2. For teachers working in school, 12.4 years is the average mean experience. The largest rating in both settings concerning years of experience in their current position, is 1 through 5 years, with 49.6 % for teachers in daycare and 35.9 % for teachers in school. A trend in this study is that teachers in daycare have less work experience than teachers in school, and also more teachers working in school have experience from daycare settings than vice versa.

Table 5 – Frequency and distribution of experience from daycare, school, and current position for teachers presently working in daycare (N 122)

Years of experience	Daycare		School		Current position	
	N	%	N	%	N	%
No experience			112	91.8		
Less than 1 year	8	6.6	1	.8	19	15.5
1-5 years	41	33.8	8	6.5	61	49.6
6-10 years	31	25.5			19	15.2
11-15 years	16	12.8			11	8.8
16-20 years	15	12			4	3.2
21 years or more	10	8.1			2	1.6
Missing	1	.8	1	.8	6	4.9
Total	122	100	122	100	122	100

Table 6 – Frequency and distribution of experience from daycare, school, and current position for teachers presently working in school (N 132)

Years of experience	Daycare		School		Current position	
	N	%	N	%	N	%
No experience	84	63.6				
Less than 1 year	2	1.5	6	4.7	11	8.4
1-5 years	14	10.6	33	25.4	47	35.9
6-10 years	16	12.2	37	28.1	36	27.6
11-15 years	7	5.4	16	12.5	10	7.7
16-20 years	5	3.8	11	8.4	8	6.2
21 years or more	2	1.6	27	21.3	14	10.9
Missing	2	1.5	2	1.5	6	4.5
Total	132	100	132	100	132	100

3.2.1 Subgroups

A general overview of the participants in this study has been given, and a total of 254 respondents are easily dealt with in quantitative methods. However, in Q-methodology respondent groups of this size can be difficult to deal with, and therefore two subgroups were randomly yet strategically drawn from the total. I also wished to do follow-up interviews on a few individuals. In the preceding text, an orientation will be given about subgroups in the study.

Interview group

In the total group of 254 respondents, 74 or 29.1% agreed to be interviewed. The interview group consists of six persons who were randomly yet strategically selected to ensure participants from all the municipalities and from both daycare and school. One person was drawn from each of the six municipalities. Three of them work in daycare and the other three work in school. Four teachers have preschool teacher education while the other two have teacher education. Three of the teachers have extra training: one in social pedagogy, one in special needs education, and one with special needs

education and arts and craft. Teachers working in school are between 26 and 50 and teachers working in daycare are from 31 to 50, both groups having an average age of 31-40 years. Only one teacher has experience from working in both daycare and school settings.

Subgroup 1

After the interviewees were pulled aside, thirty four participants were again randomly yet strategically drawn from the total group to ensure an equal amount of teachers from daycare and school and that all municipalities were represented. These were added to the six interviewees and make up Subgroup 1, which now consists of twenty teachers from daycare and twenty from school. Among the teachers in school, 35% of them are between 31-40 years, which is the mean age group, while 25% are younger, and 35% are older (15% 41-50 and 20% 51-60). One teacher did not answer this question. Among teachers in daycare there are none younger than 25 and 40% of the teachers are between 26-30 years, while 35% are between 31-40 years, 20% between 41-50, and only 5% between 51 and 60 years of age.

Among the 20 teachers in Subgroup 1 working in school, 30% of them have preschool teacher education, while 70% have schoolteacher education. In daycare 100% have preschool teacher education. Extra training in special needs education is reported by 20% of the teachers in school, while 25% in daycare have this sort of training at different levels. In addition some teachers also reported having 'other' training as mentioned when describing the 254 participant group.

When registering experience among teachers in Subgroup 1, most teachers in daycare (35%) report to have from 1 to 5 years of experience, and the same applies to teachers in school (31,8%). The mean average of teachers working in school is 10,4 years with a variation from a few months to 38 years. There are 65% of teachers in school that did not have experience from teaching in daycare, but the 30% who did had between a few months to 18 years experience from daycare. One teacher did not answer this question. Teachers working in daycare have an average of 9,8 years experience with a variation from some months to 25,8 years. Among the twenty teachers in daycare, two (10%) had experience from school, 1 and 5 years respectively.

Subgroup 2

With participants in Subgroup 1 pulled aside, the next group was also randomly yet strategically drawn to get the same and equal amount of teachers from daycare and school and also to ensure respondents from all six municipalities. This way Subgroup 2 also consists of forty teachers, twenty working in school and twenty in daycare. In Subgroup 2 among the teachers working in school, there are 40% between 31-40 years, 40% between 51-60, while 10% are between 41-50 and also 10% between 26-30, but none reported to be younger. Among teachers working in daycare 5% reported to be younger than 25, and 5% to be in age group 51-60. The majority or 45% are between 31- 40, while 20% are in age group 26-30 and 25% are between 41-50 years of age.

Among the teachers working in school, 30% have preschool teacher education while 80% have schoolteacher education. This includes two teachers with training from both types of education (there are 4 reported in the whole group of 254). Among the teachers in daycare 90% reported to have preschool teacher background. Two remaining teachers did not answer this question but one reported having a master's degree and the other reported having special needs education. In addition one more teacher in daycare and two teachers in school reported having extra training in special needs education. Some teachers in both daycare and school reported having 'other' training as well.

When registering experience in Subgroup 2, most teachers (40%) in daycare report having from 6 to 10 years, and most teachers in school (40%) report having more than 21 years of experience. The average amount years of experience among the twenty teachers working in school in subgroup 2 are 15,5 years, with a variation of a few months to 35 years. There is no report of experience from daycare among 75% of the teachers working in school, while 25% do have such experience. Among the teachers with experience from daycare, one has 1 year, three have 4 years, and one has 20 years. The average amount of experience among teachers in daycare, is 9,9 years, but it varies from a few months to 28 years. Among the teachers working in daycare, 90% of them have no experience from teaching in school, while 10% or two teachers each have two years experience from teaching in school.

3.2.2 Summary

A general tendency in this study is that teachers in daycare have less work experience than teachers in school and are somewhat younger. In addition more teachers working in school have experience from daycare settings than vice versa. Compared to the 254 participants, both subgroups have similar tendencies concerning age, and educational background. Subgroup 1 and 2 are also similar compared to reported experience for teachers working in daycare. Subgroup 2 differs somewhat in this aspect from Subgroup 1 and the 254 group, since more years of experience have been registered among teachers in school settings.

3.3 Instruments

The instruments used in this study are: a questionnaire, three Q-sample themes, and questions for a follow up interview. The purpose of these instruments is to measure teachers' beliefs concerning management behavior, classroom practices, beliefs about children, and also teachers' self-efficacy beliefs in two areas: instructional self-efficacy and disciplinary self-efficacy. The interview guide was designed to capture teachers' views on issues in the study that they wished to emphasize; or if there were issues that were not covered well enough; their thoughts about the methods; and to give room for any other comments they might have.

3.3.1 Translation

The instruments that were chosen for this study had been used in similar studies in the US (Rimm-Kaufman & Sawyer, 2004; Rimm-Kaufman et al., 2006). Since the present study was to be conducted in Norway, it was necessary to translate the instruments used and also the information given concerning procedures.

The English versions of the Teacher Self-Efficacy Scale, all the Q-sort exercises, three answer sheets (see Appendix II, III, and IV), orientations (Appendix V, VI, and VII), and descriptions (Appendix VIII and IX), were

translated into Norwegian. The Norwegian version was then translated back into English, by a different person well acquainted with both languages and the field of teaching in both countries. This was then compared to the original version. A few discrepancies were noted and discussed to ensure the notion behind the English version to be present in the Norwegian translation. Some words cannot be directly translated because of nuances in the different languages and have to be rewritten to get the intended meaning across. Some examples follow. In English the term 'student' is used in both preschool and school age. In Norway the term children is used before they begin school, but children 'become' students when they enter school settings. In Norway we do not yet have a specific word for 'efficacy' and have to write the meaning of the word in a longer sentence. Teacher Self- Efficacy Scale was titled in Norwegian 'Skala for vurdering av egen jobbutøvelse'. The English version of title and subtitles were used as well in the Norwegian version. 'Classroom practice' is relevant in the English version but not used specifically in Norwegian. The essence here was to grasp the meaning and intention in the term, which is wider than just 'teaching practice'.

Demographic items were chosen from questionnaires used in surveys conducted by the Center for Behavioral Research at the University of Stavanger, Norway. These were compared to the ones used in the studies mentioned above.

3.3.2 Demographic Questions and Self-Efficacy Scale

The demographic items contain questions concerning age, gender, level of education, workplace, experience etc. to obtain background information about the participants in the study. Examples are "Where do you work now?" with category options as daycare and school. "How long have you worked in daycare?", "How long have you worked in school?", and "How long have you worked at your current workplace?", all with space to write in the number of years and/or months. The question concerning age had six categories, and to report on level of education participants had 10 options where respondents could put a mark on one or more of the options. Participants were also asked if they were willing to be interviewed.

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The set of general demographic items were joined with the Teacher Self-Efficacy Scale in one questionnaire. This scale is a 10 item questionnaire adapted from Bandura (1993) and used in the NCEdL Kindergarten Transition Project. A similar version was also used in the NICHD-ECCRN (2002) study and in a study by Rimm-Kaufman and Sawyer (2004). The 10 items represent two components of personal self-efficacy: (1) instructional self-efficacy (seven items); and (2) disciplinary self-efficacy (three items).

Table 7 – Overview of the Teacher Self-efficacy Scale and alpha levels

Teacher Self-efficacy Scale	α
Instructional efficacy	.85
1) How much can you do to get through to the most difficult children/students?	
2) How much can you do to promote learning when there is lack of support from the home?	
3) How much can you do to keep children/students on task on difficult assignments?	
4) How much can you do to increase children/students' memory of what they have been taught in previous lessons?	
5) How much can you do to motivate children/students who show low interest in schoolwork?	
6) How much can you do to get children/students to work together?	
7) How much can you do to overcome the influence of adverse community conditions on children/students' learning?	
Disciplinary self-efficacy	.84
8) How much can you do to get children to follow group/classroom rules?	
9) How much can you do to control disruptive behavior in the group/classroom?	
10) How much can you do to prevent problem behavior on the school grounds?	

As stated in the questionnaire, the major intention of the survey was to “help gain a better understanding of the kind of things that create difficulties for

teachers in their school activities”. The items in the questionnaire are scored by using a nine point Likert scale from 1 (nothing) to 9 (a great deal). In this present study Cronbach alphas for each component were .85, and .84, respectively.

3.3.3 Teacher Belief Q-sort (TBQ)

Both Richardson (1996) and Calderhead (1996) describe different methods in assessing teachers beliefs and varying aspects of beliefs that have undergone research. Quantitative studies, interviews, and case studies have been used to pursue the challenging task of studying beliefs. In this study quantitative methods are used to examine teachers’ self-efficacy beliefs, while Q-methodology is used to investigate beliefs about behavior management, group/classroom practices and beliefs about children. The Teacher Belief Q-sort was applied and will be described in the following text.

In Q-methodology the “sample” is not the participants in the study, but the statements or items the participants are to “operate” with. From a universe of statements, a sample is drawn. McKeown and Thomas (1988) have recommended a series of steps for developing a new Q-sample such as collecting statements, choosing items and establishing the conditions of instruction. According to Rimm-Kaufman et al. (2006) these steps were followed in developing the *Teacher Belief Q-sort (TBQ)*. The TBQ used in the present study is now available on-line at www.socialdevelopmentlab.org. For a more thorough account of the TBQ see the mentioned website and article by Rimm-Kaufman et al. (2006).

As mentioned earlier in this thesis, beliefs have been looked upon as a lens or window on teachers’ thinking, decision-making, their practice and sometimes also their effectiveness (Bandura, 1993; Nespor, 1987; Pajares, 1992). Rimm-Kaufman et al. (2006, p. 143) pointed to seven elements that constituted their definition of teachers’ beliefs and influenced the development of the TBQ, and follow here:

“(1) are based on judgement, evaluation, and values and do not require evidence to back them up, (2) guide their thinking, meaning-making, decision-making, and behavior in classroom, (3) may be

unconscious such that the holder of beliefs is unaware of the ways in which they inform behavior, (4) cross between their personal and professional lives, reflecting both personal and cultural sources of knowledge, (5) become more personalized and richer as classroom experience grows, (6) may impede efforts to change classroom practice, and (7) are value-laden and can guide thinking and action (Borg, 2001; Evans, 1996; Kagan, 1992; Lortie, 2002; Nespor, 1987; Pajares, 1992; Richardson, 1996; Romanowski, 1998)" (p. 143).

Rimm-Kaufman et al. (2006, p. 143) referring to Clark and Peterson (1986), cautioned that beliefs do not automatically translate into concrete practices in the classroom but can be a framework that organize meaning and inform practices. Although not explicitly trying to link beliefs to classroom behavior, they suggested that teachers' beliefs are measurable and vary among groups of teachers who differ in terms of training and teaching experiences.

The researchers behind TBQ collected statements from sources external to the study itself. One hundred and twenty statements about teaching were gathered from literature on classroom practices as well as from existing scales where they pointed to sources such as: Brookover (1974), La Paro and Pianta (2000), Smith (1993), Solomon, Watson, Delucchi, Schaps, and Battistich (1988), and Wright (1980), and Burts, Hart, Charlesworth, and Kirk (1990), see Rimm-Kaufman et al. (2006) for more details. They also reported on efforts to balance the statements to represent wide-ranging and opposing viewpoints in addition to choosing statements that did not reflect terminology specific to particular curricular or behavioral management approaches (p. 151).

The authors who developed the TBQ described several ways of testing the Q-sort statements. First four research assistants and four teachers were asked to group the cards into coherent categories and identify statements that did not fit the category. During three separate conversations the authors and respondents discussed the set and agreement was reached upon three categories of priorities to be the focus of their investigation: "priorities in discipline and behavior management, teaching practices, and beliefs about students" (Rimm-Kaufman et al., 2006, p. 151). Their next step was to winnow the statements between 45 and 25 down to 20 statement cards to each Q-sample theme. This was done by twelve pilot teachers who were asked to choose 20 statement

cards pertinent to the general teaching experience of their colleagues and themselves, but also to identify statements they thought were confusing in wording or meaning. Through conversations between researchers and pilot teachers confusing statements were adjusted and the number of statements was reduced to twenty in each of the three Q-sample themes.

The authors' next goal was to choose the conditions of instruction and decided to establish simple requests for agreement or disagreement using five "anchor cards" for each Q-sample theme. Using Q-sample 1 (Q1) as an example it ranged from "Least characteristic of my approach or beliefs about discipline and behavior management" to "Most characteristic of my approach or beliefs about discipline and behavior management" with intermediate points represented also (p. 152). In the present study "answer sheets" (Appendix II, III, IV) were used instead of anchor cards.

The TBQ consists of three Q-sort exercises (Q-samples) to assess teachers' priorities among their beliefs: Q-sample 1 focuses on teachers' priorities about discipline and behavior management, Q-sample 2 examines priorities concerning group/classroom practices, and Q-sample 3 assesses teachers' beliefs about children. Each Q sort exercise consists of 20 statements, and the participants were to sort the statements in a forced distribution into five groups with four cards in each group and ranking them in general from least to most characteristic of their beliefs. With a forced distribution the participants' priorities would become clear.

In the Rimm-Kaufman et al.(2006) study with the development of the TBQ, the researchers used Q-technique and traditional quantitative methods, popularly known as R-methodology.

In this present study using TBQ and Q-technique, Q-methodology as described previously, was applied as guiding principles in analyzing the data.

3.3.4 Interview guide

In Q-methodology post interviews are quite common. The goal here is to allow the respondents to elaborate more on his or her points of view concerning the Q sorting. Through this follow up procedure these six teachers

could clarify their responses and it would be helpful in gaining a better understanding. Interviewing all was not possible in this study with so many participants. Among the many respondents agreeing to be interviewed, six people were chosen as described under the section titled Subgroups. The interview guide is presented below.

English version:

Based on the questions and statements in this study:

- Are there important issues concerning the adult role, beliefs/understanding of children, group/classroom practices, and behavior management you wish to emphasize?
- Are there issues that have not been referred to well enough in this study?
- Do you have any thoughts about the methods that are used?
- Is there anything else you wish to comment on?

Follow up questions concerned the relationship between process and results.

Each interview was done individually and tape-recorded with the interviewees' permission. The duration was from 45 to 60 minutes. Two interviews were carried out in daycare centers, and two were done at schools. One interview took place in a vacant community meeting room, close to where the interviewee attended a course. These five localities were all relatively peaceful areas. The sixth interview was done at an internet-café, complying with the interviewee's wishes. An important goal was to conduct the interviews at places that were convenient for them and where they felt relaxed and comfortable. All interviews were transcribed and checked with the recorded version. A few discrepancies were discovered and corrected. NVivo 7.0 (QSR International, 2007) was applied to examine the interview data.

3.4 Procedure for data collection

The following text will account for the preparation of the instruments used through pilot studies, procedures for gaining permission and the data collection.

3.4.1 Pilot studies

Three pilot studies were conducted, two in the fall of 2003, and one in January 2004. The intention behind the pilot studies was to see if information, questions and statements seemed clear and relevant, and to find out how much time was used doing the procedure.

Pilot 1:

The main focus here was to get response on the translation of the Q-samples. I asked three preschool teachers to try it out. I wanted to find out if the statements felt relevant and meaningful, or if any statements seemed unclear. All the statements were on a sheet of paper and they were asked to write the category letter (A to E – from least to most) on each statement. One thought it was too difficult and did not do it. The two others thought it was difficult also, but did it and used from 1 ½ to 2 hours on it. There were some remarks to a few words that were used. With an exception of one or two statements, they all seemed relevant.

Pilot 2:

This time I tried out the following translated documents:

1. Orientation and invitation to teachers
2. Instruction concerning the instruments
3. Questionnaire (I combined the Teachers Self-Efficacy Scale and demographic questions in one folder)
4. Q-sort guide
5. Q-sample 1 + answer sheet

6. Q-sample 2 + answer sheet
7. Q-sample 3 + answer sheet

I used bright colors (red, blue and yellow) on the Q-samples, both answer sheets and statement cards. The answer sheets (Appendix II, III, and IV) were titled to the theme according to Q-samples 1, 2 and 3, and divided into 25 squares each. Five squares were used to the five categories from A to E (Q 1: From least to most characteristic of my beliefs about discipline and behavior management; Q 2: From 'Those practices that are least essential and/or characteristic of my teaching' to 'Those practices that are most essential and/or characteristic of my teaching'; Q 3: From least to most characteristic of my belief system). The remaining squares were to illustrate where the statement cards were to be put. The statement cards were cut into squares to fit the squares on the answer sheet. Tape with glue on both sides was taped to each of these 20 squares on the answer sheet. When the informant had decided where she wanted to put the statement cards, she had to take away the top paper from the double-sided tape and attach the card to the answer sheet under the category that best expressed her point of view.

I tried all of these things out on two people with different educational backgrounds. The orientation and instructions worked well, and so did the questionnaire. They enjoyed doing the Q sorting, and liked the bright colors. They only had some minor comments on some phrases. They used from 1 to 1 ½ hours on all of it. The double-sided tape worked, but was a bit difficult for those with very short nails. (I had to abandon the use of 'stickers' for the same reason and also because they did not come in the correct size.)

Pilot 3:

I had made some minor changes in the instructions and also changed one word in the questionnaire (translations issue discussed with second translator). This time I tried it all out on four people, the same three from the first pilot study and one new person that had both teacher and preschool-teacher education but worked in first and second grade in school. This time I used a new type of tape that seemed easier to get hold of with short nails.

The feedback was that the orientation and instructions were clear and easy to follow. The tape worked well for all but one who had very short nails. Two used 45 minutes and two used 1 hour. There were no problems with the questionnaire. All four liked the bright colors and really enjoyed doing the Q sorting. Even the person who thought it was too difficult in the first pilot, said it was fun this time. I thought it would be especially important to get her impression of the instruments, because she had quite a bit performance anxiety. Only two of the six people I have asked had some problems not being able to put more than four statements under category E (most characteristic...) There were also comments on the need to reflect on several of the Q-sort statements to have a closer look at/become more conscious of their own opinions.

The experience from these three small pilot studies assured me that the information, instructions and instruments would work as intended.

3.4.2 Data collection

All the instruments, the instructions and a return envelope with prepaid postage and return address were gathered in an envelope where information about the study was pasted on the front. Each set had a code-number. Each daycare center and school received an envelope with the instruments etc for each teacher that had agreed to participate. When each teacher had finished, he or she was to put it all in the return envelope and post it. This was to ensure anonymity and the return envelopes were only opened by me.

Data collection was done in the period between March and June 2004. Among the 74 participants (29.1%) who had said they would be willing to be interviewed (an item in the questionnaire) six teachers were selected as described previously and contacted. They all agreed to schedule a time for me to interview them and to use a tape-recorder. During the interview, which lasted from forty-five minutes to one hour, they could look at the questionnaire and Q-sorts they had done. The interviews were conducted in the beginning of June before summer vacation started. They were later transcribed and rechecked with the recorded version before analysis.

After the data-collection was finished a thank you letter was sent to all the participating daycare centers and schools. The letter also contained information about the completed data collection and the two organizations that each received a prize. On behalf of all the participants, one daycare center and one school among the participating organizations were chosen to receive a book-check each with the amount of 500 Norwegian “kroner” as a “thank you” from me for participating in the study.

3.5 Data analysis plan

Research analysis will be presented in two sections. The plan for analysis is outlined below. In the first section Q-methodology principles will be used as the scientific approach to address research question 1. In the second section research question 2 will be analyzed by using R methodology. In addition data from the follow-up interviews will be presented by way of quotes and summaries under each section to further probe viewpoints on elements in the study.

3.5.1 Research aims and analysis

- 1) What are the beliefs and priorities of teachers in daycare and school, concerning discipline and behavior management, group/classroom practices, and beliefs about children?

The goal here is to describe beliefs and priorities that teachers in daycare and school have about

- Discipline and behavior management (Q1)
- Group/classroom practices (Q2)
- Beliefs about children (Q3)

The data in this section will be analyzed using Q-methodology principles and the PQMethod program (Schmolck, 2002a). Correlations are computed and, for further analyses, centroid factor analysis and judgmental rotation will be used. The data will be presented in terms of

factor arrays which portray operant rather than asserted categories (Stephenson, 1977), and show both shared views and those that differ.

- 2) What are teachers' beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and are there differences between teachers working in daycare or in school?

The goal here is to examine associations between teachers' self-efficacy beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and to examine differences between teachers working in daycare and school settings.

Analysis of the question will be conducted in terms of:

- Frequencies, means and standard deviations for efficacy scales for teachers in daycare and school,
- Correlations among efficacy scales for teachers in daycare and school,
- Analysis of variance comparing teachers in daycare and school on efficacy scales

Interview data

The transcribed interviews will be studied by using the software program NVivo (QSR International, 2007), not as a complete hermeneutical analysis, but to categorize information. The intention behind the follow-up/post interviews is to allow for the interviewees to elaborate more on their personal views concerning themes in the study. Citations will be used to accentuate meanings that evolve through the data from the Q sorting process and teachers' reports of self-efficacy, whether these citations show agreement or disagreement with other findings. This will add more qualitative aspects to the results.

3.6 Reliability and Validity

Validity and reliability are important issues in all research studies. Reliability concerns the accuracy of an experiment, test or any measurement procedure

and how the same results can be reached through repeated trials. There is always a certain amount of chance error when measuring a phenomenon. This may be large or small but a degree of unreliability will always be present (Carmines & Zeller, 1979; Cramer & Howitt, 2004). When results of repeated measurements are less consistent, the reliability is lower. On the other hand, high consistency can point to high reliability. To reduce measurement error and increase reliability, it is important to write items clearly, make test instructions easily understood, stay close to the prescribed conditions for administering an instrument, making subjective scoring rules as explicit as possible, and to train well those who do the rating (Nunnally & Bernstein, 1994, p. 262).

Validity depends on what has been measured and the extent to which a measure actually measures what it is intended to measure. Validity also denotes the data's relevance to the research question(s) (Carmines & Zeller, 1979; Cramer & Howitt, 2004; Hellevik, 1994; Lund, 2003; Ragin, 1994). It concerns the "crucial relationship between concept and indicator" and "one does not assess the validity of an indicator but rather the use to which it is being put" (Carmines & Zeller, 1979, p. 12). Different kinds of validity have been distinguished and point back to the research problem in focus (Lund, 2003). According to Lund a research problem can be causal with a production aspect or effect, or non-causal focusing on descriptive research problems (pp.99-101). Drawing upon Cook and Campell's validity systems for causal studies and generally used in quantitative research, Lund pointed to "statistical conclusion validity", "internal validity", "construct validity", and "external validity" (p. 105) and there are certain "threats" to each validity system.

Smith (2001) viewed Q-methodology as noncentric, where causality is not centered in any single source but comprised of relationships or a field of events (p. 392). Causality has no special meaning in noncentrism (N. W. Smith, 2001), but noncentric systems point to the need to deal with both person and environment relationships rather than with just one or the other (p. 398). Validity and reliability are viewed differently in R- and Q-methodologies. This is a consequence of what is presumed as important in the different traditions. Due to this difference McKeown & Thomas (1988) stated that "validity and reliability tests so central to conventional scaling in

mainstream attitude research are simply unessential within the psychometric framework of Q methodology” (p.45), so one finds few benefits from such a concept (Brown, 2002). Brown (1980) claimed the concept of validity is not important in Q-methodology since there is no outside criterion for a person’s own point of view (p 174-175). An individual’s opinion about something is just that person’s opinion (Brown, 2002, p. 149), “and inquiring whether it is valid vis-à-vis “actual events” is a separate matter which overlooks the brutally factual and eventful character of the opinion itself”. Dennis (1992/1993) agreed and pointed to that validity in Q-methodology “refers more to the ability of individuals to accurately share their perspectives on the subjective phenomenon under investigation, and to the researcher’s ability to accurately elucidate and portray the subjectivity expressed” (p.39).

In Q-methodology issues concerning validity and reliability can be drawn from the extent to which representativeness applies to the assemblance of Q-samples and P-sets. The P-set (participants) is not drawn to generalize to a larger population, but to provide an opportunity for different viewpoints about a topic (N. W. Smith, 2001). According to Brown (1980) “in Q, representativeness is sought through the application of the principles of variance design (Fisher, 1960) in which the statement population is modeled or conceptualized theoretically” (p. 188). Statements are to be drawn from a wide range of shared communicability or concourse on the topic to “present participants with a stimulus situation that had “ecological validity,” that is, that was *representative* in the methodological sense advanced by Brunswik (1949)” (Brown, 2006a, p. 254).

According to Brown (1992/1993) validity is an issue in R-methodology because there is a respondent between the observer and the trait being measured, while in “Q methodology, due to the subjectivity involved, it is the respondent who is doing the measuring, and this is the *only* person who can do so, at least on a first-hand basis” (p.45).

Messick (1989) defined validity as “an overall evaluative judgment of the degree to which empirical evidence and theoretical rationales support the *adequacy* and *appropriateness* of *inferences* and *actions* based on test scores or other modes of assessment” (p.13), pointing to both qualitative and quantitative summaries as well, and using the term *score* in its broadest sense

(Messick, 1995). According to Messick, the view of content, criterion, and construct validity is fragmented and incomplete, and he called attention to the failure to “take into account both evidence of the value implications of score meaning as a basis for action and the social consequences of score use” (p. 741). Messick’s comprehensive definition of validity embraces content, substantive, structural, generalizability, external, and consequential aspects of construct validity (1989, 1995). He also reflected on representativeness as a core concept bridging the content and substantive aspects of construct validity and pointed also to Brunswick’s ecological sampling. Here we see some common ground between Messick and Brown.

Pointing to different validity systems in quantitative and qualitative approaches, Lund (2005) raises the question if these validity differences between approaches are real or if they are fictitious. In his view validity differences are apparent rather than real, and he argues to support this standpoint. According to him “validity refers to the approximate certainty of the truth of an inference or knowledge claim, where inference is taken in a broad sense so as to encompass interpretations and generalizations” (Lund, 2005, p. 121), and points to validity as “a property of inference, not of methods, data, or results”. He illustrates this by pointing out that empirical procedures for collecting and analyzing data, “cannot have validity in themselves, only the inferences that are drawn from these procedures, data, and results.” In addition he suggests validity being a question of degree, since validity of an inference can differ from low to high, as noted by Carmines and Zeller (1979) and also Nunnally and Bernstein(1994). Another point made by Lund concerning the level of validity in a given case “is not determined by researchers in a completely objective manner with reference to clearly specified rules, but subjectively according to vague standards in the actual domain of research, and on the basis of a total set of relevant knowledge in the domain.” (Lund, 2005, p. 121). This issue is also noted by Onwuegbuzie (2002), when he calls attention to modern day “positivists” claiming that science involves confirmation and falsification and carried out objectively, while disregarding many subjective decisions made throughout the research project. In addition researchers all belong to different social groups.

Some who engage in the quantitative and qualitative debate seem to confuse the logic of justification with research methods (Onwuegbzie & Teddlie,

2003) as though they were synonymous. According to Johnson and Onwuegbuzie (2004, p. 15) the logic of justification “does not dictate what specific data collection and data analytical methods researchers must use”. Here it seems appropriate to mention a point made by Newman et al. (2003) concerning the importance of understanding the typology of purposes behind research questions to be able to identify and collect relevant data. Pointing to limitations of a narrow definition to the concept of “science”, and drawing upon Johnson & Christensen 2004, Johnson and Onwuegbuzie (2004) define science in a manner that is inclusive of the different approaches to educational research, with high regard for empirical data and the use of certain norms and practices that develop over time because they are useful. Here we can see the impact of pragmatism.

Now how can I make sense of all of this and relate it to the present study? There is evidence of increasing amounts of literature concerning focus on similarities instead of differences of various methods and also how these varying procedures can be combined. In the process of this study I have become more aware of how quantitative and qualitative aspects of research can complement each other. An epiphany here was how well this already had been done through the thinking and procedures in Q-methodology.

“There is no perfect research study”, Lund claimed in a lecture on measurement of change at the University of Stavanger, April 23rd, 2007. Although we may aspire towards perfection, few if any researchers may ever succeed. There are many choices to make during a research project, and such projects are generally not linear, but according to Newman et al. (2003) may twist and turn and occasionally lead in unanticipated directions. In their view, purposes drive the research question, and purposes may change during the study and lead to new questions which may lead to a change in methods. In a historical view, this was not well esteemed and researchers sought conditions of stronger control to enhance internal validity. According to these authors, a consequence is the un-likelihood that such fluctuating purposes noted above would be tolerated, not to mention recognized. Today a study may begin with a certain purpose, but in the view of Newman et al. (2003) the purpose at the end may differ from that at the beginning.

3.6.1 Reliability and validity concerning present study

There are many areas concerning reliability and validity, to be considered and reflected upon, to see if a research study meets the necessary acquirements intended in quality research work. The following text will view these issues concerning the present study.

The original purpose of this present project was to study and compare beliefs among teachers from US, Taiwan and Norway using the same methods and instruments on the topics described in this thesis. During this process I became aware of different ways of conducting Q research (Thorsen, 2006). A consequence of this was a decision to analyze Q data as it was originally intended according to the methodology developed by William Stephenson (1935, 1953). This would make it difficult to compare with US data, which was gathered and conducted in a different manner. This led to a focus only on Norwegian teachers and little research has been conducted to uncover beliefs of teachers in daycare and early school years in Norway so far. This also led to a stronger focus on the subjective beliefs of these teachers displayed by their individual configurations through Q-sorting of the different Q-samples and the beliefs, values and priorities that emerged from the data.

As mentioned before, in Q-methodology, reliability and validity do not play any role in the conventional sense (McKeown & Thomas, 1988), because “the importance to me” is the measuring unit. There is therefore no external criterion to judge internal spontaneous organizations or feeling projections (Brown, 1980). One measures the subjective understanding and the importance of one statement in comparison with all the other statements as a whole. On the other hand representativeness in choice of statements and P-set is important to validity and reliability. The rigorous procedure for gathering the statements and choosing a balanced selection of them in TBQ has been accounted for earlier.

One might argue that these statements have been gathered in the US, and is that concourse representative for what Norwegian teachers think and believe? First, some of the statements were collected from relevant literature and existing scales. The quality of the statements gathered could have been increased by selecting statements from interviews with the participants as

well, but on the other hand, this might not have made much difference. Teachers have an academic education, and one would think they were acquainted with relevant literature on the selected topics, but, there are no guaranties. However, follow-up interviews were conducted with six of the Norwegian participants, and the question: “Are there issues that have not been referred to well enough in this study?” was asked primarily to uncover any discrepancies in the concourse. The general response was that the statements gave a good outline of the themes in question.

Another point to discuss is the issue of structured versus unstructured choice of statements. While Stephenson (1953) was a proponent for a balanced block design when sampling statements, others do not necessarily follow his lead. For example Watts and Stenner (2004, 2005) and Corr (2006) do not use the balanced block design, but strive for a Q-sample that is broadly representative of the different opinions in the domain of interest for the research they are conducting. Watts and Stenner (2005) look upon it as a sampling task where the procedure is of little consequence as long as the final Q-sample can be justified as being broadly representative of the relevant domain. Norwegian researchers (Allgood, 1999; Allgood & Kvalsund, 2000; Kvalsund, 1998, 2005) well acquainted with Q-methodology are consistent in their use of a balanced block design when sampling statements and which seems to capture representativeness in a more precise manner. In this light one might conclude that the statements in the present study could have been structured in a more precise manner through a balanced block design and additional quality could have been added through gaining natural statements through prior interviews in a Norwegian context.

Another aspect concerning the representativeness of statements and individual’s possibilities to express their different opinions has to do with the number of statements in question. Both Watts and Stenner (2005) and Brown (1980) point to a Q-sample of 40-80 statements as satisfactory, but fewer statements have been used, for example 16 statements were used in a study by Wester and Trepal (2004). With too few statements there may be a problem of adequate coverage, while too many may lead to problems with the Q-sorting process. It is wise to generate a large sample of statements which can be refined and reduced for example through piloting, but a Q-sample “only needs to contain a representative *condensation of information*” (Watts & Stenner,

2005, p. 75). In this present study there are 20 statements in each Q- sample theme and a four times five forced distribution with a range of five categories to from A to E (-2 to +2). This may not seem like much, but it still gives each person a wide range of choice possibilities. Brown (1980) has exemplified this principle in his technical note '2. Permutations and Combinations in *Q* sorting' on pp. 265-267 where he calculated the numerous combination possibilities in the Lipset study with 33 statements and a range from -4 to +4. Although the present study has less statements and a narrower range, it still leaves room for sufficient individuality in view of a representative condensation of information, as pointed to above.

In *Q*, experience has indicated that reliability coefficients of a person with himself normally range from .80 upward (Brown, 1980). In addition when more individuals define the factor, reliability increases. The higher the reliability coefficient is for a factor, the lower the error estimation is for the factor's scores. Factors with high numbers of loadings reduce the factor score error proportionally. In the present study there are high loadings of many individuals on the factors that emerged from the data. For example Subgroup 1 has 30 defining sorts out of 40 possible at $p < .01$, ranging from .59 to .89, and the equivalent for Subgroup 2 is 32 out of 40 possible at $p < .01$ with a range from .60 to .93, both on *Q1*. There are even stronger results concerning *Q3*, beliefs about children. *Q2* where the theme is group/classroom practices, shows more variation with two factors for Subgroup 1 (A and B) and three factors (C, D and E) for Subgroup 2. While factors A and C have many defining sorts, (28 and 26), factors B, D and E have fewer (9, 4 and 3) defining sorts. A guiding rule for a well defined factor is to have two or more clearly defining sorts on each factor that do not load highly on other factors (Schmolck, 2006b). This should indicate that data gathered and the results obtained should meet necessary levels of reliability and validation.

In collecting *Q* data, a forced distribution is usually used, as was the case in this study. The intent here is to get participants to make judgments they might otherwise resist to make. The nature of this forced distribution is to have one statement placed in each of the 20 places in the four times five rectangular distribution. There were some complaints from pilot-groups and interviewees, that this took time, but on the other hand several expressed it was interesting because it made them reflect before making judgments. Many *Q* studies use a

quasi-normal distribution and not a rectangular shape as in this study. Brown (1971) argues that the same results are obtained despite the response distribution, and that ordering preferences are more influential than distribution preferences and no important statistical information is lost by using differing distribution matrixes. Cottle and McKeown (1980) support that the matrix for Q-sorting is arbitrary for the results, and that bell-shaped, flat or matrixes with more statements on the extreme ends may be applied without seeming to affect factor structure. According to Brown (1980, p. 289) “distribution effects are virtually nil”. With a rectangular distribution the psychological significance of the extremes is still not as explicit as with a quasi-normal distribution with fewer places for statements at each pole and more in the middle. Q is more than a technique, it is “a comprehensive approach to the study of behavior, where man is at issue as a total thinking and behaving being” (Stephenson, 1953, p. 7). Cottle and McKeown (1980, p. 62) are concerned that “technical components should not overshadow the validity of the total methodology”.

As noted previously, reliability has to do with reaching similar results through repeated trials, and also with the accuracy of the measurement procedure. An issue that may be of concern in relation to reliability is the conditions of instruction for Q1 and Q2. For Q3 the respondents were instructed to sort the statements into five categories from least to most characteristic of your beliefs about children. This is a straightforward instruction concerning ‘beliefs’ and should be uncomplicated to relate to. However, for Q1 and Q2 the instructions were more complicated. Respondents were asked to sort the statements into five categories from least to most characteristic of your *approach or beliefs* about discipline and behavior management (Q1), and sort the statements into five categories from least to most *essential and/or characteristic* of your teaching (Q2). Since reliability of responses also depends on the accuracy of how the measurement was carried out, having two issues in the same instruction can be a problem. Did the respondents relate to ‘approach’ or ‘beliefs’, or were these words seen as an integrated part of the instruction? The same concern may be applied to ‘essential’ and/or ‘characteristic’. Since I used the TBQ (Rimm-Kaufman et al., 2006), I also duplicated their instructions. At the time of my data collection I was not conscious enough of

this issue or that it might be a problem. In hindsight I see the instructions should have been more precise.

The TBQ is developed for use in the USA. I have tried the Norwegian version out in three small pilot studies and in the main study. I cannot say that the reliability coefficients of a person with him or herself, is .80 (Brown, 1980) or higher in this present study, since I have not duplicated the investigation on the same people. However, there are factors with high loadings of many individuals which reduce the factor score error. In addition, results from both subgroups showed similarities.

The questionnaire containing data of demographic issues and self-efficacy beliefs was carefully constructed to measure what it was supposed to do and administered in an appropriate manner to meet standards in quantitative traditions. As noted earlier, the Teacher Self-Efficacy Scale has been used satisfactory by others (NICHD-ECCRN, 2002) previously. The 10 items represent two components of personal self-efficacy: (1) instructional self-efficacy (seven items), and (2) disciplinary self-efficacy (three items). In this study Cronbach alphas for each component were .85, and .84 respectively.

The follow-up interviews were done in line with criteria for qualitative inquiry. A purpose was to make it possible for the person being interviewed to bring me as the interviewer into his or her world. The quality of the data is highly dependent upon the interviewer (Patton, 2002). I did my best to make the interviewees comfortable with the situation, and was conscious of the importance of listening and being genuinely interested in what they said. I took notes in addition to using tape-recorder to try to get as much and as accurate information as possible from those being interviewed in the restricted amount of time we had. The interviews were transcribed, checked, and rechecked with the tape-recorded versions to be sure data was transcribed correctly. The interview data was also important in comparison with the Q data and questionnaire data to see if it would confirm or contradict any of the other information. I tried to show the sensitivities and sensibilities to be the research tool (Marshall & Rossman, 1999), and to deal with the data respectfully and in line with qualitative traditions.

3.6.2 Summary

Different aspects of reliability and validity have been pointed to and discussed, and an attempt made to view this present study's degree of reliability and validity in light of these issues. Historically there have been differences in pursuing reliability and validity in various methods, and some of these variations still exist, although researchers of today tend more to look for similarities and overarching frameworks to guide the work that is needed to seek, uncover, and report on current research. A commonality in all methods is the importance of the inferences we make during the whole research process.

As noted earlier, there is no perfect research study. This applies to the present study as well. The typology of the purpose of the study changed, and from having a comparative focus of teachers in Taiwan, US and Norway, only results from Norwegian teachers are presented here due to methodological differences and gained insight into Q-methodology. Conventional reliability and validity are not central in Q due to the measuring unit being 'importance to me'. However, both Brown (2006a) and Messick (1989, 1995) state the importance of representativeness. According to this aspect the present study could have been improved by having more statements also derived from interviews with Norwegian teachers on the topics, and in addition the use of a balanced block design when narrowing down the number of statements to apply as a Q-sample. A wider range and the use of a quasi-normal distribution could nuance the picture even more and make the extremes of the factors clearer. The use of A to E instead of numbers from -2 to +2 may have had an influence. On the other hand, all five positions were written in words under the respective letter on each of the answer sheets (Appendix II, III, IV) The condition of instruction in Q1 and Q2 could have been more precise. The Teachers Self-Efficacy Scale has been used satisfactory by others, and the follow-up interviews were done in line with qualitative criteria. As noted, there are issues in this study that decrease reliability and validity to a certain degree, but the overall procedures have been conducted in line with the relevant methodologies and should give ground for sufficient reliable and valid inferences of the data.

Other essential aspects are the ethics and values implicated in our research and the consequences these may have for our respondents and others and will be viewed in the next section.

3.7 Ethics

There are many questions concerning research that touch ethical considerations. Alver and Øyen (1997) called attention to the right of each individual to protect his or her living space, feeling of honor and pride, and integrity inside the boundaries of their culture (p. 14). These are important issues to consider when studying humans and their relationships. One cannot just be content with consequentialism, or to weight research needs against eventual risks for the respondents, but to consider more general principles as sacrosanct and justice. According to Alver and Øyer (1997) the researcher must have as a basis that certain deeds are just not acceptable even though they may lead to good consequences, and point to duty-ethics or the deontological principle (p. 14). Kent (2000) viewed deontological- and consequential theories as two overarching theories in ethical philosophy but ethical dilemmas can also be dealt with guided by four principles and four rules. The four principles are: autonomy, beneficence, non-maleficence and justice, and the four rules are veracity, privacy, confidentiality, and fidelity (p.62-65). The principle of justice accounted for by Kent (2000) concerns fair entitlement to resources and that people should be treated fairly. At the University of Stavanger in Norway there is the possibility for all PhD students in the university's PhD program to seek a certain amount of funding to support their research projects. This principal does not seem that relevant to discuss in this study, but the other issues will be addressed in the following text.

Alver and Øyen (1997) discuss the obligation of research to be in seeking the truth and continuously searching for better understanding and insight. In the process there are many considerations; Are there themes that are too dangerous to do research on? Will the research process be too risky for the participants? Who is to draw the boundaries, and where should they be? Where and how are the boundaries determined for the researchers' honesty

and moral? In what degree do the researchers own the results, and how are they to be published? These and more questions the authors discuss, but conclude that research involves risks because it seeks new knowledge and possible answers where there are no answers beforehand. If there were, there would be no need for research.

3.7.1 Permissions

In research it is essential to obtain a voluntary, informed consent from the participating respondents (Alver & Øyen, 1997). Permission to do the study was obtained from the Norwegian Social Science Data Services. The information that was sent, the collection and storing of data, was conducted in compliance with the rules and regulations that apply for scientific investigations. Permission was also sought and obtained from the municipality level (Appendix V) in six municipalities, which included daycare institutions and schools in both urban and rural areas. A lot of effort was put into giving a correct, written description of the project that was easy to understand, to ensure an informed consent from the participants. This written information about the project and an invitation to participate was then sent to the leaders of the establishments (Appendix VI) before participating teachers received the written information (Appendix VII) and instrument package with letters of guidance (Appendix VIII and IX). Some of these leaders chose not to participate in the study because they were involved with other projects or activities and did not want to give their staff an additional burden at that time. The other leaders discussed the study with their staff and let them decide if they wished to participate. I was contacted by some of the daycare centers and schools who wished to participate in this study while I contacted those I had not heard from but had also received the information and invitation. There were more positive responses than I had anticipated and many pointed to the interesting theme of the study and not to my promise of giving a book-check to one daycare center and one school among the many that participated in this study. Permission was sought and obtained from four different levels: National-, municipality-, institution-, and personal level. Respondents were also informed that they could cancel their participation in the study at any time. This is in line with the principle of autonomy where researchers are obliged to recognize a person's right to agree or not agree to participate in the

study, and the rule of privacy where a person can limit access to information. This also points to the importance of seeking and obtaining an informed consent. The rule of privacy is also connected to the rule of confidentiality (Kent, 2000). Disclosing information depends on how it will be presented and published and how well anonymity can be maintained.

3.7.2 Anonymity

Another important ethical issue is to ensure anonymity for all participants. Alver and Øyer (1997) referred to the different challenges connected to quantitative and qualitative research traditions to ensure anonymity. With large data sets and methods of analyses with the aim of generalizing, it can be easier to conceal individuals compared to small data sets where there is more focus on meticulous descriptions, nuances, and details. To ensure anonymity of individuals, groups or institutions in the research report or presentation, certain aspects may have to be left out, and this may sometimes weaken the results (Alver & Øyen, 1997). When I report from the study, I have to make sure that individual participants will not be recognized. Since there are so many teachers from many different daycare centers and schools in this study, anonymity should not be difficult to abide by concerning data from questionnaires and Q sorts. I need to be extra careful when reporting interview data.

3.7.3 Beneficence

According to Kent (2000) the beneficence principle has to do with the “obligation to take positive steps to help others” (p. 63). This points to researchers’ goals and justifications for doing their research. The background for this present project is to learn more about teachers’ beliefs and how this affects their work and their relations to children. A continuation of this is to help teachers become more conscious and reflective of their own thinking and practice in an effort to enhance teachers’ ability to meet children’s many diverse needs in the context of daycare and school.

3.7.4 Non-maleficence

This principle has to do with the obligation of not exposing people to unnecessary harm or risk (Kent, 2000). This present study is not a controversial experiment, but in every research project there can be an element of risk and both people and results need to be treated with respect.

Data in this case is collected from consulting adults who have agreed to share information about their beliefs concerning their role as teachers with me. This information will be treated respectfully and with the intent that no harm will come to those providing it. Data obtained through questionnaires, Q sorting, and interviews all call for a degree of reflection by the respondent. Q sorting probably requires more reflection than answering a Likert like scaled questionnaire, since the value aspect of one statement in relation to others as a whole, is incorporated in the Q sorting process. An interview situation is special since two people are together sharing time and attention on certain issues, and the use of probes or follow-up questions raises the possibility of even more reflection. The interview situation takes the researcher into the world where people live and work and opens up what is inside people. According to Patton (1990) this type of inquiry “may be more intrusive and involve greater reactivity than surveys, tests, and other quantitative approaches” (p. 356).

Patton (1990) called attention to the power of interviews which are like interventions and their effect on people. According to him “A good interview can open up for thoughts, feelings, knowledge, and experience not only to the interviewer but also to the interviewee” (p. 353).

An interview can sometimes be change-inducing, through a reflection process that occurs during the interview and can leave the interviewee with knowledge of him or her self that they did not have or were not conscious of before the interview. The interviewer needs an ethical framework (Patton, 1990). Sometimes an interviewee may say more than first intended, or ask for help concerning a problem. Through research the intention of interviews is to gather good data, and not to be a therapist or problem-solver. With the understanding that the interviewee has something important and knowable to say, it is difficult not to be touched by what they share and tempting to try to

help if asked. In case of just such a situation I had some book titles concerning possible problem areas that I could pass on to them instead of dealing with the situation myself in this particular setting. This occurred in one case.

3.7.5 Veracity

Veracity deals with telling the truth and not withholding important information about the study when for example seeking potential respondents.

According to Kent (2000) “the rule of veracity regulates against deception” (p.64). I have tried to abide by this rule in giving a correct and easy to read written information about the study to ensure an informed consent from participants. This is also an important aspect when presenting results.

3.7.6 Fidelity

This rule concerns promise keeping. Kent (2000) pointed to the number of implicit promises that researchers often make when engaging in a research project. He noted especially to be careful with information obtained and not to engage in fraud (p. 65). Social science research builds on trust (Kent, 2000) “particularly that researchers will collect information and report their findings honestly and openly” (p. 66). Sometimes this obligation is disregarded, and fraud can not only be very damaging for those who indulge in it, but also for the reputation of the vaster scientific community. A recent example from Norway is the Sudbø case in January 2006 where data had been manipulated which may have had negative consequences for patient treatment of cancer, and for the use, distribution, and sale of medicine (Ekbom et al., 2006). This case also pointed to the responsibility of co-authors of articles published in scientific journals. There is a lot of money and honor involved in certain research topics through funding and through published articles. Although it may seem contradictory, the more a researcher publishes in adequate journals, the more time he or she is then granted to use on more research. On the other hand, with a decline in publications, less time will be granted to do research. Without a solid ethical framework, there can be temptations too hard to resist, and some parts of a research project may become corrupted.

According to Kent (2000) most researchers have been tempted to engage in fraud sometime in their career and pointed to studies where half of undergraduates admitted to cheating. He mentions reasons such as: certain types of results are more valuable than others; furthering of careers; advancing science; publishable results (p. 66). It seems quite clear that there are temptations, and this is a problem area that should be taken seriously, and hopefully is by most researchers. Ethics should be an important part of research education, but the question is how well is this followed up in colleges and universities at a time when it is extremely important to get students through in prescribed time.

Being aware of such temptations and their consequences can help steer away from them. In this present research project I have encountered different ways of using Q-technique, analyzing, and presenting Q-data. This has led to the need for me to study the philosophy behind Q-methodology more deeply, to be in a position to present this type of information correctly. In addition it has made me conscious of all the many small, but important steps throughout a research project no matter which method or methodology or combination of them one chooses to use. The many ethical issues described above, all contribute to guide our thinking, choices, and actions through potential risks in the pursuit of obtaining new knowledge through research. An essential condition is to be aware of them, reflect on them, and abide by them to the best of our ability.

3.8 Chapter summary

In this chapter a rationale has been given for the research methods chosen to pursue the purposes of this study. Background on quantitative and qualitative research methods, and Q-methodology have been outlined and discussed. Participants in the study have been presented, the instruments described, and a presentation of how the data will be presented has been given. Reliability, validity and ethics are presented in general and discussed in relation to the present study. This study combines different methods and methodologies in pursuing knowledge and understanding of teachers' beliefs. This is in line with suggestions Calderhead (1996) presented when calling attention to the

“complexity of the area, diverse methodologies are needed, each contributing its own evidence and perspective to an overall understanding of teaching” (p. 722). Results from this study will be presented in the following chapter.

4 Results

4.1 Introduction

The results presented here will contribute towards illuminating the following questions:

- 1) What are the beliefs and priorities of teachers in daycare and school, concerning discipline and behavior management, group/classroom practices, and beliefs about children?
- 2) What are teachers' beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and are there differences between teachers working in daycare or in school?

Results from three Q studies concerning Discipline and behavior management (Q 1); Group/classroom practices (Q2); and Beliefs about children (Q3) will be presented in three sections. The data is analyzed using Q-methodology principles and the PQMethod 2.11 program (Schmolck, 2002a). The data will be presented in terms of factor loadings highlighting defining sorts and factor arrays describing variations and similarities between factors. A defining sort is a Q-sort with a loading at $p < .01$ or $p < .05$ on that specific factor and these are the 'purist' representatives of that factor. A factor array is a composite Q-sort, one for each factor (McKeown & Thomas, 1988). Where there are several factors concerning the same theme, examples of statements distinguishing between factors and also consensus statements will be presented. Factor loadings, factor scores and z-scores are presented in the text, but distinguishing statements and consensus statements can be found in Appendix X.

There is also a presentation of the results focusing on teachers' self-efficacy beliefs concerning instructional self-efficacy, and disciplinary self-efficacy. SPSS 15.0 (SPSS Inc., 2007) is used to analyze the data. To examine associations between self-efficacy beliefs and differences between teachers working in daycare and school settings, analysis has been done by computing frequencies, means, standard deviations, and correlations for efficacy scales

for teachers in daycare and school, and also analysis of variance comparing teachers in daycare and school on efficacy scales.

There were 74 teachers (29.1%) that agreed to be interviewed, and from these I randomly yet strategically chose 6 interviewees, one from each municipality, three among those working in daycare and three from the school setting. In this thesis their fictive names will be Anna, Berit, Carl, David, Ester, and Frida. Anna was between 26-30 years old; Carl, David and Ester between 31-40; and Berit and Frida between 41 to 50 years of age. Carl and Ester, two of the teachers working in daycare had 10 years experience, while Berit had almost 26 years. In school Anna and Frida had between 5 and 7 years experience, while David had 12 years. In addition Frida had previously 17 years experience from work in daycare. Four of these teachers had early childhood education and two among them had special needs education in addition. The two other teachers working in school had a school teacher education. The intention behind the follow-up/post interviews is to allow for the interviewees to elaborate more on their personal views concerning themes in the study. The six transcribed interviews were analyzed using the software program NVivo 7.0 (QSR International, 2007) not as a complete hermeneutical analysis at this time, but to categorize information that could contribute to illustrate the opinions, beliefs and priorities that emerged through the Q sorting process and teachers' reports of self-efficacy.

Quotes are used to accentuate meanings that evolve through the data, whether these citations show agreement or disagreement with other findings. In spite of not using a complete hermeneutical analysis, the voices of Anna, Berit, Carl, David, Ester, and Frida will still add more qualitative aspects to the results and contribute to the understanding and interpretation of the collected data.

For each interview I had brought along the questionnaire and the three Q-sort theme pages, so the interviewee could look at them and comment. Each interview was conducted individually.

4.2 What are the beliefs and priorities of teachers in daycare and school, concerning discipline and behavior management, group/classroom practices, and beliefs about children?

As presented in 3.2.1, there are two subgroups, each with 40 participants, consisting of 20 teachers working in daycare and 20 working in school. Each subgroup was analyzed separately. There were 20 statements covering each of the three themes (Q1, Q2, and Q3). (In effect there are 6 Q studies being presented since these three themes were analyzed separately for each of the two subgroups.) Q statements were ranked into 5 categories (A-E) in a 4x5 forced distribution. This was used by Rimm-Kaufman et al. (2006) who created the TBQ, proved it useful, and was therefore utilized in this study. In Q terms such a range would be from -2 to +2 and I will refer to these numbers when presenting Q data. Conditions of instructions for the three Q themes in this study were also the same that Rimm-Kaufman et al. used.

PQMethod 2.11 program (Schmolck, 2002a) was used to analyze the data from all three Q study themes. There are different analytical options in this software program such as Principal Components Analysis (PCA) and Varimax rotation of factors, but also Centroid factor analysis and Hand rotation of factors are available (Schmolck, 2002b). Schmolck states that while PCA is the default factor extraction method in statistical packages such as SPSS (SPSS Inc., 2007), Centroid analysis was the method of choice for William Stephenson, and hence this option and philosophical background is built into the PQMethod program. The procedure Schmolck (2002a, 2002b) calls Hand rotation in PQMethod refers to what Stephenson (1953) and Brown (1980) describe as 'Theoretical rotation' or 'Judgmental rotation'. All three apply to the same procedure.

Factor analysis is applied as a data reduction or structure detection method. In Q-methodology the main focus is on the structures that emerge. Stephenson (1977, p. 3) pointing to Spearman¹, noted that factor analysis had two faces,

¹ Stephenson (1977, p. 4) noted that " the Theory of two factors was an abstract scientific model of the psychological principles of noesis and anoesis (*g* and *s*

“one was *metatheoretical*, the other *operant*, and both are sophisticated in logic-of-science respects.” Stephenson (1977, p. 8) defined operant factors as “factors which have no critical dependency on test ‘construction’ effects.”

Factor analysis can be done with a main focus on determinacy or mathematical criteria as with Principal components analysis and Varimax rotation. PCA being a well known and much used extraction technique in factor analysis is especially useful in summarizing the relationships among a large number of variables with a smaller number of components (Pett, Lackey, & Sullivan, 2003, p. 102). According to these authors a major drawback is “the extracted components tend to overestimate the linear patterns of relationships among sets of variables”. Varimax is the default option in SPSS (SPSS Inc., 2007) and its goal is to simplify the columns of the unrotated factor-loading matrix. It maximizes higher loadings and makes lower loadings lower. Pett et al. (2003, pp. 142-143) note that Varimax is designed to eliminate general factors and “overinflate the importance of lesser factors”. Varimax is an example of atheoretical rotation seeking a solution acceptable by statistical criteria (Brown, 1980, p. 227).

According to Brown (1980) the uniqueness of the centroid method is its indeterminacy. It is not fixed and has an undetermined character and can be rotated at will (Stephenson, 1953). This means there are no correct answers or solutions out of the infinite possibilities available. Reality can be examined from different vantage points (Brown, 1980). In this sense the investigator can choose to examine the data from numerous angles according to his or her inclinations and guided by theory (Brown, 2007). Brown (1980, p. 230) notes that “rotation does not affect the relationships among the facts, therefore – i.e., the data points are not moved around – only the vantagepoint from which relationships are observed.” This exploratory possibility is important for me to pursue when examining the data. It is an interesting exercise because the findings can be looked at from many different perspectives, and this helps to get to ‘know’ the data. It is not just the case of mastering which buttons to

respectively) with which Spearman was preoccupied”, g symbolizing general intelligence. Noesis: ‘perception of the mind, intelligence, thought’, the working of the pure intellect or reason (Wyld & Partridge, 1960).

push in a software analysis program, but to use imagination, creativity, abductive hunches, and of course rational thinking. “Analysts may rely on hunches, instincts, guesses, and vague feelings in wending their way through complex data, but this has always been part of science”(Brown, 2006b).

There is noted skepticism towards centroid factor analysis and judgmental rotation, but reasons for this may be found, according to Brown & Robyn (2004, p. 105), in “an absence of knowledge concerning its philosophical foundations, which are to be found in such corners as Charles S. Peirce’s (1958) abductive logic, J.R. Kantor’s (1959) interbehaviorism, Egon Brunswik’s (1947) psychological cues, and Michael Polanyi’s (1962; 1966) tacit knowledge (see Stephenson, 1961; 1980; 1982).” In Brown and Robyn’s article they point to a coherent rationale for the theoretical rotation of factors and argue that “under many, and perhaps most, conditions there is probably no other way to proceed if reality itself is to have any role in the outcome” (p 105).

In interpreting Q data, Stephenson (1983a, 1983b) reminds us of the importance of the ‘Sontag rule’: *to see more, hear more, feel more* before leaping into interpretations. Each factor should have its own distinct feeling running through it from the negative to the positive pole of the factor and this is what we try to grasp as understanding (Stephenson, 1983a, p. 81) We are also cautioned against analyzing data “*too much*” (Stephenson, 1953, p. 40) in case we ““see through” a garden to its soil and bacteria and miss the surface beauty.” He goes on to claim that in Q, correlations are analyzed “*from the standpoint of the persons who did the ratings*, because theirs are the actual operations at issue” [original italics].

Stephenson (1953, p. 40) admired Kantor’s work and pointed out:

“ all scientific behavior is *concrete inferential interbehavior*, that is , relatively specific to each experimental situation. This means that there are no absolutist deductive, hypothetico-deductive, or inductive methods or powers at issue. Every experiment, rather, requires its own rules, or some specific to it; and no single set of procedures can fit all the inferential interbehavioral settings of science. Thus we are careful to regard the postulatory-dependency methodology of Q as “open-ended” – the precise form of the analysis undertaken is determined by the experimental situation.”

Stephenson also called attention to the *analytical power* of a factor which concerns the explanation it provides, and to the *interpretive power* of a factor which lies in the combinations it helps to explain (1953, p. 41).

In the case of this study and among the many possibilities I had and tried, my final choice was on Centroid factor analysis and judgmental rotation for analyzing the Q data. I chose this for its exploratory possibilities and the opportunity to combine background information and interview data with analyses from different vantagepoints in pursuit of a clearer picture and understanding of teachers' subjective opinions not just to single items but to a range of statements as a whole according to the respondents preferences. Another reason for this choice is the connection between philosophical background of Q-methodology with centroid factor analysis and judgmental rotation, which is built into The PQMethod program. In my opinion this is the best way for me to gain knowledge of teachers' priorities and beliefs concerning discipline and behavior management, group/classroom practices, and beliefs about children. In addition centroid factor analysis and judgmental rotation are used by other Norwegian researchers well acquainted with Q-methodology (Allgood, 1999; Kvalsund, 1998, 2005).

In PQMethod, eigenvalues and percent variance explained for each factor is calculated and noted in the output data. While variance is important in quantitative analysis, it is not that important in Q, but the weight of the defining sorts and the number of individuals defining that factor is central (Brown, 1980). According to Brown (2006c) Q-methodology is designed to show the existence of various factors and also to expose/unveil similarities and differences among the factors. In this aspect if one factor is defined by more people than another factor and in this way accounts for a larger percentage of variance, is in Brown's view of little consequence. The essence is the factor or factors that emerge representing the different types of viewpoints there may be. A guiding rule for a well defined factor is "to have at least 2 sorts with high loadings on the respective factor, and clearly lower loadings on all other factors" (Schmolck, 2006b).

For Subgroup 1, I chose to highlight those that I had interviewed and maximize their loadings as defining sorts because I had more information from them that could be useful in interpreting the results. This was done for

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all three Q study themes. Correlations between factors should ideally not exceed .30 (Brown, 2007), but this is a guideline. In Q2 for Subgroup 1 the rotation resulted in an increase in the correlation between factors to .36. This is still rather low, and I chose to keep this solution because of the extra information from the interviewees. For Subgroup 2 I highlighted teachers working in daycare for all three themes to see if they differed much from those working in school. The correlations between factors on Q2 for this group were between .16 and .25, being under the recommended level. In general I hand rotated to maximize the individuals defining the factors and to keep a low correlation between factors where there was more than one. The whole point is to find meaningful factors. The judgmental rotation history is presented in Table 8.

Table 8 – Judgmental rotation history

Q studies	Rotated factors Angle		Result
Subgr.1, Q1	Factors 1 and 2	+5 degrees	One factor
Subgr.1, Q2	Factors 1 and 2	-13 degrees	Two factors
Subgr.1, Q3	Factors 1 and 2	-5 degrees	One factor
Subgr.2, Q1	Factors 1 and 5	+9 degrees	One factor
Subgr.2, Q2	Factors 1 and 2	-10 degrees	
	Factors 2 and 3	+3 degrees	Three factors
Subgr.2, Q3	Factors 1 and 2	-6 degrees	
	Factors 1 and 2	+4 degrees	One factor

Before proceeding to present the results from these analyses, a final word on judgmental rotation from Brown and Robyn (2004, p. 122) which encompasses tacit knowledge:

“We often know when something does not feel quite right, for instance, or have a vague inclination to pursue one course of action rather than another. We may be unable to articulate the reasons for these sensations – such is the nature of “hunches” (Platt 1931) in science as in other endeavors – but according to Peirce, Polanyi, Brunswik, and Kantor among others, they are not accidental; rather, they are the result of concrete experiences and lessons that have been stored up in the course of our interactions with reality and that provide useful if fallible guides to future interactions. The judgmental rotation of factors is simply a special case of this more general principle and provides a disciplined way for reality as currently understood to play a role in the final solution.”

4.2.1 Beliefs about discipline and behavior management (Q1)

A Q-sample of twenty statements (described in section 3.3.3) was chosen from the sample universe on this theme. Participants were instructed to sort the statements into five categories from least to most characteristic of your approach or beliefs about discipline and behavior management. The respondents were asked to first put the statement cards into three piles, one for the negative pole, one for the positive pole, and one for the middle, and thereafter rearrange them to fit the 4x5 grid in a way that best depicts their personal point of view. The range is from -2 to +2. Subgroups 1 and 2 were analyzed separately. Centroid factor analysis was applied and 7 factors were viewed. Two factors (1&2) were extracted and hand rotated with an angle of 5 degrees for Subgroup 1. For Subgroup 2 the same procedure was followed and two factors (1&5) were extracted and hand rotated with an angle of 9 degrees. This resulted in one factor for each Subgroup. There were 30 out of 40 defining sorts on Subgroup 1’s factor explaining 44% of the variance. On Subgroup 2 there were 32 defining sorts out of 40 possible. This explained 49% of the variance. Factor loadings can be viewed in table 9. All six interviewees had high loadings on the factor for Subgroup 1.

I will begin this presentation by looking at those respondents who are defining sorts or have statistically significant loadings on the factors. Next will be to present the positive and negative poles of the factors and also comment on the statements placed in the middle. Comments from the interviewees will be

presented before I proceed to a summary of beliefs about discipline and behavior management.

The expression $SE_r = 1/\sqrt{N}$ “enables us to evaluate the strength of a correlation coefficient by comparing it to a theoretical situation where all is random” (Brown, 1980, p. 284). In this case with 20 statements, $SE_r = 1/\sqrt{20} = 0.224$. Loading in excess of $2.58(SE_r) = +/- .577$ is significant at the .01 level. (The .05 level would be $1.96(SE_r) = +/- .439$.)

($N = 40 + 40$)

Table 9 – Factor loadings on beliefs about discipline and behavior management (Q1) for each subgroup

Loadings for Subgroup 1			Loadings for Subgroup 2		
QSORT		factor 1	QSORT		factor 1
1	1s	0.7974X	1	1s	0.5994X
2	1s	0.6487X	2	1s	0.6919X
3	1s	0.7050X	3	1s	0.3763
4	1d	0.6275X	4	1d	0.8130X
5	1d	0.7535X	5	1d	0.8043X
6	1d	0.8202X	6	1d	0.7291X
7	1d*	0.7398X	7	1d	0.6817X
8	2s	0.6164X	8	2s	0.6189X
9	2s	0.6084X	9	2s	0.5379
10	2s	0.7181X	10	2s	0.7884X
11	2d*	0.6335X	11	2d	0.7672X
12	2d	0.4666	12	2d	0.6040X
13	2d	0.7878X	13	2d	0.7323X
14	2d	0.6686X	14	2d	0.8957X
15	3s	0.5531	15	3s	0.6797X
16	3s	0.8872X	16	3s	0.1389
17	3s	0.5336	17	3s	0.8319X

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18 3s	0.7426X	18 3s	0.7020X
19 3d	0.7671X	19 3d	0.8339X
20 3d	0.8198X	20 3d	0.7891X
21 3d	0.4611	21 3d	0.6864X
22 3d*	0.8269X	22 3d	0.8032X
23 4s	0.3335	23 4s	0.5988X
24 4s*	0.7822X	24 4s	0.6705X
25 4s	0.3063	25 4s	0.8437X
26 4d	0.5279	26 4d	0.9319X
27 4d	0.6374X	27 4d	0.8847X
28 4d	0.7795X	28 4d	0.6166X
29 4d	0.7463X	29 4d	0.5595
30 5s	0.4532	30 5s	0.7167X
31 5s	0.3528	31 5s	0.3528
32 5s	0.6953X	32 5s	0.6807X
33 5s*	0.8119X	33 5s	0.5667
34 5d	0.6448X	34 5d	0.8480X
35 5d	0.5913X	35 5d	0.6949X
36 5d	0.6177X	36 5d	0.7880X
37 5d	0.6970X	37 5d	0.8417X
38 6s	0.7795X	38 6s	0.3210
39 6s	-0.1186	39 6s	0.7491X
40 6s*	0.6065X	40 6s	0.4681
% expl.Var. 44		% expl.Var. 49	

X = defining sort, here at $p < .01$ which is .577

* = interviewee

As shown in table 9 there are 40 participants in each subgroup. The first seven numbers, 1 through 7, are from the municipality labeled '1'. Three of them work in school, labeled 's', and four work in daycare, labeled 'd'. The same procedure was used for participants from the other 5 municipalities (here

labeled 2, 3, 4, 5, &6). A defining sort has a high loading on the factor and is marked by x, here at $p < .01$ for both groups. In the case of Subgroup 1, 13 out of 20 teachers working in school are defining sorts on this factor and 17 out of 20 teachers in daycare are defining sorts. The equivalent for Subgroup 2 is 13 out of 20 in school, and 19 out of 20 teachers in daycare are defining sorts on this factor. In both subgroups there are more teachers working in daycare among the defining sorts.

While factor loadings show how strongly each Q-sort relates to a factor, in Q-methodology the factor scores are even more important because they portray perspectives of subjective preferences (Brown, 2007). The factor scores can be viewed in table 10 where the factor arrays for the single factor of each subgroup is displayed in addition to Z-scores. Although the Subgroups have been computed separately, I have put them in the same table for comparison.

Table 10 – Z-scores and factor arrays (ranking) of statements for Subgroup 1 and Subgroup 2 on beliefs about discipline and behavior management (Q 1)

		Subgroup 1		Subgroup 2	
No	Statements	z-score	rank	z-score	rank
1	The primary goal in dealing with children/students' behavior is to establish and maintain control.	-1.460	-2	-1.137	-2
2	A noisy group/classroom is okay as long as all the children/ students are being productive.	-0.296	-1	-0.621	-1
3	Children/students must be kept busy doing activities or they soon get into trouble.	-1.390	-2	-1.354	-2
4	When children/students are engaged in interesting problems and challenging activities, they tend to have very few discipline problems.	1.092	2	1.109	1
5	Proper control of a class is apparent when the children/students work productively while I am out of the room (either briefly or when only a substitute is present).	-0.783	-1	-0.657	-1
6	Monitoring children/students can prevent problematic situations.	0.458	1	0.615	1
7	Peer interactions are best left to recess and snack time.	-1.594	-2	-1.567	-2

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8	The curriculum and class schedule need to be prioritized over children's/students' specific interests.	-1.464	-2	-1.347	-2
9	A classroom runs smoothly when there are clear expectations for behavior.	0.833	2	1.190	2
10	Classroom rules should be discussed and posted.	0.747	1	-0.106	0
11	Self-monitoring (or self-regulation) are important skills for children/students to develop	0.699	1	1.197	2
12	It is important to respect children's/students' autonomy and expect them to act in a responsible manner.	0.136	0	0.347	0
13	Children/students should try to resolve conflicts on their own before going to the teacher.	-0.033	0	0.376	1
14	Rules for the children's/students' group/classroom behavior need to be reinforced consistently.	0.184	0	0.362	1
15	Praise from me is an effective way to change children's/student's behavior.	1.544	2	1.426	2
16	Children/students learn best in primarily teacher-directed classrooms.	-0.602	-1	-0.676	-1
17	If I treat children/students with respect, kindness, and concern, there are less behavior problems.	1.647	2	1.565	2
18	Verbal punishment is an unacceptable means of controlling children's/students' behavior; I believe it's more important to use only positive management techniques.	0.398	0	0.045	0
19	If I anticipate problems before they happen and discuss them with the students, I have fewer discipline problems.	0.548	1	0.206	0
20	Extrinsic rewards for desirable behavior (e.g., stickers, candy bars) undermine children's/student's motivation; it's better not to give such rewards at all.	-0.664	-1	-0.973	-1

Both Subgroup 1 and Subgroup 2 were in complete agreement about -2 and -1 statements and three out of four +2 statements are also identical in both

groups. There were differences in +1 and 0 statements. The presentation will begin with the + 2 statements.

The positive pole of the factor

Teachers in both subgroups agree on three out of four statements ranked +2:

(9) A group/classroom runs smoothly when there are clear expectations for behavior.

(15) Praise from me is an effective way to change children's/students' behavior.

(17) If I treat children/students with respect, kindness and concern, there are less behavior problems.

When children are given clear expectations for how they should behave (9), and teachers show them respect, kindness, concern (17) and give praise (15), teachers in both subgroups report to believe there will be less behavior problems among/with children. Teachers having a strong focus on giving clear expectations for children to follow (9), suggests a certain way of organizing the life and work in the group/classroom. Clear expectations by itself could be quite dominating, but combined with praise, kindness, respect, and concern it could point to a focus on developing relationships to enhance proper behavior among children. It may also illuminate the responsibility the teachers have in accommodating and assessing the group/class environment by the manner in which they report to believe children should be met and interacted with.

Subgroup 1 has (4) as a +2 statement: When children/students are engaged in interesting problems and challenging activities, they tend to have very few discipline problems.

Subgroup 2 has (11) as a +2 statement: Self-monitoring (or self-regulation) are important skills for children/students to develop. Subgr. 2 has statement no. 4 as a +1 value, and Subgr. 1 has statement no. 11 at +1. Statement no. 17 has the highest z-score in both subgroups (Subgr. 1 at 1.647; Subgr. 2 at 1.565). See table 10 for more information.

Teachers in the two subgroups differ slightly in their views here, one having a stronger focus on engaging in interesting and challenging activities, while the other values self-monitoring as more important. Both are on the positive side of the factor.

+1 Statements Q1:

The +1 statements is the area with the least common statements between the subgroups. Statement (6) “Monitoring children/students can prevent problematic situations”, is the only +1 statement that the groups share. This again points to the responsibility of the teacher for maintaining a positive group/classroom atmosphere and preventing problematic behavior. The other +1 statements are listed below under each subgroup.

Subgroup 1:

(10) Group/classroom rules should be discussed and posted.

(11) Self-monitoring (or self-regulation) are important skills for children/students to develop.

(19) If I anticipate problems before they happen and discuss them with the children/students, I have fewer discipline problems.

Subgroup 2:

(4) When children/students are engaged in interesting problems and challenging activities, they tend to have very few discipline problems.

(13) Children/students should try to resolve conflicts on their own before going to the teacher.

(14) Rules for the children’s/students’ group/classroom behavior need to be reinforced consistently.

When viewing the differing +1 statements of each subgroup with their different views on + 2 [Subgr. 1 (4), and Subgr. 2 (11)], nuances are noted. Subgroup 1 places higher value on engagement in interesting and challenging activities to prevent discipline problems, and they also focus on prevention of problems through anticipating them and discussing rules with the children. These teachers also see the importance of developing skills such as self-

monitoring, although giving this statement a lower score than Subgroup 2. Subgroup 2 seems to value self-monitoring as more characteristic of their approach or beliefs of behavior management. This is supported by statement (13) where children are expected to try to resolve conflicts before contacting the teacher. Teachers in Subgroup 2 also see the importance of having interesting and engaging activities to prevent behavior problems, but see also the need to constantly reinforce children's behavior.

Next the statements comprising the negative side of the factor will be viewed. Both subgroups were in complete agreement of the statements rank ordered as -2 and -1.

The negative pole of the factor

-2 Statements Q1:

(1) The primary goal in dealing with children's/students' behavior is to establish and maintain control.

(3) Children/students must be kept busy doing activities or they soon get into trouble.

(7) Peer interactions are best left to recess and snack time.

(8) The curriculum and class schedule need to be prioritized over children's/students' specific interests.

According to Subgroup 1 and Subgroup 2, establishing and maintaining control (1) was least characteristic of these teachers' approach or beliefs. Nor do they report to believe that children/students get into trouble if they are not kept busy (3). In their view curriculum and class-schedule were not valued as more important than children's interests (8). While placing "Peer interactions are best left to recess and snack time" (7) as -2, this should imply the importance of peer interactions during other parts of the day and not just at recess time. This may indicate a focus on the importance of social interaction among children, which at the time of this study was emphasized in both daycare and school settings (BFD, 1995; KUF, 1996). Statement no. 7 has the lowest z-score in both groups (Subgr. 1 at -1.594; Subgr. 2 at -1.567).

-1 Statements Q1:

(2) A noisy classroom is okay as long as all the children/students are being productive.

(5) Proper control of the group/class is apparent when the children/students work productively while I am out of the room (either briefly or when a substitute is present).

(16) Children/students learn best in primarily teacher-directed classrooms.

(20) Extrinsic awards for desirable behavior (e.g. stickers, candy bars) undermine students' motivation; it's better not to give such awards at all.

The classifying of these statements as – 1 in both subgroups, indicates a common understanding among the teachers concerning disruptive behavior. They do not appreciate a noisy classroom although children are being productive (2). Children's productivity while the teacher is out of the room (5) does not necessarily mean there is good enough control of the group. The view of these teachers tend to be that the best way for children to learn is not automatically in teacher-directed groups or classrooms (16), but all the interviewees call attention to the importance of the adult role for enhancing good behavior among children. There seems to be an acceptance that the use of extrinsic awards may not undermine the motivation of children (20) and thereby have some effect. Anna gave an example of using "stickers" to reward a child with low impulse control for good behavior as long as the goals are very small and manageable (Anna, paragraph 116).

The middle of the factor

0 Statements Q1:

As explained in section 3.1.2 the statements valued at 0 indicate that these do not imply strong emotions among the teachers, neither in a positive nor a negative direction. Stephenson (1953, pp. 195-196) draws attention to a methodologically important issue, namely a "distensive zero" and all information is contained in the dispersion around zero. When doing a Q-sort Brown (1980, p. 22) claims "the statements toward the middle, relatively speaking, lack significance, i.e., are affectively weightless (Beebe-Center, 1929) relative to the extremes". The center of the Q-sort "should be a zone of

hedonic neutrality, not zero as a matter of gradation (as the zero point on a thermometer), but a point of meaninglessness” (Brown, 2005), and points to what is essential is “the relative meaninglessness in the middle compared to the meaningfulness at the extremes of the distribution.” Statements placed at the “distensive zero” can sometimes give a deeper understanding of the statements put elsewhere in the forced distribution. In this case, both subgroups agreed upon two statements, namely (12) concerning the respect for children’s autonomy and expecting them to behave, and also (18) which concerns the use of verbal punishment. Neither of these statements was considered important enough compared to the other statements to be put elsewhere than in the middle. All the statements in the middle position are displayed below under each subgroup.

Subgroup 1:

(12) It is important to respect children’s/students’ autonomy and expect them to act in a responsible manner.

(13) Children/students should try to resolve conflicts on their own before going to the teacher.

(14) Rules for the students’ classroom behavior need to be reinforced consistently.

(18) Verbal punishment is an unacceptable means of controlling children’s/students’ behavior problems.

Subgroup 2:

(10) Classroom rules should be discussed and posted.

(12) It is important to respect children’s/students’ autonomy and expect them to act in a responsible manner.

(18) Verbal punishment is an unacceptable means of controlling children’s/students’ behavior problems.

(19) If I anticipate problems before they happen and discuss them with the children/students, I have fewer discipline problems.

4.2.2 Teachers comments on discipline and behavior management

Berit, Carl, and Ester work in daycare, and Anna, David and Frida work in school. Before I let their voices be heard, I need to comment on a translation issue. All of these teachers agree on being “tydelig” (Norwegian) in connection to their roles as teachers. Directly translated, it could be “distinct”, but that does not grasp the whole meaning of the Norwegian concept concerning the teacher’s role. In addition it encompasses being firm, supportive, and warm, in short a teacher who is easy for the children to “read”, trust, and who gives the children clear and firm limits and warm support. This content points to an authoritative teacher, a word more commonly used in English. Although an “authoritative” teaching style is also known in Norwegian, it is not that commonly used in everyday speech. In the translation from Norwegian to English I have used both “distinctive” and “authoritative” in the translation of “tydelig”.

The letter ‘p’ stands for paragraph and the number afterwards points to where in each transcript the information can be found.

All of the interviewees call attention to the importance of an authoritative teacher role and some accentuate being a good role model:

“So, I believe students need clear adult role models, ...clear rules to abide by. I believe students become uncertain about you if they don’t know what to abide by. ...So, no, it’s very important that they know where they have me.” (Anna, p 48), “ one must be authoritative. That’s what I think is of utmost importance, distinct and friendly. Yes.” (Anna, p 60), and David (p.55) agrees: “Being an authoritative adult, that is very important” (David, p 55).

Carl (p. 48) speaks of the adult role as being central and having “ an important function in correcting behavior”, a point also made by David. “Being a good role model, being predictable, having common rules we have agreed upon together in class. And then they have participated in influencing their own everyday, at the same time they know there will be consequences if they break them.” (David, p. 59). Frida (p. 26) also calls attention to being a visible and distinct leader so there is no doubt for the children who is in charge, but also states having a set of basic rules and routines which they reach together as being important, and Ester (p. 33) supports being “clear about limits and

which rules that apply” and Frida goes on to say: “I don’t mean authoritarian in any way, but having clearer, more secure frameworks, with greater predictability” (Frida, p.217).

Berit follows up with a more nuanced picture: “Being an authoritative adult and at the same time one who listens and gives the (levende) living/engaged children a right to participate, well, that’s two sides of the same thing... For some you have to be stricter than you really want to be, while for others you can leave more room for negotiation and lead them in a different way.” (Berit , p. 26). Berit, having worked in daycare for many years can see that the child group has changed, and says they have many children with problems, both behavior and other problems. “In later years we have had to take a more firm role than we actually want to have, because we have too many who can’t be given free rein. “ (Berit, p 34). According to Anna a person isn’t awful but may do awful things. “And I believe that it is very important to separate between person and behavior” (Anna, p 116). She draws attention to a critical aspect and one where our beliefs and attributions may lead us astray and complicate the situation, especially if we are looking for a scapegoat to take the blame for failure. Myers (2004, p. 25) cautions us that sometimes “we *think* we know, but our inside information is wrong”.

An authoritative teacher is not only an adult who establishes and maintains limitation for behavior, but also a person that is engaged in the children, seeing them, caring, and showing them respect. Berit (p. 118) puts it this way: “I believe this here about treating them with respect, kindness, concern, that is what I believe is some of the very most important. And I see no conflict between that and setting limits and being structured.” Berit highlights essential values where both subgroups strongly agree. Statement (17) “If I treat children/students with respect, kindness, and concern, there are less behavior problems” received the highest z-score in both subgroups. The statement (15) that received the next highest z- score in both groups concerns using praise as an effective way to change behavior, and Anna (p. 88) agrees: “I believe strongly in using praise, to enhance the positive.”

An important issue for Carl (p. 48) is a teacher’s engagement in the children, being there for them both mentally and physically and pointing to the role of “The active, engaged, participating (medopplevende) adult.” (Carl, p 56).

Engagement can be shown in different ways and in addition to being strict, trying to be consequent and distinctive (*tydelig*), Anna (p. 48) points to humor and having fun together as important factors. This is also in line with Søbstad's rationale (Søbstad, 2006). Another essential aspect of the authoritative teacher role is "to create security between the adult and the child, brought up by Ester (p 33). For a child to feel safe and secure in daycare and/or school, they need to feel they have been "seen", that the adults are there to protect them, care for them, and teach them. Frida who pointed to having "basic rules" is in addition engaged in reaching each child so they experience being seen, heard, and cared about every day: "That I as a leader show very much that I'm interested in each child, that every day they shall know for sure that I have seen them, that I have spoken with them, that I care, that I have heard how they have been since last time." (Frida, p 26).

Statements on the positive pole of the factor tend to point out the importance of relationships and comments from teachers underline this. It is not always as easy as it sounds, because children are different and teachers are different. Ester draws attention to an important issue of how to coordinate the way adults meet children. "It is an art in itself to manage, because all adults have their own beliefs about what is important for a child." (Ester, p 33). She exemplifies this "... one reacts with anger, while the other reacts with major understanding, comforts, and the third says: I can't be bothered anymore. Now I am so tired of that child" and points to the frustration this creates in children (Ester, p 49). She also calls attention to "which reactions one should have on different things" and "how one can make rules for how one should be distinct (*tydelig*), but at the same time ...in a way... not punish for something the child actually can't help for." (Ester, p 41). This gives a picture of the complexity in working with colleagues and children and the many demands upon teachers in both daycare and school not only to focus on the learning environment and academic input, but also to deal with establishing and maintaining good relationships. This may not always be a success due to various reasons such as a difficult situation, problematic relationships, feeling of own short-comings, or just having a bad day, to mention a few.

An issue Berit sees as important connected to the adult role, is "sometimes I work like this, and sometimes I work like that... you choose different ways of working. Sometimes we make rules and hang them up, sometimes we don't."

(Berit, p 120). At first this may seem contradictory to being consistent, consequent, and having clear rules to maintain acceptable behavior among children. On the other hand it may depict flexibility, a quality in a teacher to differentiate the way we meet different children and help each child to do their best. It is in line with assumptions from DAP (Bredekamp & Copple, 2004) where it is suggested to move from an *either/or* polarization to a more *both/and* thinking which better reflects the complexity in decisions intrinsic to the work of early childhood education.

4.2.3 Summary of beliefs about discipline and behavior management

In view of all the statements in Q 1, and comments from the interviewees, teachers in both subgroups seem to have a similar opinion on disruptive behavior and how to manage it. Although they do not appreciate much noise even if children are being productive, the teachers' primary goal is not to establish and maintain control, nor to prioritize curriculum or group/class routine over children's interests, or to rely completely on extrinsic awards, although they may have some effect. Instead they emphasize clear expectations, the use of praise, and to treat children with respect, kindness, and concern as means of behavior management. The interviewees point to the importance of the adult role both in terms of being leader of the group/class and in meeting the child with kindness and concern. The interviewee teachers also acknowledge having children participate in establishing rules in the group/classroom. Teachers defining these factors tend not to believe that children learn best in primarily teacher-directed groups/classrooms, but seem to value peer interaction. Teachers focus on clearness and consequence, but some also indicate the necessity of accepting differences and meeting children in different ways. Does this point to inconsistencies among the teachers or can it be part of a tradition where equality and inclusiveness are important elements? Although mostly displaying similarities between the subgroups, there are some subtle nuances pointing to what may be a more 'preventive' focus in Subgroup 1 while Subgroup 2 seems to have a higher focus on children's autonomy. Since the range from -2 to +2 is so narrow, it is important not to stretch the minor differences. Looking at the views from both subgroups and the agreements they share on the positive and negative poles of the one factor that emerged in each group, it could be argued that this actually

depicts one major factor. The essence here seems to be on praise, clear expectations and building relationships, and using order not to have full control, but to enhance learning, communication, and engagement. This seems to point towards priorities and beliefs resembling an authoritative teaching style in dealing with behavior management. Results from the Q sorting process depict shared views not on singular items, but on the configuration of the statements as a whole. Comments from the interviewees underline main opinions. How can it be possible for teachers in different settings working with children of varying ages to have such a common view of their beliefs concerning discipline and management behavior? Is it due to methodological limitations; or can it be cultural implications behind this shared view?

4.2.4 Group/classroom practices (Q2)

For group/classroom practices there was also a Q-sample of 20 statements. Participants were instructed to sort the statements into five categories from least to most essential and/or characteristic of your teaching". Here as with the previous Q-sort theme, the respondents were asked to first put the statement cards into three piles, one for the negative pole, one for the positive pole, and one for the middle and thereafter rearrange them to fit the 4x5 grid in a way that best depicts their personal point of view. The range is from -2 to +2. Subgroups 1 and 2 were analyzed separately on this theme also. Centroid factor analysis was applied. After exploring several possibilities, I chose a two factor solution where factors (1&2) were extracted for hand rotation with an angle of -13 degrees for Subgroup 1. This was done to emphasize the loadings of the interviewees which I had more information about. These factors were called A and B.

For Subgroup 2 Centroid factor analysis was also used and there were 3 factors among the 7 factors first extracted that had defining sorts, and factors (1,2&3) were then extracted for judgmental rotation. I did not have additional information through follow-up interviews for Subgroup 2, instead factor 1 and 2 were hand rotated to accentuate the loadings of the teachers in daycare with an angle of -10 degrees for factors 1 (C) and 2 (D). Factor 2 (D) had only teachers working in school as defining sorts and factor 3 (E) was mixed.

Factors 2 and 3 were hand rotated to +3 degrees to emphasize the loadings of teachers working in school. See also table 8.

The two factors in Subgroup 1 (A & B) had 28 defining sorts on factor A and 9 on factor B. Thus 37 of the 40 possible had defining sorts on these two factors. Together these factors explained 47% of the variance (35% and 12% respectively). For Subgroup 2 there were 26 defining sorts on factor C, 4 on factor D, and 3 on factor E, a total of 33 out of 40 possible. This explained 36% of the variance on factor C, 9% on factor D, and 7% on factor E, which gives a total of 57% explained variance. There were no statistically significant negative loadings on any of the 5 factors. Factor loadings and defining sorts can be viewed in table 11 for Subgroup 1 and table 13 for Subgroup 2.

When presenting the results on Q1 concerning beliefs about discipline and behavior management, I portrayed the positive, negative and middle part of the factors which in the case of the two subgroups could broadly be seen as one factor. When it comes to group/classroom practices (Q 2) there are more divergent views among the teachers which have led to more factors in each subgroup. Factor loadings and the factor arrays (rank position) will be displayed in tables 11 and 12 for Subgroup 1 and tables 13 and 14 for Subgroup 2. In addition z-scores will be noted. The teachers' views will be presented by pointing to positive and negative poles of the factors. The analysis which is made possible through the PQMethod program, also displays tables with the statements that distinguish one factor from another. Trying to avoid to tire out the reader with all the details, the statements put into the middle will not be commented specifically, but instead a focus on statements that distinguish one factor from another. There will also be comments from the interviewees as a supplement to the interpretation of the teachers' viewpoints.

I will proceed to show and comment on table 11 concerning Subgroup 1's views of (Q 2) Group/classroom practices which resulted in two factors (A and B).

Results

Table 11 – Factor loadings on group/classroom practices (Q2) for Subgroup 1

QSORT	Factor A	Factor B
1 1s	0.6216X	0.3341
2 1s	0.1995	0.7384X
3 1s	0.6176X	0.3140
4 1d	0.4575X	0.1970
5 1d	0.6545X	-0.0839
6 1d	0.5970X	0.4245
7 1d*	0.5315X	-0.3371
8 2s	0.6180X	-0.1471
9 2s	0.8070X	0.1299
10 2s	0.0706	0.5091X
11 2d*	0.5742X	-0.3971
12 2d	0.6210X	0.0189
13 2d	0.6345X	-0.3920
14 2d	0.6911X	-0.1685
15 3s	-0.1111	0.6611X
16 3s	0.6895X	0.1091
17 3s	0.5516	0.6477X
18 3s	0.6349X	0.0432
19 3d	0.7396X	-0.2938
20 3d	0.8550X	-0.2979
21 3d	0.6615X	-0.0457
22 3d*	0.6859X	-0.0029
23 4s	0.6725X	0.3425
24 4s*	0.5020X	0.2553
25 4s	0.2533	0.5055X
26 4d	0.5984X	-0.0938
27 4d	0.5646	0.5966X
28 4d	0.7648X	-0.1213
29 4d	0.3921	0.1266

Table continued next page

Results

30 5s	0.6316X	0.2378
31 5s	0.3644	0.5117X
32 5s	0.3717	0.2147
33 5s*	0.4924	0.6130X
34 5d	0.8141X	-0.1636
35 5d	0.7437X	-0.2212
36 5d	0.6250X	-0.1250
37 5d	0.6360X	0.1284
38 6s	0.8125X	0.2142
39 6s	-0.1566	0.3879
40 6s*	-0.1054	0.4568X
	% expl.Var. 35	% expl.Var. 12

X = defining sort

* = interviewee

The numbers 1–40 are the participants in Subgroup 1. The letter ‘s’ symbolizes teachers who work in school, and ‘d’ for those who work in daycare. The numbers 1-6 in connection to ‘s’ and ‘d’ indicates the six different municipalities. Each interviewee is marked by *. Among the 28 defining sorts on factor A, 18 of them work in daycare, while 10 work in school. In factor B 8 out of 9 defining sorts work in school while only 1 works in daycare. The factors depict different views concerning beliefs about group/classroom practices among the teachers in Subgroup 1. As we know from Q-methodology it is the people who are the variables and have been correlated and factor analyzed. It is not a question of single items or single statements, but how each teacher has rank ordered all of the statements as a whole in comparison to each and every statement, and according to their personal and subjective preferences. Four of the interviewees (three from daycare and one from school) are defining sorts on factor A, while the remaining two interviewees (both working in school) are defining sorts on factor B.

Results

In table 12 we shall see how these preferences come to life through the different values statements have been given and the factor arrays that emerged as factor A and factor B. In addition distinguishing statements will be marked.

Table 12 – Z-scores and factor arrays (ranking) of statements for Subgroup 1 on beliefs about group/classroom practices (Q2) on factors A and B

No	Statements (Q2)	Factor A		Factor B	
		z-score	rank	z-score	rank
1	Having a morning routine	0.128**	0	1.292	2
2	Talking about our plan or schedule for the day	-0.078**	0	1.108	2
3	Welcoming each child/student by name to group/class	1.166**	2	0.181	0
4	Doing an activity to create a sense of community	1.310*	2	0.885	1
5	Talking about current events	0.445*	1	-0.022	0
6	Using hand signals	-0.881	-1	-0.641	-1
7	Having at least a few children/students share something that happened to them	1.283**	2	-0.490	-1
8	Discussing a written announcement or message created by teacher.	-1.589	-2	-1.725	-2
9	Conducting the business of the group/classroom (e.g., collecting lunch or milk money) following a set routine.	-1.348**	-2	-0.839	-1
10	Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class	0.588*	1	0.145	0
11	Reflecting on the content of an academic lesson and talking about what we learned	0.351**	0	1.299	2
12	Using drill and recitation for factual information (math facts, etc.)	-1.784**	-2	-0.019	0
13	Modeling behaviors for children/students	-0.060**	0	-1.281	-2

Table continued next page

Results

14	Introducing new objects or new activities in the room through demonstration	-0.139**	-1	0.949	1
15	Using work sheets	-1.539**	-2	-0.589	-1
16	Permitting children/students to choose from a variety of activities	0.737**	1	-1.516	-2
17	Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution	1.349**	2	0.252	1
18	Using whole group instruction	-0.099**	-1	1.301	2
19	Using theme-based approach to instruction	0.583	1	0.922	1
20	Working on group projects	-0.423**	-1	-1.207	-2

Distinguishing statement: *= p<0.05, **= p<0.01

Q2 Factor A(Subgr.1)

The positive pole of factor A on Q 2 for Subgroup 1

Statements placed at the high positive end (+2), contain elements such as (17) Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution; (4) Doing an activity to create a sense of community; (7) Having at least a few children/students share something that has happened to them; and (3) Welcoming each child/student by name to class. We can notice aspects of a morning routine both through the welcoming of each child and having some of them share an experience. There is also a caring element here where each child is welcomed by using their name which could imply that each child has been seen, an important factor in an authoritative teaching style (Roland & Galloway, 2002), and in addition to parents, teachers can be 'significant others' to all children they teach, and may play an important role especially for children at risk (Pianta, 1999). For this to happen it is not enough just to see the child, efforts have to be made to build a positive relationship with the

child. According to Pianta (1999, p. 63) relationships are “the cornerstone of development” and affect school success for all children including those at high-risk. On the positive pole of factor A there is a sharing and community component where children are invited to share experiences and also participate in activities to create a sense of community. In addition there is encouragement with a focus on process more than outcome, which seems to saturate this viewpoint. These elements relate to the group/classroom atmosphere which is an important aspect connected to teaching and learning. There are also more teachers working in daycare who define this factor. Although these elements are important in both daycare and school settings, there may be an even stronger focus on them concerning the youngest children.

A morning routine guided by a caring, sharing, community, and encouragement view seems to be supported by the +1 statements: (16) Permitting children/students to choose from a variety of activities; (10) Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class; (19) Using a theme-based approach to instruction; and (5) Talking about current events.

Reflection and talking about social interaction (10) and current events (5), has a sharing, community aspect. Through reflection and talking both children and teachers have an opportunity to articulate social interactions that occur in the group/class, and hopefully have a chance to reach an agreement on how to behave in the setting. Teachers defining this factor also have a focus on a ‘theme-based approach’ (19) and allow children to choose among different activities (16). It also seems to point towards a child centered view which takes into consideration such aspects as the child’s situation, needs, interests, and their development (Egedius, 2002).

When doing a Q-sort, individuals can give the same score to a statement but for different reasons. Individuals may have different understandings of the meaning of a concept or a statement. A statement may also mean different things to the same person in various contexts and/or at different times.

The negative pole of factor A

The four statements placed at the lowest negative pole (-2) depict the beliefs and approaches that these teachers report are least essential and/or characteristic of them and include: (9) Conducting the business of the group/classroom (e.g., *collecting lunch or milk money*) following a set routine; (15) Using work sheets; (12) Using drill and recitation for factual information (*math facts, etc*); and (8) Discussing a written announcement or message created by the teacher.

Using drill and work sheets is not characteristic of these teachers, nor is conducting group/classroom business by a set routine, or using time to discuss messages created by the teacher. The -2 statements are not especially caring, sharing, community, or encouragement focused as was in the +2 statements. Nor can we detect an emphasis on results instead of process, and the teachers have rank ordered these statements at the lowest possible value which supports the positive (+2) elements on factor A.

The -1 statements: (6) Using hand signals; (14) Introducing new objects or new activities in the room through demonstration; (18) Using whole group instruction; (20) Working on group projects; also suggests that an academic learning approach is not the main issue for factor A teachers who also put a statement concerning reflecting on the content of an academic lesson (11) in the middle and not at either of the extremes in the 4x5 distribution grid.

Factor A teachers may seem to value a community and relationship practice more than an academic learning approach. There are 28 out of 40 teachers who are defining sorts on this factor, and 18 of these work in daycare. Could this relate to beliefs about how to teach the younger children? On the other hand 10 of these teachers work in a school setting among the youngest children there. Could this view also relate to the number of teachers in school with a preschool teacher education background and the collaboration that has been between teachers with different educational backgrounds? Group/classroom practices tend to focus on building relationships through care, sharing and community behavior, where a variety of activities and a theme-based approach is used. The connection between positive relationships and good development for all children, has previously been pointed out by Pianta (1999, p. 63). Statement (17) focusing on encouragement and feedback

on process instead of outcome has the highest z-score (1.349) while statement (12) drill and recitation has the lowest (-1.784), see table 12 for more information. A set routine is not that important for these teachers considering practical obligations, but a morning routine that emphasizes to welcome and see each child every day is highly characteristic of them. Four of the six teachers in the interview-group are defining sorts on this factor (3 worked in daycare and 1 in school). The essence of factor A teachers concerning group/classroom practices seem to be on relationships and community more than an academic learning perspective.

Next factor B for Subgroup 1 concerning (Q2) beliefs about group/classroom practices will be presented.

Q2 Factor B (Subgr.1)

The positive pole of factor B (Subgroup 1)

The following statements are rank-ordered to +2 among factor B teachers, and symbolize the approach that is reported to be most essential and/or characteristic of these teachers: (18) Using whole group instruction; (11) Reflecting on the content of an academic lesson and talking about what we learned; (1) Having a morning routine; and (2) Talking about our plan or schedule for the day.

From the teachers defining factor B, eight out of nine work in school and among these are two of the interviewees. Giving statement (18) Using whole group instruction, the highest z-score (1.301), might indicate teaching older children. From a developmental perspective younger children generally do not have the same attention span as older children. Older children tend to understand that when a message is given to the whole group, it also means it applies to them as individuals. In school children in each class are more or less the same age, while in the Norwegian daycare setting the age range among children can be from 1 to 6 years, although this varies from one daycare to another. The difference in maturity among children in daycare is generally more diverse, and makes whole group instruction more difficult to succeed with. On this factor teachers also have a strong focus on the content of an academic lesson and what was learned. This as well points more to a school setting. In daycare, teaching and learning are integrated into play and

daily activities, using a theme-based approach more than into a specific academic lesson. Having a morning routine (1) and talking about the plan for the day (2) can help children to get started and to know what is to be expected. In factor B there seems to be a higher focus on academics, morning routines to prepare for learning, and an indication of teaching older children.

Studying the following four +1 statements can give us more information: (14) Introducing new objects or new activities in the room through demonstration; (19) Using a theme-based approach to instruction; (4) Doing an activity to create a sense of community; and (17) Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution.

In view of both +2 and +1 statements the essence of this factor seems to be on a more academic approach related to somewhat older children indicating a school setting, but also with a focus on community, encouragement and process, not unfamiliar with the content of the curriculum (KUF, 1996) for the first two years of school at the time of data collection in 2004.

The negative pole of factor B (Subgroup 1)

The next statements consist of what is least characteristic (-2) of teachers with a common view on factor B: (20) Working on group projects; (13) Modeling behaviors for children/students; (16) Permitting children/students to choose from a variety of activities; and (8) Discussing a written announcement or message created by the teacher.

Working on group projects, and a variety of choice activities is not characteristic of these teachers' approach to group/classroom practice. Nor are they focused on discussing written messages created by the teacher, which received the lowest z-score (-1.725), an understanding they share with teachers on factor A. In addition they point to modeling behaviors for children as least characteristic of their approach. Factor B teachers (-1) are not as negative to using work sheets or following a set routine (statements 15 and 9) as factor A teachers (-2).

Distinguishing statements between factors A and B

Factor arrays are a composite of the different factors where the original values are depicted and not the z-scores. To get a closer look at differences between Factor A and Factor B teachers, we can view distinguishing statements. The PQMethod program extracts distinguishing statements at a .05 and a .01 significance level. The same statement can be distinguishing for different factors for different reasons. On one factor it may have a high positive value, while it can have a negative value on another factor. In general we can see a difference in value of 2, but sometimes less. It depends on the amount of difference between z-scores. There are 14 statements at $p < .01$ level, and 3 at $p < .05$ level for Factor A teachers on Q2 that distinguish them from factor B teachers. This by itself can indicate that there are two different views on group/classroom practices. In addition there are only three consensus statements with complete agreement between teachers on both factors. The distinguishing statements between factors in Subgroup 1 are marked in table 12. See also Appendix X for more information.

Factor A teachers are distinguished from their colleagues on Factor B by valuing statements concerning (17) encouragement and process (A: 2, B: 1); (7) sharing experiences (A: 2, B: -1); (3) welcoming each child (A: 2, B: 0); and (16) a variety of choice for children (A: 1, B: -2), statistically significantly higher than teachers on Factor B. Using drill (12) (A: -2, B: 0), worksheets (15) (A: -2, B: -1), conducting group/class business by set routine (9) (A: -2, B: -1), or using whole group instruction (18) (A: -1, B: 2), group projects (20) (A: -1, B: -2) or introducing new things through demonstration (14) (A: -1, B: 1), are rank ordered statistically significantly lower than by Factor B teachers. On the other hand statements placed in the middle which seemed not to hold much value positively or negatively for Factor A teachers were much more essential or characteristic to Factor B teachers. (1) Having a morning routine (A: 0, B: 2); (2) Talking about our plan or schedule for the day (A: 0, B: 2) and (18) Using whole group instruction were scored as +2 by Factor B teachers. Modeling behaviors for children (13) was ranked as a -2 for Factor B teachers, while Factor A teachers placed it in the middle area (0).

Statements concerning welcoming each student (3), sharing experiences(7), that were rank-ordered highly (+2) on factor A, have received a rank score of 0 and -1 respectively, on factor B and accordingly is not that characteristic of

factor B teachers. All this seems to support the different view of factor B teachers being more focused on content of academic lessons, and morning routines, although they also value community aspects, encouragement, and process, but not as highly placed as for factor A teachers.

There are only three statements that teachers on both factors completely agree upon. Teachers in both subgroups are positive (+1) to (19) Using a theme-based approach to instruction, but negative (-1) to (6) Using hand signals, and placed (8) Discussing a written announcement or message created by teacher, at the most negative end (-2) of the grid.

While the most characteristic approach to group/classroom practices for Factor A teachers seem to be a relational, process oriented, child-centered approach valuing community and a variety of choice activities, Factor B teachers seem to have a group/classroom practice style where routine, focus on academic learning and whole group instruction are more important. At the same time they value community and encouragement. In short Factor A teachers seem to be more relational learning oriented, and factor B teachers more academic learning oriented.

Although teachers on factors A and B hold different views of their group/classroom practices, can they both be considered to hold a child-centered approach?

I will now proceed to the results for Subgroup 2 on Q 2 – beliefs about group/classroom practices. Analyses here resulted in three factors: C, D, and E.

Q2 Factors C, D and E (Subgroup 2)

Table 13 – Factor loadings on beliefs about group/classroom practices (Q2) for Subgroup 2

QSORT	Factor C	Factor D	Factor E
1 1s	0.5718X	0.3429	-0.2972
2 1s	0.2885	0.6497X	-0.2528
3 1s	0.4438X	0.2609	-0.0958
4 1d	0.3345	0.4093	-0.2479

Table continued next page

Results

5	1d	0.7986X	-0.0027	0.3051
6	1d	0.5092X	-0.0402	0.4457
7	1d	0.7834X	-0.1240	0.0532
8	2s	0.3483	0.2803	0.1585
9	2s	0.5300X	0.3568	0.1407
10	2s	0.6593X	0.2362	0.1316
11	2d	0.8467X	-0.3042	0.0693
12	2d	0.6470X	-0.3859	-0.4168
13	2d	0.8970X	0.1103	0.0900
14	2d	0.8277X	-0.1526	0.3490
15	3s	0.6353X	0.2469	-0.3721
16	3s	-0.0133	0.5093X	0.0119
17	3s	0.1287	0.4055	0.4499X
18	3s	0.3704	0.4393X	0.0102
19	3d	0.8835X	-0.3109	0.0993
20	3d	0.8632X	-0.0092	0.0859
21	3d	0.8208X	-0.1239	0.2948
22	3d	0.8508X	0.0320	-0.0599
23	4s	-0.1608	0.3079	0.1708
24	4s	0.4754X	0.4406	-0.0330
25	4s	-0.0742	0.3821	0.1430
26	4d	0.7144X	0.0492	0.2291
27	4d	0.6919X	-0.0632	-0.1562
28	4d	0.5878X	0.3887	0.1590
29	4d	0.5455	0.1582	0.5772X
30	5s	0.5526X	0.1260	0.3260
31	5s	-0.1066	0.5185X	0.3763
32	5s	0.7149X	0.4568	-0.1009
33	5s	-0.0580	0.0764	0.7612X
34	5d	0.7730X	0.0005	-0.1913
35	5d	0.7346X	-0.0131	0.0084
36	5d	0.8110X	0.3257	-0.1484

Table continued next page

Results

37 5d	0.7726X	-0.3732	0.3799
38 6s	0.4093	-0.0593	-0.0354
39 6s	0.1800	0.3991	-0.2008
40 6s	-0.0247	0.3821	-0.2163
% exp.Var	36	9	7

X = defining sort

The numbers 1- 40 are the participants in Subgroup 2. The letter ‘s’ symbolizes teachers who work in school, and ‘d’ for those who work in daycare. The numbers 1-6 in connection to ‘s’ and ‘d’ indicates the six different municipalities. In table 13 we find 26 defining sorts on factor C. Among the teachers who account for the defining sorts, 18 of them work in daycare and 8 work in school. The 4 defining sorts on factor D are all working in school. Factor E has 2 defining sorts working in school and 1 defining sort working in daycare. Together there are 33 defining sorts out of 40 possible on these three factors and account for a total of 52% explained variance. Centroid analysis and hand rotation was applied, and a three factor solution was chosen and contained all defining sorts. The correlations between factors ranged from 0.17 to 0.25. Z-scores, factor arrays (ranking) on Q2 concerning group/classroom practices for Subgroup 2 can be viewed in table 14 where distinguishing statements are also marked (*= p<0.05, **= p<0.01). See also table 15 and Appendix X for more details on distinguishing statements.

Results

Table 14 – Z-scores and factor arrays (ranking) of statements for Subgroup 2 on beliefs about group/classroom practices (Q2) on factors C, D and E

No	Statements (Q2)	Factor C		Factor D		Factor E	
		z-score	rnk	z-score	rnk	z-score	rnk
1	Having a morning routine	-0.005**	0	2.046**	2	-0.843**	-1
2	Talking about our plan or schedule for the day	-0.154	-1	1.810**	2	-0.427	-1
3	Welcoming each child/student by name to group/class	1.285**	2	0.256**	1	-0.832**	-1
4	Doing an activity to create a sense of community	1.352	2	0.134**	0	1.288	2
5	Talking about current events	0.566	1	-0.612**	-1	0.811	1
6	Using hand signals	-1.100	-1	-1.434	-2	-1.393	-2
7	Having at least a few children/students share something that happened to them	0.593	1	0.837	2	1.549	2
8	Discussing a written announcement or message created by teacher.	-1.324	-2	-2.046	-2	-1.788	-2
9	Conducting the business of the group/classroom (e.g., collecting lunch or milk money) following a set routine.	-1.542	-2	0.134**	0	-0.977	-2
10	Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class	0.946**	2	-0.146**	-1	-1.288**	-2

Table continued next page

Results

11	Reflecting on the content of an academic lesson and talking about what we learned	0.873*	1	0.313*	1	-0.416*	-1
12	Using drill and recitation for factual information (math facts, etc.)	-1.587**	-2	-0.127	0	0.022	0
13	Modeling behaviors for children/students	-0.073	0	0.277	1	1.393**	2
14	Introducing new objects or new activities in the room through demonstration	-0.134	-1	0.806	2	0.394	1
15	Using work sheets	-1.484**	-2	0.139	0	0.449	1
16	Permitting children/students to choose from a variety of activities	0.442	0	-1.573**	-2	0.977	1
17	Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution	1.409**	2	-0.244	-1	-0.239	0
18	Using whole group instruction	-0.653*	-1	-0.139*	-1	1.154**	2
19	Using theme-based approach to instruction	0.684	1	0.327	1	0.322	0
20	Working on group projects	-0.095	0	-0.758	-2	-0.156	0

Distinguishing statement: *= p<0.05, **= p<0.01

Q2 Factor C (Subgr.2)

The positive pole of factor C (Subgroup 2)

The statements placed on the most positive (+2) end of factor C and characterize these teachers most are: (17) Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution; (4) Doing an activity to create a sense of community; (3) Welcoming each child/student by name to group/class; and (10) Reflecting and talking about something such as a social interaction that "worked" or "didn't work" in our class.

The first three statements are the same that factor A teachers also scored as +2, and teachers of both factor A and factor C have the highest z-score (1.349 and 1.409, respectively) concerning encouragement and focus on process (17). An aspect that differs for factor C concerns talking about social interaction that did or did not work (10). Placing this statement on the high positive end (+2) distinguishes factor C from factors D (-1) and E (-2) where it was placed at the negative pole.

Factor C teachers seem to value highly an approach that focuses on encouragement and process (17), on social interaction and what does or does not work (10), has a community aspect (4), and a morning routine with a caring element (3).

Among +1 statements, there are further similarities between factor A and factor C teachers who both rank ordered (5) Talking about current events; and (19) Using a theme-based approach, the same way. Factor C teachers differ somewhat by ranking statements concerning (7) Having at least a few children/students share something that has happened to them; and (11) Reflecting on the content of an academic lesson and talking about what we learned, as +1, while factor A teachers placed these statements at +2 and 0, respectively.

The negative pole of factor C (Subgroup 2)

The following statements placed at the most negative pole (-2) for Subgroup 2 on factor C reflect what these teachers consider least essential and/or characteristic of their approach to group/classroom practice: (12) Using drill

and recitation for factual information (*math facts, etc*); (9) Conducting the business of the group/classroom (e.g., *collecting lunch or milk money*) following a set routine; (15) Using work sheets; and (8) Discussing a written announcement or message created by the teacher. These are the same statements that factor A teachers scored at -2, and underline the aspects of the positive end of the content on this factor. Using drill and recitation (12) had the lowest z-score in both groups as well (-1.587 on factor C).

More statements that factor C teachers placed on the negative pole (-1) are the same as for factor A teachers: (6) Using hand signals; (18) Using whole group instruction; and (14) Introducing new objects or new activities in the room through demonstration. In addition factor C teachers also placed: (2) Talking about our plan or schedule for the day, at -1.

Factor C teachers in Subgroup 2 have a lot in common with factor A teachers in Subgroup 1. Both groups have a focus on qualities such as care, sharing, encouragement and process. These elements can contribute to a positive learning atmosphere. Factor C teachers seem to value reflecting on social interaction and on content of an academic lesson somewhat more than factor A teachers, who have a stronger focus on the sharing, community aspect. Both tend to have a relational view characterizing their approach to group/classroom practice. Below in table 15 are statements that distinguish factor C from factors D and E. See also Appendix X.

Results

Table 15 – Distinguishing statements for factor C on beliefs about group/classroom practices

No	Statements	C	D	E
17	Encouraging children/students and giving feedback that focuses on the process of children's/students' creations or thinking, not the outcomes or the solution.	2**	-1	0
3	Welcoming each child/student by name to class.	2**	1	-1
10	Reflecting and talking about something such as a social interaction that "worked" or "didn't work" in our class.	2**	-1	-2
1	Having a morning routine	0**	2	-1
15	Using work sheets.	-2**	0	1
12	Using drill and recitation for factual information (math facts, etc).	-2**	0	0

** = $p < .01$

From the distinguishing statements in table 15 we can see that Factor C teachers seem to reflect a relational orientation (statements 17, 3, and 10) and not a technical teaching style (statements 15 and 12). They have a lot in common with factor A teachers who have the same distinguishing statements and values except for statement 10 which was placed at +1 and was a distinguishing statement from factor B at $p < .05$. Both factor A and factor C teachers placed statement (18) Using whole group instruction at -1, which may indicate teaching the younger children as argued before.

Q2 Factor D (Subgr.2)

The positive pole of factor D (Subgroup 2)

The most essential and/or characteristic for factor D teachers are the following statements (+2): (1) Having a morning routine, which received the highest z-score ; (2) Talking about our plan or schedule for the day; (7) Having at least a few children/students share something that has happened to them; and (14) Introducing new objects or new activities in the room through demonstration. Statements (1) and (2) are also scored as +2 by factor B teachers in Subgroup 1.

Among the four +1 statements are (19) Using a theme-based approach to instruction; (11) Reflecting on the content of an academic lesson and talking about what we learned; (13) Modeling behaviors for children/students; and (3) Welcoming each child/student by name to class. We can see the contours of a more academic learning oriented approach. Factor D and factor B teachers had only statement (19) in common at the +1 level.

The negative pole of factor D (Subgroup 2)

The statements that are least essential and/or characteristic (-2) of factor D teachers in Subgroup 2 are: (20) Working on group projects; (6) Using hand signals; (16) Permitting children/students to choose from a variety of activities; and (8) Discussing a written announcement or message created by the teacher, receiving the lowest z-score (-2.046) for factor D teachers. Factor D teachers share three statements, (8), (16), and (20), with factor B teachers.

Also on the negative pole of the factor albeit to a lesser degree (-1) are: (18) Using whole group instruction; (10) Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class; (17) Encouraging children/students and giving feedback that focuses on the process of children’s/students’ creations or thinking, not the outcomes or the solution; and (5) Talking about current events. There were no common statements between factor D and factor B teachers placed at -1. Statements that distinguish factor D from factors C and E can give additional information. See table 16 below and Appendix X for more information.

Results

Table 16 – Distinguishing factors for factor D on beliefs about group/classroom practices

No	Statements	C	D	E
1	Having a morning routine	0	2**	-1
2	Talking about our plan or schedule for the day.	-1	2**	-1
3	Welcoming each child/student by name to class.	2	1**	-1
4	Doing an activity to create a sense of community.	2	0**	-2
9	Conducting the business of the classroom (e.g., collecting lunch or milk money) following a set routine.	-2	0**	-2
10	Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class.	2	-1**	-2
5	Talking about current events.	1	-1**	1
16	Permitting students to choose from a variety of activities.	0	-2**	1

** = $p < .01$

As we can see in table 16, having a morning routine (1) is important to factor D teachers, while this is placed in the middle area for factor C, and factor E teachers have ranked this statement on the negative pole. Talking about the plan for the day (2) is valued highly positive on factor D, but negatively on factors C and E. Welcoming each child and community aspects (statements 3 & 4) have received a +1 and a 0 value on factor D, while on C these are valued highly positive and on E ranked on the negative side of the factor. Talking about current events (5) and a variety of activities (16) are ranked negatively by factor D teachers, while C and E teachers are neutral (middle position) or positive.

Considering both the positive and the negative poles of the factor and the distinguishing statements, this may indicate that factor D teachers seem to have a focus on morning routine structured around several elements, and an academic learning orientation. While there are signs that point to a relational and community commitment, these are not that strongly prioritized as with factor A and C teachers. There were four defining sorts on this factor and all four work in school. Although factor D and factor B teachers share some

common elements pointing to an academic learning orientation, they also differ concerning their priorities and beliefs of group/classroom practices, and factor D teachers seem to have a more structured approach on organizing the day.

Q2 Factor E (Subgr.2)

The positive pole of factor E (Subgroup 2)

The following statements are those that factor E teachers valued to be most essential/characteristic (+2) of their approach to group/classroom practice: (7) Having at least a few children/students share something that has happened to them; (13) Modeling behaviors for children/students; (4) Doing an activity to create a sense of community; and (18) Using whole group instruction.

The following statements also belong on the positive end of this factor, but to a lesser degree (+1): (16) Permitting children/students to choose from a variety of activities; (5) Talking about current events;(15) Using work sheets; and (14) Introducing new objects or new activities in the room through demonstration.

Factor E teachers value highly the sharing (7) and community (4) aspects also common to factor A teachers, but here an additional focus is on modeling behaviors (13) and using whole group instruction (18). The latter might point to work with older children. Having children/students share experiences (7) received the highest z-score (1.549). In addition to the +1 statements, this factor seems to point to a more community focused and learning oriented view (5, 14, & 15), which also permits children to choose from a variety of activities.

The negative pole of the factor

Statements that are placed on the negative end of factor E and which these teachers report to be least essential/characteristic (-2) of their group/classroom practice are: (9) Conducting the business of the group/classroom (e.g., *collecting lunch or milk money*) following a set routine;

(10) Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our group/class; (6) Using hand signals; and (8) Discussing a written announcement or message created by the teacher.

It is not essential or characteristic for these teachers to use hand signals (6), conduct group/classroom business by a set routine (9), or discuss a written message (8) which received the lowest z-score (-1.792) on this factor. Nor is it characteristic of them to reflect and talk about social interaction that did or did not work (10) in the group/class. These teachers prefer to model behaviors for children/students (13) which was ranked to +2.

Also on the negative end of the factor (-1) are these statements: (11) Reflecting on the content of an academic lesson and talking about what we learned; (2) Talking about our plan or schedule for the day; (3) Welcoming each child/student by name to group/class; and (1) Having a morning routine.

In table 17 we can see that distinguishing statements for factors E on the highly positive side are modeling behaviors (13) and using whole group instruction (18). On the negative pole of the factor that distinguishes this factor from C and D are reflecting and talking about social interaction (10), welcoming each child (3), and having a morning routine (1).

Table 17 – Distinguishing statements for factor E on beliefs about group/classroom practices

No	Statements	C	D	E
13	Modeling behaviors for children/students.	0	1	2**
18	Using whole group instruction.	-1	-1	2**
1	Having a morning routine.	0	2	-1**
3	Welcoming each child/student by name to class.	2	1	-1**
10	Reflecting and talking about something such as a social interaction that “worked” or “didn’t work” in our class.	-2	-1	-2**

** = p < .01

In light of statements placed at the positive and negative poles of factor E and statements that distinguish this factor from C and D, displayed in table 17, what seems essential to factor E teachers is a community aspect and learning orientation, more than morning routines or the caring side of welcoming each

child by name. A focus on whole group instruction may imply teaching older children.

Elements that might seem contradictory are the statements (13, 18, 5, 14, 15) indicating a learning approach on the positive side, while statement (11) Reflecting on the content of an academic lesson and talking about what we learned, was placed on the negative pole (-1). There may be several interpretations and understanding of this. One might be that teachers like other individuals, sometimes have contradicting views, and through Q-methodology and analysis this is possible to reveal. On the other hand it might possibly depict a learning orientation that does not prioritize academic content, but rather other important learning aspects such as sharing experiences and so on in a group community and where modeling behavior is important in contrast to reflecting and talking about what did or did not work.

Factor E teachers placed statements such as concerning drill and recitation (12), encouragement and focus on process (17), theme-based approach (19), and group projects (20), in the middle (value 0) which were more or less valued higher either positively or negatively on other factors. Compared to +2 and -2 statements, statements given a 0-value, or placed in the middle tend not to arouse much feeling in either positive or negative direction.

4.2.5 Teachers' comments on group/classroom practices

Anna, Berit, Carl, and Ester are all defining sorts on factor A, and David and Frida are defining sorts on factor B. This said, they also have comments that relate to essential statements on other factors as well.

Welcoming each child by name was especially important to factor A and C teachers and implies seeing each child. The issue is very important to Carl (p. 164): "it is so sad if people go through, or children go through daycare and are almost never seen. That is just so appalling." According to Berit (p.333) it is an established routine: "About saying the name and all of that, that is established routines. And it is important that it's there, so it's not anything to discuss, but our attitudes and beliefs are. We have to discuss them the whole time". This may imply that although there are established routines, teachers' concrete practice may differ according to varying attitudes and need to be

discussed. Larrivee (2000) points to the danger of staying trapped in unexamined judgments, interpretations, assumptions, and expectations and argues for ongoing critical reflection on classroom practices. This is also a point that Anna (p. 164) is concerned about: "It's good for a person to take a standpoint to what one thinks. It's actually something we use too little time on in school. I feel there is a lot of planning and a lot of practical work. But to sit and philosophize, to think a little over what we actually are doing here, we have too little time to do."

Working on group projects was placed in the middle by teachers on factors C and E, or at the negative pole, factor A with -1 and factors B and D with -2. A comment from Anna (p. 104) supports this "We don't really use it, projects are probably more used with older children." Frida calls attention to the possibility of misunderstanding concepts. She had read an article about huge misunderstandings among teachers concerning student projects which was actually something the students did alone. "I may have interpreted the word wrongly...because in my opinion when we work on group projects, we work together sometimes, and a little alone, but it's different from what we do in our books. It could be something we perform, or hang up, that's what I think about as project" (Frida, p.10).

Modeling behaviors for children was one of the most essential and/or characteristic aspects for factor E teachers, and Carl (p. 48) talking about the adult role in daycare says "it is an important function in relation to model-learning". Using drill and recitation was placed at the far most negative pole on factors A, and C, and in the middle on factors B, D, and E. According to Carl, he remembers this was something he did as a young teacher's aid together with the preschool teacher he was working with at that time, but points to a change: "I guess it's a developmental issue, that I can see in myself and as a teacher in daycare, that I have become much more relaxed to that" (Carl, p. 118).

Some dilemmas are pointed to by Berit. Having responsibility for many children Berit (p. 70) says: "either you have to be a "watcher" (påpasser) or you have to be very structured". "Things don't come by themselves, and I am thinking about the adult directed, if you wish. Children shall learn, and I believe that's quite important as well, because I feel there has been a period

now, where there has been a lot of talk about how children should find out what to do themselves, and all of that. But, at the same time, if we don't present things for them, then they won't know about them" (Berit, p 74). Here we can see traces of varying childhood philosophies concerning what children should learn and how it should be done, and David (p. 71) draws attention to differentiation, an important issue in modern Norwegian education "I work very differentiated in relation to the students", a point also made by Ester (p. 65) "You have to pull one along and calm down the other".

Concerning a variety of choice (important to factor A and E teachers at +1) and children's interests, Carl (p. 184) comments: "As preschool teachers we have struggled to make visible that we are pedagogues in the same way that school teachers are.... It has been quite revolutionizing for me to register that it's amazing how much teaching and learning that goes on when we for example are outside in daycare, or on a trip, I mean in the terrain, and the conversations we have. .. I believe in focusing on what the children are interested in learning. ..It may be difficult for those outside daycare to see daycare as a pedagogical enterprise, it has something to do with finding the code (knekke koden) to see that learning doesn't need to be classrooms, desks and a teacher lecturing". Carl (p. 176) "I think that we have become better at emphasizing children's own initiatives and to be more flexible according to it. And more conscious to that learning does not necessarily have to be formalized through structured teaching situations, but that learning...what stays put, is the informal learning". Carl represents a view that focuses on letting children plan (legge føringen) their own day as much as possible, except for meals at certain hours, "otherwise it's mostly on the children's terms" (Carl, p. 102). Berit (p. 191) tells us her practice has changed somewhat: "I have become more structured than I was before, that is, 'okay, now I'm talking, now I'm telling something, and you need to listen'. But earlier we were supposed to receive initiatives, see. We should receive all the initiatives."

Morning routines were important especially for teachers on factors B and D. It is not just the routines Frida calls attention to, but also community collaboration and how coordinated teachers are. Frida (p.38) "It's not only the ones we have in our own class we have to deal with, but all the others too. And then we have some age-mixed teaching, so suddenly we can have groups

through several weeks where both 1st, 2nd, and 3rd grade are together. ...So being coordinated, see, on routines and so on, I believe that's very important. I like to be very well prepared ... and I like to think before I act, but you also have to be very flexible and able to handle a lot of spontaneous input (innspill)... It's important that they get to show their work, homework or something they do in class, .. and I like to give them very clear and direct feedback on things. They haven't become tired of school (skoletrøtte) yet, see, so they are actually very motivated and interested in things, and then try to hold on to this as long as possible."

A relational aspect is characteristic of teachers on factors A and C concerning group/classroom practices, and this was also focused on in Q 1 Beliefs about discipline and behavior management. Carl (p. 148) comments like this: "For my own part, I believe that I am better at creating relations, positive ones, to the child group and to the other employees. It might be unconsciously down prioritized, but from we start in the fall then creating/enhancing relationships is some of what we work most intensely with."

There are also considerations of process and results. "Well, I believe more in the process. Being on your way (underveis) all the time and, ... here we very much emphasize play, a lot of social interaction, a lot free choice activities" (Carl, p. 102). He makes another point: "There are no set answers concerning interaction between people. One can't see that, now we're there, everything is perfect, now all are friends, and we have friendship as a theme" (Carl, p. 106). Ester (p. 73) seems to agree: "I guess I'm not that product oriented... It's more important to do things together, or that children take pleasure in what they are doing, show happiness and satisfaction". Berit (p. 1) also finds process the most important, but in addition to take care of the results. Anna (p. 2) says it depends on the situation, one should not just focus on results, but look for the process as well. She is concerned of a stronger focus on results, commenting on national tests. Frida is also anxious of a stronger focus on results connected to the national tests, and that it becomes more and more important to score well on the test. "Well, you train on the test before you take it, to get good results, and I feel that is so wrong" (Frida, p. 154). Looking at process and results, it depends on the task at hand according to Frida. Sometimes it has to do with the experiences they get, having to collaborate, to listen to each other, share equipment, distribute roles, and trust each other.

David (p. 315-339) speaks of the process one has to go through to get a good result, for example to get a nice handwriting, and that boys and girls may need to learn it through different writing processes as block letters or with handwriting connected by loops.

In relation to her work as a teacher, Berit (p. 176) draws a long sigh: “ I am not either there or there, I am there, and there, and there, and there, according to which situation I am in.” This depicts some of the complexity and challenges teachers meet in their work, a note also made by Bredekamp and Copple (2004).

4.2.6 Summary of beliefs concerning group/classroom practices

Analyses concerning beliefs about group/classroom practices, was conducted separately for each subgroup. This resulted in two factors for Subgroup 1 (A and B) and three factors for Subgroup 2 (C, D and E). This is different from Q 1 Beliefs about discipline and behavior management, where one factor emerged in each subgroup and they could be seen as one major factor. I have reviewed the positive and the negative poles of all the factors on Q 2 and taken into consideration statements that distinguish one factor from another in an effort to try to grasp the distinct feeling running through each factor (Stephenson, 1983a). I have added comments from the six interviewees to shed more light on possible teacher beliefs. Below is a short summary of each factor and what mostly defines their views of group/classroom practices.

- *Factor A teachers:* a relational, process oriented, child-centered approach valuing community and a variety of choice activities. In short – more relational learning oriented
- *Factor B teachers:* a practice style where morning routine, focus on academic learning and whole group instruction are more important. In short – more academic learning oriented
- *Factor C teachers:* a relational, process oriented, child-centered approach valuing community and reflecting on social interaction. Much in common with factor A. In short – more relational learning oriented

- *Factor D teachers*: a practice style with a focus on morning routine, having children share, and learning through demonstration. Some in common with factor B teachers. In short – more structured learning oriented.
- *Factor E teachers*: a practice style related to modeling behaviors and whole group instruction with a sharing, community aspect and learning through demonstration, using work sheets, and a variety of choice. In short – more model and community learning oriented (with some contradictory elements)

In both subgroups there were most defining sorts on one factor, A and C. Although analyzed separately, teachers in the two subgroups had quite a lot in common, and both seemed to display a relational learning orientation. Elements here show enough care to see and welcome each child by name, to create a sense of community, and to focus on encouragement and process. For factor A teachers having children share something was important, and for factor C teachers reflecting and talking about social interaction and what did or did not work was essential. Teachers in both subgroups had the same statements on the far negative pole which emphasized prioritizing the relational aspects. There are more teachers in daycare defining these factors, but also a contribution of teachers in school. How does this relate to a child-centered view?

In view of statements placed at the positive pole (+2 and +1) on factor B, the essence seems to have a more academic approach than factor A. This seems to be related to teaching older children indicating a school setting, but there is also a focus on community, encouragement and process, though to a lesser degree than on factor A. Distinguishing statements between factors A and B support this. On factor B, eight out of nine defining sorts work in school with only one working in daycare. On factor D all four defining sorts work in school. There are also other similarities between teachers on factors B and D. They have six common statements (two at +2, three at -2, one at +1, and one in the middle). Neither of them see giving children/students a variety of choice as essential or characteristic of them, but there are also differences in light of distinguishing statements. Factor B teachers are considered to have a more academic learning approach, and factor D teachers seem to have a focus

on morning routine structured around several elements and an academic learning approach. Factor D teachers are therefore considered to have a more structured learning approach.

In light of statements placed at the positive and negative poles of factor E and statements that distinguish this factor from C and D, what seems essential to factor E teachers is a community aspect and learning orientation, more than morning routines or the caring side of welcoming each child by name. A focus on whole group instruction may imply teaching older children. There were three defining sorts on this factor, two who work in school and one in daycare. Some factors seem quite clear cut like factors A, B, D and C, where statements on the negative pole accentuate the direction of the positive poles. On factor E there are elements that seem contradictory such as indicating a learning orientation (statements 13, 18, 5, 14, 15) but at the same time placing statement 11, Reflecting on content of academic lesson and talking about what we learned, on the negative pole. Could this be that sometimes people just have contradictory views and these can be illuminated through Q-methodology? Or does this factor point to a learning orientation that does not prioritize an academic focus, but rather an orientation towards other types of learning such as a sharing element among children, and community aspects, focusing on modeling behavior instead of reflecting or talking about it? Factor E teachers seem to have a model and community learning orientation.

Comments from the interviewees elaborate on elements such as: welcoming each child, modeling behaviors, a variety of choice for children, morning routine, relations, and process and results. One might want to consider the relation between process and result. Are they always separate or viewed as opposites, or can they be seen to combine important learning functions? Some have also concerns connected to national tests and the results obtained on them. How can this affect teaching goals? In addition interviewees have pointed to some teaching dilemmas: the importance of free choice and variety of activities for children on one side and having a more adult directed and content focus on what children should learn on the other. They have also pointed to developmental changes in themselves as teachers, by way of their own experience. Might more experience be a reason for a wider specter of teachers' beliefs in subgroup 2 concerning group/classroom practices? Another issue pointed to is the variation in practice for a teacher when

sometimes doing this and sometimes doing that and being ‘ there, and there, and there. and there,’ ...

4.2.7 Beliefs about children/students (Q3)

For the theme Beliefs about children/students there were also 20 statements and a 4 x 5 distribution grid. Participants were instructed to sort the statements into five categories from least to most characteristic of your beliefs about children. The range here is therefore from -2 to +2. The Q-sorts were computed and analyzed using the PQMethod program. Each Subgroup was analyzed by itself and as separate groups. Centroid factor analysis and judgmental rotation was applied in both cases. For Subgroup 1 emphasis was on the interviewees since I had more information from them. Factor 1 and 2 were hand rotated by -5 degrees and resulted in only one factor with 38 defining sorts of 40 possible, accounting for 64% of the variance. Teachers working in daycare were highlighted in Subgroup 2, and factors 1 and 2 were hand rotated first -6 degrees, then + 4 degrees. This also resulted in one factor with 37 defining sorts among the 40 teachers accounting for 61% of the variance. In Subgroup 1 there was one teacher working in school and one in daycare without significant loadings, and for Subgroup 2 there were two and one, respectively, that did not load on this factor. There were no negative loadings in either of the groups. If there had been it could have pointed to an opposite point of view from the factor that was displayed. In table 18 factor loadings and defining sorts can be viewed. Just like the other tables of this kind, the numbers 1 – 40 are the participants in each subgroup. The letter ‘s’ equals working in school, and ‘d’ stands for working in daycare. The numbers 1 – 6 in connection with ‘s’ and ‘d’ indicate the six different municipalities. X marks defining sorts, and * tells us who the interviewees are. All defining sorts load at $p < .01$.

Results

Table 18– Factor loadings on beliefs about children/students (Q3) for each subgroup

Loadings for Subgroup 1			Loadings for Subgroup 2		
QSORT		Factor 1	QSORT		Factor 1
1	1s	0.7931X	1	1s	0.8282X
2	1s	0.9346X	2	1s	0.7596X
3	1s	0.8272X	3	1s	0.9165X
4	1d	0.8563X	4	1d	0.8357X
5	1d	0.5707	5	1d	0.8574X
6	1d	0.9116X	6	1d	0.5488
7	1d*	0.8763X	7	1d	0.9301X
8	2s	0.7795X	8	2s	0.7985X
9	2s	0.8672X	9	2s	0.6227X
10	2s	0.8582X	10	2s	0.9058X
11	2d*	0.7208X	11	2d	0.8368X
12	2d	0.8105X	12	2d	0.7911X
13	2d	0.8802X	13	2d	0.8769X
14	2d	0.8674X	14	2d	0.7787X
15	3s	0.7838X	15	3s	0.8817X
16	3s	0.7584X	16	3s	0.7229X
17	3s	0.7924X	17	3s	0.7127X
18	3s	0.7420X	18	3s	0.6890X
19	3d	0.7940X	19	3d	0.8879X
20	3d	0.8792X	20	3d	0.9463X
21	3d	0.7711X	21	3d	0.9046X
22	3d*	0.8316X	22	3d	0.8564X
23	4s	0.3908	23	4s	0.7521X
24	4s*	0.8913X	24	4s	0.7527X
25	4s	0.8936X	25	4s	0.6720X
26	4d	0.8608X	26	4d	0.8393X
27	4d	0.6794X	27	4d	0.7247X

Table continued next page

Results

28	4d	0.8342X	28	4d	0.7529X
29	4d	0.6977X	29	4d	0.6556X
30	5s	0.8461X	30	5s	0.8561X
31	5s	0.7151X	31	5s	0.4789
32	5s	0.8944X	32	5s	0.9032X
33	5s*	0.8874X	33	5s	0.2858
34	5d	0.7706X	34	5d	0.7755X
35	5d	0.7670X	35	5d	0.6945X
36	5d	0.7809X	36	5d	0.8167X
37	5d	0.7199X	37	5d	0.8677X
38	6s	0.8089X	38	6s	0.7406X
39	6s	0.6283X	39	6s	0.8153X
40	6s*	0.6816X	40	6s	0.6045X
% expl.Var.		64	% expl.Var.		61

X = defining sort, here at $p < .01$

* = interview group

s = work in school, d = work in daycare

In table 19 z-scores and the factor arrays (ranking) for the single factor of each subgroup is displayed. They are computed separately, but put in the same table for comparison.

Results

Table 19 – Z-scores and factor arrays (ranking) of statements for Subgroup 1 and Subgroup 2 on beliefs about children/students (Q 3)

No	Statements	Subgroup 1		Subgroup 2	
		z-score	rank	z-score	rank
1	Almost all children/students in my class try their best.	-0.084	0	-0.271	0
2	Many of the children/students in my group/class try to get away with doing as little work as possible.	-1.475	-2	-1.516	-2
3	Children/students should feel as though they are "known" and "recognized" in the classroom.	1.132	2	1.260	2
4	Children/students need to be met where they are in terms of their ability.	1.321	2	1.224	2
5	Each one of my children/students teaches me something.	0.229	0	-0.087	0
6	Almost all children/students are equally likable and enjoyable	0.131	0	-0.308	-1
7	Most children/students respect teachers and authority.	-0.401	-1	-0.376	-1
8	Children/students seldom take care of their materials if they are not supervised	-1.378	-2	-1.532	-2
9	Children/students learn best when they have good role models for behavior	0.374	1	0.437	1
10	Children/students need some choice of activities within the group/classroom.	-0.388	-1	0.089	0
11	Children/students need to work on skills at which they are not good, even if it means giving them fewer choices of activities.	-0.800	-1	-0.554	-1
12	Children/students cannot be understood without knowing something about their families.	-0.935	-1	-0.634	-1
13	Children/students meet challenges best when they feel that their teachers care about them.	1.010	1	1.107	1
14	Children/students need to feel safe and secure in the group/classroom.	1.593	2	1.573	2

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15	Children/students need opportunities to think in a quiet group/classroom environment.	-0.226	0	-0.129	0
16	Children/students need to have their strengths recognized to promote learning.	0.770	1	0.783	1
17	Children/students learn best by being actively involved in lessons.	1.254	2	1.113	2
18	Children/students need opportunities to be creative in the group/classroom.	0.599	1	0.661	1
19	Some children/students show little desire to learn.	-1.330	-2	-1.466	-2
20	Children/students are more motivated by grades than they are by the acquisition of competence	-1.398	-2	-1.373	-2

As we can see from table 19, there are only minor differences between the two groups of teachers where only two statements have different values (no. 6 and 10, having 0 and -1 values). This tendency was present in Q 1 Beliefs about discipline and behavior management, as well, but having the same view is even stronger concerning beliefs about children/students.

The positive pole of the factor on Q3 (both subgroups)

On the high positive end (+2) of the factor, both subgroups rate (14) Children/students need to feel safe and secure in the group/classroom, at top with the highest z-score (1,593 and 1.573). Other statements in both groups at this level are: (4) Children/students need to be met where they are in their ability; (17) Children/students learn best by being actively involved in lessons; and (3) Children/students should feel they are “known” and “recognized”. Also on the positive pole of the factor but to a lesser degree (+1) are: (13) Children/students meet challenges best when teachers care about them; (16) Children/students need to have their strengths recognized to promote learning; (18) Children/students need opportunities to be creative in the group/classroom; and (9) Children/students learn best when they have good role models for behavior.

Teachers in both subgroups point to the importance of children feeling safe and secure, and being “known”, “recognized” is part of this as well. Another

statement to support this view is the belief that children meet challenges best when teachers care. When it comes to learning, these teachers believe that when children are actively involved in lessons, they learn best in addition to having good role models, being met according to their abilities, and having their strengths recognized. In addition children need possibilities to be creative. On the positive side concerning +2 and +1 statements, there seems to be full agreement of a caring and child-centered view of children in daycare and school.

The negative pole of the factor on Q3

The statements that least of all characterize teachers' beliefs about children/students are: (19) Some children/students show little desire to learn; (20) Children/students are more motivated by grades than they are by the acquisition of competence; (2) Many of the children/students in my group/class try to get away with as little work as possible (lowest z-score: -1.475 for Subgroup 1); and (8) Children/students seldom take care of their materials if they are not supervised (lowest z-score: -1.532 for Subgroup 2).

In this study teachers seem not to believe that children try to get away with doing as little work as possible, or that they seldom take care of their materials if teachers are not watching, nor do they find that children show little desire to learn. Putting these statements on the most negative side implies a positive view of children's potential and resources. The fourth statement with a -2 value concerns motivation by grades rather than by enhancing competence. At this early stage Norwegian children do not receive grades, but instead get a different kind of evaluation. This probably reflects Norwegian teachers' practice, but maybe also beliefs concerning what and how to motivate children.

Other statements on the negative pole but to a lesser degree (-1) are: (7) Most children/students respect teachers and authority, and may point to a certain degree of management problems. Sometimes a child-centered view can be misunderstood and teachers may let children get too much power. On the other hand with an increasingly diverse group of children, the demands on the teachers to meet all children's individual needs may feel overwhelming and difficult to comply with. Another statement that both groups agree upon as -1 concerns (11) Children/students need to work on skills at which they are not

good, even if it means giving them fewer choices of activities. This is in line with a focus on using children's resources to enhance their learning instead of grinding away on things children do not master very well. These teachers tend to value that (12) Children/students cannot be understood without knowing something about their families, as less characteristic of their views in comparison with other statements. This may imply that teachers believe to some degree that they can still do their work in daycare or school without too much background information. One of the two statements where the two groups differ is (10) Children/students need some choice of activities within the group/classroom, which was given a -1 by Subgroup 2 and placed in the middle by Subgroup 1. The other statement they differ on is (6) Almost all children/students are equally likable and enjoyable, where Subgroup 1 puts it into the middle area, while Subgroup 2 values it to be -1. Could this be accounted for by Subgroup 2 having more experience, maybe met more diverse children, or just being more confident in expressing their personal views? The other statements that were not viewed strongly either in positive or negative sense were (1) Almost all children in my group/class try their best; (5) Each one of my children/students teaches me something; and (15) Children/students need opportunities to think in a quiet group/classroom environment.

4.2.8 Teachers' comments on beliefs about children

Meeting children where they are in terms of ability also implies 'seeing' the child. This was rated highly on the positive pole of the factor. The interviewees are also concerned about this.

Ester comments on how to meet children: "To meet children at their level. Manage to see things from their point of view. Know where each child, or every age group's development, so one won't put demands too high or underestimate them." (Ester, p 33). David (p. 75) agrees: "That means I meet them where they are, at that level. And then it's very much up to the parents, if they want to follow up on what I give as homework." Here David also acknowledges the importance of parents' contribution and the collaboration between home and school. He also follows up with extra homework. "I have

an offer to the parents who want to follow up on that, and as long as the children are motivated, I allow it to continue” (David p. 83).

A consequence of ‘meeting children where they are’ is also acknowledging differences, a point also made in current Norwegian curriculum both in daycare and school. Comments from Berit (p 106) supports this: “ ..to see that children are different. To see the whole child”, and Anna agrees: “All shall be seen.” (Anna, p 92), and Ester (p. 37) tunes in: “I believe it’s good, and important that there is room for differences among children.” But David (p. 99) points to a teaching dilemma concerning students that are not that academically strong: “It’s a dilemma for the school actually. If you follow them up 100%, then you can get them over the critical borderline, but then they won’t get help”. David (p. 119) also reports of problems that have developed over the years in Norway “And the threshold has become much, much higher to get help now than it was before.” Meeting each child also involves stimulating them to do their best, but also to be aware when not to push too much. David (p. 187) puts it like this: “they are being pressured all the time, but simultaneously, ... you have to do it with your heart as well. You have to see there is a limit for each child too.” Ester (p 45) draws attention to differences among children “..even if children have the same diagnosis, or the same problem, they are still different children. You can not use the same template on all with the same diagnosis.” Frida and colleagues have learned about the ‘many intelligences’, and have become aware of how children learn in different ways. “We should open up to being a bit liberal and accepting difference. And then you have to tolerate what we call structured chaos. Right? Because then they must be allowed to be different. “ (Frida, p 46).

Another aspect that is highly valued in this study is a focus on being safe and secure: “...When we started school, there were many who were small and a little afraid. It was scary to start in school, and I believe to have a certain predictability is important at that time. Then there can be more surprises later when they become more secure.” (Anna, p 112). Carl (p 148) has some thoughts about this as well, and points to the importance of creating good relationships. He comments that some children are easier to get along with than others, and with some it can be massive work and he told me about a child which seemed quite challenging, but relationships can change. “And this

can illustrate how wrong one can be, because this child is the one I have absolutely the best relation to.” (Carl, p 148).

Having good relations and being secure affects learning (Bredekamp & Copple, 2004; Pianta, 1999). According to Frida “If they are not secure, then they won’t learn the right way, I believe, for the head is full of many other thoughts that block, which gives a lot of frustration.” (Frida, p 38). Frida also calls attention to meeting children in different ways: ”And to reach all, then you must have many approaches to reach those who like pictures, and those who need it through the ear, and those who have to get it with their body, and those who get it through music.” (Frida, p 174).

Research has noted consideration to social and affective goals in preschool age and early school years have a strong, positive influence on students’ school motivation in the long run (Lillemyr, 2004, p. 271). Søbstad (2006, p. 21) calls attention to the importance that motivation, feelings and social relations have on how much and how well we learn, and aspects such as joy and humor become interesting in pedagogical work. Teachers in both subgroups rated statement (20) Children/students are more motivated by grades than they are by the acquisition of competence, at the far most negative pole of the factor. Teachers among the interviewees acknowledge the importance of motivation, but for different reasons, and Berit has some thoughts about motivation and the teacher’s responsibility: “And about motivation, our role as motivator, is, you can do quite a lot. And I believe it requires, it requires adults to use themselves in a very, use body, use everything. And if you can’t do that, then you won’t be able to motivate, but if you do, you can motivate them to quite a lot. But it requires much of you.” (Berit, p 70). Carl also points to this: “... I see my role as a facilitator and motivator for both adults and children. “ (Carl, p 236). Frida agrees: “ So they (children) have to achieve pretty much. But you must try to accommodate so they want to do it, and that’s some of the most important, that you work terribly much with motivation.” (Frida, p 174).

4.2.9 Summary of beliefs about children

Among the 20 available statements in this Q-sample, with the 4 x 5 forced distribution, the factor arrays for each subgroup indicates a caring, accepting and child-centered view and an eye for children's potential. Nilsen (2005, p. 165) looks upon child-centeredness as a distinct trait of contemporary Norwegian society. The results from the Q-sorts are substantiated by comments from the interviewees where the teachers accentuate the importance of being seen and cared about, feeling secure, and differentiate the way they meet each child. There is also a focus on building relationships and for teachers to be responsible for motivating children to learn. How well does this relate to developmentally appropriate practices? Are these in line with an authoritative teaching style? How can teachers both in daycare and in school be so unified in their way of thinking and in their beliefs about children? Is there any connection in the priorities and beliefs portrayed through the analyses of the three Q themes, for example concerning a variety of choice and activities, motivation, and relational aspects? Results from a Q study cannot automatically be generalized to all Norwegian teachers, but point to beliefs that exist among some of them. It gives a snapshot picture of beliefs, priorities, and values of these teachers that emerged in this context and at the time the study was done in 2004.

4.3 What are teachers' beliefs concerning instructional self-efficacy and disciplinary self-efficacy, and are there differences between teachers working in daycare or in school?

This study focuses on two subscales measuring teachers' instructional self-efficacy (7 items) and disciplinary self-efficacy (3 items) adapted from Bandura (1993) and used in the NCEDL Kindergarten Transition Project. A similar version was also used in the NICHD-ECCRN (2002) study. Data here contains information from the whole group of 254 teachers including the two subgroups, where the total of 122 teachers worked in daycare and 132 worked in school.

Responses were given on a nine point Likert-like scale from 1 (nothing) to 9 (a great deal). Factor analysis (Principal Component Analysis) showed that the two factors had an eigenvalue higher than one and accounted for 60.8% explained variance. Rotation method was Varimax with Kaiser Normalization and converged in 3 iterations. In the two factor solution there are cross-loadings on one item on the two factors which can be problematic, but the highest loading is on the separate factor. The two factor solution represents two subscales in an established scale, and I have therefore chosen to keep this solution. The subscales: instructional self-efficacy, and disciplinary self-efficacy, have Cronbach's alpha values of .85, and .84, respectively. In comparison Rimm-Kaufman and Sawyer (2004, p. 329) used these two subscales in addition to two more subscales as a teacher self-efficacy measure and reported that Cronbach's alphas for each component ranged from .65 to .79. This indicates that the subscales instructional self-efficacy and disciplinary self-efficacy are a reliable measure of teachers' self-efficacy. One might ask why this study, among Norwegian teachers have higher alpha values. Could it be that Norwegian teachers are a more homogeneous group and are more similar in their views concerning instructional- and disciplinary self-efficacy?

Results presented here will include frequencies, means and standard deviations, correlations, and analysis of variance. All analyses are computed using SPSS 15 (SPSS Inc., 2007).

4.3.1 Report on teachers' instructional and disciplinary self-efficacy beliefs

Descriptive analyses will be used to study teachers self-efficacy beliefs. Mean cores, standard deviations, frequency percent, and minimum and maximum values of instructional- and disciplinary Efficacy will be presented in three tables, one for daycare, one for school and one for the whole group.

In table 20 we can see how the results from the whole group of teachers is displayed concerning instructional- and disciplinary self-efficacy beliefs. For disciplinary self-efficacy the mean score is 7.20 with a standard deviation of 1.11, and for Instructional efficacy, the mean score is 6.61 with a standard

deviation of .97. The Likert scale score from 1 to 9 was arranged into three categories: low (1-3), medium (4-6), and high (7-9). 65.8% of the teachers' scored their instructional efficacy to be of medium rank, while 34.4% of the teachers scored it to be high. There is an opposite tendency for disciplinary self-efficacy with 34.8% scoring medium and all of 64.4% scoring their self-efficacy as high. The same tendency is seen among teachers working in daycare and teachers working in school.

When we look at the two groups separately, tables 21 and 22, we find that teachers working in daycare have a higher mean score (6.74) and a lower standard deviation (.91) on instructional efficacy than teachers working in school (6.49) and (1.01). There is also a larger percent of teachers in daycare (37.5%) who have reported their instructional efficacy to be high, compared to teachers in school (31.1%). Neither group reported to have low efficacy. This can indicate a higher degree of self-efficacy beliefs among teachers in daycare concerning this issue. On the other hand teachers working in school have a higher mean score (7.26%) on disciplinary self-efficacy than teachers working in daycare (7.13%). The standard deviation was about the same (1.12 and 1.10). At the same time there are more teachers in daycare (66.3%) who report to have high disciplinary self-efficacy beliefs than teachers in school (62.7%) report to have. There were no teachers in school who reported to have low efficacy, but 0.8% of teachers in daycare did. The report of medium disciplinary self-efficacy was 32.7% for teachers in daycare and 36.5% for teachers in school

Concerning teachers working in the whole group:

Table 20 – Mean scores, standard deviations, frequency percent, and minimum and maximum values of instructional- and disciplinary self-efficacy

Whole group								
	N	M	S.d.	Low (1-3)	Medium (4-6)	High (7-9)	Minimum	Maximum
Instructional self-efficacy	254	6.61	.97	-	65.8%	34.4%	4.14	9
Disciplinary self-efficacy	253	7.20	1.11	.4%	34.8%	64.4%	3	9

Concerning teachers working in daycare:

Table 21 – Mean scores, standard deviations, frequency percent, and minimum and maximum values of instructional- and disciplinary self-efficacy

Daycare								
	N	M	S.d.	Low (1-3)	Medium (4-6)	High (7-9)	Minimum	Maximum
Instructional self-efficacy	122	6.74	.91	-	62.4%	37.5%	4.57	8.86
Disciplinary self-efficacy	122	7.13	1.10	.8%	32.7%	66.3%	3	9

Concerning teachers working in school:

Table 22 – Mean scores, standard deviations, frequency percent, and minimum and maximum values of instructional- and disciplinary self-efficacy

School	N	M	S.d.	Low (1-3)	Medium (4-6)	High (7-9)	Minimum	Maximum
Instructional self-efficacy	132	6.49	1.01	-	68.9%	31.1%	4.14	9
Disciplinary self-efficacy	131	7.26	1.12	-	36.5%	62.7%	4.33	9

Correlation analysis with Pearson's r was computed to view the relationships between subscales. This can tell us of the possible influence of one variable on another. Instructional self-efficacy correlates positively with disciplinary self-efficacy ($r = .63^{**}$) at $p < .01$ level. This indicates that teachers who report highly on Instructional self-efficacy also report to have high self-efficacy beliefs concerning discipline.

It has already been established that there are differences between teachers working in daycare and teachers working in school concerning self-efficacy beliefs, but not yet if these differences are statistically significant or not. Analysis of variance was done by applying ANOVA to test for differences between teachers working in daycare and teachers working in school which was the grouping variable. The test was performed for the two efficacy subsets/subscales. Statistically significant differences were found for one of the variables: Instructional efficacy ($p < .05$) in favour of teachers working in daycare having the higher scores. The results are reported in table 23.

Table 23 – Analysis of variance for teachers' self-efficacy beliefs

	<i>df</i>	<i>F</i>	<i>p</i>
Instructional self-efficacy	1/252	4.27	.04
Disciplinary self-efficacy	1/251	.88	.35

4.3.2 Teachers' comments on self-efficacy

Bandura (2002) states that people guide their lives by their beliefs of personal efficacy, and according to Maddux (2002) there is power in believing what you can do with your skills under certain conditions. Meeting children in a constructive way can be both challenging and exasperating, but when you succeed it provides good feelings. "We have had a tradition for treating everyone the same way" says Carl and tells about something he read that "if you treat everyone the same way, then you treat them unfairly. And we try actually during each day to treat everyone differently, because they are not alike." (Carl, p 140). He goes on to say: "...you put down an awful lot of work

into it, and it is nice when it gets solved and you find the key.” (Carl, p 160). Carl (p. 160) looks at the quiet children as the most difficult to reach, while those that are more acting-out get a lot of attention and feedback, and maybe that is how they find the ‘key’. David (p 501) does not agree and points to the acting-out children as most difficult. Giving an example David (p. 529) says “Our problem is that we sort of don’t know what we should do.” “The quiet...they are very easy, because I’m very observant of them” (David, p 497).

I have heard such statements many times before in my contact with teachers in daycare and school. Some feel more capable in dealing with and understanding children who act-out, while others feel that they have a better grip on dealing with children who are withdrawn and quiet. To have a greater feeling of self-efficacy, one has to know what to do in given situations, and not be overwhelmed by uncertainty and/or lack of knowledge and worthwhile strategies (Bandura, 2002). In a survey study on Norwegian teachers’ professional certainty, Munthe (2003, p. 72) suggests uncertainty is common in teaching but teachers “need to be able to make decisions that are appropriate even though they are made under conditions of uncertainty”. Ester (p.41) shares her frustrations of how adults relate to problematic behavior in different ways and that she would like to know how to deal with it and be able to go home with a good/clear conscience.

On the other hand Frida (p. 46) comments on what she and her colleagues have learned about ‘learning profiles’ and concludes that “we have become even better at seeing that students are different and which type that is oozing out of them, what we notice, which way they learn, how they want it to be around them.” Such experiences can increase a teacher’s feelings and beliefs of self-efficacy, and in a systems perspective it can be even more important when many colleagues share the same knowledge, experience and feelings of self-efficacy, a point Goddard et al. (2004) call attention to.

Anna (p. 211) points to meeting students in different ways and that she and her colleagues are good at varying their teaching methods. On the other hand, she draws attention to frustrations due to limited economy or other resources, so there is less to do with students who need more help in class than the teachers can give them (p. 231). This is in line with comments that Ester (p.

197) has on efficacy: “there is a conflict between what I wish to do, and could have done, and what I actually can ...see, that I try as I said with the child I mentioned, to meet and understand it, but at the same time I see my shortcomings. One should have been one adult on that child only. ” Frida (p. 254) also has experience with lack of resources and trying to do a good job, but it is difficult because of the lack of enough adults. “If the system had permitted two adults, then one could grasp problems from the start, and students wouldn’t feel they were so different or that they loose so much” (Frida, p. 254). David (p. 517) is also frustrated by cutbacks and the effect that has on children who need extra help which in turn affects the milieu in the classroom (klassemiljø). We can see how elements in the system affect what teachers feel they can do and how this can limit teachers’ self-efficacy beliefs. Self-efficacy focuses on expectations of being able to execute specific actions (Skaalvik & Bong, 2003). An efficacious outlook can bring about personal accomplishments and in turn these experiences can reduce stress and lower vulnerability to depression (Bandura, 1994; Seligman, 1991).

Another element pertaining both to a system- and an individual perspective is made by Frida (p. 214-222) when commenting on efficacy “of course it deals with how I perceive my situation, but all schools are different, and have varying leadership styles, and have different things they emphasize....So if I had worked at a different place it might have been completely different, right, the possibility I have to influence that, and that, and that, and that. It could be different according to which system the school has” and by enabling teachers to have some control over school business can enhance feelings of efficacy (Goddard et al., 2004). Frida continues “But I believe that we as adults at least, have very, very much to do with how the school day is, even though there are framework decisions of how much resources we have,...it’s us here that makes the school to what it is for the students. So one might say, they are at our mercy, their fate depends on us”. Carl (p. 56) is also conscious of the teachers’ influence and responsibility: “I believe that an active adult increases the quality in children’s experiences of daycare, and that increases the quality of your experience of doing your job as well.”

Feelings of self-efficacy can change through experience and a maturing process. Carl (p. 118) states “I have become more competent, and less frightened of loosing control the more experience I have got, so I think it’s a

process". He recalls when he was young and inexperienced how frustrated he became if children opposed, fell a sleep, or made a scene, but hardly registers it anymore. "I have lessons (samling) for those that are interested in participating, and those that are interested, they are there, and they learn... so it's actually of free will and it's sort of dynamic" (Carl, p. 180).

The interviewees have commented on different aspects of self-efficacy in relation to knowing and not knowing what to do and frustrations this can lead to. On the other hand, they have mentioned things they do well and the good feeling this gives. They have also spoken of lack of recourses and different systems, and how this can affect the work they do. In addition things can change through practice and experience, and there is the individual level of responsibility for influencing the content and experiences children get in daycare and school. Berit (p. 353) adds to this: "...you never become completely qualified. I believe it becomes more and more apparent to me the longer I work".

Although teachers have pointed to frustrations in connection to work in daycare and school that affect their feelings of self-efficacy, they have also commented on the joys of learning and teaching that are likely to have a positive influence on self-efficacy beliefs as well.

Anna (p 219) sees the school as a very interesting workplace. "It's exciting. I have never been bored at work except at meetings and planning and stuff like that. Meeting the students is never boring. It's a lot of fun to work with children!" Berit (p. 389) is still "burning with enthusiasm for my work, and that's not so bad." Frida(p. 250) points to the joys of having good colleagues and says: "I am very happy being here, and working with what I do. So it's what I wish to continue with. It is absolutely." Although being a man in elementary school is not easy according to David (p. 589), "But at the same time, that's the place I most want to be" (p. 593). Challenges can be both interesting and inspiring, and according to Carl (p.152): "When one works without set answers, then it is great fun really that one never knows where the road goes".

Calling attention to the joys of learning and teaching, and accepting that we are different, Frida is given the final remarks:

Frida, p 178: "...it's what makes the days very exciting, because, nothing is the same. So now I think I have been very fortunate to have been in this class where they give so much response, where they want to do things, and want to try. It's like, "I want to, I want to", and it became motivating for me too, because they manage to draw more out of me, and I manage to draw more out of them."

Arlene, p 180: "Yes, that's true. There is something with that interaction?"

Frida, p 182: "Yes, but then the effort increases, and that, in a way one tries to finish something, and look at it and rejoice in it, before one does something new again. I believe they should be proud of what they are doing. They should feel that, 'I got that right'. And then know by them selves, we talk about it in student conversations and in conferences, that some things are more difficult than other things, some things are easy, that the students become aware of that. I believe that is pretty important, because everyone doesn't need to know everything just as well, no, but we do the best we can, yes."

4.3.3 Summary of self-efficacy beliefs

Concerning teachers' self-efficacy beliefs data from the 254 teachers indicate that those working in daycare ($M = 6.74$) report to have higher instructional self-efficacy than teachers working in school ($M = 6.49$). Teachers in school report a lower minimum rank (4.14) than teachers in daycare (4.57). The difference between groups is also statistical significant at the $p < .05$ level. The majority of the teachers (whole group - 65.8%), report to have a medium degree of instructional self-efficacy, while 34.4% use high values to indicate their own efficacy. There were no reports of low Instructional self-efficacy.

There were no statistical significant differences between groups concerning disciplinary self-efficacy. Here the teachers working in school had a higher mean ($M = 7.26$) than teachers working in daycare ($M = 7.13$), but there were more teachers in daycare (66.3%) that reported to have high disciplinary self-efficacy than teachers in school (62.7%). There is a statistical significant positive correlation ($r = .63^{**}$) between instructional self-efficacy and disciplinary self-efficacy. This indicates that those teachers who report to

have high instructional self-efficacy also will report to have high disciplinary self-efficacy.

Viewpoints from the six teachers who were interviewed cannot be generalized for the whole group of teachers, but they do indicate some opinions, views and beliefs among teachers in daycare and school. Comments from these interviewees point to challenging children in both daycare and school. Some feel the 'quiet' ones are the more difficult to reach, while others say it is the ones who act-out. Not all know what to do. What do teachers lack here, and how should it be provided for them? Children are different and need to be met in different ways, and it is rewarding when you find the 'key' to reach them. Knowledge of what to do and good strategies can increase feelings of efficacy, while lack of ability and lack of resources to do the job can restrain perceptions of self-efficacy. Although there are frustrations connected to work in daycare and school, the interviewees also called attention to exciting and interesting work and joys connected to teaching and learning.

4.4 Summary of results

This study concerns Norwegian teachers working in daycare and in 1st and 2nd grade of school, and they come from 6 municipalities in southern Norway. The focus of the study is on research questions concerning teachers' priorities, beliefs, and subjective opinions about discipline and behavior management, group/classroom practices, beliefs about children, and teachers' self-efficacy beliefs. A total of 254 respondents participated in the study. Among the 254 teachers, 29.1% of them agreed to be interviewed. Six of these teachers were randomly yet strategically drawn to ensure one from each municipality, and three from daycare and three from school. All the interviewees are placed in Subgroup 1. The rest of Subgroup 1 was also randomly yet strategically drawn from the remaining total group to consist of teachers from all six municipalities, and an equal amount from both daycare and school, a total of 40 teachers. Subgroup 2 was also randomly yet strategically drawn from the residuals of the total group according to the same guidelines as above, and consisted of 40 teachers, with 20 from daycare and 20 from school.

A combination of methods has been used to shed light on the topics. Q-methodology was chosen to gain an understanding of teachers' subjective priorities and beliefs about discipline and behavior management, group/classroom practices, and beliefs about children. Data from the two subgroups were analyzed separately and by using the PQMethod (2.11) program (Schmolck, 2002a). R-methodology was chosen to seek knowledge of teachers' self-efficacy beliefs, and this data from the whole group of 254 teachers was computed and analyzed using SPSS 15.0 (SPSS Inc., 2007). The six transcribed interviews were analyzed using the software program NVivo 7.0 (QSR International, 2007) not as a complete hermeneutical analysis at this time, but to categorize information that could contribute to illustrate the opinions, beliefs and priorities that emerged through the Q sorting process and teachers' reports of self-efficacy.

Q-methodology does not focus on singular items, but on configurations of all the statements as a whole. In this case teachers with similar views join together on the same factor. This is not an a priori categorization by the researcher, but the respondents who categorize themselves through the Q-sorting process according to their subjective points of view and priorities. The results indicate a common view among the teachers on Q1: Beliefs about discipline and behavior management, and Q3: Beliefs about children, but more divergent views on Q2: Beliefs about group/classroom practice. The major factor that emerged on Beliefs about discipline and behavior management and common in both subgroups, is an essence on praise, clear expectations, building relationships, and using order not to have full control, but to enhance learning, communication, and engagement. These elements point to an authoritative teaching style in dealing with discipline and behavior management. The factor that emerged on Beliefs about children, was almost identical in each subgroup. The essence of this factor was a view indicating the importance for children to be seen, cared about, and to feel secure, but also for teachers to differentiate to meet each child. In addition there is a focus on relationships and motivating children. These essentials point to a caring, accepting and child-centered view on beliefs about children. The analyses on Beliefs about group/classroom practices resulted in two factors for Subgroup 1 (A and B) and three factors for Subgroup 2 (C, D, and E). Teachers on factors A and C were quite similar with a relational, process oriented, child-

centered approach valuing community and a variety of choice activities, in short a more relational learning orientation. Factor B teachers are oriented towards morning routine, focus on academic learning and whole group instruction as more important, in short a more academic learning approach. Factor D teachers focus on morning routine, having children share, and learning through demonstration. They have some things in common with factor B teachers, but have a morning routine structured around several elements, and in short they have a more structured learning orientation. Factor E teachers emerged with a practice style related to modeling behaviors and whole group instruction with a sharing, community aspect and learning through demonstration, using work sheets, and a variety of choice. There are some contradictory elements, but in short, teachers on factor E have a more model and community learning orientation.

One might wonder why there is such a common view among teachers in both daycare and school concerning beliefs about children/students and beliefs about discipline and behavior management. Beliefs concerning practice are more divergent. There were more teachers working in daycare than school that were defining sorts on factors A and C with a more pronounced relational orientation. This relational aspect was also clear in teachers' beliefs about children and in behavior management view, and here almost all teachers in both daycare and school were defining sorts. Factors B and D had teachers in school as defining sorts and the essence of these factors pointed to more academic and structured learning approaches. Teachers on factor E were a mixture, and had some contradictory elements.

Teachers' self-efficacy beliefs were pursued through two established subscales: instructional self-efficacy (7 items), and disciplinary self-efficacy (3 items), and data from all the 254 participants were computed. The alpha values for Norwegian teachers were higher on both subscales than for US teachers. Are Norwegian teachers a more homogenous group, and therefore more similar in their views? Could this be a good thing or can it be seen as problematic in view of the many immigrants from different cultures that have come to our country in later years with children attending daycare and school?

There were no reports of low instructional self-efficacy, and 65.8% of the whole group of teachers report to have a medium degree of Instructional self-

efficacy, while 34.4% use high values to indicate their own efficacy. There were statistically significant differences between teachers in daycare and teachers in school at the $p < .05$ level in favor of teachers working in daycare. There were no statistical significant differences between groups concerning disciplinary self-efficacy. Teachers working in school had a higher mean score ($M = 7.26$) than teachers in daycare ($M = 7.13$), but there were more teachers in daycare (66.3%) that reported to have high degree of disciplinary self-efficacy than teachers in school (62.7%). There is a statistical significant correlation ($r = .63^{**}$) between instructional self-efficacy and disciplinary self-efficacy, indicating those teachers who report to have high instructional self-efficacy will also report to have high disciplinary self-efficacy.

Comments from the interviewees help to substantiate why certain statements were placed at the positive poles of factors and also to shed light on what enhances or decreases feelings of self-efficacy. There were many comments relating to building relationships and to differentiate their approach to meet different children's needs. These six teachers also gave voice to a systemic influence and to frustrations and joys connected to teaching.

5 Discussion

5.1 Introduction

The present study has its focus on gaining a deeper understanding of subjective priorities and beliefs that teachers may hold on these specific themes: discipline and behavior management, group/classroom practices, beliefs about children, and self-efficacy beliefs. The theoretical foundation of this study is basically on general and developmental systems theory and social cognitive theories. An outline has been made of the background and context in which teachers in daycare and school work. Theory and research concerning beliefs and developmentally appropriate practices have been accounted for. Different methodologies have been presented and argumentation for the combined use of them has been provided.

This study has its origin in the Norwegian society and among teachers in daycare and in school. Social democratic rights, and strive for equity has characterized the country for many years. In addition to political trends, world wide knowledge, collaboration with and influences from other countries have also made impact on our thinking and choices made over the years (Telhaug, Mediås, & Aasen, 2006). In a country with very high taxes and a lot of resources put into education, questions have been raised why Norwegian students are not doing that well in comparison to other countries in the PISA studies (Kjærnsli, Lie, Olsen, & Roe, 2007). A challenge pointed to already in 1988 (NOU 1988:28) where a concern was of not getting enough competence from the cumulated talents of the people.

An important area of educational research is to gain more knowledge of what goes on in the classroom or daycare environment, and what affects teaching and learning processes and the influence this has on children and teachers. There is concern that there has been too much focus on political and pedagogical ideology and accepted intents, and too little interest in presenting conditions as they are, understanding why, and the consequences this may have for teaching (Haug, 2007, pp. 8-9), and Haug suggests there is more interest in presenting and discussing ideals and harmony than analyzing

concrete empirical data from the field. Beliefs can be part of such ‘conditions as they are’ and be studied empirically.

5.2 The investigator’s subjectivity - a problem or an asset?

A research study is a process where some answers are found and insights gained. However, it may also lead to surprises and new questions. The documentation of different cultures in daycare and school (Haug, 1991, 1992; Lillemyr, 2004; Ottosen, 2006), the different pedagogical identities as a result from dissimilar education and training for primary and preschool teachers (Riksaasen, 1999), difficulty to comply with new reforms (Kennedy, 2005), and my own experiences from work in daycare and school colored my expectations. I was surprised that teachers in daycare and school had such similar beliefs concerning behavior management and beliefs about children. How could this be? What was the commonality? In spite of this, why are there still differences concerning group/classroom practices? How do I as a researcher fit into this picture? Maybe it is time to take a meta-position to view both the substance and myself from a different perspective? The viewpoint from where we observe has bearing on what we see. “A metaview is a view from a distance, a vantage point that allows a broader scope of a situation” (J. R. Brown, 1996, p. 74) and this may be helpful. Again I recall Stephenson’s caution *to see more, hear more, feel more* before leaping into interpretations (1983a, 1983b).

The researcher position – what does it account for? What role does this position play in different methodologies? Independent of which research method or methodology one chooses, a study generally begins with the researcher’s interest in gaining more knowledge in a specific area. In this aspect subjectivity of the researcher is part of the process from the very start. According to the purpose of the study and the typology of the field in question, research questions and/or hypotheses are formulated and decisions made on how to proceed, using one or more research methods. Data is collected, analyzed, presented, and the researcher has to make sense of the results. Many choices are made, some of which can lead to dilemmas and

pitfalls, but also to epiphanies and gained insight (Thorsen, 2006), see appendix I.

The researcher will inevitably have influence on the research at one time or another, no matter how “objective” the start is. Being less often the target of outright deception social scientists have to deal with bias, distortion, and cover-up (Ragin, 1994, p. 21). High ethical standards and integrity are essential in good research, but not all meet these standards as we have seen in the Sudbø case in Norway (Ekbohm et al., 2006). Some issues seem to be obvious such as not obtaining data before the proper consents are in place, and maybe therefore easier to abide by. Other issues may be in a grey zone and not that easy to see or to treat with the concern and guidelines such issues deserve. Some researchers have been tempted to engage in fraud at sometime in their career, and many undergraduates have admitted to cheating (Kent, 2000). Honesty in research seems to be a virtue as in many other aspects of life. How does this apply to my “surprise” considering the results? Could my subjectivity and expectations of different cultures be a problem or an asset in this study?

Judith Brown (1996, p. 5) states the investigator’s subjectivity is a major factor in research, either intentionally as in qualitative methodology, or unintentionally and she points to results from Rosenthal (1996). She argues there is “no such thing as impersonal science” (p. 11) and goes on to say: “The “I,” the personal component of the researcher, can no longer be neglected in educating researchers for the ever-expanding world of scientific investigations” (p. 13). The researcher’s self-awareness of self-other interaction with theory, respondents, data, results and interpretation can enhance a study’s quality. Being aware of my “surprise” can help to see the results in a different light, and prevent me from staying trapped in unchallenged inferences, beliefs and working theories (Larrivee, 2000).

5.3 Viewing Q data from a different perspective

I have acknowledged my surprise at not finding the cultural differences I had expected: Is there a way to look at my data again, from a different position to discover new meaning? The operant factors from the Q themes are the same

but can there be new insights to gain? Making meaning depends on the relationship of figure and ground, and errors are made “when we lose sight of the present context, and make meaning on the bases of previous experience or context” (J. R. Brown, 1996, p. 57). Can I change the figure/ground perspective and see the young lady in the picture and not just the old one this time? (Picture shown in psychology books, e.g. Nordland (1968, p. 76)). Take a bird’s eye-view and find a different explanation? Am I trapped in one specific perspective, or can I become aware of other possibilities?

Turning back to and using logic of abduction there can be several possible explanations. Dealing with unexpected phenomenon calls for developing a new explanation or extending the one I have (Andreewsky & Bourcier, 2000, p. 843). A goal is to find the ‘argument to the best explanation’ (Baggini & Fosl, 2003). This calls for using reasonable and scientific logical inference but also to extend into the sphere of deep insight to generate new knowledge (Reichertz, 2004).

Putting aside my expectations of cultural differences between teachers in daycare and teachers in school, how can I explain and understand the beliefs that emerged through the Q data?

Concerning beliefs about discipline and behavior management, teachers in this study emphasize clear expectations, the use of praise, and to treat children with respect, kindness, and concern as means of behavior management. The interviewees underlined the importance of the adult role both as a leader and in relating to children with kindness and concern, accepting differences and meeting children in different ways. In their beliefs about children, teachers indicated a caring, accepting and child-centered view and an eye for children’s potential. The interviewees accentuate the importance for children to be seen and cared about, to feel secure, and also to differentiate the way they meet each child. The results from the configurations of Q statements concerning beliefs about children and behavior management reflect teacher’s beliefs of the importance of relationships and a good learning environment. The essential feelings flowing through the results of these two Q sort themes come across as warmth, care and respect. Concerning child-teacher relationships, these develop in the crossing points of child and adult characteristics, their interactions, and the context in which this happens

(Hamre, Pianta, Downer, & Mashburn, 2008; Pianta, 1999). Staff and teachers are the most important resources in daycare- and school systems (BFD, 1995; St.meld.nr.30 (2003-2004)). Beliefs, values, knowledge and priorities are essential elements in teachers' performance in the vocation they have chosen.

How can the beliefs be explained in terms of Rokeach's (1976) definitions? Could these beliefs be seen as 'derived beliefs' that stem from trusting and believing in an authority source and accepting beliefs that emanate from that source? Could such an authority source be national documents and framework plans concerning daycare and school curricula? Although derived beliefs can lead to group identity, can they really have such a strong impact as seems to be the case here? Or is this just part of the whole picture? Since more or less the same configurations of statements were found in both subgroups on these themes points to a rather substantial point of view many can agree upon and share.

The beliefs in question here are basically concerned with relationships between adults and children. This can generally arouse strong feelings. Can this be an expression of the teachers' existential beliefs that are more central than others and stem from very early in life? Existential beliefs are concerned with meaning and provide a person with a sense of individual identity (Nespor, 1987; Rokeach, 1976). According to Rokeach (1976) such central beliefs can be seen as primitive or core beliefs that are psychologically incontrovertible. They have a taken-for-granted character and represent a person's "basic truths" about physical and social reality and the nature of self (p. 6). These "basic truths" are not easily changed especially if they are shared by many other people. In this case almost all the teachers shared the same beliefs and priorities.

So, believing in treating others with kindness, respect and concern, showing care and acceptance may rightfully be considered as existential beliefs not unfamiliar to the "Golden Rule" where the essence is to treat others as you want to be treated. This points to ethics of reciprocity and is well known in various religions and also cited by philosophers such as Kant, Plato, Socrates, and Seneca (Robinson, 2008). These beliefs have been part of humanity and found in different cultures for centuries. Such beliefs and principles are not limited to a specific age group, but can in theory embrace all human beings.

On the background of these reflections I believe the ‘argument to the best explanation’ is that teachers have expressed existential beliefs, independent of age-group, concerning beliefs about children and behavior management. This can also be seen in light of what Stephenson (1974, p. 13) called James’s law, that a distinction has to be drawn between what is *me* (him, her) and *mine* (his, hers). It could be argued that existential beliefs may depict *me* or how a person sees him or herself. Pointing to beliefs as deeply ego-involving systems, Stephenson (1965, p. 286) also saw beliefs as commitments and largely culturally determined. In his view opinions are numerous, states of mind considerably fewer, and beliefs are few indeed. Maybe existential beliefs was what he had in mind? What we see from the results of Q1 and Q2 may be examples to which some Norwegian teachers feel committed. An interesting point is how such existential beliefs translate into practice.

Such beliefs can be seen as guidelines to how the teachers want to act in relation to children, here in the context of daycare and school. Being existential beliefs, I suggest similar beliefs and priorities would also be found in other contexts where teachers and children of various ages meet.

Concerning beliefs and priorities about group/classroom practices a wider range of viewpoints emerged among teachers in daycare and school. These do not have the same existential character as mentioned above. Although teachers gain knowledge and beliefs about the teaching profession from their own early experience as students (Richardson, 1996; Woolfolk Hoy et al., 2006), they are also influenced by teacher education and in-service practice. Teachers come in contact with different authority sources, so the results from the Q-sorting concerning group/classroom practices may be what Rokeach (1976) characterized as derived beliefs. These beliefs are more receptive to change than more central beliefs are, and therefore at least to a certain degree susceptible to input from new knowledge and reform suggestions or decree.

Through the five factors indicating beliefs about group/classroom practices in the two subgroups, there are some differences. Factors A and C teachers are quite similar in focusing upon a relational, process oriented, child-centered approach (both relational learning oriented). Factors B and D teachers also have some common elements pointing to more academic and structured learning orientations associated with older children. Factor E teachers were

somewhat different being more model and community learning oriented. In light of group/classroom practices we can see some of the cultural differences noted by others (Haug, 1991, 1992; Lillemyr, 2004; Ottosen, 2006), and of which I expected to find signs. The differences here may stem from the teacher education programs that were attended (Riksaasen, 1999), national documents, framework plans and curricula, and also the children's development and needs. The two strongest factors A (Subgroup 1) and C (Subgroup 2) had most teachers from daycare as defining sorts, but also a relatively large amount of teachers working in school which can indicate a shared view of priorities and beliefs in daycare and school. This may be a result of reform work to make a stronger connection between teaching and learning in both educational settings, and also the influence of preschool teachers and primary school teachers working together in the first grades in school. However, this study has a higher percent of teachers with a preschool teacher background 33.3% working in school than at the national level 12% (Lagerstrøm, 2007), and this may account for some of these similarities.

Optimal development in early years is more likely to happen when children have the possibilities to establish positive and caring relationships with adults and other children, profit from adult guidance and help, and exploring interesting environments while having many things to do and learn (Bredenkamp & Copple, 2004; Hamre & Pianta, 2005; Pianta, 1999). Research referred to in chapter 2 accentuates the importance in early childhood teaching to support children's intellectual development and at the same time also to enhance their social, emotional and physical development. Some examples of appropriate practice here can be: play, small group activities, fostering initiatives and child chosen activities, active exploration of materials, listening to and reading stories and poems.

There is a transformation that occurs around age 6 or 7 where children achieve "an increased ability to assume personal responsibility, self-direction, and logical thinking" (Bredenkamp & Copple, 2004, p. 98). Could the different factors that emerged from the data in this study reflect this aspect? The NAEYC position (Bredenkamp & Copple, 2004) cautions against narrowing the school curriculum or using instructional approaches that are not compatible with what we now know of how young children learn and develop. Many children are taught basic academic skills but do not master

how to use them in problem solving or in real situations. Could this be a problem in Norway as well? A Norwegian news broadcast on April 25th, 2008 reported that 300 000 Norwegian adults could not read or write well enough, which gave them problems in daily life. With a stronger focus on academic skills in early school years in more recent government documents (St.meld.nr.30 (2003-2004), ; UFD, 2005), it is essential that children are taught in ways that enhance their learning experiences and help them to become well adjusted participants in a democratic society (KUF, 1996).

There have been examples of contradictory views for example by factor E teachers of a learning approach characterized by modeling behavior, using whole group instruction, but not reflecting on content of academic lesson and what was learned. We may recall Berit (p. 120) mentioning that “sometimes I work like this, and sometimes I work like that... you choose different ways of working”. Could this be the case here and maybe reflect the NAEYC view of DAP (Bredekamp & Copple, 2004) pointing to the usefulness of a both/and position, and caution against polarization into either/or choices?

Concerning children’s choices a both/and position could be that “children benefit from engaging in self-initiated, spontaneous play **and** from teacher-planned and –structured activities, projects, and experiences” (Bredekamp & Copple, 2004, p. 23). An important essence here would be for the teacher to know well enough the developmental level of the child to implement curricula goals into interesting challenges the child can master without under- or overestimating the child’s competence.

The teacher-child relational aspect is of high concern for teachers in this study and in line with previous work acknowledging this fact (Cornelius-White, 2007; Pianta, 1999). Teachers have also noted the importance of community. With a high group orientation will this conflict with or set aside the ability to focus on individual children’s learning needs? On the other hand, interviewees stressed the importance of children being seen and met, and also to respond to them differently to meet their needs. However, the interviewees also pointed to systemic factors of influence such as in which organization one works, and the problem of limited resources.

Results from Q sort themes (Q1 and Q3) point to teachers' existential beliefs about children and behavior management which are quite similar among the teachers within and between both subgroups. With this common background in central beliefs, teachers still hold diverse beliefs concerning group/classroom practices which may be of a different character. These may be derived from sources such as teacher educational background and national documents concerning daycare and school. It may be constructive to see these beliefs in relation to Argyris' and Schön's work concerning espoused theories and theories-in-use (Argyris & Schön, 1974/1989, 1996). When asked how to behave under certain conditions, our espoused theory is usually given. This is a theory of action which we pledge to and communicate to others. The theory that actually rules our action is according to Argyris and Schön, our theory-in-use. This may or may not be attuned to our espoused theory, and we may or may not be aware of any discrepancy between them.

If we view central or existential beliefs as part of how we see and identify ourselves, and which we feel to be right, it is natural to assume we would want to act in accordance with these beliefs. This may be related to espoused theories of action and used as guidelines for how we behave. We may espouse to theories and principles that are more idealistic than what we actually do in everyday life (Argyris & Schön, 1996). We may agree upon the principles, but certain issues or situations may lead us to act differently. The statement that received the highest z-score in both subgroups concerning behavior management was: "If I treat children/students with respect, kindness, and concern, there are less behavior problems". At the same time Berit calls attention to being stricter than you really want to be with some children, while you can negotiate more with others. Another example concerning the importance of relationships comes from Ester focusing on how to coordinate the way adults meet children because one may react with anger, another with understanding and comfort, while a third just cannot be bothered with the child any more. Rokeach (1976, p. 113) viewed beliefs as predispositions to action and which have a cognitive, affective and behavior component. Believing in what to do and how to do it may seem quite clear both cognitively and emotionally, but actually doing it in every situation and context may not be that simple. Here our theories-in-use emerge and we may argue for or rely on dispensations from our espoused theories to justify our

actions. “Sometimes I work like this, and sometimes I work like that...” (Berit, p. 120). It can be difficult to separate teachers’ beliefs from the role of the circumstances of teaching (Kennedy, 2005, p. 32).

Some view subjectivity as behavior (Stephenson, 1953), and “there is conscious and unconscious problem-solving, guided by the subject’s preferences and beliefs” (Stephenson, 1993, p. 71). In this light, beliefs and actions are not part of different realms, but belong to the same totality, although they may not always be synchronized. Stephenson calls attention to other aspects as well such as intentionality and complexity (Stephenson, 1993) and complementarity (Stephenson, 1986c, 1986d). He sees every factor in Q as indicative of an intention, not as an *a priori* assumption but as an observed effect (1993, p. 76), and complexity is natural in intentionality (p. 75). One might conclude that intentions are highly complex, but Stephenson (1993, p. 76) notes that asking “*for the complexity to be understood and to be made the object of one’s science*” [original italics] is something quite different. This is what is attempted in Q-methodology. Several researchers (Brenner, Aucoin, & Xiaoming, 1998; Brown, 1986; Stephenson, 1983c) note the similarity between quantum theory and Q-methodology, for example with the relationship between observer and observed, and where quantum theory concerns states-of-energy, and in Q the concern is with states-of-feeling. “*We discover intentionality as quantum factors. Every operant factor is a surfacing of intrinsic, natural, intentionality. That is, intrinsic to the given situation*”(Stephenson, 1993, p. 80) [original italics].

How can current data from the three Q-themes be understood in this perspective? Each respondent observes him or herself in relation to personal preferences concerning all the statements as a whole. Each statement in the Q-sample of each theme is a possibility, not a prediction. A collection of such statements, from a self-referent standpoint, “can represent, theoretically, the complex subjectivity of the individual anent the event” (Stephenson, 1993, p. 83). Furthermore, when several individuals Q-sort the same statements, each is a concrete specific case, and how they individually contribute to each factor is part of the analysis (N. W. Smith, 2001). For Q1 and Q3, with the vast complex possibilities, almost all of the teachers shared the same point of view. The states-of-feeling can be understood as warmth and care, and pointing to intentions such as treating children with kindness and respect, building

relationships, using praise and communicating clear expectations (Q1). Intentionality surfacing in relation to Q3 is to see each child, make him and her feel safe and secure, to differentiate approaches to meet each child's needs, and also to focus on relationships and motivation.

Complexity is even more apparent in Q2 concerning group/classroom practices where several operant factors emerged and represent different states-of-feeling and intentions. Seen in relation to quantum theory, Stephenson (1986d, p. 538) notes it is not just averages we see, but indication of complementarity. Drawing upon William James and Niels Bohr, Stephenson discusses the concept of complementarity seen as "gaps" in thought. Through experiential observation "thought is divisible into transitive and substantive parts, providing evidence of complementarity" and "therefore requires quantum-theoretical exploration" (Stephenson, 1986c, p. 519). The substantive part has to do with a statement's meaning as printed, while as thought, its meaning can have different aspects (Stephenson, 1986d, p. 535). Underlying patterns can be discovered through structuring and analyzing transitive thought (Allgood, 1999).

The different factors expressed in Q2 on beliefs concerning group/classroom practices represent such "gaps" in transitive thought. They are different but complementary and part of the whole picture. Factors A and C with a high focus on encouragement and process, welcoming each child and having a sharing aspect point to feeling tones characterized by care, concern and the importance of seeing and helping each child in the learning process. These factors are called relational learning oriented. It does not mean that these elements are completely lacking in the other factors, but that they are more pronounced in factors A and C. Likewise, teachers defining factors B, D and E have higher preferences concerning other aspects which constitute transitive "gaps" in thought and with feeling tones that differ somewhat between each factor. These feeling tones represent self-reference. There has been a transformation of experience into operant factors which are complementary to each other (Stephenson, 1986d). Factors B (academic learning orientation) and D (structured learning orientation) are factors that only have teachers working in school as defining sorts. Both factors have feeling tones related to the importance of organizing the learning process, content, and group/classroom environment. The intentions here seem to promote academic

learning through structure. Teachers defining these factors belong to different subgroups but still have similarities although there are nuances that differ between them as described in chapter 4. Feeling tones in factor E (model and community oriented) seem to value activity over reflection and intentions point to modeling behavior, and doing activities to create community more than by talking. The origin by way of statements is the same for all these factors concerning group/classroom practices. The differences come to light through the configurations from a self-referent standpoint which gives operant factors. Each of these factors has a feeling state with intrinsic intentionality (Stephenson, 1993), and through Q-methodology intentionality is an observed effect and not an a priori assumption (Stephenson, 1986c, 1986d, 1993). These differences are separate but also parts of the totality.

We do not live and act in a vacuum as documented through cited research in chapter 2. We are persons in relation to others and therefore interdependent of each other, noted by Allgood (2005). Our beliefs, knowledge and action interrelate in our contact and communication with others. Empathy, congruence and positive regard can facilitate the flow of communication in relational learning situations (Allgood, 2005). Sometimes this can be problematic and we fail to act in compliance with them.

Argyris and Schön (1974/1989, pp. 23-24) note two meanings of the word congruence. One has to do with a person's espoused theory matching his or her theory-in-use. The other meaning of congruence concerns inner feelings being expressed in actions, for example feeling sad, acting sad. The two meanings are complementary and according to the authors show an integration of a person's internal and external state, not unlike what has been described above. When there is lack of congruence between espoused theory and theory-in-use a person "may search for a modification of either theory since we tend to value both espoused theory (image of self) and congruence (integration of doing and believing)" (p. 23). Congruence is not static but can vary over time. Argyris and Schön call attention to a person's ability to be himself, or to be what he believes and feels, hinges on the behavioral world that he creates. Conducive of congruence is low self-deception, high availability of feelings, and low threat. On the other hand, low self-esteem and high threat contribute to self-deception and incongruence. This seems rather logical, but it is still not that straight forward. "An espoused theory that is

congruent with an otherwise inadequate theory-in-use is less valuable than an adequate espoused theory that is incongruent with the inadequate theory-in-use, because then the incongruence can be discovered and provide a stimulus for change” (p. 23-24).

Incongruence is not a new phenomenon, it was also an issue Peirce (1877) was concerned about in his paper *The Fixation of Belief*, where he discusses belief and doubt as different kinds of sensations. He saw the feeling of believing as a more or less sure indication of deliberate habits of action, while doubt was associated with an uneasy and dissatisfied state. In his view doubt causes irritation, stimulates to action, and motivates to inquire to reach belief again that we think to be true. In the crossing point between belief and doubt change may occur.

Due to the importance of congruence to a positive sense of self, Argyris and Schön (1974/1989) claim it is desirable to have an espoused theory and theory-in-use that in time become congruent. These issues can also be seen in relations to teachers’ self-efficacy beliefs.

5.4 Self-efficacy

Self-efficacy beliefs have to do with what I believe I can do with my skills under certain conditions, and there is power in believing you are capable (Maddux, 2002). Bandura (1986) emphasized the importance of self-beliefs in human cognition, motivation, and behavior. An efficacious outlook can bring about personal accomplishments, which in turn can contribute to reduce stress and lower vulnerability to depression (Bandura, 1994; Seligman, 1991).

Two self-efficacy subscales were used to measure 254 teachers’ instructional self-efficacy and disciplinary self-efficacy through a nine-point Likert-like scale. None of the teachers reported to have low (1-3) instructional self-efficacy beliefs. A majority of teachers in daycare (62.4%) and school (68.9%) report having medium (4-6) instructional self-efficacy. There are more teachers in daycare (37.5%) reporting having high (7-9) instructional self-efficacy compared to teachers working in school (31.1%) and the difference is statistically significant at $p < .05$ level in favor of teachers

working in daycare. In general this should mean that teachers in this study are rather confident of their instructional self-efficacy, although there is room for improvement in both categories of teachers. Could the reason for higher self-efficacy ratings among teachers in daycare be related to the daycare curriculum? There is probably still a higher degree of freedom for teachers in daycare to transform curricula into daily activities and learning experiences for children. The work is not measured or evaluated in the same way as is the case in school. Although teachers in daycare have curriculum goals to reach, the pressure on teachers in school seems to be higher on reaching defined goals. They may also have the ghost of national tests lurking in their minds, as Frida called attention to (4.2.5). Could such elements account for the differences? In daycare, teachers and teachers' aids work together in groups and might explain an eventual stronger degree of support between colleagues that could result in higher confidence and self-efficacy beliefs. In hindsight I see I could have differentiated among teachers with varying years of experience to see if this had any effect.

Concerning disciplinary self-efficacy there is only a small percent (.4%) reporting a low rating (1-3). The majority of all the 254 teachers (64.4 %) report to have high (7-9) disciplinary self- efficacy, while 34.8% of these teachers report medium (4-6) degree of self-efficacy in this area. There were no significant differences between groups. The mean values (7.26 – 7.13) between groups might indicate that teachers in school had a slightly higher degree of disciplinary self-efficacy. This could mask the reality. Among teachers in daycare the minimum number is 3 while the equivalent for teachers in school is 4.33. Looking more closely we see that more teachers working in daycare (66.3%) report a high degree of disciplinary self-efficacy than teachers in school (62.7%), while it is the opposite concerning middle degree of self-efficacy. It is interesting to see this in relation to results from Q1 concerning discipline and behavior management where the essence is on praise, clear expectations and building relationships. All in all, this seems quite encouraging that so many teachers in daycare and school report to have a high degree of disciplinary self-efficacy. If this really is the case, why do we hear reports of many noisy classrooms? Are noisy classrooms equivalent with low disciplinary self-efficacy? Have I in this study come across many competent teachers? On the other hand, can noisy classrooms also be

indicative of a lot of collaborative and productive work going on? Although there is a rather large number of participants behind the self-efficacy data, they were not drawn from a representative universe of Norwegian teachers and can therefore not be generalized to the Norwegian teacher population.

There is a statistical significant correlation ($r = .63^{**}$) between instructional self-efficacy and disciplinary self-efficacy, which indicates that those teachers reporting having high instructional self-efficacy will also report having high disciplinary self-efficacy. This is important in light of results from Bandura. Those who have a high sense of efficacy concerning their own teaching capabilities, can motivate their students and enhance their cognitive development, while teachers with a low sense of instructional efficacy seem to favor a custodial orientation that relies more on negative sanctions to get students to study (Bandura, 1994, 2002).

Cronbach's alphas were .85 and .84 which point to a reliable measure of Norwegian teachers' self-efficacy beliefs. These results are higher compared to the findings in a study on US teachers (Rimm-Kaufman & Sawyer, 2004). Could this point to a more homogeneity among Norwegian teachers? We are a small country population wise and have national framework plans and curricula in the daycare, school, and teacher education systems. In a systemic view when more people share the same knowledge and act in similar ways this should in theory lead to predictability. This could be a good thing for many children, but is that the case for all? Could this aspect actually be a problem for children from different cultures who now live in Norway with or without their close families? According to Woolfolk Hoy et al. (2006, p. 717), US teachers are mostly "white, female, monolingual in English, and middle class". These teachers deal with increasing numbers of children with quite different backgrounds, which adds to the complexity of teaching (Woolfolk et al., 2006). Norwegian statistics from 2005 concerning education among immigrants, conclude that there are less than 3% who study subjects related to primary industry or teacher education (Henriksen, 2006). This accounts for very few teachers in daycare and school with an immigrant background. This may lead to children and/or families in danger of being misunderstood. I did not ask about ethnicity in the present study, but recognize the importance of gaining more knowledge about this aspect.

The interviewees spoke of joys in succeeding well in their job, for example meeting a challenging child in a constructive way, or gaining knowledge of different 'learning profiles' and being more competent at noticing how individual children best learn and being able to help them in the right direction, and the positive feelings this gave. Several pointed to how interesting it is to teach and their enthusiasm for their work. Teachers have also commented on positive interaction that leads to reciprocal motivation and enjoyment between teacher and child in the teaching/learning process. They also spoke of frustrations, when being uncertain and not knowing what to do, or knowing what to do but lacking the resources to carry it through. There was a special concern for children who need extra help.

There seems to be three areas that create concern for lack of self-efficacy:

1. Lack in ability, when teachers do not know what to do
2. Lack of resources as economy cutbacks and/or not enough staff
3. System related problems in the organization, such as not having the time or place to discuss coherent ways of dealing with children. Acknowledging that feelings of efficacy are also related to the culture and relationships in the organization one works.

These issues can also be seen in relation to dealing with children and how individuals may react differently to child behavior, as Ester mentioned. A weak sense of collective efficacy on for example this topic could undermine teachers' sense of self-efficacy (Goddard et al., 2004).

An issue here is how could/should this be provided for them to enhance their feelings of efficacy? What can be done for student teachers in the teacher educational system? What can be done for in-service teachers and for daycare and school communities?

5.5 Methodological issues and concerns

No research method is perfect so I wanted to combine methods in an effort to reduce limitations. At the onset of the study I saw Q-methodology through quantitative lenses and sought a huge number of participants. This is not necessary in Q-methodology which is mainly intended for small groups or single case studies. Up through the years, many have made similar mistakes. When first aware of my misunderstanding, I had to decide how to deal with it. I chose to study the philosophy behind the methodology in an effort to understand how this method was intended to be used (Thorsen, 2006), see Appendix I. Since it seemed very well suited for my goal in pursuing teachers' subjective priorities and beliefs I have tried to analyze the data in line with the methodology and philosophical background. This did leave me with an ethical dilemma. What should I do with the huge number of respondents who have put time and effort into my investigation?

Since I also use a questionnaire to collect data, all the respondents would in fact be in the study, but to a lesser degree than first anticipated. I sought help on the Q-Methodology Network Listserv, and Peter Schmolck (2006a), and others (Hurd, 2006; Lipgar, 2006) kindly advised me to concentrate on a smaller number of participants. I chose therefore to draw two groups with 40 participants in each group from the total number of 254 respondents. These groups were randomly yet strategically chosen on the background of all six municipalities being represented and an equal amount of teachers working in daycare and in school were chosen. In theory the choice could have fallen on almost anyone in the total group. One cannot generalize from a limited number of respondents in a Q study to the percent of the population in Norway belonging to for example factor A teachers or factor B teachers, but that teachers with this or that view exist.

In hindsight I have been concerned that there are only 20 statements in each Q sort theme. With more statements there is a possibility that the teachers' viewpoints could have been more nuanced than was the case in this study. Two of the themes (Q1 and Q3) had each only one, but very strong factor. On Q2 with still only 20 statements, several factors emerged which represent different viewpoints and beliefs. The authors of the TBQ (Rimm-Kaufman et al., 2006) put a lot of effort into choosing statements that could depict

teachers' priorities and beliefs in a balanced way on the different themes, but did not use a balanced block design recommended in Q-methodology (Brown, 1980; Stephenson, 1953). I now see the importance of selecting a larger number of statements from the concourse, and using the balanced block design to ensure a balanced and reliable account of possible viewpoints in the context of the study. I would also prefer to start with interviews to get a natural selection of statements from the particular context where the study is to occur.

An issue I also have had to deal with is the range in the forced distribution. A forced distribution has the option of depicting personal preferences in the configuration of all the statements as a whole. It makes you reflect on which statements are more important to you. Rimm-Kaufman et al (2006) used a four times five grid with five categories from A to E and four statements under each, and I chose the same. This is also a result of my misunderstanding to begin with. In Q such a distribution is illustrated by -2 to +2. This has to do with an important methodological issue, the so called "distensive zero" where all information is contained in the dispersion around zero (Stephenson, 1953, pp. 195-196). The center of the Q-sort points essentially to "the relative meaninglessness in the the middle compared to the meaningfulness at the extremes of the distribution" (Brown, 2005). In the course of this research project I have experienced several epiphanies (Thorsen, 2006), but the most revolutionary (concerning methodology) was to grasp the essentials concerning the "distensive zero" where the mean is zero and standard deviation is 1.00. According to Stephenson (1974, p. 10) "*This is a fundamental quantum of measurement, for all subjectivity*" [original italics].

Five categories, A to E, were used in data collection in this study to display the range from least to most instead of the numbers from -2 to +2. The "distensive zero" was therefore not specifically depicted for the respondents, but text was provided to explain each of the five categories in the range, see Appendix II, III, and IV. In category C, the term "somewhat" was used. I am uncertain if this point may or may not have influenced the Q-sorters, but I do recognize the necessity of being more precise in the future, and consequences this may have when interpreting the results. Another point I have become much more conscious of is instead of using from 'least to most', in Q studies

it is more in line with the philosophy behind the methodology to use for example 'most unlike to most like my beliefs'.

As noted above, a flat or rectangular distribution was used in this study. However, a quasi-normal distribution is usually recommended, but other distributions may be used without seeming to affect factor structure (Brown, 1971; Cottle & McKeown, 1980). On the other hand, with a quasi-normal distribution, the extremes would have been clearer. A wider distribution range for example from -4 to +4 could nuance the picture even more, but calls for an increased number of statements.

An issue to take into account is that different words can mean various things to different people as Frida made me aware of when pointing to the word 'project' which she understood differently from the use of the word in a document she had read. Different statements can also mean different things to the same people at different times and/or in varying contexts. The same statements can have quite different significance to the individual under varying conditions of instruction (Stephenson, 1953, p. 195), thus allowing for ambiguity.

Using a "ready made instrument" can have its advantages, for example the use of the Teacher Self-efficacy Scale which has been tried out and validated previously by other scientists. However, there may also be limitations and drawbacks in using ready made alternatives. For example, by using the TBQ and the same conditions of instructions, the problem of having two issues in the same instruction was carried on. As noted under 3.7.1 using both 'approach or belief' and 'essential and/or characteristic' in the instruction for Q1 and Q2, respectively, can complicate matters. In addition it has not been common to standardize Q samples, a point made by Stephenson (1974, p. 14) "no Q-samples are standardized to measure anyone's concept of self, ideal-self, or whatever—though for practical purposes no doubt some use can be found for such categorical tests".

With quantitative measures one can gather information on many individuals' relation to a chosen number of variables, as items in a scale. This methodology has advantages on dealing with a huge number of respondents.

A problem noticed in this study was that mean values could mask some of the information that could be found (see 5.4) and give a distorted picture.

There were follow-up interviews from only six individuals, and I did not go into a deep content analysis, but categorized the information to shed additional light on results from the Q sorting process and teachers' reports of self-efficacy. A thorough hermeneutical analysis of interviews can give rich data that can account for a deeply meaningful exploration of teachers' thoughts and meanings. However, the purpose here was not to use interviews as the main source of data, but as a follow-up procedure to help support the interpretation of Q-sorts and efficacy data. In spite of this limited use, and only having interviewees from one subgroup, the voices of Anna, Berit, Carl, David, Ester, and Frida have shed light on central issues in this study through their reflections and comments.

5.6 Limitations and strengths

Although I have tried to do a thorough investigation into theory, methods and empiri, the study does have its limitations. I have already discussed some methodological concerns. A major limitation of the study which is quite obvious at this point is the lack of observational data of group/classroom practices. I have concentrated on thinking and feeling aspects such as beliefs and reflections, and not performance. According to Marcos and Tillema (2006, p. 114), such a perspective can give 'blind spots' in research efforts to uncover what actually goes on in a group/classroom setting, and only tell part of the story of teaching. Observation could have given a clearer picture of the relation between beliefs and actions, or espoused theories and theories-in-use. With no observations of teacher practice, there was no possible way to see *how* things were done (Klette, 2004), or to verify the congruency.

The results from this research cannot be generalized to the Norwegian population of teachers, and this may be seen by some as a major limitation. The teachers in this study were not recruited from a representative sample of the universe of teachers in Norway, so even the self-efficacy data can not be generalized. By using Q-methodology, results point to beliefs which are out there among teachers, but not to which percent of the population has this, or

that belief. Drawing upon interviews and qualitative procedures depict opinions that some teachers hold which very well may be held by other teachers as well, but this can not be generalized here and now.

Today I can see different choices that were possible to make, and different options of how to conduct such a study or a similar study. In hindsight and with deeper knowledge it is easier to see better ways of doing things. I can join the chorus of many before me: if I only knew then what I know today... Although the present study has some limitations, there are also strengths to be noted.

First of all the present study focuses on themes that have not been that well documented previously in Norway. I have chosen to study both historic and classical theory in addition to more contemporary theory from several fields in an attempt to cast light on and understand teachers' beliefs among some Norwegian teachers. Another strength of the study is the thorough account of methods, especially Q-methodology and the importance of not just knowing *how* and *which* buttons or menus to choose when analyzing data, but to know *why* one choice is preferred to another by examining philosophies behind.

Combining a focus on both teachers in daycare and teachers in early school years contributes to cast light on important settings in children's lives and teachers they meet and interact with in both systems. With a focus on lifelong learning and curricula and national framework plans there is also a need to highlight the period of transition between daycare and school, the culture and challenges children meet. This study has focused on some of these aspects by prioritizing the study of beliefs teachers hold in these settings.

Translating research instruments and using them in a different country can be tricky. Translating from English to Norwegian and back to English again helps to maintain the initial content and meaning. By doing three different pilot-studies in an effort to ensure that the instruments were comprehended and used in the way they were intended to, has in my opinion added to the validity and reliability of the study.

We live in a complex world and need various ways of seeking knowledge and understanding of it (Richardson, 1996; M. L. Smith, 2006), and different traditions can be combined in the same study (Johnson & Onwuegbzie, 2004;

Lund, 2005). Although there are dilemmas in dealing with so much data and using different methodologies, I have tried to abide by and follow up on recommendations mentioned above. This can be seen as a strength in the pursuit of empiri and analysis concerning the themes of this study and has added different dimensions to the understanding of teachers' beliefs.

Another strength in this study is the use of Q-methodology to explore operant subjectivity among teachers. Here it is the teachers that have categorized themselves through the Q-sorting process. This methodology and procedure has contributed to cast light on many aspects of teachers' beliefs by the configuration of a set of statements as a whole displaying each person's preferences through their personal Q sorting process while ranking each statement in comparison to all the others. This has proven useful in illuminating shared beliefs and those that differ. This line of research can also expose contradictory beliefs, values, and priorities we may hold. Reading the statements in a Q-sample has "factual meaning but only potential subjective meaning" before the Q sorting process has begun and the respondent experiences how each statement feels 'like me' or 'not like me'. (Allgood, 1999, p. 213). With this in mind while placing the statements at either end of the extremes or somewhere in the middle, a person is communicating "the transitive or feeling part of their thoughts" (p. 213). Drawing upon James, Allgood sees both fact and feeling as "irreducible to each other, conjoined in the gestalt of thought" (p. 211). Stephenson (1983a) also notes the essential feeling that should flow through each factor from the positive to the negative pole and it is here we seek to gain our understanding. In this process tacit knowledge can be made explicit. In light of the results presented from the Q sorting process, I have found confirmation of tapping into subjectivity.

5.7 Relevance and further research

The present study has relevance for teacher change concerning teacher education, in-service teachers' continuous growth, and implementation of new curricula in daycare and school.

Through the years we have seen that educational policy in Norway has changed based on political and educational ideology to meet societal goals,

and lead to consequences for children, families and teachers (Haug, 2000). Beliefs are part of this process, whether we acknowledge this or not. The first Starting Strong report (OECD, 2001) pointed to challenges concerning Norwegian daycare policy. The second Starting Strong report (OECD, 2006) concluded that Norway had worked seriously to improve the challenges noted in the first report. In addition Norway's holistic view of the relationship between care and learning in early years was emphasized. PISA and TIMSS studies (TIMSS & OECD-PISA, 2006) have pointed that the quality in Norwegian school concerning reading, math and science could be better. With a stronger focus on academics in school, will this lead to a shift away from a child-centered, process oriented view of children in daycare and early school years as well? In pursuit of results it is essential not to undermine the importance of relationships, processes, and active, experiential learning in meaningful contexts. Well qualified teachers with knowledge of children's development and how their learning potential best can be met, are of utmost importance for each individual child and for society as a whole. What politicians, researchers, educators, parents, and others believe is the 'right' way, or the 'best' way to prepare, implement, and conduct early childhood education (birth to eight years) is important to grasp. Different beliefs and priorities here may lead to various consequences.

Is the focus on the children's needs or societal needs? Can these aspects be combined in a constructive manner? Upon what are the beliefs based, and to which priorities do they lead? Are such beliefs grounded on recent research? Such matters should be called to attention and discussed more thoroughly in light of the consequences to which they may lead.

5.7.1 Teacher change

This study has focused on gaining insight and understanding of teachers' beliefs on certain themes and not specifically addressed teacher change. However, there is a connection between beliefs teachers hold and the impact such beliefs may have on communication, action, and the acquisition of new knowledge. To facilitate change in knowledge and practice it may be necessary to change beliefs. Murphy and Mason (2006) have synthesized major research findings concerning changing knowledge and beliefs in

educational contexts through different models of conceptual change. They call attention to the function of knowledge and beliefs within the change process. In addressing these themes, Murphy and Mason (2006, p. 319) have noted that "...cognitive, social, and educational psychologists are more likely to employ an information processing framework, whereas science educators usually rely on a constructivist approach." They propose a theoretical framework that can unify and strengthen these different research positions by turning back to pragmatist roots and the philosophy of Peirce. As mentioned previously, Peirce (1877) viewed beliefs as conscious, deliberate habits of action that have practical consequences. When acting according to such beliefs or habits result in surprises or unexpected consequences, doubt may arise and lead to new inquiries. An engagement in addressing doubt could result in changes in beliefs and understanding that lead to new practical consequences, but there may also be impediments. "The force of habit will sometimes cause a man to hold on to old beliefs, after he is in a condition to see that they have no sound basis. But reflection upon the state of the case will overcome these habits, and he ought to allow reflection its full weight" (Peirce, 1877, p. 9). This is in line with more recent literature accentuating the importance of reflecting on practice (Argyris & Schön, 1974/1989, 1996; Katz, 1996; Larrivee, 2000; Richardson, 1998; Schön, 2002) and becoming a critically reflective practitioner.

Q-methodology can be used to cast light on subjective beliefs by helping individuals become aware of their position in relation to a topic. This is also important in the process of illuminating tacit knowledge. According to Schön (2002) competent practitioners usually know more than they can say, which can be implicitly seen in patterns of action. Feedback from teachers in the pilot-studies and interviewees remarked they had to stop and reflect on statements in the different Q sort themes to find out what they really felt, thought and did that was most characteristic of themselves. This effect is also verified in a study by Allgood (1999) where transitive thought and the meaning of it became explicit through the Q sorting process and discussions of the results. Research studies should pursue this effect by using Q-methodology to facilitate teacher change by illuminating beliefs and feelings associated with teaching in combination with discussions in relation to practice and knowledge.

5.7.2 Teacher education

The quality of teacher education has influence on how competent new teachers in daycare and school are. There is a lot of ground to cover and many subjects to master in addition to social skills and ability to collaborate. There are other essential skills to learn as well. Judith Brown calls attention to the importance of awareness and the ability to know what is going on around us and within us. “Self-awareness and awareness of others lead the way to presence, responsiveness, direct communication, and contact – provided one is able to put words to one’s experience” (J. R. Brown, 1996, p. 66). Through their work teachers need to communicate with children, parents, colleagues and others. A focus on self-awareness and awareness of others during the period of teacher education can enhance their ability to understand different situations more clearly. Insight into personal beliefs, priorities and feelings can lead to a more conscious way of dealing with problematic situations which all teachers encounter sooner or later. Having gained some insight into these matters during the teacher education period may hinder a novice teacher to experience “This child just breaks me down emotionally”, or maybe see such a situation from a different perspective.

Espoused theories and theories-in-use are also beliefs and could through Q studies be illuminated and discussed. This could be particularly useful among student teachers and help them to become more reflective of their beliefs and practice as present and future teachers. A Q study at the beginning and at the end of their teacher education could indicate how subjective opinions and preferences evolve through the educational process. If it concerns topics where existential and central beliefs are an issue, there probably would not be much change. On the other hand, if more derived beliefs are concerned and have been influenced by authority sources such as the educational program and the people teaching it, changes may be seen. In addition, a well designed Q study at the beginning of the teacher education may indicate student groups with different focus, and the education can be tailored to meet the different needs of the varying groups to reach the goal of becoming competent teachers, or to help guide a student away from the teacher vocation.

5.7.3 In-service teachers' continuous growth

It has been argued in this thesis that systems play a part in many aspects, so also for teachers' self-efficacy beliefs. We have heard of teachers describing how and when they feel efficacious, but also of frustrations concerning lack of ability, and economical setbacks and the consequences to which this leads. It may not be directly connected with the economy in daycare and school, but changes can be made in the individual organizations by way of reviewing routines and ways of organizing work. Many frustrations could be dealt with if time was set aside for staff to reflect on their own and their colleagues' beliefs and practices and what hinders or enhances teaching. Although having different beliefs of how to meet and teach certain children, teachers could for example share and discuss various alternatives and work towards a compromise. Consensus statements from Q-studies could serve as a starting point of agreement. Having routines for being a reflective practitioner can also help new teachers become and feel more competent in collaboration with colleagues. Both for new and experienced teachers, there is always something new to learn, and as Berit (p. 353) reflected: "...you never become completely qualified. I believe it becomes more and more apparent to me the longer I work."

Teachers may resist change suggested by others, but engage in change that they initiate (Richardson, 1998). A view such as the one Berit expressed, can open up for changes. She may see the need to learn something new. Change can be seen as a threat (Skogen, 2004), but is neither inherently positive or negative because the meaning always depends on the context (J. R. Brown, 1996). She claims change can occur in a manipulative manner oppressing others, but it can also be done in ways that enhance a persons' options to improve their lives and work by discovering something is possible. This can have the potential of helping teachers to help him or herself to make changes themselves.

For both novice and in-service teachers, becoming aware of subjective beliefs, priorities, and practices we hold can help enhance the quality of work in teaching young children. Beliefs are not normally open to discussion, but if not challenged we can stay trapped in our way of thinking (Larrivee, 2000). This does not mean that essential beliefs have to change, but that we should

look to the consequences of what our beliefs sometimes generate, for example misinterpreting or misjudging children.

This could be done by performing Q studies on the themes of this study, and have teacher staff reflect on the results. It could also be done in combination with pre- and post interviews and observation of practice. To do so we also need to have a daycare and school culture where such an activity is both welcomed, expected, and with prioritized time to do it. It gives teachers the possibility to gain a new frame of mind. An interesting research project would be to combine Classroom Assessment Scoring System (CLASS) (Pianta et al., 2006) on observation of relevant teaching practices with a Q study focusing on subjective preferences. This might be a relevant way of addressing what Marcos and Tillema (2006, p. 124) state as “the difficulty in bridging the world of talk and walk”. Such a combination could provide information, knowledge, and understanding of what is going on in the group/classroom in addition to being a basis for staff development through reflection, discussion and group activities. In light of efficacy research (Goddard et al., 2004; Woolfolk Hoy et al., 2006) this could lead to collective efficacy.

5.7.4 Implementing new curriculum

Previous research has established a relationship between beliefs, actions, and teaching practices. As Kennedy (2005) and Haug (1999) have noted, reforms based on certain ideals may be difficult to implement. Teachers holding different beliefs and values than the reformers can justify their present practice, or they may have dispositions that interfere with their ability to implement the reforms, or circumstances of teaching could prevent change (Kennedy, 2005). Teachers might need new knowledge or guidance to make the necessary alterations. However, an aspect to which Gregoire (2003, p. 149) calls attention is “understanding how teachers’ beliefs relate to their practice as well as to student outcomes may be the missing link between calls for school reform and teachers’ implementation of that reform”. But, is curriculum well enough grounded on recent research of how children best learn? With a stronger focus on academics will the teaching of social competence and enhancement of relationships suffer?

The teachers in this study seem to hold existential beliefs that comply with intentions in the curricula concerning beliefs about children and behavior management. Although beliefs and views of the teachers in this study seemed to be in line with curricula, this may not be that obvious in other parts of the country. In addition, we may expect teachers to be updated on curricula and current research, but can it be taken for granted? Maybe studies of teachers' beliefs and priorities should be done on a regular basis as a part of enhancing the quality of teaching among young children? However, teachers may also gain differentiated beliefs through their experiences which may support or interfere with implementation of new curricula. These may also need investigation, but how well can science document this? Combining different research methods could be a solution.

Well qualified teachers with knowledge of children's development and how their learning potential best can be met, is of utmost importance for each individual child and for society as a whole. Being conscious of subjective beliefs, priorities, and the roles these may play, in addition with the competence of being a critically reflective practitioner, can help teachers reach these goals. Goals change, concourses change, and we need continuous research to get a wide-ranging and more comprehensive picture of the field, but also to educate and prepare both new teachers and in-service teachers for tomorrows' daycare and school, and the teacher – child enterprise in a changing society.

5.8 Concluding remarks

This study deals with beliefs, priorities and essentially subjectivity. My goal was to investigate teachers' subjective beliefs on specific themes. In the process I have become much more aware of my own subjectivity as well.

Insight has been gained into the conglomerate of beliefs. These can be both elusive, vary in character and have affect on our lives. Some beliefs have an existential character, being deeply rooted in and connected to our identity and difficult to change. We may express these beliefs as espoused theories. We may also hold beliefs of which we are not conscious. Some beliefs we gain through the impact of education, lived experience and contact with others who

can be significant to us and/or seen as an authority source. Our beliefs may become explicit through our actions and practice. These can be seen as theories-in-use. It can be an advantage if there is congruency between espoused theories and theories-in-use, but sometimes this is not the case. Teachers have a very important vocation with impact on individual children, their families and society in general through the education of new generations. The relationships that develop between teachers and others makes a difference, and teachers' beliefs can contribute to the quality of the impact.

In the pursuit of investigating teachers' beliefs I have gained insight into different methodologies and research methods. All have their strengths and limitations, but can also be complementary to each other. In a complex world it can be wise to use various research methods to gain knowledge and understanding from many perspectives. But it can also generate a huge amount of work and time consuming procedures. It is important to know which method or combination of methods, are best to use in dealing with the topic in question. It is also vital to know which menus to select from a science research program, but it is even more essential to know *why*, and to make choices throughout the preparation, investigation, analyses and inferences supported by relevant knowledge of the methodologies behind. In this process insight into the "I" in research can also enhance the quality of the investigation.

Research concerning changing knowledge and beliefs began as a unified area and it is argued that it is returning to those pragmatic roots (Murphy & Mason, 2006). In this present study attention has been given to the interrelatedness of different elements. It could be fruitful if future research could focus on the connectedness of beliefs and knowledge and how this relates to teachers' acquisition of new knowledge, ability to establish and develop good relationships, and enhance their teaching practices, to meet and stimulate children's different needs and learning potential.

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Appendix overview

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Appendix

Appendix I

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A Pathway to Understanding Q-methodology

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Abstract

This paper does not aim to present results from the data collection, but rather, it aims to address philosophical and epistemological concerns about the study and will reflect dilemmas, pitfalls, and epiphanies a Q novice encounters in the process of learning thoroughly about Q-methodology and its theoretical origins. As an attempt to comprehend the original intention behind the methodology, an overview of Q and a more detailed account of the philosophy is presented before reflecting on possible changes in my understanding as a result of this process.

I. Introduction

This paper addresses concerns that arose while using Q-technique in my PhD study. I was introduced to Q from the point of view that Q-technique and R-methodology¹⁾ were natural companions in line with traditional quantitative research.

Key words: Q methodology, Philosophy, Operant Subjectivity, Logic of Abduction, And Q and R Differences

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1) Karl Pearson and Charles Spearman were responsible for major contributions to correlational and factor-analytic approaches to the study of human behaviour. This has been labeled R-technique, where the R is a generalized reference pointing to the product-moment correlation coefficient, or Pearson's *r*, in studying trait relationships (Brown, 1980; Ernest, 2001; McKeown & Thomas, 1988; Smith, 2001; Stephenson, 1953). Stephenson (1953) used the term "R-methodology" about the complex system of postulates that underlie a number of tests or traits being applied to a sample of persons, which are scored objectively, and where the fundamental concern is

As a result, the author sought as many as 254 participants and individually interviewed six people drawn from the cohort after the Q-sorting process. My limited knowledge of Q-methodology at that time led to predicaments and consequences I did not foresee in my eagerness to learn more about Norwegian preschool teachers' priorities and beliefs and their subjective opinions about discipline and behavior management, classroom practices, and children. This paper does not aim to present results from the data collection, but rather, it aims to address philosophical and epistemological concerns about the study and will reflect dilemmas, pitfalls, and epiphanies a Q novice encounters in the process of learning more thoroughly about Q-methodology and its theoretical origins.

II. Predicaments and focus questions

During this study I discovered two different ways of practicing Q method:

- A) One using Q-technique and R-methodology to sample individuals' subjective opinions about other people or individuals' opinions or priorities in relation to non-humans, such as things, events, issues etc, and
- B) A second procedure using Q-technique, Q factor analysis, and the implicit philosophy in Q-methodology to reveal individuals' subjective points of view.

This led to frustrations, curiosity, a need to reflect on different practices, and two major questions: What was the original intention behind Q-methodology? How would this affect my understanding?

With a desire to pursue the method's original intention and in search of enlightenment, I turned to the literature on the philosophy behind Q-methodology and also attended two of Prof. Steven Brown's Q seminars at the University of Essex, UK. This, of course, gave me a deeper insight into Q-methodology, but it also slowed down the progress of my PhD because I felt an obligation to rethink what I should do in light of my newly acquired knowledge. This may not be uncommon, and as Newman et al (2003) called attention to, a research project may not necessarily proceed linearly but may twist and turn and, in some cases, lead in unexpected directions. In the following text, an overview of Q-methodology will be

with individual differences. In R-methodology, analyses may include t test, analysis of variance, multivariate analysis of variance or covariance, regression, discriminant analysis, canonical correlation, etc. to study relationships between items for a number of people (Ernest, 2001, p. 342). This term has been used by many in Q literature to distinguish it from Q-methodology and is therefore used here.

presented before a more detailed account of the philosophy. This is an attempt to comprehend what the original theory and intention behind Q-methodology was before I reflect on possible changes in my understanding.

III. Q-methodology

The Q-methodology was originally developed by William Stephenson, a British physicist and psychologist. He was interested in trying to find a way to reveal the subjectivity involved in any situation. In the beginning it was looked upon as controversial and shunned by most of academic psychology (Brown, 1972; Brown, 1991/1992; Brown, 1996; Brown, 1997). Today the methodology is accepted and used in the fields of communication and many other social sciences. Some indicate that Q-methodology combines the strengths of both qualitative and quantitative research traditions, and in other circumstances it can provide a bridge between the two (Brown, 1996; Dennis & Goldberg, 1996).

Q-methodology deals with subjectivity, or, to be more precise, an individual's communication of his or her point of view, and is based on a twofold premise that subjective points of view are communicable and that these views are always anchored in self-reference (Brown, 1972; McKeown & Thomas, 1988; Stephenson, 1953).

Communication on any topic is called 'concourse.' This represents the many different viewpoints and feelings concerning a topic, which can be positive or negative, of any subject matter. Statements from people in a particular context can be collected through interviews and conversations, by sampling newspapers, essays, scientific literature, etc. portraying self-referenced opinions and feelings. The universe of a concourse is never ending. A set of representative, but not exhaustive, statements is drawn from the concourse and called a Q-sample. A set of persons or P set is instructed to rank order (Q-sort) these statements according to a specified condition of instruction, which could be 'most like' or 'most unlike' me or agree/disagree. Each individual's subjective point of view is depicted in his or her rank ordering of all the statements in relation to each other and in accordance with the condition of instruction. The results of the Q-sorting are submitted to correlation and factor analysis, which in Q-methodology gives natural classes of response (Brown, 1980; Brown, 2006). The purpose is to uncover the inherent structure of a concourse (Brown, 1991/1992).

It is most common to use this methodology on small groups of people or on single cases with different conditions of instruction, which is in accordance with its rich description of subjectivity (Brown, 1980; McKeown & Thomas, 1988; Smith, 2001; Stephenson, 1953; Stephenson,

1978). Although pointing to limitations, Stenner et al (2006) called attention to its usefulness in explorations of a broad, cross-cultural nature (p. 671). Watts and Stenner (2005) noted that the method uses a by-person factor analysis, which can identify groups of participants that make sense of a number of statements in similar ways.

There are now programs that analyze the data according to principles and philosophy behind the method:

- PQMethod (computerfreeware):
<http://lrz-muenchen.de/~schmolck/qmethod>
- PCQ (computer software):
<http://www.pcqsoft.com>

IV. Philosophy behind the methodology

Different ideals and philosophies have varying methodologies and approaches to research. Smith (2001) looked into 16 systems of psychology and has categorized them by their approach to causality into Organocentric, Envirocentric, Sociocentric, and Noncentric (or ‘contextual interactionist’). He places ‘Operant subjectivity,’ also known as Q-methodology, in the category Noncentric. Causality is here, according to Smith (2001), comprised of relationships or a field of events and not centered in any single source. This phenomenon can be seen in the Q-sorting process, which has all the characteristics of a psychological event (Brown, 2002; Kantor, 1971; N. W. Smith, 2006; Stephenson, 1953; Stephenson, 1983b), including statements having the stimulus functions (sf), response functions (rf) of the Q-sorter, the personal history (hi) of the respondent in comparison with the subject matter, the setting (st) where the Q-sort is obtained, and the medium of contact (md) between stimulus and response. These dimensions are interacting with all of the others to produce a unique, but far from random, event, according to Brown (2002). This points back to the work of J. R. Kantor and his principle of the specificity of inferential interbehavior, which is incorporated into Q-methodology (Stephenson, 1953, p. 341). Specificities in Q can be of the utmost importance (Stephenson, 1953) and come before generalities and comprise them (Smith, 2001).

In addition to Kantor, whom Stephenson (1984) greatly admired, he also pointed to Freud, Spearman, Fisher, and Peirce and their fundamental influence on Q-methodology (Stephenson, 1993/1994, p. 1):

Freud’s pleasure/pain principle is incorporated into the Q-sorting operation, and concern with morality can be traced to studies on factor W (character) in Spearman’s laboratory. The reality principle, also Freud’s, joined with training in physics which

led to self-reference in explaining consciousness. Self-reference, in turn, draws its first principle from Peirce – that ideas, unlike facts, spread in human communicability and form concourses, all of which can be conceptualized in terms of Fisherian designs.

Stephenson (Smith, 2001; Stephenson, 1953) was influenced by Bentley (concrete transactions) and Kantor (interactions between persons and their surroundings) when he insisted that beliefs, feelings, opinions, and the like were concrete behaviors that could be communicated and systematically analyzed by Q-methodology. Stephenson (1953, p. 23) viewed behavior as neither mind nor body nor physiology, but saw it simply as behavior, whether it be subjective to a person or objective to others. His approach to philosophy of science, measurement, statistics, and psychological principles has been looked upon as a revolution that psychology was not ready for at the time (Smith, 2001).

According to Stephenson (1978), concourse theory, the theory of meaning and a theory of self, completes the foundation of theory of communication in terms of Q-methodology. The approach to communication is based on abductory logic, and Stephenson (1986a) called attention to ‘new look’ science through the contribution of Kuhn, but he also reflected the earlier work on abduction by C. S. Peirce. The focus is on “asking the questions in such a way that understandings are grasped before explanations are sought, if necessary, to confirm them” (Stephenson, 1980b, p. 88). Discovery, the use of laws, theory and instrumentation are important aspects in reaching understandings, and the procedure is from concrete situations to interpretations and explanations, which are subjective to the person advocating them (Stephenson, 1986a). See also William Stephenson’s Scientific creed (1961a, 1961b) and Albert Atkin’s (2004a, 2004b, 2004c) articles concerning C. S. Peirce.

Quite essential in this methodology is ‘operant subjectivity.’ When individuals receive a sample of statements to work with, they ‘operate’ with them in the process of finding the place where the different statements belong in order to express their personal point of view. Both people and statements are involved. A subjective operant is neither right nor wrong, and there is no outside criterion for a person’s personal point of view (Brown, 1980). “Operant subjectivity,” as Smith (2001, p. 320) defines it, “is subjective behavior as it manifests itself through Q-methodology”.

To get a better understanding of the concept, the different elements will be viewed more closely in the sequel.

V. Concourse theory of communication

Stephenson (1978, pp. 21-22) proposed that consciousness is merely communicability or, in other words, a person's communicable possibilities which can take two forms, corresponding to what we call 'objective' and 'subjective.' 'Objective,' in his view, is in relation to the outside world and is a matter of facts that explain the relation. This in turn leads to information. The 'subjective' form of communicability is within ourselves. It has to do with our thoughts, feelings, beliefs, wishes, opinions, emotions, fantasies, etc. and is experiences of the mind that are articulations of an individual's 'behavioral field.' This involves meaning and possibilities of self-involvement. Stephenson (1983b) pointed to interbehavioral psychological principles that Kantor proposed involving different aspects of a psychological event as mentioned earlier. This consists of a person and his or her personal history that is engaged in imagining or perceiving something in some setting (Smith, 2001, p. 60). Interactions take place in a "psychological field," and Stephenson (1983b) defined this field to be the concourse and covered by concourse theory.

According to Stephenson (1980a), Descartes was the one responsible for splitting 'mind' and 'matter,' and with him the word consciousness came into the English language around 1650; it was used in the meaning conscious of something. The word conscious evolved in the 14th century, and both concepts are relatively new and have different meanings from their origin. Scio is to 'know' and con is 'with' in the context, "I know together with (someone)..." or "I share (with someone) the knowledge that..." (p.75). Stephenson (1980a) quoted Lewis, who found it helpful to restore the word conscire to cover the meaning 'sharing knowledge.' Consciring accounts for sharing knowledge between two or more people or doing it self-reflectively. By using the concepts of conscire and concourses, Stephenson has developed a method and way of thinking that is able to move away from studies of consciousness and to focus on subjectivity:

...subjectivity is rooted in conscire, in the common knowledge, the shareable knowledge known to everyone in the culture. The sharing is what should have been called consciousness, and it meant merely being communicable in common (Stephenson, 1980b, p. 15).

The science of subjectivity has, according to Stephenson (1978), never prospered because of categorical attribution. He illustrated the functional-interactional position by giving an example of how a handshake is called a greeting, but at the same time many gestures, remarks, and acts of recognition also mark the occasion. We also said

that thinking goes on in one's mind, but for Stephenson, statements of opinion and fact are being spoken (p.22). He continued with a warning against all 'object' or 'thing-attribute' terms and pointed out that whenever categories are mentioned, it is with tentative designations and with meanings, both of which depend upon concrete situations and are methodological devices or provisional specifications.

In the theory of concourses, populations of 'statements' are being generalized in Qmethodology in a wider concept of concourses in relation to functional-interactive situations in subjective behavior, and in the sequel, eight elements are briefly quoted (Stephenson, 1978, pp. 23-25):

1. Subjective communication is grounded, theoretically, in statistical quantities of "statements" about a situation.
2. We assume, for theoretical purposes, that each "statement" of a concourse is equally probable a priori, and equipotential a priori, and enter into a functional-interactive situation at issue.
3. We assume that all "statements" of a concourse have self-referent possibilities.
4. It follows by definition, from the assumptions of subjectivity, that concourses will concern meanings and not facts.
5. All subjective communication is reducible to concourses, whether in the sciences, the arts, or any other domain.
6. Complex subjective situations so reduced to concourses are not to be taken as a reductionist assumption.
7. The number of concourses, therefore, is infinite.
8. Pragmatically, concourses are empirically grounded.

To do a scientific study of subjectivity, this philosophy and methodology begins with the statistical conception of concourses. This is not done in an objective manner of scientific reductionism, but it is concerned with structures, configurations, syntheses, and with a focus on understanding in contrary to explanations or predictability. The theory ignores facts and concerns itself only with meanings (Stephenson, 1978).

VI. Theory of meaning

To look more closely at a theory of meaning, which is the core of communication and begins with concourse theory, Stephenson (1978) found it necessary to take a developmental position. He referred to Schachtel and pointed to young children at the age of three being able to begin to reflect on their own feelings and to develop a

sense of him- or herself as 'me' and also what is his or hers as 'mine.' Through numerous acts of reflection or focalizing attention, the child explores outer world and inner experiences. As the child matures, he or she becomes communicable through actions in the real world under restrictions and socializing constraints, but in the child's own subjectivity, the constraints can be lessened. While adolescents can easily participate in concourses, younger children can join in the discourse by way of pictures. It is supposed that meanings become organized through different configurations of the 'statements' of a concourse. There are numerous preconceived possibilities and each has a vector in multidimensional space. This is the modus operandi of factor analysis and of Q-methodology as Stephenson saw it (1978, p. 26). Prediction and change in the real world has been the way of science for a long time, but in Q-methodology the philosophy is to stay in the person's mind and let him or her perform the vector measurements, and the concern is with the structure of his or her subjectivity as such in the situation. Different configurations of factors give us varying 'meanings,' and these have to be interpreted. Factors are structured differently in relation to conditions of instruction, which adds to the total complex of 'meaning.'

An example of this could be a Q-sample of 32 statements describing 'self' given to 12 people. These 12 could group together on, for example, three different factors describing themselves. These three factors would have different 'meanings' from another. In the mentioned example, the condition could be 'describe yourself.' Other conditions could be 'describe your ideal self,' 'describe your self as your mother sees you,' as well as describing how your husband, colleagues, and boss respectively see you. Different conditions add new dimensions to the 'meaning' of 'self' that add to the complexity. The Q-sorter in general may not be aware of these 'meanings,' but when confronted with them, he or she may very well understand them. The word 'meaning' is here put in quotes to indicate a technical term. Stephenson (1978, p. 30) sums this up as:

The core of our theory, therefore, rests with these syntheses, these configurations of statements from a concourse, mediated by "focalizing attention" and giving rise to operant structures.

VII. Theory of self

As mentioned earlier, concourse theory, theory of meaning and a theory of self, completes the foundation of theory of communication concerning Q-methodology.

Many have viewed the concept of 'self' in different ways. Stephenson (1978, 1979) refers to Koffka and his interpretation of 'self' as the one that comes closest to self as seen in Q-methodology. According to Stephenson, Koffka adopted a perceptual stance with the Ego being an important segregation in a person's psychological field, but it is not a constant segregation or with fixed boundaries, and he (Stephenson, 1979, p. 7) quoted Koffka: "The Ego has a core, the Self, and enveloping this core, in various communications with it and each other, are other sub-systems."

The conception of self as Stephenson (1978, p. 34) saw it:

is an abstract statistical theory, a matter of "mathematical philosophy" like that used by Newton in multidimensional space as a link to between "focalizing attention" and meanings. The only person who can operate the process is the individual himself, so that "single case" methodology is its sine qua non."

In later articles Stephenson (1986a, 1986b) refers to the "working theory" of communication and to the effect that schemata, which is made operant by Q factors, is central in communication. It is not message systems as such that is essential, but rather, what is in the minds of people. In defining the term schemata, he turned to Bartlett and Vickers and looked upon it as an apperceptive system of subjectivity that is active and loosely organized. Earlier experience, belief systems, priorities, and values of the person are all part of the concept of schemata.

In simple terms, Stephenson (1986a, p. 58) describes 'self' as merely what one says of oneself. This in turn can be comprised into Q factors which represent schemata and offer a method of dealing with subjectivity objectively (Stephenson, 1953). These factors bring regularities to light, which then define classes of self-descriptions (Stephenson, 1961b) and "... fundamental data are the operations by persons, not operational definitions of self-descriptions" (p.14).

VIII. The logic of abduction

A part of understanding Q-methodology and Stephenson's visions is to grasp what the logic of abduction is. We generally hear mostly about deduction (reasoning from generals to particulars) and induction (inferring a general law from specifics) and not that much about abduction (a syllogism in which the major premises are certain, and the minor ones are only probable). Explanations in parenthesis were found in The Oxford Universal Dictionary (1965). According to Misak (2001), Peirce is the first to

put a name to and discuss inference to the best explanation, or what Peirce called abduction. He is also the founder of pragmatism and the view that a philosophical theory must be connected to practice (p. 336). See also Atkin (2004a, 2004b, 2004c). Brown and Robyn (2003) pointed to Peirce's view that guessing, later referred to as abductions, are more often right than wrong and are preceded by a "passive and receptive state" and that judgment is not capricious, but is guided by the store of impressions. They go on to say:

... there is a sensuous element to abduction that is missing in deduction and induction, the former involved with elaborating propositions and the latter testing them; abduction, on the other hand, seeks explanations, and its reasoning process is not from general principles to specific consequences (deduction) or from specific observations to generalizations (induction), but from effects to causes (p.5).

Abduction is a mode of inference (Brown & Robyn, 2003) initiated by something one observes as puzzling or interesting. Baggini and Fosl (2003) explained abduction as a process of reasoning that is used to decide which explanation of given phenomena we should select, and therefore, it is also called 'argument to the best explanation' (p. 38). Some, like Duhem and Quine, claim that there are a variety of explanations for every possible body of evidence. To decide which one of those explanations best fits the evidence, abduction can be used (Baggini & Fosl, 2003; Brown & Robyn, 2003; Stephenson, 1961a; Stephenson, 1961b). Baggini & Fosl (2003) listed some key principles of selection that can be looked upon as tools in the process (p. 39):

Simplicity: when possible, go with the least complicated explanation, the one that requires the fewest and most direct causal sequences, the one that requires the fewest claims about what exists, and the one that speculates about things beyond the evidence as little as possible.
Coherence: when possible, go with the explanation that's consistent with what we already believe to be true.
Testability or predictive power: when possible, go with the theory that allows you to make predictions that can be confirmed or disconfirmed.
Comprehensiveness in scope: when possible, go with the explanation that leaves the fewest loose ends, that explains the most, and that leaves the least unexplained.

The concept of abduction and inference has been discussed and developed over the years. Lipton (2001) pointed to the governing idea "that explanatory considerations are a guide to inference, that scientists infer from the available

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evidence to the hypothesis which would, if correct, best explain that evidence” (p.184). According to Lipton, this can also be

seen as an extension of the idea of “self-evidencing” explanations. Stephenson (1961b) noted that abduction is more than accidentally or incidentally arriving at discoveries because a scientist knows broadly what he (or she) is looking for. It can be an afterthought or an explaining hypothesis, but “abduction is much more: it is for future use, like a law” (p. 13). Peirce’s method of abduction can be appealing to pragmatists but trouble realists who believe that science discloses the single nature of independent reality (Baggini and Fosl, 2003). From a pragmatic point of view, according to Baggini and Fosl, methods of abduction are not based on the supposition that truth about an independent reality can be irrefutably established, but rather, they are based on the idea that we have to make the best of truth that we can, given the limits of evidence and the demands of life.

IX. Summary of essential ideas behind Q-methodology

Working with this view of the philosophy of science behind Q-methodology has been almost like taking a fieldtrip into the thoughts and arguments of many great thinkers, but only the surface has been scratched, and a lot of deep digging could still be done. This will have to wait, but in the following text an attempt was made to summarize some essential ideas.

Non-centrism has its roots in natural philosophy and pragmatism and also parallels some of Aristotle’s principles. Influence from ancient China and pre-Socratic Greek can be traced. We can also see signs of Thomas Aquinas’ philosophy through ‘intentionality.’ Other influences come from twentieth-century developments that have stepped outside tradition in some degree (Smith, 2001). The systems in this category, one being Operant subjectivity or Q-methodology, have in common a focus on relationships or interdependencies as comprising psychological action instead of linear causality. Inquiry usually begins with observed events rather than constructs. With a view of interdependent relationships as ongoing events, mind-body dualism or any form of reductionism is not called upon. Non-centric systems are critical of confusing constructs with events. Focus is on mutuality or interaction, and this interaction comprises all psychological events. There is no need for a hypothetical causal agent such as mind, cognition, instinct, brain, or the like (Smith, 2001).

Q-methodology, with its focus on operant subjectivity, gives us a methodology for measuring subjectivity objectively. People can measure themselves on the relative subjective importance of one item over another. This method groups together

people with similar subjective points of view (Brown, 1980; Stephenson, 1953). Smith (2001, p. 397) pointed to the fact that:

This contrasts with conventional “R” methodology, which discards individual characteristics and can measure subjectivity only from the point of view of the investigator (rating scales, for example), not that of the subject.

Causality has no special meaning in non-centrism, which is a system that calls attention to dealing with both person and environment relationships rather than with just one or the other (Smith, 2001). Most non-centric systems are eclectic in their use of research methodologies, but not Q-methodology, which is an exception and has its own Q-sort methodology. Smith (2001) acknowledged that this methodology is proved valuable to both centric and non-centric systems by “providing subject-centered measurements that are completely untapped by the averaging techniques used in R statistics” (p.398). According to Brown (1980, pp. 132-133), scaling methodologies assume everyone to have all traits in some measurable degree, examining the positive aspects of a phenomenon and generally use a range from most to least. The mean in R, therefore, has weight, symbolizing an average amount of the trait. In Q the scale ranges from most to most, with extremes being of equal significance and the middle being neutral or unimportant. In Q the mean is weightless and the continuum reflects the positive side of a variable, but also the relationship to the opposite.

Operant subjectivity through Q-methodology does not use hypothetico-deductive procedure, which is construct-based. This procedure starts with a theoretical construct, deduces hypotheses, and then experimentally tests each hypothesis against the construct. A criticism of this procedure is its use of constructs to support constructs. Supporters of operant subjectivity and Q-methodology use the empirico-inductive method with clear traces of abduction logic (Stephenson, 1961b), which starts with observations and then gathers data experimentally to draw constructs from regularities of their investigation and not necessarily from an initial construct. This method is event-based. As we can see, some systems are founded on constructs, and some methodologies are as well. The same accounts for event-based systems and methodologies (Smith 2001; Stephenson 1978).

X. Discussion

With the philosophy and epistemology of Q in mind, I turn back to the confusion I encountered concerning different practices and my dilemma as to which path to choose to find answers in my study. Katz (1996) was confronted by a dilemma concerning child development and teacher preparation and defined it like this:

...a dilemma is a predicament in which each of two alternative courses of action – one of which must be taken – are equally desirable or undesirable, and in which taking one of the courses of action undermines the potential benefits and values that might be derived if the other “horn” of the dilemma had been chosen (p. 145).

To reveal teachers’ priorities and beliefs, the two “horns” of my dilemma were to use Q-technique and R-methodology or Q-technique and Q-methodology. An example of the former is a study by Rimm-Kaufman et al. (2006) describing the development of the Teacher Belief Q-Sort (TBQ) and how it was applied in their study. This tool offers a set of statements to be rank ordered by the teachers using a forced distribution creating a need for teachers to prioritize. The teachers rank belief statements relative to each other as opposed to agreeing or disagreeing. According to Rimm-Kaufman et al. (2006), the term ‘Q-Sort method’ offers a person-oriented as well as a variable-oriented view. The authors stated that priorities can be characterized using what they call R-method, the variable-oriented method, and data can be factor analyzed to identify constructs of importance. They used R-method factor analysis to cluster items into meaningful factors to allow for group comparisons. In their data, a matrix row represented each participant and columns represented statements. In addition they used the criterion method, also used and accounted for by Block (1961), in which an exemplar was created and to which other participants of the study could be compared. Results of average degree of relation to a criterion exemplar among four groups of teachers were reported by way of mean, standard deviation, F values, significance, and effect size.

A study by Hurd and Brown (2004) can serve as an example of procedure using Q-technique and Q-methodology to study subjective views of the Q-methodology movement. Statements were drawn from the discourse of communication on this topic from the Q discussion list and consisted of a Q-sample of 40 statements. Hurd and Brown viewed this sample as naturalistic, but also as roughly structured for balance, and 42 Q-sorts were collected. They used PQMethod freeware for Q analysis and settled on a four-factor principal components solution with varimax rotation after trying other solutions as well. Stephenson (1953) recommended centroid factor analysis and judgmental rotation. All of these different possibilities can be found in PQMethod, which analyzes Q data in line with Q-methodology principles, keeping subjectivity intact and bringing regularities to light. The four factors presenting views shared by different people emerged through the data and analysis. The results were described by presenting statements that characterized the positive and negative sides of the factors and also by pointing to distinguishing

statements. The results were explained, interpreted, and discussed, and different implications of them were noted.

These two procedures have put a lot of effort into sampling the statements from relevant concourses, which were to be sorted in the different studies. One of the major pitfalls in analyzing data using the procedure of Q-technique and R-methodology was that subjectivity could be lost in the statistics. At the outset of my study, this was not known to me. This may be the case for others as well, since according to Smith (2001), there are many more studies that have been conducted with the approach associated with Block's than with Stephenson's; also, Q is much better known in the Block version. By using R-methodology I might have contributed to the misunderstandings of the intentions behind the original Q-methodology. On the other hand, there could be benefits from using R. Since my P set is so large, R-methodology principles have the statistics to deal with it, and results could be compared to other studies in which the same procedures had been used.

In my contact with the respondents, I had specifically asked for their subjective opinions. By using Q-technique and Q-methodology, the participants' subjectivity would be respected and subtle nuances would be revealed through Q factor analysis. These nuances emerge through the different configurations of the statements of the concourse and give us varying meanings to interpret. Pitfalls concerning this study from a Q standpoint are the huge P set and only a few post interviews. The PQMethod program does not handle such a large P-set that well. I might choose a smaller section of the P set and then analyze the data by using PQMethod with centroid factor analysis and judgmental rotation. However, many participants have taken the time to do the Q-sorting, and a dilemma here is that I feel obliged to use the data.

I now know what the original intention behind the methodology was, but why did I not grasp the essence of Q-methodology to begin with? If I knew then what I know now, I would have done things differently from the very start and been spared many dilemmas and pitfalls.

Viewing literature concerning Q (Block, 1961; Brown, 1980; Smith, 2001; Stephenson, 1953), it seems fairly clear that there are different practices. Febbraro (1995) saw Q-methodology as versatile and had served a variety of epistemological and ideological goals (p.148). Why there are different practices using Q-technique may not be that easy to answer. Some of it may be explained by different ideologies. For example, Block (1961) used Q-technique from a "special context of application – judgments by professional observers" (p. 116). This was not what Stephenson (1953) intended with Q when he applied "subjective" to a person's selfdescriptions (p. 22) and relevance to self-reference. Block (1961) and others (Rimm-Kaufman & Sawyer, 2004; Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006), used Q data

to test their hypothetical conceptions and to look for significant differences by using a criterion. In contrast, what is involved, according to Stephenson in the foreword of Brown's book (Brown, 1980), is "the discovery of hypotheses and reaching understandings, instead

of testing hypotheses by way of predictability and falsifiability" (p. X).

Different practices might also be explained by misunderstandings of Q-methodology, which has been demonstrated from the very start in the mid-thirties (Brown, 1972; Brown, 1980; Smith, 2001; Stephenson, 1953) and is mainly concentrated around different views of the correlation matrix and subsequent factor analysis. Factor analysis in R is based on a matrix single-centered for traits while Q factor analysis is based on a matrix single-centered for persons (Brown, 1980, p. 19). Those trained in R-methodology may look upon the Q-matrix not as the inverse (or opposite) of R but as its transpose (or rearranged) (Brown, 1972) and see only one matrix. Stephenson (1953) on the other hand claimed there were two data matrices and stated (p. 15), "There never was a single matrix of scores to which both R and Q apply." According to Brown (1972), Stephenson regarded, "Q and R as over-all methodological orientations that deal with separate aspects of human behavior, each methodology subsumed by different assumptions" (p. 60). Among other differences R is concerned with interdependency analysis while Q is concerned with dependency analysis (Stephenson, 1953). In addition, these methodological orientations accentuate different aspects concerning validity and reliability. According to McKeown and Thomas (1988), "the validity and reliability tests so central to conventional scaling in mainstream attitude research are simply unessential within the psychometric framework of Q-methodology" (p. 45).

Should a theory always stay the same or is there room for it to develop and change? A similar question was addressed by Hurd and Brown (2004) when they studied the future of the Q-methodology movement. The sharpest differences of opinions that they reported were between "whether Q should be further explored as a full scientific theory of subjectivity in the tradition of Stephenson or whether its impact should be in its practical applications to research problems and its engagement of alternative epistemologies that may force Q to evolve" (p.10). Hurd and Brown also recognized the dilemma between safeguarding things of value and obtaining new things of value, which consecutively depends on the ability to recognize value.

The different practices may also be a product of the knowledge, traditions, and beliefs that theorists, scholars, and researchers hold to be "true." According to an extensive literature concerning attitudes and beliefs (Allport, 1967; Clandinin & Connelly, 1987; Nespor, 1987; Pajares, 1992; Pajares, 2003; Richardson, 1994; Richardson, 1996; Rokeach, 1976; Stephenson, 1965), knowledge and beliefs seem

deeply intertwined, and some beliefs are more central than others, affecting our thinking and behavior, guiding our actions, and being influenced by experience, new knowledge, and authorities that are of importance to us. Beliefs can be resistant to change, especially in adulthood, and we can cling to beliefs based on incorrect or incomplete knowledge. We may need an epiphany or gestalt shift to change some of our beliefs.

XI. Epiphanies

From dilemmas to frustrations and to becoming aware of pitfalls in the journey between two methodologies, my PhD work has also led to some epiphanies:

- That conspire has to do with the sharing of knowledge and meaning, although some of this may be tacit. It's out there among us, ready to emerge and be grasped through certain procedures.
- Subjectivity is rooted in conspire, is communicable and operant, and can be shared.
- We can view subjectivity by allowing people to measure themselves on the relative subjective importance of one item over another, reflecting and drawing upon the self-reference in the procedure.
- The subject instead of the researcher defines the meaning.
- We do not need categorical attribution beforehand but can wait and see what the data presents.
- There are actually two different matrices of data for Q and R, and they naturally meet different requirements and need different solutions.
- Different scientific approaches can complement each other, e.g. they can shed light on a topic from different perspectives.

XII. Conclusion

Through my PhD study, I have had the opportunity to learn thoroughly about Q-methodology, and in that process I have also learned more about R-methodology. No methodology alone can give us all the answers. R-methodology is useful in obtaining facts and information. To measure subjectivity, we need a different approach, and Q-methodology has given us this possibility. Each procedure has its strengths in different areas, R-methodology in pursuing and testing hypotheses and generating information, facts, and generalities, and Q-methodology in focusing on discoveries and understanding of subjective points of view in and among individuals. Choosing Q-technique and R-methodology would have been the easiest path for me to pursue since the researchers I was in contact with used that version. My PhD could have been finished smoothly and quickly in that tradition, and I could have

proceeded to other projects. However, with my newly acquired and deeper knowledge of Q-methodology, this became problematic for me. New knowledge should not be ignored but rather taken into account even if it can be more time consuming and can lead to new dilemmas. This knowledge changed my understanding of Q. It made me aware of dilemmas and pitfalls that previously were unknown to me. I also learned about the philosophy behind the methodology and method that shows how well connected they are in revealing such subtle elements as beliefs, feelings, values, etc. in human behavior. A purpose of my study is to reveal such issues among Norwegian teachers. This, of course, affected my choice to use Q-technique and Q-methodology, which sent me on a much bumpier and winding road towards completing my PhD, but it also gave me learning experiences I would have been without. Maybe this is the essence of gaining knowledge through work towards a PhD degree.

The knowledge of different systems and methodologies can help us make a more informed choice in our endeavor to understand and to explain phenomenon, but we have to see this in relation to the purpose of the research project. According to Newman et al. (2003, p. 167), researchers can strengthen the legitimacy, trustworthiness, and applicability when there is consistency between research purposes, questions, and methods that are used. I can acknowledge interesting aspects in both Q and R and believe it is wise to have a repertoire of research methods that better enable us to choose the methodology that will provide the best guidance to find knowledge and understanding on the research issues we pursue. Since reality is complex and contingent, research should also be and should examine phenomenon from all angles (M. L. Smith, 2006, p. 471), which is a point also made by Newman et al. (2003). Philosophy of science and the methodologies that incorporate the different views is a huge field of knowledge that can be difficult to comprehend. It is important, however, to seek this knowledge and to know what to choose when designing a study and following it through. It is not enough to learn a method. We need to learn the methodology behind it as well. This is important for individual researchers to do, but it also places a huge responsibility on institutions and programs aiming at educating future researchers. Essex Summer School in Social Science Data Analysis at the University of Essex, UK, is a fine example of how this can be done. There are participants from various countries, and it is possible to choose among many different topics and methodologies, one of them being Prof. Steven Brown's seminar on Q-methodology.

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Appendix II

Code no _____

Q1: Beliefs about Discipline and Behavior Management

A: Least characteristic of my approach or beliefs about discipline and behavior management	B: Minimally characteristic of my approach or beliefs about discipline and behavior management	C: Somewhat characteristic of my approach or beliefs about discipline and behavior management	D: Characteristic of my approach or beliefs about discipline and behavior management	E: Most characteristic of my approach or beliefs about discipline and behavior management

Appendix

Appendix III

Code no _____

Q2: Group/Classroom Practices

A: Those practices that are least essential and/or characteristic of my teaching	B: Those practices that are less essential and/or characteristic of my teaching	C: Those practices that are somewhat essential and/or characteristic of my teaching	D: Those practices that are essential and/or characteristic of my teaching	E: Those practices that are most essential and/or characteristic of my teaching

Appendix

Appendix IV

Code no _____

Q3: Beliefs about Children/Students

A: Least characteristic of my belief system	B: Hardly characteristic of my belief system	C: Somewhat characteristic of my belief system	D: Characteristic of my belief system	E: Most characteristic of my belief system

Appendix

Appendix V

Senter for atferdsforskning
Høgskolen i Stavanger
Postboks 8002
4068 STAVANGER

Dato.....

Til kommuner.....

Søknad om tillatelse til å gjennomføre en doktorgradsstudie om voksenrollen i barnehage og skole

Jeg henvender meg til ulike kommuner for å informere om og søke om tillatelse til å gjennomføre en studie om voksenrollen i barnehagen og skolen. Prosjektets tittel er: '**Teacher Priorities and Beliefs**'. Vi vet en del om hvor viktig voksenrollen er både i barnehage og skole. Jeg er opptatt av den voksnes oppfattelse og forståelse av virkeligheten. I denne studien ønsker jeg informasjon fra til sammen ca 200 førskolelærere i barnehager (3 årskolealder) og ca 200 lærere fordelt på første og andre klasse.

Studien har fokus på forståelse av barns/elevs sosiale utvikling og læring, håndtering av atferd i gruppen/klassen, praksis på avdelingen/i klasserommet og førskolelærere og lærere sin egen vurdering av utført arbeid. Det er førskolelærere og lærere sin subjektive forståelse jeg ønsker informasjon om, og det betyr at alle svar er like 'riktige'. For å innhente informasjon vil jeg bruke spørreskjema og Q-sort metode i forhold til alle informanter, og i tillegg intervju noen få tilfeldig utvalgte. Q-sort metode handler om å rangere utsagn etter kategorier fra A til E. A viser til det som er minst karakteristisk og E det som er mest karakteristisk for informanten. Hvis for eksempel utsagnet "Barn/elever trenger å føle seg trygge i gruppen" ikke er karakteristisk for din måte å tenke på, sorteres den under kategori A osv. Disse instrumentene har vært utprøvd blant noen lærere førskolelærere. I den forbindelse ble det bemerket at det gjennom utfyllingen skjer en bevisstgjøring hos informanten i forhold til tema som blir berørt. Innsamling av data er planlagt til februar/mars 2004, og prosjektet avsluttes, og data anonymiseres innen 31.12.10.

Appendix

Tilsvarende studier gjøres på Taiwan og i USA, og det vil bli muligheter til å sammenlikne resultater mellom alle tre land. Jeg forventer å finne data som gir informasjon om prioriteringer, forståelse og praksis blant førskolelærere og lærere fra land med ulike utdannings systemer. Resultatene kan komme til å få en positiv innflytelse/effekt på enkelt lærere/førskolelærere, på utdanning og opplæring av dem, samt på forståelsen av likheter og forskjeller blant lærere og førskolelærere fra forskjellige land med ulike utdannings systemer.

Takk for at du tok deg tid til å lese dette! De som deltar i denne undersøkelsen vil være med i trekningen om to boksjekker på kr. 500. En vil gå til en barnehage, og den andre til en skole. Det er frivillig å delta, og det er mulig å trekke seg fra undersøkelsen på et hvilket som helst tidspunkt. Opplysninger vil bli behandlet konfidensielt, og rapporteres slik at enkelt individer ikke kan gjenkjennes. Prosjektet er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS. Har du noen spørsmål, kan du kontakte meg på tlf. 51 83 29 00

Vennlig hilsen

Arlene Arstad Thorsen
prosjektleder

Appendix VI

Høgskolen i Stavanger
Postboks 8002
4068 STAVANGER

Til virksomhetsledere i barnehager og skoler

Voksenrollen i barnehage og skole – Invitasjon til en doktorgradsstudie

Viser til e-post av xxxxxxx fra direktør xxxxxxxxxxx som er positiv til at ansatte i skoler og barnehager deltar som informanter i denne studien. Jeg henvender meg til deg som virksomhetsleder for å informere om og invitere barnehagen/skolen til å delta i en studie om voksenrollen i barnehagen og skolen. Prosjektets tittel er: **'Teacher Priorities and Beliefs'**. Vi vet en del om hvor viktig voksenrollen er både i barnehage og skole. Jeg er opptatt av den voksnes persepsjon og forståelse av virkeligheten. Deres bidrag vil være et viktig supplement til å få mer kunnskap om dette. I denne studien ønsker jeg informasjon fra ca 200 førskolelærere/pedagogiske ledere i barnehager (3-6 års avd.) og ca 200 lærere fordelt på første og andre klasse.

Studien har fokus på forståelse av barns/elevs sosiale utvikling og læring, håndtering av atferd i gruppen/klassen, praksis på avdelingen/i klasserommet og førskolelærere og lærere sin selvutvurdering av utført arbeid. Det er førskolelærere og lærere sin subjektive forståelse jeg ønsker informasjon om, og det betyr at alle svar er like 'riktige'. For å innhente informasjon vil jeg bruke spørreskjema og Q-sort metode i forhold til alle informanter, og i tillegg intervju noen få tilfeldig utvalgte. Q-sort metode handler om å rangere utsagn etter kategorier fra A til E. A viser til det som er minst karakteristisk og E det som er mest karakteristisk for deg. Hvis for eksempel utsagnet "Barn/elever trenger å føle seg trygge i gruppen" ikke er karakteristisk for din måte å tenke på, sorteres den under kategori A osv.

Instrumentene har vært utprøvd og forbedret flere ganger, og ved den siste utprøvingen, brukte lærere og førskolelærere ca 1 time på hele opplegget. I den forbindelse ble det bemerket at det skjer en bevisstgjøring hos

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informanten i forhold til tema som blir berørt, og at det var interessant og greit å utføre det. Innsamling av data er planlagt til februar/mars 2004, og prosjektet avsluttes, og data anonymiseres innen 31.12.10.

Tilsvarende studier gjøres på Taiwan og i USA, og det vil bli muligheter til å sammenlikne resultater mellom alle tre land. Jeg forventer å finne data som gir informasjon om prioriteringer, forståelse og praksis blant førskolelærere/pedagogiske ledere og lærere fra land med ulike utdannings systemer. Resultatene kan komme til å få en positiv innflytelse/effekt på enkelt lærere/førskolelærere, på utdanning og opplæring av dem, samt på forståelsen av likheter og forskjeller blant lærere og førskolelærere fra forskjellige land med ulike utdannings systemer.

Takk for at du tok deg tid til å lese dette! De som deltar i denne undersøkelsen vil være med i trekningen om to boksjekker på kr. 500. En vil gå til en barnehage, og den andre til en skole. Det er frivillig å delta, og det er mulig å trekke seg fra undersøkelsen på et hvilket som helst tidspunkt. Opplysninger vil bli behandlet konfidensielt, og rapporteres slik at enkelt individer ikke kan gjenkjennes. Prosjektet er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS. Har du noen spørsmål, kan du kontakte meg på tlf. 51 83 29 00 eller på e-post: arlene.thorsen@saf.his.no. Dersom det er interesse ved din barnehage/skole til å delta i studien, vennligst ta kontakt med undertegnede gjennom e-post, brev eller telefon snarest. Spørreskjema og Q-sort oppgavene vil bli sendt til barnehager og skoler som ønsker å delta, og det legges ved ferdig frankert og adressert konvolutt til retur forsendelsen.

Dette er en mulighet til å bidra til økt kunnskap om voksenrollen i barnehager og skoler både nasjonalt og sammenliknet med andre land. Det vil ta ca 1 time å fullføre spørreskjema og Q-sort oppgavene, og det er ingen ekstra utgifter til porto. De som deltar, er med i trekningen om to boksjekker.

Vennlig hilsen

Arlene Arstad Thorsen
prosjektleder

Appendix VII

Senter for atferdsforskning
Høgskolen i Stavanger
Postboks 8002
4068 STAVANGER

Dato

Til førskolelærere/pedagogiske ledere og lærere i første og andre klasse

Søknad om tillatelse til å gjennomføre en doktorgradsstudie om voksenrollen i barnehage og skole

Jeg henvender meg til deg for å informere om og invitere deg til å delta i en studie om voksenrollen i barnehagen og skolen. Prosjektets tittel er: **'Teacher Priorities and Beliefs'**. Vi vet en del om hvor viktig voksenrollen er både i barnehage og skole. Jeg er opptatt av den voksnes oppfattelse og forståelse av virkeligheten. I denne studien ønsker jeg informasjon fra til sammen ca 200 førskolelærere i barnehager (3-6 års avd.) og ca 200 lærere fordelt på første og andre klasse.

Studien har fokus på forståelse av barns/elevs sosiale utvikling og læring, håndtering av atferd i gruppen/klassen, praksis på avdelingen/i klasserommet og førskolelærere og lærere sin selvvrdering av utført arbeid. Det er førskolelærere og lærere sin subjektive forståelse jeg ønsker informasjon om, og det betyr at alle svar er like 'riktige'. For å innhente informasjon vil jeg bruke spørreskjema og Q-sort metode i forhold til alle informanter, og i tillegg intervju noen få tilfeldig utvalgte. Q-sort metode handler om å rangere utsagn etter kategorier fra A til E. A viser til det som er minst karakteristisk og E det som er mest karakteristisk for deg. Hvis for eksempel utsagnet "Barn/elever trenger å føle seg trygge i gruppen" ikke er karakteristisk for din måte å tenke på, sorteres den under kategori A osv. Det tar ca 1 time å gjøre dette. Innsamling av data er planlagt til våren 2004, og prosjektet avsluttes og data anonymiseres innen 31.12.10.

Tilsvarende studier gjøres på Taiwan og i USA, og det vil bli muligheter til å sammenlikne resultater mellom alle tre land. Jeg forventer å finne data som

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gir informasjon om prioriteringer, forståelse og praksis blant førskolelærere og lærere fra land med ulike utdannings systemer. Resultatene kan komme til å få en positiv innflytelse/effekt på enkelt lærere/førskolelærere, på utdanning og opplæring av dem, samt på forståelsen av likheter og forskjeller blant lærere og førskolelærere fra forskjellige land med ulike utdannings systemer.

Takk for at du tok deg tid til å lese dette! De som deltar i denne undersøkelsen vil være med i trekningen om to boksjekker på kr. 500. En vil gå til en barnehage, og den andre til en skole. Det er frivillig å delta, og det er mulig å trekke seg fra undersøkelsen på et hvilket som helst tidspunkt. Opplysninger vil bli behandlet konfidensielt, og rapporteres slik at enkelt individer ikke kan gjenkjennes. Prosjektet er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS. Har du noen spørsmål, kan du kontakte meg på tlf. 51 83 29 00 eller e-post: arlene.thorsen@his.no. Dersom du kan tenke deg å delta i studien, vennligst gå videre til veiledningsarket inni konvolutten.

Vennlig hilsen

Arlene Arstad Thorsen
prosjektleder

Appendix VIII

Veiledning

Takk for at du valgte å gå videre. Her vil du finne en nærmere orientering om hva du skal gjøre.

Denne pakken inneholder:

1. Spørreskjema
2. Veiledning til Q-sort oppgave
3. Tre Q-sort oppgaver
4. En ferdig adressert og frankert konvolutt

Først fyller du ut spørreskjemaet. Den første delen er 'Teacher Self-Efficacy Scale' som er oversatt til norsk og har 19 spørsmål som gjelder vurdering av egen jobbutøvelse. Det brukes en skala fra 1 til 9, hvor 1 står for 'ingenting' og 9 står for 'en hel del'. Sett ring rundt det tallet som representerer ditt syn best. Deretter kommer 12 spørsmål som tar for seg bakgrunnsopplysninger. Her er det ruter hvor du setter kryss for det som er mest aktuelt for deg. Noen steder kan du sette flere kryss. Det er også stiplede linjer hvor du kan skrive inn tall og /eller tekst.

Nå er du klar til å ta fatt på Q-sort utsagnene. Her vil du finne utsagn som du skal kategorisere i forhold til hvordan de beskriver din forståelse og pedagogiske praksis. Først leser du gjennom orienteringen om hvordan du skal løse oppgavene. Samme fremgangsmåte brukes på alle tre Q-sort oppgaver.

Når spørreskjemaet og alle tre Q-sort oppgaver er fullført, legger du alt sammen i den ferdigfrankerte konvolutten som ligger vedlagt, og sender den til oss så snart som mulig og innen

Din innsats bidrar til å gi oss økt kunnskap om ulike sider ved voksenrollen i barnehage og skole. Mange takk for din hjelp!

Vennlig hilsen

Arlene Arstad Thorsen
prosjektleder

Appendix IX

Veiledning til Q-sort oppgave

Dette er ditt Q-sort utstyr. Vedlagt vil du finne:

- Tre svarark med ulike farger merket:
- Forståelse av disiplin i gruppen og håndtering av atferd
- Praksis på avdeling/i klasserom
- Forståelse av barn/elever
- Tre plastlommer med utsagnskort som hører til svararkene.

For å fullføre dine Q-sort, anbefaler vi deg å finne et relativt stort tomt område (et bord vil antakelig passe best), hvor du har plass til å bre ut svarark og utsagnskort.

Begynn med Q-sort oppgaven om ”Forståelse av disiplin i gruppen og håndtering av atferd.” Legg først fram svararket med samme tittel og som inneholder kategorier fra A til E. Nå er du klar til å sortere utsagnskortene. Målet ditt er å plassere hvert utsagnskort under en kategori som passer best for deg. For eksempel hvis utsagnet “Å ha oppsyn med barn/elever kan forhindre problematiske situasjoner”, slett ikke er karakteristisk for deg, plasser det under kategori “ Minst karakteristisk for min tilnæringsmåte eller oppfattelse av disiplin og håndtering av atferd”. For hvert utsagn, les og plasser kortet under den kategorien som kjennetegner deg best. **HUSK DET ER INGEN ‘RETTE’ ELLER ‘GALE’ SVAR.**

Pass på at du har kun FIRE kort under hver kategori, selv om rekkefølgen ikke gir en perfekt fremstilling av dine meninger.

For å gjøre denne oppgaven enklere, kan du gjerne begynne med å sortere kortene under kategoriene A, C og E. Deretter se gjennom bunkene for å fordele dem videre inn under de 5 kategoriene. Når du synes dette gir en brukbar fremstilling av dine meninger, fjern papiret fra klebmerket på svararket og fest utsagnskortet på den aktuelle plassen. Når du har fullført Q-sort oppgaven om ”Forståelse av disiplin i gruppen og håndtering av atferd”, gjentar du samme prosedyre for ”Praksis på avdeling/i klasserom” og ”Forståelse av barn/elever”. Når du har fullført alle tre Q-sort oppgaver, vennligst legg svararkene med rød, blå og gul farge i den frankerte konvolutten sammen med det utfylte spørreskjemaet og returner til oss.

MANGE TAKK!

Appendix X

Distinguishing and Consensus Statements

Distinguishing Statements on Q2, Subgroup 1 for Factor 1 (A)

(P < .05; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown

Factors		1		2		
No.	Statement	No.	RNK	SCORE	RNK	SCORE
17	Encourage, give feedb on proc not outcome/ solution	17	2	1.35*	1	0.25
4	Doing an activity to create a sense of community	4	2	1.31	1	0.88
7	Having at least a few students share something	7	2	1.28*	-1	-0.49
3	Welcoming each student by name to class	3	2	1.17*	0	0.18
16	Permitting students to choose from a var of active	16	1	0.74*	-2	-1.52
10	Reflecting and talking about what worked or not	10	1	0.59	0	0.14
5	Talking about current events	5	1	0.45	0	-0.02
11	Reflecting on content of ac lesson and what learned	11	0	0.35*	2	1.30
1	Having a morning routine	1	0	0.13*	2	1.29
13	Modeling behaviors for students	13	0	-0.06*	-2	-1.28
2	Talking about our plan or schedule for the day	2	0	-0.08*	2	1.11
18	Using whole group instruction	18	-1	-0.10*	2	1.30
14	Intro new objects or activities through demonstr	14	-1	-0.14*	1	0.95
20	Working on group projects	20	-1	-0.42*	-2	-1.21

9	Conducting the business of gr/clroom by set routine	9	-2	-1.35*	-1	-0.84
15	Using work sheets	15	-2	-1.54*	-1	-0.59
12	Using drill and recitation for factual information	12	-2	-1.78*	0	-0.02

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Consensus Statements - Those That Do Not Distinguish Between ANY Pair of Factors

All Listed Statements are Non-Significant at $P > .01$, and Those Flagged With an * are also Non-Significant at $P > .05$.

Factors		1			2	
No.	Statement	No.	RNK	SCORE	RNK	SCORE
4	Doing an activity to create a sense of community	4	2	1.31	1	0.88
5	Talking about current events	5	1	0.45	0	-0.02
6*	Using hand signals	6	-1	-0.88	-1	-0.64
8*	Discussing a written message created by tea	8	-2	-1.59	-2	-1.73
10	Reflecting and talking about what worked or not	10	1	0.59	0	0.14
19*	Using a theme-based approach to instruction	19	1	0.58	1	0.92

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PQMethod2.11 Q2 subgr 2 #3

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Distinguishing Statements for Factor 1 (C)

(P < .05; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

Factors

No.	Statement	1		2		3	
		No.	SCORE	RNK	SCORE	RNK	SCORE
17	Encourage, give feedb on process not outc	17	1.41*	-1	-0.24	0	-0.24
3	Welcoming each ch/student by name to gr/cl	3	1.28*	1	0.26	-1	-0.83
10	Reflecting and talking ab worked or not	10	0.95*	-1	-0.15	-2	-1.29
11	Reflecting on content of academic lesson	11	0.87	1	0.31	-1	-0.42
1	Having a morning routine	1	0.00*	2	2.05	-1	-0.84
18	Using whole group instruction	18	-0.65	-1	-0.14	2	1.15
15	Using work sheets	15	-1.48*	0	0.14	1	0.45
12	Using drill and recitation	12	-1.59*	0	-0.13	0	0.02

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Distinguishing Statements for Factor 2 (D)

(P < .05; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

Factors

No.	Statement	1		2		3	
		No.	SCORE	RNK	SCORE	RNK	SCORE
1	Having a morning routine	1	0	2	2.05*	-1	-0.84
2	Talking about our plan or schedule	2	-1	2	1.81*	-1	-0.43
11	Reflecting on content of ac lesson	11	1	1	0.31	-1	-0.42
3	Welcoming each ch/student by name	3	2	1	0.26*	-1	-0.83
9	Conducting the business by set rout	9	-2	0	0.13*	-2	-0.98
4	Doing an activity to create comm.	4	2	0	0.13*	2	1.29
18	Using whole group instruction	18	-1	-1	-0.14	2	1.15
10	Reflect and talking ab worked or not	10	2	-1	-0.15*	-2	-1.29
5	Talking about current events	5	1	-1	-0.61*	1	0.81
16	Permitting ch/studs to choose f vari	16	0	-2	-1.57*	1	0.98

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PQMethod2.11 Q2 subgr 2 #3

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Distinguishing Statements for Factor 3 (E)

(P < .05 ; Asterisk (*) Indicates Significance at P < .01)

Both the Factor Q-Sort Value and the Normalized Score are Shown.

Factors

No.	Statement	1		2		3	
		No.	SCORE	RNK	SCORE	RNK	SCORE
13	Modeling behaviors for ch/stud	13	0 -0.07	1	0.28	2	1.39*
18	Using whole group instruction	18	-1 -0.65	-1	-0.14	2	1.15*
11	Reflecting on content of ac lesson	11	1 0.87	1	0.31	-1	-0.42
3	Welcoming each ch/student by name	3	2 1.28	1	0.26	-1	-0.83*
1	Having a morning routine	1	0 0.00	2	2.05	-1	-0.84*
10	Reflect and talk ab worked or not	10	2 0.95	-1	-0.15	-2	-1.29*

Appendix

PQMethod2.11 2 subgr 2 #3

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Consensus Statements - Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at $P > .01$, and Those Flagged With an * are also Non-Significant at $P > .05$.

Factors

No.	Statement	No.	1		2		3	
			RNK	SCORE	RNK	SCORE	RNK	SCORE
6*	Using hand signals	6	-1	-1.10	-2	-1.43	-2	-1.39
19*	Using a theme-based approach to inst	19	1	0.68	1	0.33	0	0.32
20	Working on group projects	20	0	-0.09	-2	-0.76	0	-0.16

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